

Lucent Technologies
Bell Labs Innovations



3B21D Computer Common Systems

Growth/Retrofit Tasks
Volume 1

254-303-100
Issue 3
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About This Information Product

Purpose

This information product is part of a documentation set used to support the *UNIX** Real-Time Reliable (RTR) system running on the Lucent Technologies 3B21D computer. It presents the procedures used to grow, degrow, convert, and retrofit major components of the 3B21D computer.

Audience

This information product provides information for a variety of audiences. Anyone interested in the *UNIX* RTR operating system and the 3B21D computer will find this information product useful. However, the primary audience includes the following:

- Software developers
- Hardware developers
- Training course developers
- System administrators
- 3B21D computer system personnel responsible for system engineering, maintenance, operations, and installation.

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Reason for Reissue

This information product is being reissued to incorporate new information for the 3B21D computer and to bring the information product into compliance with new Lucent Technologies documentation standards. The major changes are as follows:

- Expand to two volumes.
- Change the Response in Step **20.4** of Chapter 1.
- Change the title of Chapter 9, "IOP Unit Degrowth" to "IOP 2 or IOP 3 Degrowth."
- Change the title of Chapter 10, "IOP Unit Growth" to "IOP 2 or IOP 3 Growth."
- Change the syntax in Step **11.2** of Chapter 10.
- Divide existing Chapter 13 into two new chapters.
- Add new Chapter 13, "KLW256 Memory Growth."
- Divide existing Chapter 14 into two new chapters.
- Add new Chapter 14, "UUCP Link Degrowth."
- Add new Chapter 15, "UUCP Link Growth."
- Renumber existing Chapters 15 through 31. Add one to each number to accommodate new Chapter 15.
- Make the following changes in existing Chapter 20 that is now Chapter 21:
 - Add 254-303-101, *Routine Maintenance Tasks*, to "References" section.
 - Reference 254-303-106, *System Maintenance Manual*, for more information on setting IDs in Step **39**.
 - Change table title from Table 20-2, "Location of Jumper" to Table 21-2, "9824AN SCSI Bus Jumper Locations." Then, correct the existing data in Table 20-2, "Location of Jumper." The IOP 2 SPU Growth Unit should be Equipment Location (EQL) 11-XXX-XXX and not 62-XXX-XXX.
 - Resequence Steps **57** through **61** at the end of the procedure.
 - Add a new subprocedure to test both a 9-track tape and a DAT unit.
- Add new Chapter 33, "KBN15 to KBN415 DMAC Conversion."
- Add new Chapter 34, "TN983 to UN597 MTTYC Conversion."
- Add new Chapter 35, "UN583 to UN597 MTTYC Conversion."
- Add new Chapter 36, "UN597 1200 to 9600 Baud ROP Conversion."
- Add new Chapter 37, "UN597 to UN597 with ABD Conversion."
- Add new Chapter 38, "TN74B to UN582 TTYC Conversion."
- Add new Chapter 39, "TN82B to UN582 HSDC Conversion."

- Add new Chapter 40, "TN75C to UN582 SDLC Conversion."
- Add new Chapter 41, "TN1839 to UN582 SDLC Conversion."
- Add new Chapter 42, "UN33 to UN933 SCSDC Conversion."
- Add new Chapter 43, "UN373/TN2116/410AA to UN580B DFC Conversion."
- Add new Chapter 44, "Internet Protocol-Data Service Unit Conversion."

How to Use This Information Product

This information product consists of independent chapters and reference information. Each chapter contains procedures for accomplishing a single task. Specific topics are referenced in the "Table of Contents" and in the "Index" with page number locations. The "Glossary" defines terminology used in this information product. This issue has been divided into two volumes as follows:

Volume 1

Volume 1 contains growth and degrowth procedures used to change a 3B21D computer system.

- Master Table of Contents
- About This Information Product
Provides general information about the information product. Information regarding how to audience, reason for reissue, conventions, safety labels, how to order, and how to comment is included. A description of how the information product is organized and a brief description of the contents of each chapter is also provided.
- Chapter 1 — DCI High-Level Degrowth
Describes the procedure used to degrow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) by high-level mode Recent Change and Verify (RC/V).
- Chapter 2 — DCI High-Level Growth
Describes the procedure used to grow the DCI by high-level mode RC/V.
- Chapter 3 — DCI Low-Level Degrowth
Describes the procedure used to degrow the DCI by low-level mode RC/V.
- Chapter 4 — DCI Low-Level Growth
Describes the procedure used to grow the DCI by low-level mode RC/V.
- Chapter 5 — DFC Growth
Describes the procedure used to grow a Disk File Controller (DFC).
- Chapter 6 — DMAC/DSCH Growth
Describes the procedure used to grow a Direct Memory Access Controller (DMAC)/Dual Serial Channel (DSCH) circuit pack (KBN15).

- Chapter 7 — HSDC Degrowth
Describes the procedure used to degrow a High-Speed Data Link Controller (HSDC).
- Chapter 8 — HSDC Growth
Describes the procedure used to grow an HSDC.
- Chapter 9 — IOP 2 or IOP 3 Degrowth
Describes the procedure used to degrow an Input/Output Processor (IOP 2 or IOP 3).
- Chapter 10 — IOP 2 or IOP 3 Growth
Describes the procedure used to grow a new IOP 2 or IOP 3.
- Chapter 11 — IOP/SCSI Peripheral Unit Growth (Growth Shelf)
Describes the procedure used to grow an IOP/Small Computer System Interface (SCSI) peripheral unit into a processor cabinet of a 3B21D computer system.
- Chapter 12 — Memory Growth
Describes the procedure needed to grow additional Single In-line Memory Modules (SIMMs).
- Chapter 13 — KLW256 Memory Growth
Describes the procedure used to grow a KLW256 memory board.
- Chapter 14 — UUCP Link Degrowth
Describes the procedure to degrow a UNIX-to-UNIX Copy (UUCP) link.
- Chapter 15 — UUCP Link Growth
Describes the procedure to grow a UUCP link.
- Chapter 16 — Peripheral Cabinet Growth
Describes the procedure used to grow a peripheral cabinet.
- Chapter 17 — SCSDC Degrowth
Describes the procedure used to degrow a Scanner and Signal Distributor Controller (SCSDC).
- Chapter 18 — SCSDC Growth
Describes the procedure used to grow an SCSDC (UN33/UN933 circuit packs).
- Chapter 19 — SCSI 9-Track Tape Device Degrowth
Describes the procedure used to degrow a SCSI 9-track tape device.
- Chapter 20 — SCSI DAT Device Degrowth
Describes the procedure used to degrow a SCSI Digital Audio Tape (DAT) device.
- Chapter 21 — SCSI Peripheral Growth
Describes the procedure used to grow a SCSI Moving Head Disk (MHD), a pair of duplex SCSI MHDs, a SCSI DAT device, or a SCSI 9-track tape device.

- Chapter 22 — SCSDC16 Growth
Describes the procedure used to grow an SCSDC16 (UN33/UN933).
- Chapter 23 — SDL Degrowth
Describes the procedure used to degrow a Synchronous Data Link (SDL) by high-level mode RC/V.
- Chapter 24 — SDL Growth
Describes the procedure used to grow SDLs by high-level mode RC/V.
- Chapter 25 — SDLC Degrowth
Describes the procedure used to degrow a Synchronous Data Link Controller (SDLC) by high-level mode RC/V.
- Chapter 26 — SDLC Growth
Describes the procedure used to grow SDLCs.
- Chapter 27 — TTY Degrowth
Describes the procedure used to degrow the Terminal (TTY).
- Chapter 28 — TTY Growth
Describes the procedure used to grow the TTY.
- Chapter 29 — TTYC Degrowth
Describes the procedure used to degrow a Terminal Controller (TTYC) by high-level mode RC/V.
- Chapter 30 — TTYC Growth
Describes the procedure used to grow the TTYC by high-level mode RC/V.
- Chapter 31 — UC Degrowth
Describes the procedure used to degrow a UN379 Utility Circuit (UC) by low-level mode RC/V.
- Chapter 32 — UC Growth
Describes the procedure used to grow a UN379 UC by low-level mode RC/V.

Volume 2

Volume 2 contains conversion procedures used to change a 3B21D computer system.

- Master Table of Contents
- About This Information Product
Provides general information about the information product. Information regarding how to audience, reason for reissue, conventions, safety labels, how to order, and how to comment is included. A description of how the information product is organized and a brief description of the contents of each chapter is also provided.

- Chapter 33 — KBN15 to KBN415 DMAC Conversion
Describes the procedure used to convert from a KBN15 Direct Memory Access Controller (DMAC) dual serial channel circuit pack to a KBN415 circuit pack.
- Chapter 34 — TN983 to UN597 MTTYC Conversion
Describes the procedure used to convert a Maintenance Terminal Controller (MTTYC) from a TN983 circuit pack to a UN597 circuit pack.
- Chapter 35 — UN583 to UN597 MTTYC Conversion
Describes the procedure used to convert a MTTYC from a UN583 circuit pack to a UN597 circuit pack.
- Chapter 36 — UN597 1200 to 9600 Baud ROP Conversion
Describes the procedure used to convert a 1200 baud Receive-Only Printer (ROP) to 9600 baud using a UN597 circuit pack.
- Chapter 37 — UN597 to UN597 with ABD Conversion
Describes the procedure used to enable the Alternate Boot Disk (ABD) feature on a UN597 MTTYC circuit pack.
- Chapter 38 — TN74B to UN582 TTYC Conversion
Describes the procedure used to convert from a TN74B Terminal Controller (TTYC) circuit pack to a UN582 Multipurpose Peripheral Controller (MPC) circuit pack.
- Chapter 39 — TN82B to UN582 HSDC Conversion
Describes the procedure used to convert from a TN82B High-Speed Data Link Controller (HSDC) to a UN582 MPC circuit pack.
- Chapter 40 — TN75C to UN582 SDLC Conversion
Describes the procedure used to convert from a TN75C Synchronous Data Link Controller (SDLC) circuit pack to a UN582 MPC circuit pack.
- Chapter 41 — TN1839 to UN582 SDLC Conversion
Describes the procedure used to convert from a TN1839 Synchronous Data Link Controller (SDLC) circuit pack to a UN582 MPC circuit pack.
- Chapter 42 — UN33 to UN933 SCSDC Conversion
Describes the procedure used to convert from a UN33 Scanner and Signal Distributor Controller (SCSDC) circuit pack to a UN933 SCSDC circuit pack.
- Chapter 43 — UN373/TN2116/410AA to UN580B DFC Conversion
Describes the procedure used to convert from a UN373/TN2116/410AA DFC circuit pack to a UN580B DFC circuit pack.

- Chapter 44 — Internet Protocol-Data Service Unit Conversion
Describes the procedure used to add an Internet Protocol-Data Service Unit (IP-DSU) between the Switching Control Center (SCC) channel on the 3B21D computer and the local 10BaseT Local Area Network (LAN) hub or router.
- Appendix A — Copying to Backup Partitions
Describes the procedure used to copy backup partitions.
- Glossary
- Index.

Using Procedures in This Information Product

The procedures in this information product are easy to use for both the experienced and inexperienced user. Steps requiring a more complicated action have “subprocedures” that provide detailed instructions.

- If you know how, you can perform the action described in the main procedure step, skip (or “bypass”) the subprocedure steps, and continue to the next main procedure step.
- If you need help, perform the steps detailed in the subprocedure.

Each subprocedure is set off from the main procedure by double bold horizontal lines that mark the beginning of the subprocedure and double narrow horizontal lines that mark the ending.

Figure 1 shows how bypassing works. If you know how to remove the MHD from service (Step **3**), you can perform the action (without having to read Steps **3.1** and **3.2**), and then skip to Step **4**. If you do not know how to remove the MHD from service, you should read and perform the instructions given in Steps **3.1** and **3.2**, and then continue to Step **4**.

Numbering Conventions

The first step in a main procedure is Step **1** as shown in Figure 1. For example:

1. Verify mate Moving Head Disk (MHD).

The first step in a subprocedure is **X.1**. The **X** varies depending on where in the main procedure the subprocedure step occurs. For example, if we added a subprocedure step after the main procedure Step **3**, the first number of the subprocedure would be **3.1**. See Figure 1 for an example.

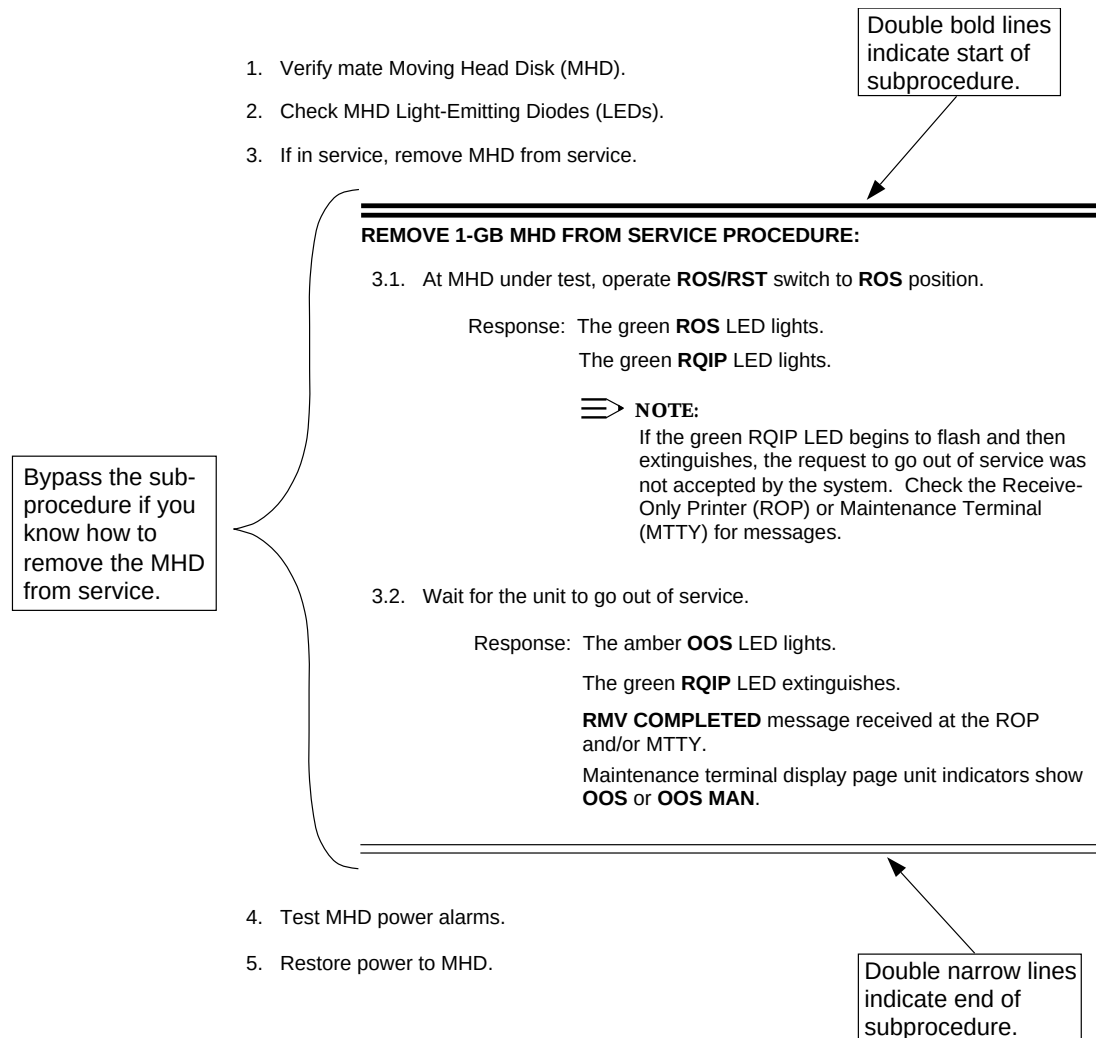


Figure 1. Sample of Subprocedure Bypassing

Conventions Used

Command, Filename, and Display Notations

The input commands contained in this information product are listed in both Man-Machine Language (MML) and Program Documentation Standard (PDS) format. For example, a step instructing the user to enter the appropriate input command to the system would include both formats as follows:

- If MML, **VFY:MHD=b;**
- If PDS, **VFY:MHD b!**

The following notations are used to show commands, filenames, variables, screen displays, and return keys in the text and displays.

⇒ NOTE:

System filenames and command names are case-sensitive, so you must enter them exactly as they are shown.

- Command names in text appear in **bold** type; for example, the **/usr/bin/ls** command. Command names in headings appear in **bold** type.

⇒ NOTE:

Due to the possibility of errors when entering a command, punctuation has been alleviated at the end of a command line unless the punctuation is part of that command.

- Filenames, forms, and record names in text appear in *italic* type; for example, the */usr/lib/uucp/System* file, the *scsdbody* form, or the *sgen* record. Filenames, forms, and record names in headings appear in ***bold-italic*** type.
- Text that you enter such as a command or a response to a prompt appears in **bold** type; for example, the **ls -la** command. The convention of making text **bold** overrides other conventions; for example, enter **scsdbody** for the form name.

⇒ NOTE:

Due to the possibility of errors (comparing actual response with instructions), punctuation has been alleviated at the end of a response unless the punctuation is part of that response.

- Variables that appear in a command line or file appear in *italic* type; for example, **grep *username* /etc/passwd**. In this example, *username* is a variable indicating a user's name is required.

- Screen displays and system messages appear in constant width type; for example, Please enter your password. Program code listings and file listings are also shown in constant width type. Input messages are shown in **constant-width bold** type.
- Comments and explanations within a display are indented and shown in *italic* type. These are for information only and will not appear on your screen.
- Square brackets around an argument on a command line indicate that the argument is optional; for example, the **lpstat [-t]** command. In this example, the **-t** argument is optional and can be omitted.
- A vertical bar (|) between words in an argument on a command line indicates that one of the arguments is to be selected.
- The key identified on your keyboard as Return, Enter, or a bent arrow (↵) is referred to as the Return key. Occasionally, representations of this Return key will be shown as <CR> or boxed; for example, Return.
- There is an implied Return at the end of each command and menu response that you enter. Some examples do not explicitly show the Return. Where you may be expected to enter a Return (as in the case where you are accepting a menu default), the symbol <CR> is shown to indicate that you are to press the Return key.
- Key combinations appear in a hyphenated format; for example, Ctrl-d. Press and hold down the first key of a key combination while pressing the second key.
- Ellipses (three dots) on a command line indicate that the previous argument can be repeated; for example, **ls [file ...]**. In this example, multiple files can be listed after the command.
- References to manual pages are followed by their manual page location number in parentheses; for example, **mount(1M)**.

Hexadecimal Notation

Hexadecimal (base 16) numbers are denoted with a **0x** prefix; for example, 0x00A is decimal 10.

Equipment Locations

A coordinate numbering system is used to identify the Equipment Location (EQL) in units and cabinets. The origin is the lower left front of the cabinet or unit. Vertical increments are measured in inches. Horizontal increments are measured in eighths of an inch. The coordinate location of a circuit pack is expressed as the horizontal and vertical location of the center lines of the connector into which the circuit pack is inserted. The location of a unit in a cabinet is identified by the placement of the lower left corner of the unit in the cabinet.

For example, a connector at EQL 004-080 is located 4 inches above the origin and 10 inches (80 by 0.125 = 10.0) to the right of the origin.

Safety Labels

Safety labels are reminders used to assure the safety of personnel and to minimize service interruptions, loss of data, and damage to equipment, products, and software.

Three types of safety labels are used in Lucent Technologies documentation. The three types, in descending order of priority, are as follows:

1. **DANGER** indicates the presence of a hazard that **will** cause death or severe personal injury if the hazard is not avoided.
2. **WARNING** indicates the presence of a hazard that **can** cause death or severe personal injury if the hazard is not avoided.
3. **CAUTION** indicates the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.

This information product contains safety labels in the form of CAUTION statements.

Related Information Products

Table 1 lists by information product number and Select Code the Lucent Technologies information products supporting the 3B21D computer.

Table 1. Information Products Supporting 3B21D Computer

New Information Product Number	Old Select Code	Title
254-303-100	-	3B21D Computer Growth/Retrofit Tasks
254-303-101	-	3B21D Computer Routine Maintenance Tasks
254-303-102	-	3B21D Computer Trouble Clearing Tasks
254-303-103	303-007	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Processor Recovery Messages Guide
254-303-104	303-010	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Recent Change and Verify Manual
254-303-105	304-045	3B21D Computer Hardware Reference Manual
254-303-106	304-046	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System System Maintenance Manual
254-303-107	303-072	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Software Troubleshooting Guide
254-303-110	303-080	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System PDS Input Messages Manual
254-303-111	303-081	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System PDS Output Messages Manual
254-303-112	303-082	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System MML Input Messages Manual
254-303-113	303-083	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System MML Output Messages Manual

Information product references will not include full titles. For example, “Refer to 254-303-104, *Recent Change and Verify Manual*, for more information.”

How to Comment on This Information Product

We are constantly striving to improve the quality and usability of this information product. Please use one of the following options to provide us with your comments:

- You may use the on-line comment form at **<http://www.lucent-info.com/comments>**
- You may email your comments to **ctiphotline@lucent.com**
- You may use the enclosed comment form to send us your comments either by fax or mail as follows:
 - Fax to **1-407-767-2760**
 - Mail to the following address:
Lucent Technologies
Documentation Services Coordinator
240 E. Central Parkway
Altamonte Springs, FL 32701-9928
- You may call the hot line with your comments at **1-800-645-6759**. The hot line is staffed Monday through Friday from 8:00 a.m. to 5:00 p.m. Eastern time.

Please include with your comments the title, ordering number, issue number and issue date of the information product, your complete mailing address, and your telephone number.

Mandatory Customer Information

The 3B21D computer is used as the Administrative Module (AM) in various switching system applications and is not provided as a stand-alone product. Therefore, the application documentation is responsible for providing this information.

Refer to the applicable application documentation for "Mandatory Customer Information."

DCI High-Level Degrowth

1

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DCI High-Level Degrowth

1

Introduction

This chapter describes the procedure used to degrow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) from a 3B21D computer system using high-level mode Recent Change and Verify (RC/V). The DCI feature provides a high-throughput interface to transfer data between a 3B21D computer and an adjunct processor. The DCI feature is supported beginning with Real-Time Reliable (RTR) Release 21.3 and later field releases, but the high-level degrowth procedure is only available in RTR Release 21.17 or later software releases.

The DCI feature is described in 254-303-106, *System Maintenance Manual*.

Information on installing the DCI board in the adjunct processor may be found in the adjunct processor hardware owner's guide.

During the high-level Recent Change and Verify (RC/V) session, the system will prompt for diagnostics, removals, and restorals of equipment.

- If the Maintenance Terminal (MTTY) is used, pressing the **CMD/MSG** key enables messages to be entered at the same terminal.
- If an RC/V terminal is used, another terminal is needed to input the requested messages.

Values for all fields should be as provided by application engineering.

⇒ NOTE 1:

If using the MTTY to return to the Equipment Configuration Database (ECD) RC/V session, press the **CMD/MSG** key twice - once to access the command mode where graphic displays could be viewed and the second time to return to the ECD RC/V session.

⇒ **NOTE 2:**

This procedure does not update *rootdmly*.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- On the 3B21D computer:
 - RTR Release 21.17 or later software release must be installed on the 3B21D computer. The dci delete (*dcidel*) high-level form is not available before Release 21.17; therefore, the low-level DCI degrowth procedure must be used for releases prior to Release 21.17.
 - All 3B21D computer hardware should be either active or standby.
 - No system update activity should be taking place when performing this procedure.
 - On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
 - Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
 - The root ECD must be consistent with the *incore* ECD.
- If the adjunct processor is a Sun* SPARCstation†:
 - The Sun SPARCstation should be running SunOS* System V Release 4.0 (SVR4) (Solaris* 2.X) or later releases.
 - The Sun SPARCstation software to support the DCI feature should have been installed using installation instructions defined in 254-303-106, *System Maintenance Manual*.

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References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*
- Adjunct processor hardware owner's guide.

Procedure

The following steps describe the DCI high-level mode degrowth procedure:

1. At the MTTY, inhibit Routine Exercises (REXs) by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **2.1**) or the command mode (Step **2.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At MTTY Common Processor Display Page (CPDP) 102, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. At the RC/V terminal, enter **incore**

Response: The cursor moves to the **review only:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

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-
- 2.2. Invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Delete the DCI from the ECD.

DELETE DCI FROM ECD PROCEDURE:

- 3.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. Enter **dcidel**

Response: The system displays a blank deletion of dci (*dcidel*) form.
The cursor returns to attribute 1.

- 3.3. Enter the *unit_name* and *unit_number* values for the DCI (in capitals) being degrown as provided by application engineering.

Response: The system displays **Reading...Please wait...** followed by **Enter, Delete, Validate, or Print:**

- 3.4. Enter **d**

Response: The system displays **Deleting ...** in the upper right corner of the screen and prompts you to remove the DCI from service.

⇒ NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *dcidel* form. Messages flash on the screen indicating the database actions currently in progress.

4. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 4.1. At MTTY CPDP 102, verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step 5.
- If **no**, continue to Step 4.2.

- 4.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

5. At the MTTY, remove the degrowth DCI from service by entering the appropriate input command.

- If MML, **RMV:DCI=a;**
- If PDS, **RMV:DCI a!**

Where: *a* = unit number of the DCI device.

Response: The system displays **RMV DCI a COMPLETED**

6. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step 6 prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

7. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 7.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

**CAUTION:**

The system could sustain a severe maintenance reset while CU 0 is unavailable.

- 7.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 0 FORCED ONLINE** followed by **REPT CU 1 UNAVAILABLE**

**NOTE:**

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 7.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

8. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

9. Disconnect the DCI cable for CU 1.

DISCONNECT DCI CABLE FOR CU 1 PROCEDURE:

- 9.1. Disconnect the DSCH end of the DCI cable for CU 1 from the DSCH port, previously provided by application engineering, on the 3B21D computer. This information is also shown on the high-level form as *device_num* (field 3).
- 9.2. Disconnect the adjunct processor end of the DCI cable from the adjunct processor.
- 9.3. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key based on the data input on the *dcidel* form. Messages flash on the screen indicating the database actions currently in progress.

Response: The ROP displays **REPT DEGROWTH DCI a
COMPLETE**

Where: *a* = unit number of the DCI being degrown.



NOTE:

This response means the DCI is now unequipped, but the procedure must be completed to update the database.

10. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 10.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 10.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 10.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

11. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

- 11.1. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 1**



NOTE:

Wait for the **RQIP** light to come on and then extinguish before continuing to Step **11.2**.

- 11.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
CU 1 **OOS** Light-Emitting Diode (LED) extinguishes.

- 11.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 1 in progress and wait until CU 1 is restored to standby before continuing.

11.4. At the RC/V terminal, press the <CR> key.

Response: The system displays **REPT DCI a** in growth state.

Where: *a* = unit name of the growth DCI.

12. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

12.1. At MTTY CPDP 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **13**.
- If **no**, continue to Step **12.2**.

12.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

13. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **13** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

14. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 14.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 1 is unavailable.

- 14.2. On the EAI page, force CU 1 on-line by entering **12**

Response: The system displays **REPT CU 1 FORCED ONLINE** followed by **REPT CU 0 UNAVAILABLE**



NOTE:

At the MTTY, CU 0 displays an FOFL indicator and CU 1 displays an FONL indicator.

- 14.3. At the MTTY, press the **NORM DISP** key to return to the normal display.
-
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15. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

16. Disconnect the DCI cable from CU 0 and remove the 993A DCI Small Computer System Interface (SCSI) Bus (SBUS) card from the adjunct processor.

**DISCONNECT DCI CABLE FROM CU 0 AND REMOVE SBUS CARD FROM
ADJUNCT PROCESSOR PROCEDURE:**

- 16.1. Disconnect the DSCH end of the DCI cable for CU 0 from the DSCH port, previously provided by application engineering, on the 3B21D computer. This information is also shown on the high-level form as *device_num* (field 3).



CAUTION:

*Before removing the DCI board from the adjunct processor, make sure the system power switch is in the **OFF** (0) position. When the power is off, the green LED on the front panel is not lit and the fans are not running.*

- 16.2. Disconnect the adjunct processor end of the DCI cable from the adjunct processor.
- 16.3. Remove the DCI board from the adjunct processor as specified in the adjunct processor hardware owner's guide.
- 16.4. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key based on the data input on the *dcidel* form. Messages flash on the screen indicating the database actions currently in progress.

17. Remove the Previous Logical Unit (PLU) from service.

⇒ **NOTE:**

The **dcidel** session running on the RC/V terminal indicates which unit to remove. Wait for the unit to be removed from service before continuing.

REMOVE PLU FROM SERVICE PROCEDURE:

- 17.1. Verify that the degrowth DCI is the first device under the DSCH.

- If **no**, continue to Step 17.2.
- If **yes**, go to Step 19.

- 17.2. At the MTTY, enter the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**

- 17.3. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key. The side pointer fields of the PLU are updated. Messages flash on the screen indicating the database actions currently in progress.

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-
18. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

19. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

19.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

19.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ONLINE**

⇒ NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

19.3 At the MTTY, press the **NORM DISP** key to return to the normal display.

20. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

20.1. At CUPS TN1821 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**

⇒ NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **20.2**.

20.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
CU 0 **OOS** LED extinguishes.

20.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.

20.4. At the RC/V terminal, press the <CR> key.

Response: Wait for the **FORM Deleted** indicator at the top right of the screen.

21. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

21.1. At the RC/V terminal, enter < and press the <CR> key.

Response: The cursor moves to the **Enter Form Name:** attribute.

21.2. Access the low-level forms by entering **toggle**

Response: The cursor moves to the **Enter Form Name:** attribute.

21.3. Enter **activate**

Response: The system displays **1.copy_inc_to_disk:YES**

21.4. Press the <CR> key.

Response: The system prompts for the action desired.

21.5 Enter **e**

Response: The system flashes **executing... FORM EXECUTED** once and displays the **Enter Form Name:**

21.6 Enter < and press the <CR> key.

Response: The ECD RC/V is completed.

22. Kill the DCI Display Process (DCIDIP).

KILL DCIDIP PROCEDURE:

22.1. At the MTTY, access CPDP 108 and check status of the DCI. Verify that this is the last DCI being removed.

- If **yes**, continue to Step **22.2**.
- If **no**, go to Step **24**.

22.2. At the MTTY, enter the appropriate input command.

- If MML, **INIT:ULARP;**
- If PDS, **INIT:ULARP!**

Response: The system displays **INIT ULARP COMPLETED**

22.3. At the MTTY, enter the appropriate input command.

- If MML, **STP:EXC:DATA,USER,FN="/cft/dap/dcidip";**
- If PDS, **STOP:EXC:USER,FN"/cft/dap/dcidip"!**

Response: The system displays **STOP EXC USER COMPLETED**

22.4. Verify that the process is stopped by entering the appropriate input command.

- If MML, **STP:EXC:DATA,USER,FN="/cft/dap/dcidip";**
- If PDS, **STOP:EXC:USER,FN"/cft/dap/dcidip"!**

Response: The system displays **STOP EXC USER STOPPED**

⇒ NOTE:

The **STOP EXC USER STOPPED** response may be followed by a **killp** warning that can be ignored.

23. Stop the DCI driver.

STOP DCI DRIVER PROCEDURE:

- 23.1. Verify that this is the last DCI being removed.

- If **yes**, continue to Step **23.2**.
- If **no**, go to Step **24**.

- 23.2. At the MTTY, enter the appropriate command.

- If MML, **STOP:DCI;**
- If PDS, **STOP:DCI!**

Response: The system displays **STOP DCI COMPLETED**

24. Update the backup root file system.

 NOTE:

See Appendix A for the procedure to update the backup root file system.

25. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

26. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

27. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

DCI High-Level Growth

2

Contents

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Introduction

This chapter describes the procedure used to grow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) into a 3B21D computer system using high-level mode Recent Change and Verify (RC/V). The DCI feature provides a high-throughput interface to transfer data between a 3B21D computer and an adjunct processor. The DCI feature is supported in Real-Time Reliable (RTR) Release 21.3 and later field releases, but the high-level growth procedure is only available in RTR Release 21.17 or later software releases.

The DCI feature is described in the 254-303-106, *System Maintenance Manual*.

Information on installing the DCI board in the adjunct processor may be found in the adjunct processor hardware owner's guide.

During the high-level Recent Change and Verify (RC/V) session, the system will prompt for diagnostics, removals, and restorals of equipment.

- If the Maintenance Terminal (MTTY) is used, pressing the **CMD/MSG** key enables messages to be entered at the same terminal.
- If an RC/V terminal is used, another terminal is needed to input the requested messages.

Values for all fields should be as provided by application engineering.

⇒ NOTE 1:

If using the MTTY to return to the Equipment Configuration Database (ECD) RC/V session, press the **CMD/MSG** key twice - once to access the command mode where graphic displays could be viewed and the second time to return to the ECD RC/V session.

⇒ **NOTE 2:**

This procedure does not update *rootdmly*.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- On the 3B21D computer:
 - RTR Release 21.17 or later software must be installed on the 3B21D computer. The addition of dci (*dcia dd*) high-level form is not available before Release 21.17; therefore, the low-level DCI growth procedure must be used for releases prior to Release 21.17.
 - All 3B21D computer hardware should be either active or standby.
 - No system update activity should be taking place when performing this procedure.
 - On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
 - Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
 - The root ECD must be consistent with the *incore* ECD.
- If the adjunct processor is a Sun* SPARCstation†:
 - The Sun SPARCstation should be running SunOS* System V Release 4.0 (SVR4) (Solaris* 2.X) or later releases.
 - Sun SPARCstation software to support the DCI feature should be installed using installation instructions defined in 254-303-106, *System Maintenance Manual*.

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References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*
- Adjunct processor hardware owner's guide.

Procedure

The following steps describe the DCI high-level mode growth procedure:

1. At the MTTY, inhibit Routine Exercises (REXs) by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL**

2. Invoke the *incore* database high-level mode RCV by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RCV PROCEDURE:

- 2.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At MTTY Common Processor Display Page (CPDP) 102, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **review only:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.1.5. Enter **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Invoke the *incore* database high-level mode RC/V using the command mode.

COMMAND MODE PROCEDURE:

- 2.2.1. At the MTTY, enter the appropriate input command.

- If MML,
RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 2.2.2. Enter **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

3. Insert the DCI into the ECD.

INSERT DCI INTO ECD PROCEDURE:

- 3.1. At the RC/V terminal, enter **dciaadd**

Response: The system displays a blank *dciaadd* form.
The cursor moves to the **unit_name:** attribute.

- 3.2. Enter the *unit_name* and *unit_number* values for the DCI (in capitals) being grown as provided by application engineering.

Response: The system displays **Enter Insert, Change, Substitute, Validate, or Print:**

- 3.3. Enter **i**

Response: The system displays **Inserting ...**

⇒ NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *dciaadd* form. Messages flash on the screen indicating the database actions currently in progress.

4. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 4.1. At MTTY CPDP 102, verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step 5.
- If **no**, continue to Step 4.2.

- 4.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

5. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step 5 provides automatic restoral of the CU 1 when the unit is powered up later in procedure.

Response: The system displays **RMV CU 1 COMPLETED**

6. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 6.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 1 is unavailable.

- 6.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 0 FORCED ONLINE**
followed by **REPT CU 1 UNAVAILABLE**



NOTE:

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 6.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

7. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

8. Connect the DCI cable and install the DCI card for CU 1.
-

CONNECT DCI CABLE AND INSTALL DCI CARD FOR CU 1 PROCEDURE:

- 8.1. Connect the DSCH end of the DCI cable for CU 1 to the DSCH port, previously provided by application engineering, on the 3B21D computer. See Tables 2-1 and 2-2.



NOTE:

For assistance in mounting and grounding the DSCH cables, see Figure 2-1.

- 8.2. Install the DCI board in the adjunct processor as specified in the adjunct processor hardware owner's guide.
- 8.3. Connect the end of the DCI cable to the adjunct processor.
- 8.4. At the RC/V terminal, press the <CR> key.

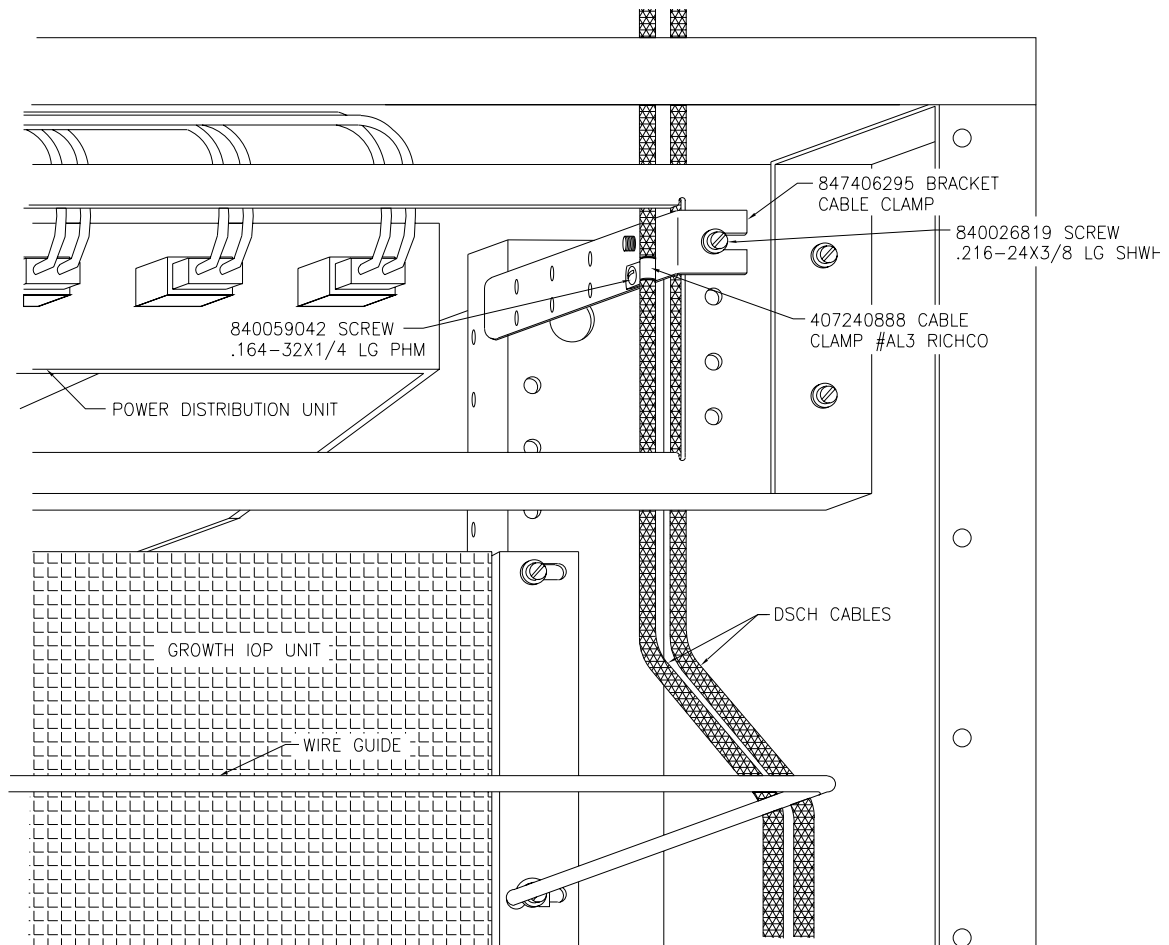
Response: The system begins to make changes to the *incore* ECD in response to the data input on the *dcia dd* form. Messages flash on the screen indicating the database actions currently in progress.

Table 2-1. EQL for CU 0

CU 0 DMAC 0 for Channels 11-14			
EQL	Channel	Device	Application
EQL 28-075-351	Channel 11	0	Reserved for 3B21D computer IOP 0
EQL 28-075-345	Channel 11	1	Reserved for 3B21D computer IOP 2
EQL 28-075-338	Channel 11	2	Reserved for 3B21D computer DFC 0
EQL 28-075-332	Channel 11	3	Reserved for 3B21D computer DFC 2
EQL 28-075-151	Channel 12	0	—
EQL 28-075-145	Channel 12	1	—
EQL 28-075-138	Channel 12	2	—
EQL 28-075-132	Channel 12	3	—
EQL 28-075-319	Channel 13	0	Reserved for 3B21D computer IOP 1
EQL 28-075-312	Channel 13	1	Reserved for 3B21D computer IOP 3
EQL 28-075-306	Channel 13	2	Reserved for 3B21D computer DFC 1
EQL 28-075-300	Channel 13	3	Reserved for 3B21D computer DFC 3
EQL 28-075-119	Channel 14	0	—
EQL 28-075-112	Channel 14	1	—
EQL 28-075-106	Channel 14	2	—
EQL 28-075-100	Channel 14	3	—
CU 0 DMAC 1 for Channels 16-19			
EQL 28-065-351	Channel 16	0	—
EQL 28-065-345	Channel 16	1	—
EQL 28-065-338	Channel 16	2	—
EQL 28-065-332	Channel 16	3	—
EQL 28-065-151	Channel 17	0	—
EQL 28-065-145	Channel 17	1	—
EQL 28-065-138	Channel 17	2	—
EQL 28-065-132	Channel 17	3	—
EQL 28-065-319	Channel 18	0	—
EQL 28-065-312	Channel 18	1	—
EQL 28-065-306	Channel 18	2	—
EQL 28-065-300	Channel 18	3	—
EQL 28-065-119	Channel 19	0	—
EQL 28-065-112	Channel 19	1	—
EQL 28-065-106	Channel 19	2	—
EQL 28-065-100	Channel 19	3	—

Table 2-2. EQL for CU 1

CU 1 DMAC 0 for Channels 11-14			
EQL	Channel	Device	Application
EQL 53-075-351	Channel 11	0	Reserved for 3B21D computer IOP 0
EQL 53-075-345	Channel 11	1	Reserved for 3B21D computer IOP 2
EQL 53-075-338	Channel 11	2	Reserved for 3B21D computer DFC 0
EQL 53-075-332	Channel 11	3	Reserved for 3B21D computer DFC 2
EQL 53-075-151	Channel 12	0	—
EQL 53-075-145	Channel 12	1	—
EQL 53-075-138	Channel 12	2	—
EQL 53-075-132	Channel 12	3	—
EQL 53-075-319	Channel 13	0	Reserved for 3B21D computer IOP 1
EQL 53-075-312	Channel 13	1	Reserved for 3B21D computer IOP 3
EQL 53-075-306	Channel 13	2	Reserved for 3B21D computer DFC 1
EQL 53-075-300	Channel 13	3	Reserved for 3B21D computer DFC 3
EQL 53-075-119	Channel 14	0	—
EQL 53-075-112	Channel 14	1	—
EQL 53-075-106	Channel 14	2	—
EQL 53-075-100	Channel 14	3	—
CU 1 DMAC 1 for Channels 16-19			
EQL 53-065-351	Channel 16	0	—
EQL 53-065-345	Channel 16	1	—
EQL 53-065-338	Channel 16	2	—
EQL 53-065-332	Channel 16	3	—
EQL 53-065-151	Channel 17	0	—
EQL 53-065-145	Channel 17	1	—
EQL 53-065-138	Channel 17	2	—
EQL 53-065-132	Channel 17	3	—
EQL 53-065-319	Channel 18	0	—
EQL 53-065-312	Channel 18	1	—
EQL 53-065-306	Channel 18	2	—
EQL 53-065-300	Channel 18	3	—
EQL 53-065-119	Channel 19	0	—
EQL 53-065-112	Channel 19	1	—
EQL 53-065-106	Channel 19	2	—
EQL 53-065-100	Channel 19	3	—



NOTES:

1. THE CABLE CLAMP BRACKET SHOULD BE MOUNTED ON THE RIGHT-HAND SIDE OF THE FRAME VIEWED FROM THE REAR.
2. ATTACH CABLE CLAMPS STARTING NEAR THE BEND IN THE CABLE CLAMP BRACKET.

Figure 2-1. DSCH Cables Grounding and Mounting for DCI Feature

9. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 9.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 9.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 9.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

10. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

- 10.1. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**



NOTE:

Wait for the **RQIP** light to come on and then extinguish before continuing to Step **10.2**.

- 10.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
CU 1 **OOS** Light-Emitting Diode (LED) extinguishes.

- 10.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 1 in progress and wait until CU 1 is restored to standby before continuing.

- 10.4. At the RC/V terminal, press the <CR> key.

Response: The system displays **REPT DCI a** in growth state.

Where: *a* = unit name of the growth DCI.

11. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 11.1. At MTTY CPDP 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **12**.
- If **no**, continue to Step **11.2**.

- 11.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

12. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **12** prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

13. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 13.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 0 is unavailable.

- 13.2. On the EAI page, force CU 1 on-line by entering **12**

Response: The system displays **REPT CU 1 FORCED ONLINE** followed by **REPT CU 0 UNAVAILABLE**



NOTE:

At the MTTY, CU 0 displays an FOFL indicator and CU 1 displays an FONL indicator.

- 13.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

14. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

15. Connect the DCI cable for CU 0.

CONNECT DCI CABLE FOR CU 0 PROCEDURE:

- 15.1. Connect the DSCH end of the DCI cable for CU 0 to the DSCH port, previously provided by application engineering, on the 3B21D computer. This information is also shown on the high-level form as *device_num* (field 3). Refer to Tables 2-1 and 2-2.
- 15.2. Connect the end of the DCI cable to the adjunct processor.
- 15.3. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key based on the data input on the *dcicdd* form. Messages flash on the screen indicating the database actions currently in progress.

16. Remove the Previous Logical Unit (PLU) from service.

REMOVE PLU FROM SERVICE PROCEDURE:

- 16.1. Verify that the growth DCI is the first device under the DSCH.
- If **no**, continue to Step **16.2**.
 - If **yes**, go to Step **18**.
- 16.2. At the MTTY, enter the appropriate input command.
- If MML, **RMV:a=b;**
 - If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

The **dciaadd** session running on the RC/V terminal indicates which unit to remove. Wait for the unit to be removed from service before continuing.

16.3. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key. The side pointer fields of the PLU are updated to point to the growth DCI. Messages flash on the screen indicating the database actions currently in progress.

17. At the MTTY, restore PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

18. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

18.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

18.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

18.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.

19. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

- 19.1. At CUPS TN1821 (EQL 53-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **19.2**.

- 19.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
CU 0 **OOS** LED extinguishes.

- 19.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.

- 19.4. At the RC/V terminal, press the <CR> key.

Response: The system displays **REPT DCI a** in growth state.

Where: *a* = unit name of the growth DCI.

20. At the MTTY, diagnose the growth DCI with CU 1 by entering the appropriate input command.

- If MML, **DGN:DCI=a;**
- If PDS, **DGN:DCI a!**

Where: *a* = the unit number of the growth DCI.

Response: The system displays **DGN DCI a ATP MESSAGE COMPLETE**

21. At the MTTY, switch the CUs by entering the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

22. Diagnose the growth DCI with CU 0.

DIAGNOSE GROWTH DCI WITH CU 0 PROCEDURE:

- 22.1. At the MTTY, enter the appropriate input command.

- If MML, **DGN:DCI=a;**
- If PDS, **DGN:DCI a!**

Where: *a* = unit number of the growth.

Response: The system displays **DGN DCI a ATP MESSAGE COMPLETE**

- 22.2. At the RC/V terminal, press the <CR> key.

Response: The system continues to make changes to the *incore* ECD in response to the <CR> key. Messages flash on the screen indicating the database actions currently in progress. Finally, the system will flash **FORM INSERTED** in the upper right of the screen and display a blank *dciadd* form with the cursor at attribute 1.

23. At the MTTY, restore the DCI device to service by entering the appropriate input command.

- If MML, **RST:DCI=a;**
- If PDS, **RST:DCI a!**

Where: *a* = unit number of the growth DCI.

Response: The system displays **RST DCI a COMPLETED**

24. Restart the User Level Automatic Restart Process (ULARP).

RESTART ULARP PROCEDURE:

- 24.1. Verify that this is the first DCI being added.

- If **yes**, continue to Step **24.2**.
- If **no**, go to Step **26**.

- 24.2. At the MTTY, enter the appropriate input command.

- If MML, **INIT:ULARP;**
- If PDS, **INIT:ULARP!**

Response: The system displays **INIT ULARP COMPLETED**

25. Verify page is up for DCI Display Process (DCIDIP). At MTTY CPDP 100, select **108**

Response: The CPDP 108 shows the DCIs that were added.

26. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 26.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 26.2. At the RC/V terminal, press the <CR> key.

Response: The system prompts for the action desired.

- 26.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 26.4. Enter **<**

Response: The ECD RC/V is completed.

27. Verify that this is the first DCI being added.

- If **yes**, continue to Step 28.
- If **no**, go to Step 32.

28. Invoke the sg database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVSG,DB="root",NREVIEW;**
- If PDS, **RCV:MENU:RCVSG,DB "root",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

29. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 29.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 29.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 29.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

30. Update the system generation (*sgen2*) record.

⇒ **NOTE:**

Update the *sgen2* record to add a block device "j" (**bdj**) driver.

UPDATE *sgen* RECORD PROCEDURE:

- 30.1. At the RC/V terminal, enter **sgen2**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 30.2. Enter **u**

Response: The cursor moves to the **ksgen:** attribute.

- 30.3. Enter **sgen2**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

30.4. Enter **c**

Response: The system displays **Change Field:**

30.5. Enter **10**

Response: The system displays **row:**

30.6. Enter **a**

Where: **a** = next available row.

30.7. Enter **/prcl/bdj**

Response: The system displays **row:**

30.8. Press the <CR> key.

Response: The system displays **Change Field:**

30.9. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

30.10. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **sgen2:** attribute.

30.11. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

31. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

31.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

31.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

31.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

32. At the MTTY, build boot image by entering the appropriate input command.

- If MML, **UPD:BLDBOOT:DATA, BOOTIMAGE="/appdmert";**
- If PDS, **UPD:BLDBOOT:BOOTIMAGE "/appdmert"!**

Response: The system displays **UPD BLDBOOT COMPLETED**

33. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

34. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

35. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

36. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

DCI Low-Level Degrowth

3

Contents

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Introduction

This chapter describes the procedure used to degrow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) from a 3B21D computer system using low-level mode Recent Change and Verify (RC/V). The DCI feature provides a high-throughput interface to transfer data between a 3B21D computer and an adjunct processor. The DCI feature is supported in Real-Time Reliable (RTR) Release 21.3 and later field releases. When using this degrowth with software releases before Release 21.17, the channel option (*chopt*) form will be deleted. For Release 21.17 or later, the dci option (*dciopt*) form will be deleted.

⇒ NOTE:

This procedure does not update *rootdmly*.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 24 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the incore ECD.
- If the adjunct processor is a *Sun* SPARCstation*†:
 - The *Sun SPARCstation* should be running *SunOS** System V Release 4.0 (SVR4) (*Solaris** 2.X) or later releases.
 - The *Sun SPARCstation* software to support the DCI feature should have been installed using installation instructions defined in 254-303-106, *System Maintenance Manual*.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*
- Adjunct processor hardware owner's guide.

Procedure

The following steps describe the DCI low-level mode degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

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2. Invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the channel subdevice linkage.

⇒ **NOTE:**

The following subprocedure provides the Unit Control Block (UCB) linkage for channel subdevices from which the DCI will be degrown. If the DCI to be removed is *not* the first device under the specified channel, the Previous Logical Unit (PLU) to the DCI will have to be removed in Step **33** in order to update the side pointer linkages to bypass the DCI device. For use later in this procedure, the following subprocedure also provides the UCB pointer list which shows the forms which must be removed and the Minor Device Chain Table (MDCT) pointer list which provides the logical device (*logdev*) records associated with the DCI device being degrown.

DETERMINE CHANNEL SUBDEVICE LINKAGE PROCEDURE:

- 3.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

- 3.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

- 3.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

- 3.4. Enter **CU**

Response: The cursor moves to the **complex_number:** attribute.

- 3.5. Enter **0**

Response: The cursor moves to the **unit_name:** attribute.

- 3.6. Enter **CH**

Response: The cursor moves to the **unit_number:** attribute.

3.7. Enter **aa**

Where: **aa** = channel number from which the DCI will be degrown.

Response: The cursor moves to the **iop_list:** attribute.

3.8. Enter **>**

Response: The cursor moves to the **pointer_list:** attribute.

3.9. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

3.10. Enter **ucb**

Response: The cursor moves to the **form_inst_key keyfield1:** attribute.

3.11. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield2:** attribute.

3.12. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield3:** attribute.

3.13. Enter **DCI**

Response: The cursor moves to the **form_inst_key keyfield4:** attribute.

3.14. Enter **aa**

Where: **aa** = unit number of the DCI being removed.

Response: The cursor moves to the **get_form_red** attribute.

3.15. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. At the MTTY, request hard copies of the forms from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Where: *filename* = any unique name.

Response: The system displays **DUMP FILE ALL COMPLETED**

5. At the MTTY, remove the DCI unit by entering the appropriate input command.

- If MML, **RMV:DCI=a;**
- If PDS, **RMV:DCI a!**

Where: *a* = unit number of the DCI device.

Response: The system displays **RMV DCI a COMPLETED**

6. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 6.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 6.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

7. Update the DCI major status to Unequipped (UNEQIP).

UPDATE DCI MAJOR STATUS TO UNEQIP PROCEDURE:

- 7.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 7.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 7.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 7.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 7.5. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

- 7.6. Enter **a**

Where: **a** = unit number of the DCI being degrown.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 7.7. Enter **c**

Response: The system displays **Change Field:**

- 7.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 7.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

- 7.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

7.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

7.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

8.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

8.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

8.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 28-060], remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **9** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

10. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 10.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.
- 10.2. Enter **12**

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

11. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Disconnect the DCI cable from CU 0.

DISCONNECT DCI CABLE FROM CU 0 PROCEDURE:

- 12.1. Disconnect the DSCH end of the DCI cable for CU 0 from the DSCH port, previously provided by application engineering, on the 3B21D computer.
- 12.2. Disconnect the end of the DCI cable for CU 0 from the adjunct processor
-
-

13. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 13.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 13.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 13.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

14. Determine the PLU status by referring to the ROP output obtained in Step 4. If the growth DCI is the first device under this channel, continue to Step 15; otherwise, go to Step 16.
15. Update the DSCH down pointer and the DCI up pointer linkages.

UPDATE DSCH DOWN POINTER AND DCI UP POINTER LINKAGES PROCEDURE:

- 15.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 15.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 15.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

15.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

15.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

15.6. Enter **aa**

Where: **aa** = channel number from which the DCI is being degrown.

Response: The system completes the remainder of the form and displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

15.7. Enter **c**

Response: The system displays **Change Field:**

15.8. Enter **36**

Response: The cursor moves to the **down complex_name:** attribute.

15.9. Enter **'**

Response: The cursor moves to the **down complex_number:** attribute.

15.10. Enter **'**

Response: The cursor moves to the **down unit_name:** attribute.

15.11. Enter **'**

Response: The cursor moves to the **down unit_number:** attribute.

15.12. Enter **'**

Response: The system displays **Change Field:**

15.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15.15. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

15.16. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.17. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

15.18. Enter **a**

Where: **a** = unit number of the DCI being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.19. Enter **c**

Response: The system displays **Change Field:**

15.20. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

15.21. Enter **'**

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

15.22. Enter **'**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

15.23. Enter **'**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

15.24. Enter '

Response: The system displays **Change Field:**

15.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.26. Enter u

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15.27. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

16. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

16.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

16.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

16.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

17. At CUPS TN1821 (EQL 53-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 0**

18. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 18.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 18.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 18.3. At the MTTY, press the **NORM DISP** key to return to the Common Processor Display Page (CPDP).
-
-

19. At the MTTY, restore CU 0 by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETED**



NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

20. Switch the CUs.

SWITCH CUs PROCEDURE:

- 20.1. At the MTTY, switch the CUs by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU COMPLETED**

- 20.2. At MTTY CPDP 102, verify that the CUs have switched.
-
-

21. At CUPS TN1821 (EQL 53-060), remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **21** prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

22. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 22.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

- 22.2. Enter **12**

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

23. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

24. Disconnect the DCI cable and the Small Computer System Interface (SCSI) Bus (SBUS) card for CU 1.

DISCONNECT DCI CABLE AND SBUS CARD FOR CU 1 PROCEDURE:

- 24.1. Disconnect the DSCH end of the DCI cable for CU 1 from the DSCH port, previously provided by application engineering, on the 3B21D computer.
 - 24.2. Disconnect the DCI cable for CU 1 from the adjunct processor.
 - 24.3. Remove the DCI SBUS card. Follow procedures specified in the adjunct processor hardware owner's guide.
-
-

25. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 25.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.
 - 25.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**
 - 25.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.
-
-

26. Determine the PLU status by referring to the ROP output obtained in Step 4. If the growth DCI is the first device under this channel, continue to Step 27; otherwise, go to Step 28.

27. Update the DSCH down pointer and the DCI up pointer linkages.

**UPDATE DSCH DOWN POINTER AND DCI UP POINTER LINKAGES
PROCEDURE:**

- 27.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 27.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 27.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 27.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 27.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

- 27.6. Enter **aa**

Where: **aa** = channel number from which the DCI is being
degrown.

Response: The system completes the remainder of the form and
displays **Review, Change, Substitute, Validate,**
screen#, or Print:

- 27.7. Enter **c**

Response: The system displays **Change Field:**

- 27.8. Enter **36**

Response: The cursor moves to the **down complex_name:**
attribute.

- 27.9. Enter **'**

Response: The cursor moves to the **down complex_number:**
attribute.

27.10. Enter '

Response: The cursor moves to the **down unit_name:** attribute.

27.11. Enter '

Response: The cursor moves to the **down unit_number:** attribute.

27.12. Enter '

Response: The system displays **Change Field:**

27.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

27.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

27.15. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

27.16. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

27.17. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

27.18. Enter **a**

Where: **a** = unit number of the DCI being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

27.19. Enter **c**

Response: The system displays **Change Field:**

27.20. Enter **51**

Response: The cursor moves to the **cntrl_1 complex_name:** attribute.

27.21. Enter **'**

Response: The cursor moves to the **cntrl_1 complex_number:** attribute.

27.22. Enter **'**

Response: The cursor moves to the **cntrl_1 unit_name:** attribute.

27.23. Enter **'**

Response: The cursor moves to the **cntrl_1 unit_number:** attribute.

27.24. Enter **'**

Response: The system displays **Change Field:**

27.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

27.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

27.27. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

28. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 28.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 28.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 28.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

29. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 1**

30. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 30.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 30.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 30.3. Press the **NORM DISP** key to return to the CPDP.
-
-

31. At the MTTY, restore CU 1 by entering the appropriate input command.

- If MML, **RST:CU=1;**
- If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETED**

⇒ **NOTE:**

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

32. Determine the PLU status by referring to the ROP output obtained in Step 4. If the DCI is the first device under the specified channel, go to Step 39; otherwise, continue to Step 33.

33. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**

34. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

34.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

34.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

34.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

35. Update the PLU Unit Control Block (UCB) side pointer to bypass the DCI.

UPDATE PLU UCB SIDE POINTER TO BYPASS DCI PROCEDURE:

- 35.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 35.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 35.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 35.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 35.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

- 35.6. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 35.7. Enter **c**

Response: The system displays **Change Field:**

- 35.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

- 35.9. Enter **aa**

Where: **aa** = Next Logical Unit (NLU) name (see output from
Step 4) or NULL if the DCI is the last device.

Response: The system displays **Change Field:**

35.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

35.11. Enter **a**

Where: **a** = unit number of the NLU or NULL if the DCI is the last device.

Response: The system displays **Change Field:**

35.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

35.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

36. Update the DCI UCB controller pointers and side pointers.

**UPDATE DCI UCB CONTROLLER POINTERS AND SIDE POINTERS
PROCEDURE:**

36.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

36.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

36.3. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

36.4. Enter **a**

Where: **a** = unit number of the DCI being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 36.5. Enter **c**
Response: The system displays **Change Field:**
- 36.6. Enter **44**
Response: The cursor moves to the **side unit_name:** attribute.
- 36.7. Enter **'**
Response: The system displays **Change Field:**
- 36.8. Enter **45**
Response: The cursor moves to the **side unit_number:** attribute.
- 36.9. Enter **'**
Response: The system displays **Change Field:**
- 36.10. Enter **46**
Response: The cursor moves to the **cntrl_0 complex_name:** attribute.
- 36.11. Enter **'**
Response: The cursor moves to the **cntrl_0 complex_number:** attribute.
- 36.12. Enter **'**
Response: The cursor moves to the **cntrl_0 unit_name:** attribute.
- 36.13. Enter **'**
Response: The cursor moves to the **cntrl_0 unit_number:** attribute.
- 36.14. Enter **'**
Response: The system displays **Change Field:**
- 36.15. Enter **51**
Response: The cursor moves to the **cntrl_1 complex_name:** attribute.
- 36.16. Enter **'**
Response: The cursor moves to the **cntrl_1 complex_number:** attribute.

36.17. Enter '

Response: The cursor moves to the **cntrl_1 unit_name:** attribute.

36.18. Enter '

Response: The cursor moves to the **cntrl_1 unit_number:** attribute.

36.19. Enter '

Response: The system displays **Change Field:**

36.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

36.21. Enter u

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

36.22. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

37. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

37.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

37.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

37.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

38. At the MTTY, restore the PLU to service by entering the appropriate input command.
- If MML, **RST:a=b**;
 - If PDS, **RST:a b**!

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

39. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 39.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 39.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 39.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

⇒ **NOTE:**

Delete the ECD records for the DCI in the order given in the following procedure. The *logdev* records must be removed first, followed by the minor device chain table (*mdct*) records, then the remaining records as specified in the procedure. Removing the records in this order prevents “outstanding reference” database errors. The class definition (*classdef*) form must also be updated to remove DCDRVLOG.

40. Delete the ECD records associated with the DCI using the *logdev* form.

DELETE ECD RECORDS ASSOCIATED WITH DCI USING *logdev* FORM PROCEDURE:

- 40.1. At the RC/V terminal, enter **logdev**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 40.2. Enter **d**
- Response: The cursor moves to the **logical_name:** attribute.
- 40.3. Enter the *logdev* record name as provided by application engineering.
- Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**
- 40.4. Enter **d**
- Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **logical_name:** attribute.
- 40.5. Repeat Steps **40.1** through **40.4** for each *logdev* record.
- Response: The cursor moves to the **Enter Form Name:** attribute.
- 40.6. Enter **<**
- Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

41. Delete the ECD records associated with the DCI using the *mdct* record.

⇒ **NOTE:**

Two *mdct* records are used for each DCI. One record is used for diagnostics, and the other record is used for normal operations. Repeat Steps **41.1** through **41.5** to delete each *mdct* record.

DELETE ECD RECORDS ASSOCIATED WITH DCI USING *mdct* FORM PROCEDURE:

- 41.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 41.2. Enter **d**

Response: The cursor moves to the **mdct_name:** attribute.

- 41.3. Enter the *mdct* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 41.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.

- 41.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

42. Delete the ECD records associated with the DCI using the unit control block (*ucb*) form.

**DELETE ECD RECORDS ASSOCIATED WITH DCI USING *ucb* FORM
PROCEDURE:**

- 42.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 42.2. Enter **d**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 42.3. Enter the *ucb* record name as provided by application engineering.

Response: The system completes the remainder of the form and
displays **Enter Delete, Validate, screen#, or Print:**

- 42.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
followed by **Enter Review, Change-insert,
Validate, screen#, or Print:**

- 42.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

⇒ NOTE:

If using releases prior to Release 21.17, delete the channel option (*chopt*) form.

43. Delete the ECD records associated with the DCI using the *chopt* form.

**DELETE ECD RECORDS ASSOCIATED WITH DCI USING *chopt* FORM
PROCEDURE:**

- 43.1. At the RC/V terminal, enter **chopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 43.2. Enter **d**

Response: The cursor moves to the **option_name:** attribute.

- 43.3. Enter the *chopt* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 43.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **option_name:** attribute.

- 43.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

⇒ NOTE:

If using Release 21.17 or later, delete the dci option (*dciopt*) form.

44. Delete the ECD records associated with the DCI using the *dciopt* form.

**DELETE ECD RECORDS ASSOCIATED WITH DCI USING *dciopt* FORM
PROCEDURE:**

- 44.1. At the RC/V terminal, enter **dciopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 44.2. Enter **d**

Response: The cursor moves to the **option_name:** attribute.

- 44.3. Enter the *dciopt* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 44.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **option_name:** attribute.

- 44.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

45. Delete the ECD records associated with the DCI using the error threshold (*errthld*) form.

DELETE ECD RECORDS ASSOCIATED WITH DCI USING *errthld* FORM PROCEDURE:

- 45.1. At the RC/V terminal, enter **errthld**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 45.2. Enter **d**

Response: The cursor moves to the **error_table:** attribute.

- 45.3. Enter the *errthld* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 45.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

- 45.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

46. Delete the ECD records associated with the DCI Display Process (DCIDIP) using the device definition (*device*) form.

DELETE ECD RECORDS ASSOCIATED WITH DCI USING *device* FORM PROCEDURE:

- 46.1. At the RC/V terminal, enter **device**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 46.2. Enter **d**

Response: The cursor moves to the **logical_devname:** attribute.

46.3. Enter the *device* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

46.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **logical_devname:** attribute.

46.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

47. Delete the ECD records associated with the DCI using the *classdef* form.

DELETE ECD RECORDS ASSOCIATED WITH DCI USING *classdef* FORM PROCEDURE:

47.1. At the RC/V terminal, enter **classdef**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

47.2. Enter **u**

Response: The cursor moves to the **class_name:** attribute.

47.3. Enter **10**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

47.4. Enter **c**

Response: The system displays **Change Field:**

47.5. Enter **3**

Response: The system displays **row:**

47.6. Enter **a**

Where: *a* = row containing DCDRVLOG.

47.7. Enter '

Response: The system displays **row:**

47.8. Press the <CR> key.

Response: The system displays **Change Field:**

47.9. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

47.10. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **class_name:** attribute.

47.11. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

48. Delete the ECD records associated with the DCIDIP using the user level automatic restart process (*ularp*) form.

DELETE ECD RECORDS ASSOCIATED WITH DCIDIP USING *ularp* FORM PROCEDURE:

48.1. At the RC/V terminal, enter **ularp**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

48.2. Enter **d**

Response: The cursor moves to the **rec_name:** attribute.

48.3. Enter the *ularp* record name as provided by application engineering.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

48.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **rec_name:** attribute.

48.5. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

49. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

49.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

49.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

49.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

50. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

50.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

50.2. Press the <CR> key.

Response: The system prompts for the action desired.

50.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

50.4. Enter <

Response: The ECD RC/V is completed.

51. Kill the DCIDIP.

KILL DCIDIP PROCEDURE:

51.1. At the MTTY, access CPDP 108 and check status of the DCI. Verify that this is the last DCI being removed.

- If **yes**, continue to Step **51.2**.
- If **no**, go to Step **53**.

51.2. At the MTTY, enter the appropriate input command.

- If MML, **INIT:ULARP;**
- If PDS, **INIT:ULARP!**

Response: The system displays **INIT ULARP COMPLETED**

51.3. At the MTTY, enter the appropriate input command.

- If MML, **STP:EXC:DATA,USER,FN="/cft/dap/dcidip";**
- If PDS, **STOP:EXC:USER,FN"/cft/dap/dcidip"!**

Response: The system displays **STOP EXC USER COMPLETED**

51.4. At the MTTY, verify that the process is stopped by entering the appropriate input command.

- If MML, **STP:EXC:DATA,USER,FN="/cft/dap/dcidip";**
- If PDS, **STOP:EXC:USER,FN"/cft/dap/dcidip"!**

Response: The system displays **STOP EXC USER STOPPED**

⇒ NOTE:

The **STOP EXC USER STOPPED** response may be followed by a **killp** warning that can be ignored.

52. Stop the DCI driver.

STOP DCI DRIVER PROCEDURE:

- 52.1. Verify that this is the last DCI being removed.

- If **yes**, continue to Step **52.2**.
- If **no**, go to Step **53**.

- 52.2. At the MTTY, enter the appropriate input command.

- If MML, **STOP:DCI;**
- If PDS, **STOP:DCI!**

Response: The system displays **STOP DCI COMPLETED**

53. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

54. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

55. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

56. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

DCI Low-Level Growth

4

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DCI Low-Level Growth

4

Introduction

This chapter describes the procedure used to grow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) into a 3B21D computer system using low-level mode Recent Change and Verify (RC/V). The DCI feature provides a high-throughput interface to transfer data between a 3B21D computer and an adjunct processor. The DCI feature is supported in Real-Time Reliable (RTR) Release 21.3 and later field releases. When using this growth procedure with software releases before Release 21.17, the channel option (*chopt*) form must be used. For Release 21.17 or later, the dci option (*dciopt*) form must be used.

⇒ NOTE:

This procedure does not update *rootdmly*.

The 3B21D computer software release must be installed on the system before this growth procedure can take place. Information on installing the DCI board in the adjunct processor may be found in the adjunct processor hardware owner's guide. Refer to 254-303-106, *System Maintenance Manual*, for installation procedures.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- On the 3B21D computer:
 - RTR Release 21.3 or later software release must be installed on the 3B21D computer.
 - All 3B21D computer hardware should be either active or standby.
 - No system update activity should be taking place when performing this procedure.
 - On all equipped units, diagnostics should have been run recently and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
 - Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
 - The root Equipment Configuration Database (ECD) must be consistent with the incore ECD.
- If the adjunct processor is a *Sun* SPARCstation*[†]:
 - The *Sun SPARCstation* should be running *SunOS** System V Release 4.0 (SVR4) (*Solaris** 2.X).
 - *Sun SPARCstation* software to support the DCI feature should be installed using installation instructions defined in 254-303-106, *System Maintenance Manual*.

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† SPARC is a registered trademark of SPARC International, Inc. SPARCstation is a registered trademark and licensed exclusively to Sun Microsystems, Inc. Products bearing SPARC trademarks are based on an architecture developed by Sun Microsystems, Inc.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*
- Adjunct processor hardware owner's guide.

Procedure

The following steps describe the DCI low-level mode growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode RC/V by entering the appropriate input command.
 - If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the channel subdevice linkage.

⇒ **NOTE:**

The following subprocedure provides the Unit Control Block (UCB) linkage for channel subdevices to which the DCI will be grown. If the growth DCI is *not* the first device under the specified channel, the Previous Logical Unit (PLU) to the DCI will have to be removed in Step **40** in order to update the side pointer linkages to the DCI device.

DETERMINE CHANNEL SUBDEVICE LINKAGE PROCEDURE:

- 3.1. At the RC/V terminal, enter **dbinfo**
Response: The cursor moves to the **dbinfo_opf:** attribute.
- 3.2. Enter **/tmp/filename**
Where: *filename* = any unique name.
Response: The cursor moves to the **ucb_list:** attribute.
- 3.3. Enter **y**
Response: The cursor moves to the **complex_name:** attribute.
- 3.4. Enter **CU**
Response: The cursor moves to the **complex_number:** attribute.
- 3.5. Enter **0**
Response: The cursor moves to the **unit_name:** attribute.
- 3.6. Enter **CH**
Response: The cursor moves to the **unit_number:** attribute.

3.7. Enter *a*

Where: *a* = channel number to which the DCI will be grown.

Response: The cursor moves to the **iop_list:** attribute.

3.8. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. At the MTTY, request hard copies of the forms from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Where: *filename* = any unique name.

Response: The system displays **DUMP FILE ALL COMPLETED**

5. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

5.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to **tr_name:** attribute.

5.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

5.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

6. Insert the ECD records associated with the DCI using the unit control block (*ucb*) form.

**INSERT ECD RECORDS ASSOCIATED WITH DCI USING *ucb* FORM
PROCEDURE:**

- 6.1. At the RC/V terminal, enter **ucb**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 6.2. Enter **i**
- Response: The cursor moves to the **k_complex_name:** attribute.
- 6.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). Table 4-1 contains values for fields that are static and must be used for the DCI feature. All other field values must be as provided by application engineering.

Table 4-1. *ucb* Form Field Values

Field	Value
11. device_port	SNIC (RTR Release 21.3 only) DCI (RTR Release 21.7 and later)
12. device_type	SNIC (RTR Release 21.3 only) DCI (RTR Release 21.7 and later)
13. internal_device	Value from 0 - 3; assigned in numerical order
23. device_num	DSCH port number that DCI is connected to
28. interrupt_num	DSCH port number that DCI is connected to
27. mv	2 (for 3B21D computer)
30. pathname	<i>pu/dci</i>
56. error_table	Name of <i>errthld</i> record engineered for DCI
57. option_name	Name of <i>chopt</i> record engineered for DCI (before RTR Release 21.17) Name of <i>dciopt</i> record engineered for DCI (RTR Release 21.17 or later)

6.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED
Enter Review, Change-insert, Validate, screen#,
or Print:**

6.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

⇒ NOTE:

The *chopt* form is only used in Releases 21.3 through 21.15. Release 21.17 must use the *dciopt* form.

7. Insert the ECD records associated with the DCI using the *chopt* form.

**INSERT ECD RECORDS ASSOCIATED WITH DCI USING *chopt* FORM
PROCEDURE:**

7.1. At the RC/V terminal, enter **chopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

7.2. Enter **i**

Response: The cursor moves to the **option_name:** attribute.

7.3. Only three fields of the *chopt* form are used by the DCI driver and are described in Table 4-2. Populate these fields with information as provided by application engineering.

Table 4-2. *chopt* Form Field Values

Field	Value
4. poll	minimum polling period in milliseconds
5. time_out	maximum polling period in milliseconds
6. picconf	period in seconds to attempt to restore a DCI that is removed because of excessive errors

7.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **option_name:** attribute.

7.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

⇒ NOTE:

The *dciopt* form must be used with Release 21.17 and later.

8. Insert the ECD records associated with the DCI using the *dciopt* form.

INSERT ECD RECORDS ASSOCIATED WITH DCI USING *dciopt* FORM PROCEDURE:

8.1. At the RC/V terminal, enter **dciopt**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

8.2. Enter **i**

Response: The cursor moves to the **option_name:** attribute.

8.3. Populate all fields of the *dciopt* form as provided by application engineering.

⇒ NOTE:

Field 1 — Option block name is the same as field 57 (*option_name*) on the *ucb* form of the corresponding DCI. This is a key field.
Field 6 — *dcitype* — “1” indicates the DCI supports the High Availability - Operations and Maintenance Platform (HA-OMP) feature. All other DCI units must use the default value “0”.

8.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **option_name:** attribute.

8.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

9. Insert the ECD records associated with the DCI using the minor device chain table (*mdct*) form.

⇒ **NOTE:**

Two *mdct* records are needed for each DCI. One record is used for diagnostics (diagnostic *mdct* record is used for all DCI devices equipped), and the other record is used for normal operations.

INSERT ECD RECORDS ASSOCIATED WITH DCI USING *mdct* FORM PROCEDURE:

- 9.1. At the RC/V terminal, enter **mdct**
Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 9.2. Enter **i**
Response: The cursor moves to the **mdct_name:** attribute.
- 9.3. Populate all fields of the *mdct* form. Static field values are described in Table 4-3. Other field values must be as provided by application engineering.

Table 4-3. *mdct* Form Field Values

Field	Value
2. logical_device	dc
3. mdct_type	"d" for diagnostic <i>mdct</i> "T" for normal operation <i>mdct</i>

- 9.4. Enter **i**
Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **mdct_name:** attribute.
 - 9.5. Enter **<**
Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

10. Insert the ECD records associated with the DCI using the error threshold (*errthld*) form.

INSERT ECD RECORDS ASSOCIATED WITH DCI USING *errthld* FORM PROCEDURE:

- 10.1. At the RC/V terminal, enter **errthld**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 10.2. Enter **i**

Response: The cursor moves to the **error_table:** attribute.

- 10.3. Populate all fields of the *errthld* form as provided by application engineering. The only static field for the *errthld* record is given in Table 4-4.

Table 4-4. *errthld* Form Field Values

Field	Value
1. error_table	dcierr

- 10.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED
Enter Review, Change-insert, Validate, screen#,
or Print:**

- 10.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Insert the ECD records associated with the DCI Display Process (DCIDIP) using the user level automatic restart process (*ularp*) form.

INSERT ECD RECORDS ASSOCIATED WITH DCICIP USING *ularp* FORM PROCEDURE:

- 11.1. At the RC/V terminal, enter **ularp**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 11.2. Enter **i**
- Response: The cursor moves to the **rec_name:** attribute.
- 11.3. Populate all fields of the *ularp* form as provided by application engineering. The only static field for the *ularp* record is given in Table 4-5.

Table 4-5. *ularp* Form Field Values

Field	Value
1. rec_name	dcidip

- 11.4. Enter **i**
- Response: The system displays **Inserting... FORM INSERTED
Enter Review, Change-insert, Validate, screen#,
or Print:**
- 11.5. Enter **<**
- Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

12. Insert the ECD records associated with the DCI using the logical device (*logdev*) form.

⇒ **NOTE:**

One *logdev* record is required for diagnostics. Additional *logdev* records are added as provided by application engineering.

INSERT ECD RECORDS ASSOCIATED WITH DCI USING *logdev* FORM PROCEDURE:

- 12.1. At the RC/V terminal, enter **logdev**
Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:
- 12.2. Enter **i**
Response: The cursor moves to the **logical_name:** attribute.
- 12.3. Populate all fields of the *logdev* form as provided by application engineering. Static fields are described in Table 4-6.

Table 4-6. *logdev* Form Field Values

Field	Value
For diagnostic <i>logdev</i> form:	
1. logical_name	"/dgn/dcdx" where x is the k_unit_number defined in the <i>ucb</i> form
5. dcn	"9" to match the name of the driver as block device "j" (bdj)
6. driver_type	"r" for diagnostic <i>logdev</i> form
For normal <i>logdev</i> forms:	
1. logical_name	begins with "dev"
2. partition	set to logical channel number used for this logical device
5. dcn	"9" to match the name of the driver as bdj

12.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **logical_name:** attribute.

12.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

13. Insert the ECD records associated with the DCI using the device definition (*device*) form.

INSERT ECD RECORDS ASSOCIATED WITH DCI USING *device* FORM PROCEDURE:

13.1. At the RC/V terminal, enter **device**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

13.2. Enter **i**

Response: The cursor moves to the **logical_devname:**
attribute.

13.3. Populate all fields of the *device* form with information listed in Table 4-7 and as provided by application engineering.

Table 4-7. *device* Form Field Values

Field	Value
1. logical_devname	DCDRVLOG
2. path	/etc/log/DCDRVLOG

13.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **logical_devname:**
attribute.

13.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

14. Insert the ECD records associated with the DCI using the class definition (*classdef*) form.



NOTE:

The DCI driver uses class name 10 as the message class.

INSERT ECD RECORDS ASSOCIATED WITH THE DCI USING *classdef* FORM PROCEDURE:

- 14.1. At the RC/V terminal, enter **classdef**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 14.2. Enter **u**
- Response: The cursor moves to the **class_name:** attribute.
- 14.3. Enter **10**
- Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**
- 14.4. Enter **c**
- Response: The system displays **Change Field:**
- 14.5. Enter **3**
- Response: The system displays **row:**
- 14.6. Enter **a**
- Where: **a** = next available row.
- 14.7. Enter **DCDRVLOG**
- Response: The system displays **row:**
- 14.8. Press the <CR> key.
- Response: The system displays **Change Field:**
- 14.9. Press the <CR> key.
- Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

14.10. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **class_name:** attribute.

14.11. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

15. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

15.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

15.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

15.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

16. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 28-060], remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **16** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

17. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 17.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.
- 17.2. Enter **12**

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

18. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

19. Connect the DCI cable and install the Small Computer System Interface (SCSI) Bus (SBUS) card for CU 0.

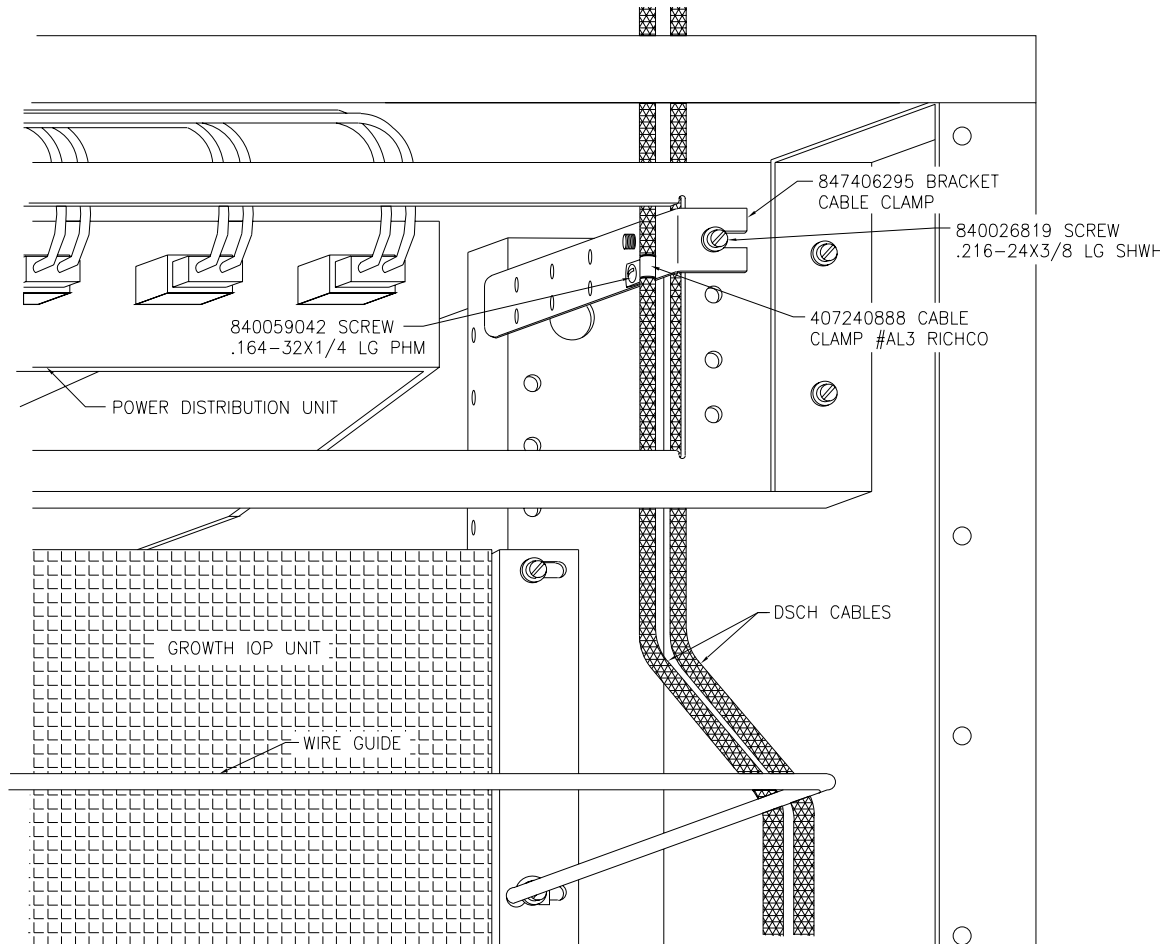
CONNECT DCI CABLE AND INSTALL SBUS CARD FOR CU 0 PROCEDURE:

- 19.1. Connect the DSCH end of the DCI cable for CU 0 to the DSCH port, previously provided by application engineering, on the 3B21D computer.
- 19.2. Install the DCI board in the SBUS slot as specified on the *SPARCstation*. Installation procedures for installing SBUS cards are provided in the *Desktop SPARC Hardware Owner's Guide*.
- 19.3. Connect the end of the DCI cable to the *Sun SPARCstation*.



NOTE:

For assistance in mounting and grounding the DSCH cables, refer to Figure 4-1.



NOTES:

1. THE CABLE CLAMP BRACKET SHOULD BE MOUNTED ON THE RIGHT-HAND SIDE OF THE FRAME VIEWED FROM THE REAR.
2. ATTACH CABLE CLAMPS STARTING NEAR THE BEND IN THE CABLE CLAMP BRACKET.

Figure 4-1. DSCH Cables Grounding and Mounting for DCI Feature

20. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 20.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 20.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 20.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

21. Determine the PLU status by referring to the ROP output obtained in Step 4. If the growth DCI is the first device under this channel, continue to Step 22; otherwise, go to Step 23.
22. Update the DSCH down pointer and the DCI up pointer linkages.

**UPDATE DSCH DOWN POINTER AND DCI UP POINTER LINKAGES
PROCEDURE:**

- 22.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 22.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 22.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

22.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

22.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

22.6. Enter **a**

Where: **a** = channel number to which the DCI is being grown.

Response: The system completes the remainder of the form and displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

22.7. Enter **c**

Response: The system displays **Change Field:**

22.8. Enter **36**

Response: The cursor moves to the **down complex_name:** attribute.

22.9. Enter **'**

Response: The cursor moves to the **down complex_number:** attribute.

22.10. Enter **'**

Response: The cursor moves to the **down unit_name:** attribute.

22.11. Enter **DCI**

Response: The cursor moves to the **down unit_number:** attribute.

22.12. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system displays **Change Field:**

22.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

22.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

22.15. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

22.16. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

22.17. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

22.18. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

22.19. Enter **c**

Response: The system displays **Change Field:**

22.20. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

22.21. Enter **CU**

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

22.22. Enter **0**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

22.23. Enter **CH**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

22.24. Enter **a**

Where: **a** = channel number to which the DCI is grown.

Response: The system displays **Change Field:**

22.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

22.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

22.27. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

23. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

23.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

23.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

23.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

24. At CUPS TN1821 (EQL 28-060), restore power to CU 0 by pressing the **START/ON/OFF** switch to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 0**

25. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 25.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 25.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**

⇒ NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 25.3. At the MTTY, press the **NORM DISP** key to return to the Common Processor Display Page (CPDP).
-
-

26. At the MTTY, restore CU 0 by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETED**

⇒ NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

27. Switch the CUs.

SWITCH CUs PROCEDURE:

- 27.1. At the MTTY, switch CUs by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU COMPLETED**

- 27.2. At MTTY CPDP 102, verify that the CUs have switched.
-
-

28. At CUPS TN1821 (EQL 53-060), remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **28** prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

29. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 29.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

- 29.2. Enter **12**

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

30. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

31. Connect the DCI cable and install the SBUS card for CU 1.

**CONNECT DCI CABLE AND INSTALL SBUS CARD FOR CU 1
PROCEDURE:**

- 31.1. Connect the DSCH end of the DCI cable for CU 1 to the DSCH port, previously provided by application engineering, on the 3B21D computer.
- 31.2. Connect the end of the DCI cable to the *Sun SPARCstation*.
-
-

32. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 32.1. At the RC/V terminal, enter **trbegin**
- Response: The system displays the **Transaction Begin** form.
The cursor moves to **tr_name:** attribute.
- 32.2. Press the <CR> key.
- Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**
- 32.3. Enter **e**
- Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.
-
-

33. Determine the PLU status by referring to the ROP output obtained in Step 4. If the growth DCI is the first device under this channel, continue to Step 34; otherwise, go to Step 35.

34. Update the DSCH down pointer and the DCI up pointer linkages.

**UPDATE DSCH DOWN POINTER AND DCI UP POINTER LINKAGES
PROCEDURE:**

- 34.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 34.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 34.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 34.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 34.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

- 34.6. Enter **a**

Where: **a** = channel number to which the DCI is being grown.

Response: The system completes the remainder of the form and
displays **Enter Review, Change, Substitute,
Validate, screen#, or Print:**

- 34.7. Enter **c**

Response: The system displays **Change Field:**

- 34.8. Enter **36**

Response: The cursor moves to the **down complex_name:**
attribute.

- 34.9. Enter **'**

Response: The cursor moves to the **down complex_number:**
attribute.

34.10. Enter '

Response: The cursor moves to the **down unit_name:** attribute.

34.11. Enter **DCI**

Response: The cursor moves to the **down unit_number:** attribute.

34.12. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system displays **Change Field:**

34.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

34.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

34.15. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

34.16. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

34.17. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

34.18. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

34.19. Enter **c**

Response: The system displays **Change Field:**

34.20. Enter **51**

Response: The cursor moves to the **cntrl_1 complex_name:** attribute.

34.21. Enter **CU**

Response: The cursor moves to the **cntrl_1 complex_number:** attribute.

34.22. Enter **1**

Response: The cursor moves to the **cntrl_1 unit_name:** attribute.

34.23. Enter **CH**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

34.24. Enter **a**

Where: **a** = channel number to which the DCI is grown.

Response: The system displays **Change Field:**

34.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

34.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

34.27. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

35. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 35.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 35.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 35.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

36. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by pressing the **START/ON/OFF** switch to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 1**

37. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 37.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 37.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 37.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

38. At the MTTY, restore CU 1 by entering the appropriate input command.

- If MML, **RST:CU=1;**
- If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETED**

⇒ **NOTE:**

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

39. Determine the PLU status by referring to the ROP output obtained in Step 4. If the DCI was not the first device under the specified channel, continue to Steps 40 through 45; otherwise, go to Step 46.

40. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**

41. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

41.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

41.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

41.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

42. Update the PLU UCB side pointer to the DCI.

UPDATE PLU UCB SIDE POINTER TO DCI PROCEDURE:

- 42.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 42.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 42.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 42.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 42.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

- 42.6. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 42.7. Enter **3**

Response: The system displays **Change Field:**



NOTE:

Record the existing values as shown for each side attribute listed
on the *ucb* form. Save this information for future reference in this
procedure.

complex_name complex_number unit_name unit_number

41.side 42)_____ 43)_____ 44)_____ 45)_____

42.8. Enter **c**

Response: The system displays **Change Field:**

42.9. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

42.10. Enter **DCI**

Response: The system displays **Change Field:**

42.11. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

42.12. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system displays **Change Field:**

42.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

42.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

43. Update the DCI UCB controller and side pointers.

UPDATE DCI UCB CONTROLLER AND SIDE POINTERS PROCEDURE:

- 43.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 43.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 43.3. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

- 43.4. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 43.5. Enter **c**

Response: The system displays **Change Field:**



NOTE:

If the PLU already had side pointers, use the information recorded in Step **42.7** and add side pointers. If not, go to Step **43.10**.

- 43.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

- 43.7. Enter **a**

Where: **a** = unit name recorded from the update of the PLU.

Response: The system displays **Change Field:**

- 43.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

43.9. Enter *a*

Where: *a* = unit number recorded from the update of the PLU.

Response: The system displays **Change Field:**

43.10. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

43.11. Enter **CU**

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

43.12. Enter **0**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

43.13. Enter **CH**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

43.14. Enter *a*

Where: *a* = channel number to which the DCI is grown.

Response: The system displays **Change Field:**

43.15. Enter **51**

Response: The cursor moves to the **cntrl_1 complex_name:** attribute.

43.16. Enter **CU**

Response: The cursor moves to the **cntrl_1 complex_number:** attribute.

43.17. Enter **1**

Response: The cursor moves to the **cntrl_1 unit_name:** attribute.

43.18. Enter **CH**

Response: The cursor moves to the **cntrl_1 unit_number:** attribute.

43.19. Enter **a**

Where: **a** = channel number to which the DCI is grown.

Response: The system displays **Change Field:**

43.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

43.21. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

43.22. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

44. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

44.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

44.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

44.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

45. At the MTTY, restore the PLU to service by entering the appropriate input command.
- If MML, **RST:a=b;**
 - If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

46. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 46.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 46.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 46.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

47. Update the DCI major status to GROW.

UPDATE DCI MAJOR STATUS TO GROW PROCEDURE:

47.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

47.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

47.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

47.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

47.5. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

47.6. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

47.7. Enter **c**

Response: The system displays **Change Field:**

47.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

47.9. Enter **GROW**

Response: The system displays **Change Field:**

47.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

47.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

47.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

48. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

48.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

48.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

48.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

49. At the MTTY, diagnose the DCI with CU 0 by entering the appropriate input command.

- If MML, **DGN:DCI=a;**
- If PDS, **DGN:DCI a!**

Where: **a** = unit number of the growth DCI.

Response: The system displays **DGN DCI a COMPLETED**

50. Switch the CUs.

SWITCH CUs PROCEDURE:

50.1. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU COMPLETED**

50.2. At MTTY CPDP 102, verify that the CUs have switched.

51. At the MTTY, diagnose the DCI with CU 1 by entering the appropriate input command.

- If MML, **DGN:DCI=a;**
- If PDS, **DGN:DCI a!**

Where: *a* = unit number of the growth DCI.

Response: The system displays **DGN DCI a COMPLETED**

52. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

52.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

52.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

52.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

53. Update the DCI major status to Out of Service (OOS).

UPDATE DCI MAJOR STATUS TO OOS PROCEDURE:

- 53.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 53.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 53.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 53.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 53.5. Enter **DCI**

Response: The cursor moves to the **k_unit_number:** attribute.

- 53.6. Enter **a**

Where: **a** = unit number of the growth DCI.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 53.7. Enter **c**

Response: The system displays **Change Field:**

- 53.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 53.9. Enter **OOS**

Response: The system displays **Change Field:**

- 53.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

53.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

53.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

54. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

54.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

54.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

54.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

55. At the MTTY, restore the DCI device by entering the appropriate input command.

- If MML, **RST:DCI=a;**
- If PDS, **RST:DCI a!**

Where: **a** = unit number of the growth DCI.

Response: The system displays **RST DCI a COMPLETED**

56. At the MTTY, verify the configuration and ensure that the DCI device is restored and is in the **ACT** state by entering the appropriate input command.

- If MML, **OP:CFGSTAT:DATA, DCI=a;**
- If PDS, **OP:CFGSTAT:DCI a!**

Where: *a* = unit number of the growth DCI.

Response: The system displays **OP CFGSTAT COMPLETED**

57. Restart the User Level Automatic Restart Process (ULARP).

RESTART ULARP PROCEDURE:

- 57.1. Verify that this is the first DCI being added.

- If **yes**, continue to Step **57.2**.
- If **no**, go to Step **59**.

- 57.2. At the MTTY, enter the appropriate input command.

- If MML, **INIT:ULARP;**
- If PDS, **INIT:ULARP!**

Response: The system displays **INIT ULARP COMPLETED**

58. Verify that page is up for the DCI Display Process (DCIDIP). At MTTY CPDP 100, select **108**

Response: The CPDP 108 shows the DCIs that were added.

59. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 59.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 59.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 59.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 59.4. Enter **<**

Response: The ECD RC/V is completed.

60. Verify that this is the first DCI being added.

- If **yes**, continue to Step **61**.
- If **no**, go to Step **66**.

61. Invoke the root database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVSG,DB="ROOT",NREVIEW;**
- If PDS, **RCV:MENU:RCVSG,DB "ROOT",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

62. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

62.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

62.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

62.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

63. Update the system generation (*sgen*) record.

⇒ NOTE:

Update the *sgen2* record to add a block device "j" (**bdj**) driver.

UPDATE *sgen* RECORD PROCEDURE:

63.1. At the RC/V terminal, enter **sgen2**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

63.2. Enter **u**

Response: The cursor moves to the **ksgen:** attribute.

63.3. Enter **sgen2**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

63.4. Enter **c**

Response: The system displays **Change Field:**

63.5. Enter **10**

Response: The system displays **row:**

63.6. Enter **a**

Where: **a** = next available row.

63.7. Enter **/prc/bdj**

Response: The system displays **row:**

63.8. Press the <CR> key.

Response: The system displays **Change Field:**

63.9. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

63.10. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **ksgen2:** attribute.

63.11. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

64. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

64.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

64.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

64.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

65. At the MTTY, build boot image by entering the appropriate input command.

- If MML, **UPD:BLDBOOT:DATA, BOOTIMAGE="/appdmert";**
- If PDS, **UPD:BLDBOOT:BOOTIMAGE "/appdmert"!**

Response: The system displays **UPD BLDBOOT COMPLETED**

66. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

67. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

68. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

69. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a Disk File Controller (DFC) into a 3B21D computer system. If Scanner and Signal Distributor Points are *not* available (this must be verified with application engineering), the Scanner and Signal Distributor Controller (SCSDC) circuit pack must be grown before continuing with this procedure. See Chapter 18, "SCSDC Growth."

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the DFC growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the channel subdevice linkage.

⇒ **NOTE:**

The following subprocedure provides the Unit Control Block (UCB) linkage for channel subdevices from which the DFC will be grown. If the growth DFC is not the first device under the specified channel, the Previous Logical Unit (PLU) to the DFC will have to be removed in Step 17 in order to update the side pointer linkages to bypass the DFC device.

DETERMINE CHANNEL SUBDEVICE LINKAGE PROCEDURE:

- 3.1. At the RC/V terminal, enter **dbinfo**

Response:

- 3.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

- 3.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

- 3.4. Enter **CU**

Response: The cursor moves to the **complex_number:** attribute.

- 3.5. Enter **0**

Response: The cursor moves to the **unit_name:** attribute.

- 3.6. Enter **CH**

Response: The cursor moves to the **unit_number:** attribute.

- 3.7. Enter **aa**

Where: *aa* = channel number from which the DFC will be grown as provided by application engineering.

Response: The cursor moves to the **iop_list:** attribute.

- 3.8. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. At the MTTY, request hard copies of the forms from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

5. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 5.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 5.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 5.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

6. Insert the unit control block (*ucb*) record associated with the DFC. The Real-Time Reliable (RTR) convention for DFC/Small Computer System Interface (SCSI) Bus (SBUS) number assignment is shown in Table 5-1.

Table 5-1. DFC/SBUS Number Assignment Convention

SBUS Number Assignment	1st	2nd
DFC 2	4	6
DFC 3	5	7

INSERT *ucb* RECORD ASSOCIATED WITH DFC PROCEDURE:

6.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

6.2. Enter **i**

Response: The cursor moves to the **k_complex_name:**
attribute.

6.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). The fields in Table 5-2 contain default values for fields that are static. Tables 5-3 and 5-4 contain the values for fields 27 and 66 depending on the DFC pack code being grown. All other field values must be as provided by application engineering.

Table 5-2. Default *ucb* Form Field Values for DFC

Field	Value
3. unit name	"DFC"
4. unit number	2 or 3
5. essential	"n"
6. top	"n"
7. unique_unit	"n"
8. pseudo_node	"n"
9. restorable	"n"
10. removable	"n"
11. device_port	DFC
12. device_type	DFC
15. critical	"y"
16. portswitch	"n"
17. posswitch	"0"
30. pathname	pu/dfc
56. error_table	dfcerr

Table 5-3. Field 27 Values for DFC

Pack Code	MV Value
UN373 and TN2116	0x2
UN580	0x3
UN580B	0x4

Table 5-4. Field 66 Values for DFC

Pack Code	U_Model
UN373 and TN2116	8
UN580	9
UN580B	9

6.4. Enter i

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

6.5. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Insert the *ucb* record associated with the DFC using the minor device chain table (*mdct*) form.

INSERT *ucb* RECORD ASSOCIATED WITH DFC USING *mdct* FORM PROCEDURE:

- 7.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 7.2. Enter **i**

Response: The cursor moves to the **mdct_name:** attribute.

- 7.3. Populate all fields of the *mdct* form. Default field values are described in Table 5-5. Other field values must be as provided by application engineering.

Table 5-5. Default *mdct* Form Field Values

Field	Value
1 mdct name	"dfc a" a = DFC number being grown.
2. logical_device	"dk"
3. mdct_type	"T"

- 7.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **mdct_name:** attribute.

- 7.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

8. Insert the *ucb* record associated with the DFC using the *ucb* form for the first SBUS.

INSERT *ucb* RECORD ASSOCIATED WITH DFC USING *ucb* FORM FOR FIRST SBUS PROCEDURE:

- 8.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 8.2. Enter **i**

Response: The cursor moves to the **k_complex_name:** attribute.

- 8.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). The fields in Table 5-6 contain default values for fields that are static and apply to both SBUS records. Tables 5-7 and 5-8 contain the values for fields 27 and 66 depending on the DFC pack code being grown. All other field values must be as provided by application engineering.

Table 5-6. Default *ucb* Form Field Values for First and Second SBUS

Field	Value
3. unit name	"SBUS"
4. unit number	Refer to Table 5-1.
5. essential	"n"
6. top	"n"
7. unique_unit	"n"
8. pseudo_node	"n"
9. restorable	"n"
10. removable	"n"
11. device_port	DFC
12. device_type	SBUS
15. critical	"y"
16. portswitch	"n"
17. posswitch	"0"
30. pathname	pu/sbus
56. error_table	dfcerr

Table 5-7. Field 27 Values for First and Second SBUS

Pack Code	MV Value
UN373 and TN2116	0x2
UN580	0x3
UN580B	0x3

Table 5-8. Field 66 Values for Second SBUS

Pack Code	U_Model
UN373 and TN2116	8
UN580	9
UN580B	9

8.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

8.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Insert the *ucb* record associated with the DFC using the *ucb* form for the second SBUS.

INSERT *ucb* RECORD ASSOCIATED WITH DFC USING *ucb* FORM FOR SECOND SBUS PROCEDURE:

9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

9.2. Enter **i**

Response: The cursor moves to the **k_complex_name:** attribute.

- 9.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). The fields in Table 5-6 contain default values for fields that are static and apply to both SBUS records. Tables 5-7 and 5-8 contain the values for fields 27 and 66 depending on the DFC pack codes being grown. All other field values must be as provided by application engineering.

9.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

9.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Insert the scanner and signal distributor option block body (*scsdbody*) record associated with the DFC using the *scsdbody* form.

INSERT *scsdbody* RECORD ASSOCIATED WITH DFC USING *scsdbody* FORM PROCEDURE:

10.1. At the RC/V terminal, enter **scsdbody**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

10.2. Enter **i**

Response: The cursor moves to the **k_complex_name:** attribute.

10.3. Populate all fields of the *scsdbody* form. Field values must be as provided by application engineering.

10.4. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

10.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 11.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 11.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 11.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

12. At Control Unit Power Switch (CUPS) TN1821, [at Equipment Location (EQL) 28-060], operate the **ROS/RST** switch to the **ROS** position.

Response: The system displays **RMV CU 0 COMPLETED**

 NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **13**.

13. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 13.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

- 13.2. Enter **12**

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

14. At CUPS TN1821 (EQL 28-060), remove power from CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED**
CU 0



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

15. Install the growth SCSI DFC circuit pack.

INSTALL GROWTH SCSI DFC CIRCUIT PACK PROCEDURE:

- 15.1. Install the DFC circuit pack and power circuit at specified EQL for DFC growth as shown in Table 5-9.

Table 5-9. Circuit Pack and Power Circuit EQLs for DFC Growth

EQL 11-172	EQL 11-180	EQL 11-190
TN 2116	UN373(B)	410AA
—	UN580	410AA
—	UN580B	—

- 15.2. Connect the DSCH cable between the unavailable (CU 0) DSCH and the growth SCSI DFC.
-
-

16. Refer to the ROP output obtained in Step **4** to determine where on the channel the DFC will be grown and if other units already exist under that channel.

- If the growth DFC is the first device under the channel and no other devices exist under the channel, then continue to Step **17** and then go to Step **19**.
- If the growth DFC is not the first device under the channel or if other devices exist under the channel, then go to Step **18** and then continue to Step **19**.



CAUTION:

Do not grow a DFC as the first logical device under a DSCH if any other devices (IOPs or DFCs) already exist under that channel.

17. Update the UCB linkages for the growth DFC when DFC is the first logical unit.

UPDATE UCB LINKAGES FOR GROWTH DFC WHEN DFC IS FIRST LOGICAL UNIT PROCEDURE:

- 17.1. Prepare a transaction block for the DFC as the first logical unit.

PREPARE TRANSACTION BLOCK FOR DFC AS FIRST LOGICAL UNIT PROCEDURE:

- 17.1.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 17.1.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 17.1.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

17.2. Update the growth DFC cntrl_0 pointer and down pointer linkage.

**UPDATE GROWTH DFC cntrl_0 POINTER AND DOWN POINTER LINKAGE
PROCEDURE:**

17.2.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation.
I=Insert R=Review U=Update D=Delete:**

17.2.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

17.2.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

17.2.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.2.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:**
attribute.

17.2.6. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

17.2.7. Enter **c**

Response: The system displays **Change Field:**

17.2.8. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:**
attribute.

17.2.9. Enter **CU**

Response: The cursor moves to the **cntrl_0
complex_number:** attribute.

17.2.10. Enter **0**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

17.2.11. Enter **CH**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

17.2.12. Enter **aa**

Where: **aa** = channel number from which the DFC is being grown.

Response: The system displays **Change Field:**

17.2.13. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

17.2.14. Enter **SBUS**

Response: The system displays **Change Field:**

17.2.15. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

17.2.16. Enter **b**

Where: **b** = unit number of the first SBUS controlled by the growth DFC. See Table 5-1 for SBUS number assignments.

Response: The system displays **Change Field:**

17.2.17. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.2.18. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.3. Update the DSCH down pointer to the growth DFC.

UPDATE DSCH DOWN POINTER TO GROWTH DFC PROCEDURE:

17.3.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

17.3.2. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

17.3.3. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

17.3.4. Enter **aa**

Where: **aa** = channel number onto which the DFC is being grown.

Response: The system completes the remainder of the form and displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

17.3.5. Enter **c**

Response: The system displays **Change Field:**

17.3.6. Enter **36**

Response: The cursor moves to the **down complex_name:** attribute.

17.3.7. Enter **'**

Response: The cursor moves to the **down complex_number:** attribute.

17.3.8. Enter **'**

Response: The cursor moves to the **down unit_name:** attribute.

17.3.9. Enter **DFC**

Response: The cursor moves to the **down unit_number:** attribute.

17.3.10. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system displays **Change Field:**

17.3.11. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.3.12. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.4. Update the first SBUS up pointer and side pointer linkages.

UPDATE FIRST SBUS UP POINTER AND SIDE POINTER LINKAGES PROCEDURE:

17.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

17.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.4.3. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

17.4.4. Enter **a**

Where: **a** = unit number of the first SBUS controlled by the growth DFC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.4.5. Enter **c**

Response: The system displays **Change Field:**

17.4.6. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

17.4.7. Enter **'**

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

17.4.8. Enter **'**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

17.4.9. Enter **DFC**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

17.4.10. Enter **a**

Where: **a** = unit number of the growth DFC.

Response: The system displays **Change Field:**

17.4.11. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

17.4.12. Enter **SBUS**

Response: The system displays **Change Field:**

17.4.13. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

17.4.14. Enter **b**

Where: **b** = unit number of the first SBUS controlled by the growth DFC. See Table 5-1 for SBUS number assignments.

Response: The system displays **Change Field:**

17.4.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.4.16. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.5. Update the second SBUS up pointer linkage.

UPDATE SECOND SBUS UP POINTER LINKAGE PROCEDURE:

17.5.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

17.5.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.5.3. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

17.5.4. Enter **b**

Where: **b** = unit number of the second SBUS controlled by the growth DFC. See Table 5-1 for SBUS number assignments.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.5.5. Enter **c**

Response: The system displays **Change Field:**

17.5.6. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

17.5.7. Enter '

Response: The cursor moves to the **cntrl_0
complex_number:** attribute.

17.5.8. Enter '

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

17.5.9. Enter **DFC**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

17.5.10. Enter **a**

Where: **a** = unit number of the growth DFC.

Response: The system displays **Change Field:**

17.5.11. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

17.5.12. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

17.5.13. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

17.6. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

17.6.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

17.6.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

17.6.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

17.7. Update the ECD linkages for DFC as an added unit to the channel.

**UPDATE ECD LINKAGES FOR DFC AS AN ADDED UNIT TO CHANNEL
PROCEDURE:**

17.7.1. At the MTTY, remove the PLU from service for the DFC as an added unit to the channel by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

Refer to the ROP output obtained in Step 4 to determine the PLU.

17.8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

17.8.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

17.8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

17.8.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

17.9. Update the PLU UCB side pointer to the DFC.

UPDATE PLU UCB SIDE POINTER TO DFC PROCEDURE:

17.9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

17.9.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

17.9.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

17.9.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.9.5. Enter *a*

Where: *a* = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

17.9.6. Enter *b*

Where: *b* = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.9.7. Enter **c**

Response: The system displays **Change Field:**

17.9.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

17.9.9. Enter **DFC**

Response: The system displays **Change Field:**

17.9.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

17.9.11. Enter *a*

Where: *a* = unit number of the DFC being grown.

Response: The system displays **Change Field:**

17.9.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.9.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.10. Update the growth DFC cntrl_0 pointer and down pointer linkage.

**UPDATE GROWTH DFC cntrl_0 POINTER AND DOWN POINTER LINKAGE
PROCEDURE:**

17.10.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

17.10.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.10.3. Enter **DFC**

Response: The cursor moves to the **k_unit_number:**
attribute.

17.10.4. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

17.10.5. Enter **c**

Response: The system displays **Change Field:**

17.10.6. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:**
attribute.

17.10.7. Enter **CU**

Response: The cursor moves to the **cntrl_0**
complex_number: attribute.

17.10.8. Enter **0**

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

17.10.9. Enter **CH**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

17.10.10. Enter **aa**

Where: **aa** = channel number onto which the DFC is being grown.

Response: The system displays **Change Field:**

17.10.11. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

17.10.12. Enter **SBUS**

Response: The system displays **Change Field:**

17.10.13. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

17.10.14. Enter **b**

Where: **b** = unit number of the first SBUS controlled by the growth DFC. See Table 5-1 for SBUS number assignments.

Response: The system displays **Change Field:**

17.10.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.10.16. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.11. Update the first SBUS up pointer and side pointer linkage.

**UPDATE FIRST SBUS UP POINTER AND SIDE POINTER LINKAGE
PROCEDURE:**

17.11.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

17.11.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.11.3. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:**
attribute.

17.11.4. Enter **a**

Where: **a** = unit number of the first SBUS controlled by the
growth DFC.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

17.11.5. Enter **c**

Response: The system displays **Change Field:**

17.11.6. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:**
attribute.

17.11.7. Enter **'**

Response: The cursor moves to the **cntrl_0
complex_number:** attribute.

17.11.8. Enter **'**

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

17.11.9. Enter **DFC**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

17.11.10. Enter *a*

Where: *a* = unit number of the growth DFC.

Response: The system displays **Change Field:**

17.11.11. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

17.11.12. Enter **SBUS**

Response: The system displays **Change Field:**

17.11.13. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

17.11.14. Enter *b*

Where: *b* = unit number of the second SBUS controlled by the growth DFC. See Table 5-1 for SBUS number assignments.

Response: The system displays **Change Field:**

17.11.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.11.16. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.12. Update the second SBUS up pointer linkage.

UPDATE SECOND SBUS UP POINTER LINKAGE PROCEDURE:

17.12.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

17.12.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

17.12.3. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

17.12.4. Enter *b*

Where: *b* = unit number of the second SBUS controlled by the growth DFC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.12.5. Enter **c**

Response: The system displays **Change Field:**

17.12.6. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

17.12.7. Enter **'**

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

17.12.8. Enter **'**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

17.12.9. Enter **DFC**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

17.12.10. Enter **a**

Where: **a** = unit number of the growth DFC.

Response: The system displays **Change Field:**

17.12.11. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.12.12. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.12.13. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

17.13. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

17.13.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

17.13.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

17.13.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

19. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

19.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

19.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

19.3. At the MTTY, press the **NORM DISP** key to return to the Common Processor Display Page (CPDP).

20. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

- 20.1. At CUPS TN1821 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **20.2**.

- 20.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
CU 0 **OOS** Light-Emitting Diode (LED) extinguishes.

- 20.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.
-
-

21. Switch the CUs.

SWITCH CUs PROCEDURE:

- 21.1. At the MTTY, switch the CUs by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 21.2. At MTTY CPDP 102, verify that the CUs have switched.
-
-

22. At CUPS TN1821 (EQL 53-060), remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step **22** prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

23. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 23.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
23.2. Enter **12**

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

 NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **24**.

24. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

25. Connect the DSCH cable for CU 1. Connect the DSCH cable between the unavailable (off-line) DSCH and the growth SCSI DFC. See Tables 5-10 and 5-11.

 NOTE:

Each table includes both Direct Memory Access (DMA) 0 and 1.

Table 5-10. DMA 0 DSCH Assignments (Cable Table)

DSCH		Location		Assign To	Notes
Channel	Subdevice	EQL	Terminal		
11	0	28-075	351	IOP 0	1,2,3
	1	&	345	IOP 2	
	2		338	DFC 0	
	3	53-075	332	3B21D computer (reserved)	
12	0	28-075	151	spare	2,3,4
	1	&	145		
	2		138		
	3	53-075	132		
13	0	28-075	319	IOP 1	1,2,3
	1	&	313	IOP 3	
	2		300	DFC 1	
	3	53-075	300	3B21D computer (reserved)	
14	0	28-075	119	spare	2,3,4
	1	&	116		
	2		106		
	3	53-075	100		
Notes: 1. Fixed assignment reserved by <i>UNIX</i> * Real-Time Reliable (RTR) operating system. 2. Equipment Location (EQL) 28-075 corresponds to Control Unit (CU) 0. 3. EQL 53-075 corresponds to CU 1. 4. All other slots not assigned to <i>UNIX</i> RTR are available for other applications. * <i>UNIX</i> is a registered trademark of The Open Group in the United States and other countries.					

Table 5-11. DMA 1 DSCH Assignments (Cable Table)

DSCH		Location		Notes
Channel	Subdevice	EQL	Terminal	
16	0	28-065	351	1,2
	1	&	345	1,2
	2	53-065	338	
	3		332	
17	0	28-065	151	1,2
	1	&	145	
	2	53-065	138	
	3		132	
18	0	28-065	319	1,2
	1	&	313	1,2
	2	53-065	306	
	3		300	
19	0	28-065	119	1,2
	1	&	113	
	2	53-065	106	
	3		100	
Notes: 1. Equipment Location (EQL) 28-065 corresponds to Control Unit (CU) 0. 2. EQL 53-065 corresponds to CU 1.				

26. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 26.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 26.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 26.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

27. Update the growth DFC cntrl_1 pointer.

UPDATE GROWTH DFC cntrl_1 POINTER PROCEDURE:

- 27.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 27.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 27.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 27.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 27.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

27.6. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

27.7. Enter **c**

Response: The system displays **Change Field:**

27.8. Enter **51**

Response: The cursor moves to the **cntrl_1 complex_name:** attribute.

27.9. Enter **CU**

Response: The cursor moves to the **cntrl_1 complex_number:** attribute.

27.10. Enter **1**

Response: The cursor moves to the **cntrl_1 unit_name:** attribute.

27.11. Enter **CH**

Response: The cursor moves to the **cntrl_1 unit_number:** attribute.

27.12. Enter **aa**

Where: **aa** = channel number from which the DFC is being grown.

Response: The system displays **Change Field:**

27.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

27.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

28. Update the DSCH down pointer to the growth DFC.

UPDATE DSCH DOWN POINTER TO GROWTH DFC PROCEDURE:

28.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

28.2. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

28.3. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

28.4. Enter **aa**

Where: **aa** = channel number onto which the DFC is being grown.

Response: The system completes the remainder of the form and displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

28.5. Enter **c**

Response: The system displays **Change Field:**

28.6. Enter **36**

Response: The cursor moves to the **down complex_name:** attribute.

28.7. Enter **'**

Response: The cursor moves to the **down complex_number:** attribute.

28.8. Enter **'**

Response: The cursor moves to the **down unit_name:** attribute.

28.9. Enter **DFC**

Response: The cursor moves to the **down unit_number:** attribute.

28.10. Enter **a**

Where: **aa** = unit number of the DFC being grown.

Response: The system displays **Change Field:**

28.11. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

28.12. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

29. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

29.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute

29.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

29.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

30. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 30.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 30.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 30.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

31. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

- 31.1. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 1**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **31.2**.

- 31.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
CU 1 **OOS** LED extinguishes.

- 31.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 1 in progress and wait until CU 1 is restored to standby before continuing.
-
-

32. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 32.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 32.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 32.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

33. Update the DFC major status to GROW.

UPDATE DFC MAJOR STATUS TO GROW PROCEDURE:

- 33.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 33.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 33.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 33.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 33.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

33.6. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

33.7. Enter **c**

Response: The system displays **Change Field:**

33.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

33.9. Enter **GROW**

Response: The system displays **Change Field:**

33.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

33.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

33.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

34. Update the first SBUS major status to GROW.

UPDATE FIRST SBUS MAJOR STATUS TO GROW PROCEDURE:

- 34.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation.**
I=Insert R=Review U=Update D=Delete:

- 34.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 34.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 34.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 34.5. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

- 34.6. Enter **b**

Where: **b** = unit number of the SBUS being grown.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 34.7. Enter **c**

Response: The system displays **Change Field:**

- 34.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 34.9. Enter **GROW**

Response: The system displays **Change Field:**

- 34.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

34.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

34.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

35. Update the second SBUS major status to GROW.

UPDATE SECOND SBUS MAJOR STATUS TO GROW PROCEDURE:

35.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

35.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

35.3. Press the **<CR>** key.

Response: The cursor moves to the **k_complex_number:** attribute.

35.4. Press the **<CR>** key.

Response: The cursor moves to the **k_unit_name:** attribute.

35.5. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

35.6. Enter **b**

Where: **b** = unit number of the SBUS being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

35.7. Enter **c**

Response: The system displays **Change Field:**

35.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

35.9. Enter **GROW**

Response: The system displays **Change Field:**

35.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

35.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

35.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

36. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

36.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

36.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

36.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

37. At the MTTY, restart the Disk File System Access (DFSA) page by entering the appropriate input command.

- If MML, **STOP:EXC:DATA,ANY,FN="/cft/dap/dkdip",UCL;**
- If PDS, **STOP:EXC:ANY,FN="/cft/dap/dkdip",UCL!**

Response: The system displays **STOP EXC ANY COMPLETED**

38. At the MTTY, remove the IOP from service that controls the SCSDC to which the growth DFC will be connected by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

39. At Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.

Where: *a* = unit number of the IOP.

Response: The system displays **REPT POWER REMOVED IOP a**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

40. Connect the SCSD cable from the growth DFC to the SCSDC.

41. At IOPPS TN1820 for IOP *a*, restore power to IOP *a* by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

⇒ **NOTE 1:**

The **OFF** LED at IOP *a* IOPPS TN1820 extinguishes.

⇒ **NOTE 2:**

The IOP and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP *a*** followed by **RST IOP *a* COMPLETED** followed by **RST... COMPLETED** for each unit under IOP *a*.

42. At the MTTY, restore IOP 1 to service by entering the appropriate input command.

- If MML, **RST:IOP=*a*;**
- If PDS, **RST:IOP *a*!**

Where: *a* = unit number of the IOP.

Response: The system displays **RST IOP *a* COMPLETED**

43. At the MTTY, diagnose the DFC with CU 0 by entering the appropriate input command.

- If MML, **DGN:DFC=*a*;**
- If PDS, **DGN:DFC *a*!**

Where: *a* = unit number of DFC.

Response: The system displays **DGN DFC *a* COMPLETED ATP**

44. Switch the CUs.

SWITCH CUs PROCEDURE:

- 44.1. At the MTTY, switch the CUs by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 44.2. At MTTY CPDP 102, verify that the CUs have switched.
-

45. At the MTTY, diagnose the DFC with CU 1 by entering the appropriate input command.

- If MML, **DGN:DFC=a;**
- If PDS, **DGN:DFC a!**

Where: *a* = unit number of the DFC.

Response: The system displays **DGN DFC a COMPLETED ATP**

46. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 46.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 46.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 46.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

47. Update the DFC major status to OOS.

UPDATE DFC MAJOR STATUS TO OOS PROCEDURE:

- 47.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 47.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 47.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 47.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 47.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 47.6. Enter **a**

Where: **a** = unit number of the DFC being grown.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 47.7. Enter **c**

Response: The system displays **Change Field:**

- 47.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 47.9. Enter **OOS**

Response: The system displays **Change Field:**

- 47.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

47.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

47.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

48. Update the first SBUS major status to OOS.

UPDATE FIRST SBUS MAJOR STATUS TO OOS PROCEDURE:

48.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

48.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

48.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

48.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

48.5. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

48.6. Enter **b**

Where: **b** = unit number of the first SBUS being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

48.7. Enter **c**

Response: The system displays **Change Field:**

48.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

48.9. Enter **OOS**

Response: The system displays **Change Field:**

48.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

48.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

48.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

49. Update the second SBUS major status to OOS.

UPDATE SECOND SBUS MAJOR STATUS TO OOS PROCEDURE:

49.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

49.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

49.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

49.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

49.5. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

49.6. Enter *b*

Where: *b* = unit number of the second SBUS being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.7. Enter **c**

Response: The system displays **Change Field:**

49.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

49.9. Enter **OOS**

Response: The system displays **Change Field:**

49.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

49.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

50. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

50.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute

50.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

50.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

51. At the MTTY, restore the DFC unit by entering the appropriate input command.

- If MML, **RST:DFC=a;**
- If PDS, **RST:DFC a!**

Response: The system displays **RST DFC a COMPLETED ATP**

⇒ NOTE:

Wait until this command completes before continuing to Step 52.

52. At the MTTY, verify configuration and that the DFC device is restored and is active by entering the appropriate input command.

- If MML, **OP:CFGSTAT:DATA, DFC=a;**
- If PDS, **OP:CFGSTAT:DFC a!**

Where: **a** = unit number of the growth DFC.

Response: The system displays **OP CFGSTAT COMPLETED**

53. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 53.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 53.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 53.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 53.4. Enter **<**

Response: The ECD RC/V is completed.

54. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

55. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

56. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
57. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**



NOTE:

Proceed to the SCSI growth chapters (Chapters 11 and 21) as required to add drives or other peripherals.

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Introduction

This chapter describes the procedure used to grow a Direct Memory Access Controller (DMAC)/Dual Serial Channel (DSCH) circuit pack (KBN15) into a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 24 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

DMA Assignments

Table 6-1 describes the Direct Memory Access (DMA) 0 DSCH assignments for the 3B21D computer. Table 6-2 describes the DMA 1 assignments.

NOTE:

Each table includes both Direct Memory Access (DMA) 0 and DMA 1.

Table 6-1. DMA 0 DSCH Assignments (Cable Table)

DSCH		Location		Assign To	Notes
Channel	Subdevice	EQL	Terminal		
11	0	28-075	351	IOP 0	1,2,3
	1	&	345	IOP 2	
	2		338	DFC 0	
	3	53-075	332	3B21D computer (reserved)	
12	0	28-075	151	spare	2,3,4
	1	&	145		
	2		138		
	3	53-075	132		
13	0	28-075	319	IOP 1	1,2,3
	1	&	313	IOP 3	
	2		300	DFC 1	
	3	53-075	300	3B21D computer (reserved)	
14	0	28-075	119	spare	2,3,4
	1	&	116		
	2		106		
	3	53-075	100		
Notes:					
1. Fixed assignment reserved by <i>UNIX</i> * Real-Time Reliable (RTR) operating system.					
2. Equipment Location (EQL) 28-075 corresponds to Control Unit (CU) 0.					
3. EQL 53-075 corresponds to CU 1.					
4. All other slots not assigned to <i>UNIX</i> RTR are available for other applications.					
* <i>UNIX</i> is a registered trademark of The Open Group in the United States and other countries.					

Table 6-2. DMA 1 DSCH Assignments (Cable Table)

DSCH		Location		Notes
Channel	Subdevice	EQL	Terminal	
16	0	28-065	351	1,2
	1	&	345	1,2
	2	53-065	338	
	3		332	
17	0	28-065	151	1,2
	1	&	145	
	2	53-065	138	
	3		132	
18	0	28-065	319	1,2
	1	&	313	
	2	53-065	306	1,2
	3		300	
19	0	28-065	119	1,2
	1	&	113	
	2	53-065	106	
	3		100	
Notes: 1. Equipment Location (EQL) 28-065 corresponds to Control Unit (CU) 0. 2. EQL 53-065 corresponds to CU 1.				

Procedure

The following steps describe the DMAC/DSCH growth procedure:

1. At the Maintenance Terminal (MTTY), verify and set the initial conditions.

VERIFY AND SET INITIAL CONDITIONS PROCEDURE:

- 1.1. Check the Summary Status Area for a **SYS NORM** indicator.
- 1.2. If a **SYS NORM** indicator is not displayed, enter the appropriate input command.
 - If MML, **OP:00S;**
 - If PDS, **OP:00S!**

⇒ NOTE 1:

Evaluate the system response to determine if system status is acceptable to continue. Correct any deficiency as required.

⇒ NOTE 2:

Automatic maintenance requests are inhibited. They must be allowed at the conclusion of this procedure.

- 1.3. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Print the existing DMA/DSCH forms.

PRINT DMA/DSCH FORMS PROCEDURE:

The existing DMA/DSCH forms in the current system should be printed and used for reference during this subprocedure. The printout is useful if backout subprocedures must be performed. Another useful reference is the link list of Unit Control Block (UCB) pointers which is printed using the database information (*dbinfo*) form.

- 2.1. Determine whether the MTTY or the Recent Change and Verify (RC/V) terminal is to be used.
 - If the MTTY, continue to Step **2.2**.
 - If the RC/V terminal, go to Step **2.5**.
- 2.2. At the MTTY, ensure that the terminal is in the command mode.
- 2.3. Enter menu command **199**
 - Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.
- 2.4. Go to Step **2.6**.
- 2.5. At the RC/V terminal, enter the appropriate input command.
 - If MML, **RCV:MENU:DATA,RCVECD;**
 - If PDS, **RCV:MENU:RCVECD!**
 - Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.
- 2.6. Enter **incore**
 - Response: The cursor moves to the **reviewonly:** attribute.
- 2.7. Enter **n**
 - Response: The cursor moves to the **journaling:** attribute.
- 2.8. Press the <CR> key.
 - Response: The cursor moves to the **print_file:** attribute.

2.9. Enter */tmp/filename*

Where: *filename* = any unique name.

Response: The cursor moves to the **echo_file:** attribute.

2.10. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

2.11. Enter **ucb**

Response: The system displays a blank unit control block (*ucb*) form.
The cursor moves to the **k_complex_name:** attribute.

2.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.13. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

2.14. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

2.15. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.16. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.17. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.18. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.19. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

2.20. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

2.21. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.22. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.23. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.24. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.25. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

2.26. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

2.27. Enter **12**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.28. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.29. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.31. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

2.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

2.33. Enter **12**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.34. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.35. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.36. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.37. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

2.38. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

2.39. Enter **14**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.40. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.41. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.42. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.43. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

2.44. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

2.45. Enter **14**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.46. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.47. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.48. Enter **<**

Response: The system displays the **Data Entry** form.
The cursor moves to the **Enter Form Name:** attribute.

2.49. Enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

2.50. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

- 2.51. Enter **y**
Response: The cursor moves to the **complex_name:** attribute.
- 2.52. Enter **CU**
Response: The cursor moves to the **complex_number:** attribute.
- 2.53. Enter **0**
Response: The cursor moves to the **unit_name:** attribute.
- 2.54. Enter **CC**
Response: The cursor moves to the **unit_number:** attribute.
- 2.55. Enter **0**
Response: The cursor moves to the **iop_list:** attribute.
- 2.56. Enter **'**
Response: The system displays **Enter Review, Validate, screen#, or Print:**
- 2.57. Enter **e**
Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.
The cursor moves to the **Enter Form Name:** attribute.
- 2.58. Enter **dbinfo**
Response: The cursor moves to the **dbinfo_opf:** attribute.
- 2.59. Enter **/tmp/filename**
Where: *filename* = any unique name.
Response: The cursor moves to the **ucb_list:** attribute.
- 2.60. Enter **y**
Response: The cursor moves to the **complex_name:** attribute.
- 2.61. Enter **CU**
Response: The cursor moves to the **complex_number:** attribute.

2.62. Enter **1**

Response: The cursor moves to the **unit_name:** attribute.

2.63. Enter **CC**

Response: The cursor moves to the **unit_number:** attribute.

2.64. Enter **0**

Response: The cursor moves to the **iop_list:** attribute.

2.65. Enter **'**

Response: The system displays **Enter Review, Validate, screen#, or Print:**

2.66. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

2.67. Enter **<**

Response: The system displays **REPT RCV COMPLETED**

2.68. At the MTTY, enter the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Where: *filename* = any unique name.

3. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 3.1. Select and prepare the ECD RC/V terminal.
- 3.2. Determine if the MTTY or RC/V terminal is to be used.
 - If the MTTY terminal, continue to Step **3.3**.
 - If the RC/V terminal, go to Step **3.6**.
- 3.3. At the MTTY, ensure that the terminal is in the command mode.
- 3.4. Enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.
- 3.5. Go to Step **3.7**.
- 3.6. At the RC/V terminal, enter the appropriate input command.
 - If MML, **RCV:MENU:DATA,RCVECD;**
 - If PDS, **RCV:MENU:RCVECD!**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.
- 3.7. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.
- 3.8. Enter **n**

Response: The cursor moves to the **journaling:** attribute.
- 3.9. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3.10. Verify that DMA 1 *ucb* forms are in the database as unequipped.



NOTE:

Review the *dbinfo ucb* list obtained in Step 2.68.

- If **yes**, then go to Step 7.



NOTE:

If the forms exist, they are set up the way the application intended them to be, unequipped and disconnected.

- If **no**, continue to Step 3.11.

3.11. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

3.12. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

3.13. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. Insert the *ucb* form for CU 0, DMA 1.

INSERT *ucb* FORM FOR CU 0, DMA 1 PROCEDURE:

- 4.1. At the RC/V terminal, enter **ucb**
Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:
- 4.2. Enter **r**
Response: The cursor moves to the **k_complex_name:**
attribute.
- 4.3. Enter **CU**
Response: The cursor moves to the **k_complex_number:**
attribute.
- 4.4. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.
- 4.5. Enter **DMA**
Response: The cursor moves to the **k_unit_number:** attribute.
- 4.6. Enter **0**
Response: The system completes the remainder of the form and
displays **Enter Review, Change-insert, Validate,**
screen#, or Print:
- 4.7. Enter **c**
Response: The system displays **Change Field:**
- 4.8. Enter **4**
Response: The cursor moves to the **k_unit_number:** attribute.
- 4.9. Enter **1**
Response: The system displays **Change Field:**
- 4.10. Enter **13**
Response: The cursor moves to the **internal_device:** attribute.
- 4.11. Enter **15**
Response: The system displays **Change Field:**

4.12. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

4.13. Enter **UNEQIP**

Response: The system displays **Change Field:**

4.14. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

4.15. Enter **15**

Response: The system displays **Change Field:**

4.16. Enter **37**

Response: The cursor moves to the **complex_name:** attribute.

4.17. Enter **'**

Response: The system displays **Change Field:**

4.18. Enter **38**

Response: The cursor moves to the **complex_number:** attribute.

4.19. Enter **'**

Response: The system displays **Change Field:**

4.20. Enter **39**

Response: The cursor moves to the **unit_name:** attribute.

4.21. Enter **'**

Response: The system displays **Change Field:**

4.22. Enter **40**

Response: The cursor moves to the **unit_number:** attribute.

4.23. Enter **'**

Response: The system displays **Change Field:**

4.24. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

4.25. Enter '

Response: The system displays **Change Field:**

4.26. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

4.27. Enter '

Response: The system displays **Change Field:**

4.28. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

4.29. Enter '

Response: The system displays **Change Field:**

4.30. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

4.31. Enter '

Response: The system displays **Change Field:**

4.32. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

4.33. Enter '

Response: The system displays **Change Field:**

4.34. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

4.35. Enter '

Response: The system displays **Change Field:**

4.36. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

4.37. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

4.38. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

5. Insert the *ucb* form for CU 1, DMA 1.

INSERT *ucb* FORM FOR CU 1, DMA 1 PROCEDURE:

5.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

5.2. Enter **r**

Response: The cursor moves to the **k_complex_name:** attribute.

5.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

5.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

5.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

5.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Validate, screen#, or Print:**

5.7. Enter **c**

Response: The system displays **Change Field:**

5.8. Enter **2**

Response: The cursor moves to the **k_complex_number:** attribute.

5.9. Enter **1**

Response: The system displays **Change Field:**

5.10. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

5.11. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

5.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

6. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

6.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form
The cursor moves to the **tr_name:** attribute.

6.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

6.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

7. Verify that the *ucb* forms for CU 0 (channels 16 through 19) are in the database as unequipped.

⇒ **NOTE:**

Review the *dbinfo ucb* list obtained in Step 2.68.

- If **yes**, go to Step 11.

⇒ **NOTE:**

If the forms exist, check the form and record *interrupt_num* (No. 28).

- If **no**, continue to Step 8.

⇒ **NOTE:**

If forms are added in these steps, the *interrupt_num* (No. 28) will be *interrupt* source 10.

8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 8.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 8.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

9. Insert the *ucb* forms for CU 0, channels 16 through 19.

**INSERT *ucb* FORMS FOR CU 0, CHANNELS 16 THROUGH 19
PROCEDURE:**

- 9.1. At the RC/V terminal, enter **ucb**
Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 9.2. Enter **r**
Response: The cursor moves to the **k_complex_name:**
attribute.
- 9.3. Enter **CU**
Response: The cursor moves to the **k_complex_number:**
attribute.
- 9.4. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.
- 9.5. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 9.6. Enter **11**
Response: The system completes the remainder of the form and
displays **Enter Review, Change-insert, Validate,
screen#, or Print:**
- 9.7. Enter **c**
Response: The system displays **Change Field:**
- 9.8. Enter **4**
Response: The cursor moves to the **k_unit_number:** attribute.
- 9.9. Enter **16**
Response: The system displays **Change Field:**
- 9.10. Enter **13**
Response: The cursor moves to the **internal_device:** attribute.

9.11. Enter **16**

Response: The system displays **Change Field:**

9.12. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

9.13. Enter **UNEQIP**

Response: The system displays **Change Field:**

9.14. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

9.15. Enter **0x00**

Response: The system displays **Change Field:**

9.16. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

9.17. Enter **16**

Response: The system displays **Change Field:**

9.18. Enter **39**

Response: The cursor moves to the **unit_name:** attribute.

9.19. Enter **'**

Response: The system displays **Change Field:**

9.20. Enter **40**

Response: The cursor moves to the **unit_number:** attribute.

9.21. Enter **'**

Response: The system displays **Change Field:**

9.22. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

9.23. Enter **'**

Response: The system displays **Change Field:**

9.24. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

9.25. Enter **'**

Response: The system displays **Change Field:**

9.26. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

9.27. Enter **'**

Response: The system displays **Change Field:**

9.28. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

9.29. Enter **'**

Response: The system displays **Change Field:**

9.30. Enter **47**

Response: The cursor moves to the **complex_name:** attribute.

9.31. Enter **'**

Response: The system displays **Change Field:**

9.32. Enter **48**

Response: The cursor moves to the **complex_number:** attribute.

9.33. Enter **'**

Response: The system displays **Change Field:**

9.34. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

9.35. Enter **'**

Response: The system displays **Change Field:**

9.36. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

9.37. Enter **'**

Response: The system displays **Change Field:**

9.38. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

9.39. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

9.40. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9.41. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

9.42. Enter **r**

Response: The cursor moves to the **k_complex_name:** attribute.

9.43. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

9.44. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

9.45. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

9.46. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Validate, screen#, or Print:**

9.47. Enter **c**

Response: The system displays **Change Field:**

- 9.48. Enter **4**
Response: The cursor moves to the **k_unit_number:** attribute.
- 9.49. Enter **17**
Response: The system displays **Change Field:**
- 9.50. Enter **13**
Response: The cursor moves to the **internal_device:** attribute.
- 9.51. Enter **17**
Response: The system displays **Change Field:**
- 9.52. Enter **24**
Response: The cursor moves to the **channel_num:** attribute.
- 9.53. Enter **17**
Response: The system displays **Change Field:**
- 9.54. Press the <CR> key.
Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**
- 9.55. Enter **i**
Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**
- 9.56. Enter **<**
Response: The cursor moves to the **Enter Form Name:** attribute.
- 9.57. Enter **ucb**
Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**
- 9.58. Enter **r**
Response: The cursor moves to the **k_complex_name:** attribute.
- 9.59. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.

- 9.60. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.
- 9.61. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 9.62. Enter **16**
Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Validate, screen#, or Print:**
- 9.63. Enter **c**
Response: The system displays **Change Field:**
- 9.64. Enter **4**
Response: The cursor moves to the **k_unit_number:** attribute.
- 9.65. Enter **18**
Response: The system displays **Change Field:**
- 9.66. Enter **13**
Response: The cursor moves to the **internal_device:** attribute.
- 9.67. Enter **18**
Response: The system displays **Change Field:**
- 9.68. Enter **24**
Response: The cursor moves to the **channel_num:** attribute.
- 9.69. Enter **18**
Response: The system displays **Change Field:**
- 9.70. Press the <CR> key.
Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**
- 9.71. Enter **i**
Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

9.72. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

9.73. Enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

9.74. Enter **r**

Response: The cursor moves to the **k_complex_name:** attribute.

9.75. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

9.76. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

9.77. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

9.78. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Validate, screen#, or Print:**

9.79. Enter **c**

Response: The system displays **Change Field:**

9.80. Enter **4**

Response: The cursor moves to the **k_unit_number:** attribute.

9.81. Enter **19**

Response: The system displays **Change Field:**

9.82. Enter **13**

Response: The cursor moves to the **internal_device:** attribute.

9.83. Enter **19**

Response: The system displays **Change Field:**

9.84. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

9.85. Enter **19**

Response: The system displays **Change Field:**

9.86. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

9.87. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

9.88. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Insert the *ucb* forms for CU 1, channels 16 through 19.

**INSERT *ucb* FORMS FOR CU 1, CHANNELS 16 THROUGH 19
PROCEDURE:**

10.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

10.2. Enter **r**

Response: The cursor moves to the **k_complex_name:** attribute.

10.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

10.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 10.5. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 10.6. Enter **16**
Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Validate, screen#, or Print:**
- 10.7. Enter **c**
Response: The system displays **Change Field:**
- 10.8. Enter **2**
Response: The cursor moves to the **k_complex_number:** attribute.
- 10.9. Enter **1**
Response: The system displays **Change Field:**
- 10.10. Press the <CR> key.
Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**
- 10.11. Enter **i**
Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**
- 10.12. Enter **c**
Response: The system displays **Change Field:**
- 10.13. Enter **4**
Response: The system displays the *ucb* form for channel 16. The cursor moves to the **k_unit_number:** attribute.
- 10.14. Enter **17**
Response: The system displays **Change Field:**
- 10.15. Enter **13**
Response: The cursor moves to the **internal_device:** attribute.

10.16. Enter **17**

Response: The system displays **Change Field:**

10.17. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

10.18. Enter **17**

Response: The system displays **Change Field:**

10.19. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

10.20. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

10.21. Enter **c**

Response: The system displays **Change Field:**

10.22. Enter **4**

Response: The system displays the *ucb* form for channel 16.
The cursor moves to the **k_unit_number:** attribute.

10.23. Enter **18**

Response: The system displays **Change Field:**

10.24. Enter **13**

Response: The cursor moves to the **internal_device:** attribute.

10.25. Enter **18**

Response: The system displays **Change Field:**

10.26. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

10.27. Enter **18**

Response: The system displays **Change Field:**

10.28. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

10.29. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

10.30. Enter **c**

Response: The system displays **Change Field:**

10.31. Enter **4**

Response: The system displays the *ucb* form for channel 16.
The cursor moves to the **k_unit_number:** attribute.

10.32. Enter **19**

Response: The system displays **Change Field:**

10.33. Enter **13**

Response: The cursor moves to the **internal_device:** attribute.

10.34. Enter **19**

Response: The system displays **Change Field:**

10.35. Enter **24**

Response: The cursor moves to the **channel_num:** attribute.

10.36. Enter **19**

Response: The system displays **Change Field:**

10.37. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

10.38. Enter **i**

Response: The system displays **Inserting... FORM INSERTED** followed by **Enter Review, Change-insert, Validate, screen#, or Print:**

10.39. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

11.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12. Remove CU 0 from service.

⇒ **NOTE:**

The following subprocedure assumes CU 0 is on standby. If necessary, at the MTTY, execute a switch to achieve this configuration by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

REMOVE CU 0 FROM SERVICE PROCEDURE:

- 12.1. At the MTTY, enter menu command **102**

Response: The system displays Common Processor Display Page (CPDP) 102.

- 12.2. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU 0!**
- If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

13. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 13.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.
- 13.2. Enter **12**
- 13.3. Verify that the active CU is forced on-line and that the Out-of-Service (OOS) CU is forced off-line.
-
-

14. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 14.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 14.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 14.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

15. Update the side pointers of the Previous Logical Unit (PLU) to the growth DMA.

UPDATE SIDE POINTERS OF PLU TO GROWTH DMA PROCEDURE:

- 15.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 15.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 15.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 15.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 15.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

15.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.7. Enter **3**

Response: The system displays page 3 of the *ucb* form with choices.



NOTE:

Record the values as shown for each side attribute listed on the *ucb* form. Save this information for later reference in this procedure.

complex_name	complex_number	unit_name	unit_number
41 side 42)_____	43)_____	44)_____	45)_____

15.8. Enter **c**

Response: The system displays **Change Field:**

15.9. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

15.10. Enter **CU**

Response: The system displays **Change Field:**

15.11. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

15.12. Enter **0**

Response: The system displays **Change Field:**

15.13. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

15.14. Enter **DMA**

Response: The system displays **Change Field:**

15.15. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

15.16. Enter **1**

Response: The system displays **Change Field:**

15.17. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.18. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

16. Update the growth DMAC linkage and major status.

UPDATE GROWTH DMAC LINKAGE AND MAJOR STATUS PROCEDURE:

16.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

16.2. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

16.3. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

16.4. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.5. Enter **c**

Response: The system displays **Change Field:**



NOTE:

If the PLU to DMA 1 already had side pointers, use the information recorded in Step **15.7** and change side pointers. If there are no side pointers, go to Step **16.10**.

16.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

16.7. Enter the unit name recorded from the update of the PLU.

Response: The system displays **Change Field:**

16.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

16.9. Enter the unit number recorded from the update of the PLU.

Response: The system displays **Change Field:**

16.10. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

16.11. Enter **CU**

Response: The system displays **Change Field:**

16.12. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

16.13. Enter **0**

Response: The system displays **Change Field:**

16.14. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

16.15. Enter **GROW**

Response: The system displays **Change Field:**

16.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

16.18. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

17. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

17.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

17.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

17.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 28-060], remove power from OOS CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0** followed by **REPT CU 0 UNAVAILABLE**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

19. Insert the DMAC/DSCH circuit pack (KBN15) and 410AA power supply for CU 0.

**INSERT DMAC/DSCH CIRCUIT PACK (KBN15) AND 410AA POWER
SUPPLY FOR CU 0 PROCEDURE:**

- 19.1. Verify that the DMAC 1 “quad word inhibit” backplane wire is connected between EQL pin 028-065-736 and EQL pin 028-065-738 (ground pin). If not connected, add this wire before inserting the DMAC/DSCH circuit pack.
- 19.2. Insert the DMAC/DSCH circuit pack into EQL 28-065.
- 19.3. Insert 410AA power supply into EQL 19-060.
- 19.4. Verify that the correct fuse is installed for the 410AA power supply.
-



NOTE 1:

If the *ucb* forms existed, check the interrupt_num (No. 28).



NOTE 2:

If the *ucb* forms are added during this procedure, their interrupt_num (No. 28) would be interrupt source 10.

20. If the interrupt_num wires are in place, verify connections are correct based on the following or add interrupt_num wires as follows:

Channel	If interrupt_num Is:	Wire from Terminal	Wire to Terminal
16, 17, 18, and 19	*	028-037-050	028-037-049
	10	028-037-049	028-038-049T
	11	028-037-049	028-038-048T
* If interrupt_num is the same for all channels (16, 17, 18, and 19).			

If channels 16 and 18 or 17 and 19 have different interrupt_num(s), each must be wired as follows:

interrupt_num	Channel	Wire from Terminal	Wire to Terminal
10	16 and 18	028-037-050	028-038-049T
	17 and 19	028-037-049	028-038-049T
11	16 and 18	028-037-050	028-038-048T
	17 and 19	028-037-049	028-038-048T

21. At CUPS TN1821 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.
22. At the MTTY, diagnose CU 0 DMA 1 by entering the appropriate input command.
 - If MML, **DGN:CU=0,DMA=1;**
 - If PDS, **DGN:CU 0,DMA 1!**

Response: The system displays **DGN CU 0 DMA 1 ATP MESSAGE COMPLETE**

⇒ **NOTE:**

An ATP condition must be achieved before continuing.

23. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 23.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

- 23.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 23.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

24. Update the growth DMA status from GROW to OOS.

UPDATE GROWTH DMA STATUS FROM GROW TO OOS PROCEDURE:

- 24.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 24.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 24.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 24.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 24.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

- 24.6. Enter **1**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 24.7. Enter **c**

Response: The system displays **Change Field:**

- 24.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 24.9. Enter **OOS**

Response: The system displays **Change Field:**

24.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

24.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

24.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

25. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

25.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

25.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

25.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

26. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 26.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 26.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 26.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

27. Restore CU 0 to service.

RESTORE CU 0 TO SERVICE PROCEDURE:

- 27.1. At the MTTY, restore CU 0 to service by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETED**

- 27.2. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.



NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

28. Switch the CUs.

SWITCH CUs PROCEDURE:

- 28.1. At the MTTY, switch the CUs by entering menu command **102**

Response: The system displays the CPDP.

- 28.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 28.3. At MTTY CPDP 102, verify that the CUs have switched.
-

29. At CUPS TN1821 (EQL 28-060), remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **29** prevents automatic restoral of the CU 1 when the unit is powered up in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

30. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 30.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

- 30.2. Enter **12**

- 30.3. Verify that the active CU is forced on-line and that the OOS CU is forced off-line.
-

31. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 31.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

- 31.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 31.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

32. Update the side pointers of the PLU to the growth DMA.

UPDATE SIDE POINTERS OF PLU TO GROWTH DMA PROCEDURE:

- 32.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 32.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 32.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 32.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 32.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

32.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

32.7. Enter **3**

Response: The system displays page 3 of the *ucb* form with choices.



NOTE:

Record the values as shown for each side attribute listed on the *ucb* form. Save this information for later reference in this procedure.

	complex_name	complex_number	unit_name	unit_number
41 side	42)_____	43)_____	44)_____	45)_____

32.8. Enter **c**

Response: The system displays **Change Field:**

32.9. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

32.10. Enter **CU**

Response: The system displays **Change Field:**

32.11. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

32.12. Enter **1**

Response: The system displays **Change Field:**

32.13. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

32.14. Enter **DMA**

Response: The system displays **Change Field:**

32.15. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

32.16. Enter **1**

Response: The system displays **Change Field:**

32.17. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

32.18. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

33. Update the growth DMAC linkage and major status.

UPDATE GROWTH DMAC LINKAGE AND MAJOR STATUS PROCEDURE:

33.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

33.2. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

33.3. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

33.4. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

33.5. Enter **c**

Response: The system displays **Change Field:**



NOTE:

If the PLU to DMA 1 has side pointers, use information recorded in Step **32.7** and change side pointers. If there are no side pointers, go to Step **33.10**.

33.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

33.7. Enter the unit name recorded from the update of the PLU.

Response: The system displays **Change Field:**

33.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

33.9. Enter the unit name recorded from the update of the PLU.

Response: The system displays **Change Field:**

33.10. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

33.11. Enter **CU**

Response: The system displays **Change Field:**

33.12. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

33.13. Enter **1**

Response: The system displays **Change Field:**

33.14. Enter **21**

Response: The cursor moves to the **unit_name:** attribute.

33.15. Enter **GROW**

Response: The system displays **Change Field:**

33.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

33.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

33.18. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

34. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

34.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

34.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

34.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

35. At CUPS TN1821 (EQL 53-060), remove power from the OOS CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1** followed by **REPT CU 1 UNAVAILABLE**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

36. Insert the DMAC/DSCH circuit pack (KBN15) and 410AA power supply for CU 1.

INSERT DMAC/DSCH CIRCUIT PACK (KBN15) AND 410AA POWER SUPPLY FOR CU 1 PROCEDURE:

- 36.1. Verify that the DMAC 1 “quad word inhibit” backplane wire is connected between EQL pin 053-065-736 and EQL pin 053-065-738 (ground pin). If not connected, add this wire before inserting the DMAC/DSCH circuit pack.
- 36.2. Insert the DMAC/DSCH circuit pack into EQL 53-065.
- 36.3. Insert the 410AA power supply into EQL 45-060.
- 36.4. Verify that the correct fuse is installed for the 410AA power supply.
-
-



NOTE 1:

If the *ucb* forms already existed, check the interrupt_num (No. 28).



NOTE 2:

If the *ucb* forms are added during this procedure, their interrupt_num (No. 28) would be interrupt source 10.

37. If interrupt_num wires are in place, verify connections are correct based on the following or add interrupt_num wires as follows:

Channel	If interrupt_num Is:	Wire from Terminal	Wire to Terminal
16, 17, 18, and 19	*	053-037-050	053-037-049
	10	053-037-049	053-038-049T
	11	053-037-049	053-038-048T
* If interrupt_num is the same for all channels (16, 17, 18, and 19).			

If channels 16 and 18 and 17 and 19 have different interrupt_num(s), each must be wired as follows:

interrupt_num	Channel	Wire from Terminal	Wire to Terminal
10	16 and 18	053-037-050	053-038-049T
	17 and 19	053-037-049	053-038-049T
11	16 and 18	053-037-050	053-038-048T
	17 and 19	053-037-049	053-038-048T

38. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.
39. At the MTTY, diagnose CU 1 DMA 1 by entering the appropriate input command.
- If MML, **DGN:CU=1,DMA=1;**
 - If PDS, **DGN:CU 1,DMA 1!**

Response: The system displays **DGN CU 1 DMA 1 ATP MESSAGE COMPLETE**

⇒ **NOTE:**

An ATP condition must be achieved before continuing.

40. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 40.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

- 40.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 40.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

41. Update the growth DMA status from GROW to OOS.

UPDATE GROWTH DMA STATUS FROM GROW TO OOS PROCEDURE:

- 41.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 41.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 41.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 41.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 41.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

- 41.6. Enter **1**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 41.7. Enter **c**

Response: The system displays **Change Field:**

- 41.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 41.9. Enter **OOS**

Response: The system displays **Change Field:**

- 41.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, screen#, or Print:

41.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:**
attribute.

41.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

42. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

42.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

42.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

42.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

43. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 43.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 43.2. On the EAI page, clear force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 43.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

44. Restore CU 1 to service.

RESTORE CU 1 TO SERVICE PROCEDURE:

- 44.1. At the MTTY, restore CU 1 to service by entering the appropriate input command.

- If MML, **RST:CU=1;**
- If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETED**

- 44.2. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.



NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

45. Switch the CUs.

SWITCH CUs PROCEDURE:

- 45.1. At the MTTY, switch the CUs by entering menu command **102**

Response: The system displays the CPDP.

- 45.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 45.3. At MTTY CPDP 102, verify that the CUs have switched.
-
-

46. Remove CU 0 from service.

⇒ NOTE:

The following subprocedure assumes CU 0 is on standby. If necessary, at the MTTY, execute a switch to achieve this configuration by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

REMOVE CU 0 FROM SERVICE PROCEDURE:

- 46.1. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.

- 46.2. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=0;**
- If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

47. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 47.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 47.2. Enter **12**
- 47.3. Verify that the active CU is forced on-line and that the OOS CU is forced off-line.
-
-

48. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 48.1. At the RC/V terminal, enter **trbegin**
- Response: The cursor moves to the **tr_name:** attribute.
- 48.2. Press the <CR> key.
- Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**
- 48.3. Enter **e**
- Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.
-
-

49. Update the DSCH side pointer linkages, controller linkages, and major status for CU 0.

**UPDATE DSCH SIDE POINTER LINKAGES, CONTROLLER LINKAGES,
AND MAJOR STATUS FOR CU 0 PROCEDURE:**

- 49.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 49.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 49.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 49.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 49.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

- 49.6. Enter **16**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

- 49.7. Enter **c**

Response: The system displays **Change Field:**

- 49.8. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

- 49.9. Enter **CU**

Response: The system displays **Change Field:**

- 49.10. Enter **43**

Response: The cursor moves to the **complex_number:**
attribute.

- 49.11. Enter **0**
Response: The system displays **Change Field:**
- 49.12. Enter **44**
Response: The cursor moves to the **unit_name:** attribute.
- 49.13. Enter **CH**
Response: The system displays **Change Field:**
- 49.14. Enter **45**
Response: The cursor moves to the **unit_number:** attribute.
- 49.15. Enter **17**
Response: The system displays **Change Field:**
- 49.16. Enter **47**
Response: The cursor moves to the **complex_name:** attribute.
- 49.17. Enter **CU**
Response: The system displays **Change Field:**
- 49.18. Enter **48**
Response: The cursor moves to the **complex_number:** attribute.
- 49.19. Enter **0**
Response: The system displays **Change Field:**
- 49.20. Enter **49**
Response: The cursor moves to the **unit_name:** attribute.
- 49.21. Enter **DMA**
Response: The system displays **Change Field:**
- 49.22. Enter **50**
Response: The cursor moves to the **unit_number:** attribute.
- 49.23. Enter **1**
Response: The system displays **Change Field:**

49.24. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

49.25. Enter **GROW**

Response: The system displays **Change Field:**

49.26. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

49.27. Enter **0x1**

Response: The system displays **Change Field:**

49.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.29. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

49.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

49.31. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

49.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

49.33. Enter **17**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.34. Enter **c**

Response: The system displays **Change Field:**

49.35. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

- 49.36. Enter **CU**
Response: The system displays **Change Field:**
- 49.37. Enter **43**
Response: The cursor moves to the **complex_number:** attribute.
- 49.38. Enter **0**
Response: The system displays **Change Field:**
- 49.39. Enter **44**
Response: The cursor moves to the **unit_name:** attribute.
- 49.40. Enter **CH**
Response: The system displays **Change Field:**
- 49.41. Enter **45**
Response: The cursor moves to the **unit_number:** attribute.
- 49.42. Enter **18**
Response: The system displays **Change Field:**
- 49.43. Enter **47**
Response: The cursor moves to the **complex_name:** attribute.
- 49.44. Enter **CU**
Response: The system displays **Change Field:**
- 49.45. Enter **48**
Response: The cursor moves to the **complex_number:** attribute.
- 49.46. Enter **0**
Response: The system displays **Change Field:**
- 49.47. Enter **49**
Response: The cursor moves to the **unit_name:** attribute.
- 49.48. Enter **DMA**
Response: The system displays **Change Field:**

49.49. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

49.50. Enter **1**

Response: The system displays **Change Field:**

49.51. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

49.52. Enter **GROW**

Response: The system displays **Change Field:**

49.53. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

49.54. Enter **0x1**

Response: The system displays **Change Field:**

49.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.56. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

49.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

49.58. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

49.59. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

49.60. Enter **18**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 49.61. Enter **c**
Response: The system displays **Change Field:**
- 49.62. Enter **42**
Response: The cursor moves to the **complex_name:** attribute.
- 49.63. Enter **CU**
Response: The system displays **Change Field:**
- 49.64. Enter **43**
Response: The cursor moves to the **complex_number:** attribute.
- 49.65. Enter **0**
Response: The system displays **Change Field:**
- 49.66. Enter **44**
Response: The cursor moves to the **unit_name:** attribute.
- 49.67. Enter **CH**
Response: The system displays **Change Field:**
- 49.68. Enter **45**
Response: The cursor moves to the **unit_number:** attribute.
- 49.69. Enter **19**
Response: The system displays **Change Field:**
- 49.70. Enter **47**
Response: The cursor moves to the **complex_name:** attribute.
- 49.71. Enter **CU**
Response: The system displays **Change Field:**
- 49.72. Enter **48**
Response: The cursor moves to the **complex_number:** attribute.
- 49.73. Enter **0**
Response: The system displays **Change Field:**

- 49.74. Enter **49**
Response: The cursor moves to the **unit_name:** attribute.
- 49.75. Enter **DMA**
Response: The system displays **Change Field:**
- 49.76. Enter **50**
Response: The cursor moves to the **unit_number:** attribute.
- 49.77. Enter **1**
Response: The system displays **Change Field:**
- 49.78. Enter **21**
Response: The cursor moves to the **major_status:** attribute.
- 49.79. Enter **GROW**
Response: The system displays **Change Field:**
- 49.80. Enter **22**
Response: The cursor moves to the **equipage:** attribute.
- 49.81. Enter **0x1**
Response: The system displays **Change Field:**
- 49.82. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 49.83. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 49.84. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 49.85. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

- 49.86. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 49.87. Enter **19**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 49.88. Enter **c**
Response: The system displays **Change Field:**
- 49.89. Enter **47**
Response: The cursor moves to the **complex_name:** attribute.
- 49.90. Enter **CU**
Response: The system displays **Change Field:**
- 49.91. Enter **48**
Response: The cursor moves to the **complex_number:** attribute.
- 49.92. Enter **0**
Response: The system displays **Change Field:**
- 49.93. Enter **49**
Response: The cursor moves to the **unit_name:** attribute.
- 49.94. Enter **DMA**
Response: The system displays **Change Field:**
- 49.95. Enter **50**
Response: The cursor moves to the **unit_number:** attribute.
- 49.96. Enter **1**
Response: The system displays **Change Field:**
- 49.97. Enter **21**
Response: The cursor moves to the **major_status:** attribute.

49.98. Enter **GROW**

Response: The system displays **Change Field:**

49.99. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

49.100. Enter **0x1**

Response: The system displays **Change Field:**

49.101. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

49.102. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

50. Update the growth DMA down pointer linkage to the growth DSCH for CU 0, DMA 1.

**UPDATE GROWTH DMA DOWN POINTER LINKAGE TO GROWTH DSCH
FOR CU 0, DMA 1 PROCEDURE:**

50.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

50.2. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

50.3. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

50.4. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 50.5. Enter **c**
Response: The system displays **Change Field:**
- 50.6. Enter **37**
Response: The cursor moves to the **complex_name:** attribute.
- 50.7. Enter **CU**
Response: The system displays **Change Field:**
- 50.8. Enter **38**
Response: The cursor moves to the **complex_number:** attribute.
- 50.9. Enter **0**
Response: The system displays **Change Field:**
- 50.10. Enter **39**
Response: The cursor moves to the **unit_name:** attribute.
- 50.11. Enter **CH**
Response: The system displays **Change Field:**
- 50.12. Enter **40**
Response: The cursor moves to the **unit_number:** attribute.
- 50.13. Enter **16**
Response: The system displays **Change Field:**
- 50.14. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 50.15. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 50.16. Enter **<**
Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

51. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

51.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

51.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

51.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

52. At the MTTY, diagnose CU 0 DSCH 16 by entering the appropriate input command.

- If MML, **DGN:CU=0,CH=16:RAW,TLP;**
- If PDS, **DGN:CU 0,CH 16:RAW,TLP!**

Response: The system displays **DGN CU 0 CH 16 CATP MSG COMPLETE**

⇒ NOTE:

A Conditional All Tests Passed (CATP) result must be achieved before continuing. Repeat Step **52** for DSCH 17, 18, and 19.

53. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 53.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

- 53.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 53.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

54. Update the growth DSCH status from GROW to OOS for CU 0.

UPDATE GROWTH DSCH STATUS FROM GROW TO OOS FOR CU 0 PROCEDURE:

- 54.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 54.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 54.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 54.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 54.5. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 54.6. Enter **16**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 54.7. Enter **c**
Response: The system displays **Change Field:**
- 54.8. Enter **21**
Response: The cursor moves to the **major_status:** attribute.
- 54.9. Enter **OOS**
Response: The system displays **Change Field:**
- 54.10. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 54.11. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 54.12. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 54.13. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.
- 54.14. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 54.15. Enter **17**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 54.16. Enter **c**
Response: The system displays **Change Field:**
- 54.17. Enter **21**
Response: The cursor moves to the **major_status:** attribute.
- 54.18. Enter **OOS**
Response: The system displays **Change Field:**
- 54.19. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 54.20. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 54.21. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 54.22. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.
- 54.23. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 54.24. Enter **18**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 54.25. Enter **c**
Response: The system displays **Change Field:**
- 54.26. Enter **21**
Response: The cursor moves to the **major_status:** attribute.
- 54.27. Enter **OOS**
Response: The system displays **Change Field:**

54.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

54.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

54.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

54.31. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

54.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

54.33. Enter **19**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

54.34. Enter **c**

Response: The system displays **Change Field:**

54.35. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

54.36. Enter **OOS**

Response: The system displays **Change Field:**

54.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

54.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

54.39. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

55. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

55.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form
The cursor moves to the **tr_name:** attribute.

55.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

55.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

56. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

56.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

56.2. Enter **13**

56.3. Verify that the EAI page central control status is cleared of force conditions.

57. Restore CU 0 to service.

RESTORE CU 0 TO SERVICE PROCEDURE:

57.1. At the MTTY, restore CU 0 to service by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETED**

57.2. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.



NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

58. Switch the CUs.

SWITCH CUs PROCEDURE:

58.1. At the MTTY, switch the CUs by entering menu command **102**

Response: The system displays the CPDP.

58.2. At the MTTY, switch the CUs by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

58.3. At MTTY CPDP 102, verify that the CUs have switched.

59. Remove CU 1 from service.

⇒ **NOTE:**

The following subprocedure assumes CU 1 is on standby. If necessary, at the MTTY, execute a switch to achieve this configuration by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

REMOVE CU 1 FROM SERVICE PROCEDURE:

59.1. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.

59.2. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=1;**
- If PDS, **RMV:CU 1!**

Response: The system displays **RMV CU 1 COMPLETED**

60. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

60.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

60.2. Enter **12**

60.3. Verify that the active CU is forced on-line and that the OOS CU is forced off-line.

61. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 61.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

- 61.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 61.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

62. Update the DSCH side pointer linkages, controller linkages, and major status for CU 1.

UPDATE DSCH SIDE POINTER LINKAGES, CONTROLLER LINKAGES, AND MAJOR STATUS FOR CU 1 PROCEDURE:

- 62.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 62.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 62.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 62.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

62.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

62.6. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.7. Enter **c**

Response: The system displays **Change Field:**

62.8. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

62.9. Enter **CU**

Response: The system displays **Change Field:**

62.10. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

62.11. Enter **1**

Response: The system displays **Change Field:**

62.12. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

62.13. Enter **CH**

Response: The system displays **Change Field:**

62.14. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

62.15. Enter **17**

Response: The system displays **Change Field:**

62.16. Enter **47**

Response: The cursor moves to the **complex_name:** attribute.

62.17. Enter **CU**

Response: The system displays **Change Field:**

62.18. Enter **48**

Response: The cursor moves to the **complex_number:** attribute.

62.19. Enter **1**

Response: The system displays **Change Field:**

62.20. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

62.21. Enter **DMA**

Response: The system displays **Change Field:**

62.22. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

62.23. Enter **1**

Response: The system displays **Change Field:**

62.24. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

62.25. Enter **GROW**

Response: The system displays **Change Field:**

62.26. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

62.27. Enter **0x1**

Response: The system displays **Change Field:**

62.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.29. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

62.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

62.31. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

62.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

62.33. Enter **17**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.34. Enter **c**

Response: The system displays **Change Field:**

62.35. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

62.36. Enter **CU**

Response: The system displays **Change Field:**

62.37. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

62.38. Enter **1**

Response: The system displays **Change Field:**

62.39. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

62.40. Enter **CH**

Response: The system displays **Change Field:**

62.41. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

62.42. Enter **18**

Response: The system displays **Change Field:**

62.43. Enter **47**

Response: The cursor moves to the **complex_name:** attribute.

62.44. Enter **CU**

Response: The system displays **Change Field:**

62.45. Enter **48**

Response: The cursor moves to the **complex_number:** attribute.

62.46. Enter **1**

Response: The system displays **Change Field:**

62.47. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

62.48. Enter **DMA**

Response: The system displays **Change Field:**

62.49. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

62.50. Enter **1**

Response: The system displays **Change Field:**

62.51. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

62.52. Enter **GROW**

Response: The system displays **Change Field:**

62.53. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

62.54. Enter **0x1**

Response: The system displays **Change Field:**

62.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.56. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

62.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

62.58. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

62.59. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

62.60. Enter **18**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.61. Enter **c**

Response: The system displays **Change Field:**

62.62. Enter **42**

Response: The cursor moves to the **complex_name:** attribute.

62.63. Enter **CU**

Response: The system displays **Change Field:**

62.64. Enter **43**

Response: The cursor moves to the **complex_number:** attribute.

62.65. Enter **1**

Response: The system displays **Change Field:**

62.66. Enter **44**

Response: The cursor moves to the **unit_name:** attribute.

62.67. Enter **CH**

Response: The system displays **Change Field:**

62.68. Enter **45**

Response: The cursor moves to the **unit_number:** attribute.

62.69. Enter **19**

Response: The system displays **Change Field:**

62.70. Enter **47**

Response: The cursor moves to the **complex_name:** attribute.

62.71. Enter **CU**

Response: The system displays **Change Field:**

62.72. Enter **48**

Response: The cursor moves to the **complex_number:** attribute.

62.73. Enter **1**

Response: The system displays **Change Field:**

62.74. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

62.75. Enter **DMA**

Response: The system displays **Change Field:**

62.76. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

62.77. Enter **1**

Response: The system displays **Change Field:**

62.78. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

62.79. Enter **GROW**

Response: The system displays **Change Field:**

62.80. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

62.81. Enter **0x1**

Response: The system displays **Change Field:**

62.82. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.83. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

62.84. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

62.85. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

62.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

62.87. Enter **19**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.88. Enter **c**

Response: The system displays **Change Field:**

62.89. Enter **47**

Response: The cursor moves to the **complex_name:** attribute.

62.90. Enter **CU**

Response: The system displays **Change Field:**

62.91. Enter **48**

Response: The cursor moves to the **complex_number:** attribute.

62.92. Enter **1**

Response: The system displays **Change Field:**

62.93. Enter **49**

Response: The cursor moves to the **unit_name:** attribute.

62.94. Enter **DMA**

Response: The system displays **Change Field:**

62.95. Enter **50**

Response: The cursor moves to the **unit_number:** attribute.

62.96. Enter **1**

Response: The system displays **Change Field:**

62.97. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

62.98. Enter **GROW**

Response: The system displays **Change Field:**

62.99. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

62.100. Enter **0x1**

Response: The system displays **Change Field:**

62.101. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

62.102. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

63. Update the growth DMA down pointer linkage to the growth DSCH for CU 1.

**UPDATE GROWTH DMA DOWN POINTER LINKAGE TO GROWTH DSCH
FOR CU 1 PROCEDURE:**

- 63.1. At the RC/V terminal, enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 63.2. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 63.3. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

- 63.4. Enter **1**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

- 63.5. Enter **c**

Response: The system displays **Change Field:**

- 63.6. Enter **37**

Response: The cursor moves to the **complex_name:** attribute.

- 63.7. Enter **CU**

Response: The system displays **Change Field:**

- 63.8. Enter **38**

Response: The cursor moves to the **complex_number:**
attribute.

- 63.9. Enter **1**

Response: The system displays **Change Field:**

- 63.10. Enter **39**

Response: The cursor moves to the **unit_name:** attribute.

63.11. Enter **CH**

Response: The system displays **Change Field:**

63.12. Enter **40**

Response: The cursor moves to the **unit_number:** attribute.

63.13. Enter **16**

Response: The system displays **Change Field:**

63.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

63.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

63.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

64. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

64.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

64.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

64.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

65. At the MTTY, diagnose CU 1 DSCH 16 by entering the appropriate input command.

- If MML, **DGN:CU=1,CH=16:RAW,TLP;**
- If PDS, **DGN:CU 1,CH 16:RAW,TLP!**

Response: The system displays **DGN CU 1 CH 16 CATP MSG COMPLETE**

⇒ **NOTE:**

A CATP condition must be achieved before continuing. Repeat this step for channels 17, 18, and 19.

66. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

66.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

66.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

66.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

67. Update the growth DSCH status from GROW to OOS for CU 1.

**UPDATE GROWTH DSCH STATUS FROM GROW TO OOS FOR CU 1
PROCEDURE:**

- 67.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 67.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 67.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 67.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 67.5. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

- 67.6. Enter **16**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

- 67.7. Enter **c**

Response: The system displays **Change Field:**

- 67.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 67.9. Enter **OOS**

Response: The system displays **Change Field:**

- 67.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

- 67.11. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 67.12. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 67.13. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.
- 67.14. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 67.15. Enter **17**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 67.16. Enter **c**
Response: The system displays **Change Field:**
- 67.17. Enter **21**
Response: The cursor moves to the **major_status:** attribute.
- 67.18. Enter **OOS**
Response: The system displays **Change Field:**
- 67.19. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 67.20. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 67.21. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.

67.22. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

67.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

67.24. Enter **18**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

67.25. Enter **c**

Response: The system displays **Change Field:**

67.26. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

67.27. Enter **OOS**

Response: The system displays **Change Field:**

67.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

67.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

67.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

67.31. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

67.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

67.33. Enter **19**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

67.34. Enter **c**

Response: The system displays **Change Field:**

67.35. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

67.36. Enter **OOS**

Response: The system displays **Change Field:**

67.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

67.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

67.39. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

68. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

68.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

68.2. Press the <CR> key four times.

Response: The system prompts for the action desired.

68.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

69. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

69.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

69.2. Enter **13**

69.3. Verify that the EAI page central control status is cleared of force conditions.

70. Restore CU 1 to service.

RESTORE CU 1 TO SERVICE PROCEDURE:

70.1. At the MTTY, restore CU 1 to service by entering the appropriate input command.

- If MML, **RST:CU=1;**
- If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETED**

70.2. At the MTTY, enter menu command **102**

Response: The system displays the CPDP.



NOTE:

Do *not* proceed until all diagnostics pass and the CU has been marked standby.

71. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

71.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

71.2. Press the <CR> key.

Response: The system prompts for the action desired.

71.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

71.4. Enter <

Response: The ECD RC/V is completed.

72. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

73. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

74. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

75. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

HSDC Degrowth

7

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Introduction

This chapter describes the procedure used to degrow a High-Speed Data Link Controller (HSDC) from a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the HSDC degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the Previous Logical Unit (PLU) and the Next Logical Unit (NLU).

DETERMINE PLU AND NLU PROCEDURE:

- 3.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. Enter **ioppc**

Response: The cursor moves to the **unit_name:** attribute.

- 3.3. Enter **IOP**

Response: The cursor moves to the **unit_number:** attribute.

- 3.4. Enter **a**

Where: **a** = unit number of the IOP from which the HSDC will be degrown.

Response: The system displays **Enter Review, Validate, or Print:**

⇒ NOTE:

The **pc** (in link order) attribute displays the Unit Control Block (UCB) linkage for IOP a subdevices. If the HSDC is not the first unit under the IOP (that is, there are other units under the IOP), examine the **unitname** and **unitnumber** attributes under the **unitname** and **unitnumber** columns and determine which unit is the PLU and which unit is the NLU to the growth HSDC. It is important to note that the PLU will be removed from service in Step **16**. Note the **unitname** and **unitnumber** attributes for the PLU and NLU. These values will be used in the following steps.

- 3.5. Enter **r**

Response: The cursor moves to the **unit_name:** attribute.

- 3.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

3.7. Enter **toggle**

Response: The cursor remains at the **Enter Form Name:** attribute.

4. Determine database information (dbinfo) for later use in this procedure.

⇒ NOTE:

The following subprocedure provides the UCB linkage for channel subdevices from which the Dual Serial Channel Computer Interconnect (DCI) will be degrown. If the DCI to be removed is not the first device under the specified channel, the PLU to the DCI will have to be removed in Step **14** in order to update the side pointer linkages to bypass the DCI device. For use later in this procedure, this subprocedure also provides the UCB pointer list which shows the forms which must be removed and the Minor Device Chain Table (MDCT) pointer list which provides the logical device (*logdev*) records associated with the DCI device being degrown.

DETERMINE dbinfo FOR LATER USE IN PROCEDURE:

4.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

4.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

4.3. Enter **>**

Response: The cursor moves to the **iop_list:** attribute.

4.4. Enter **>**

Response: The cursor moves to the **pointer_list:** attribute.

4.5. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

4.6. Enter **ucb**

Response: The cursor moves to the **form_inst_key keyfield1:** attribute.

4.7. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield2:** attribute.

4.8. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield3:** attribute.

4.9. Enter **HSDC**

Response: The cursor moves to the **form_inst_key keyfield4:** attribute.

4.10. Enter *aa*

Where: *aa* = unit number of the HSDC being removed.

4.11. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4.12. Enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

4.13. Enter */tmp/filename*

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

4.14. Enter >

Response: The cursor moves to the **iop_list:** attribute.

4.15. Enter >

Response: The cursor moves to the **pointer_list:** attribute.

4.16. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

4.17. Enter **mdct**

Response: The cursor moves to the **form_inst:key keyfield1** attribute.

4.18. Enter *aaa*

Where: *aaa* = form key name from UCB pointer list.

Response: The cursor moves to the **form_inst_key keyfield2** attribute.

4.19. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

5. At the MTTY, request hard copies from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

6. At the MTTY, remove the HSDC from service by entering the appropriate input command.

- If MML, **RMV:HSDC=a;**
- If PDS, **RMV:HSDC a!**

Where: *a* = unit number of the HSDC.

Response: The system displays **RMV HSDC a COMPLETED**

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 7.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

8. Update the HSDC from Out of Service (OOS) to unequipped.

UPDATE HSDC FROM OOS TO UNEQUIPPED PROCEDURE:

- 8.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 8.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 8.5. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **a**

Where: **a** = unit number of the HSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

8.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

9.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

9.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

10. Remove the IOP from service.

REMOVE IOP FROM SERVICE PROCEDURE:

10.1. At Common Processor Display Page (CPDP) 102, verify that the MTTY is connected to the IOP from which the HSDC is to be degrown.

- If **yes**, continue to Step **10.2**.
- If **no**, go to Step **10.4**.

10.2. Verify that both port switches, located at the bottom of the processor cabinet, are in the **AUTO** position and if not, operate switches to the **AUTO** position.

10.3. At the MTTY, switch to another IOP by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

- 10.4. At MTTY CPDP 102, verify that the ROP is connected to the IOP from which the HSDC is to be degrown.
- If **yes**, continue to Step **10.5**.
 - If **no**, go to Step **10.7**.
- 10.5. Verify that both port switches, located at the bottom of the processor cabinet, are in the **AUTO** position and if not, operate switches to the **AUTO** position.
- 10.6. At the MTTY, switch the ROP to another IOP by entering the appropriate input command.
- If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

- 10.7. At the MTTY, enter the appropriate input command.
- If MML, **RMV:IOP=a;**
 - If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) should light.



NOTE:

Do **not** continue until this request has successfully completed.

11. At IOPPS TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position. See Table 7-1 for IOPPS EQLs.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

Where: *a* = unit number of the IOP.

Table 7-1. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Unseat and remove the HSDC circuit pack.
13. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.



NOTE 1:

At IOPPS TN1820, the **OFF** LED at IOP a extinguishes.



NOTE 2:

The IOP and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching CPDP.

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

Where: a = unit number of the IOP.

14. Determine if the degrowth HSDC is the first device under the IOP channel and if other devices exist under the channel.
 - If the degrowth HSDC is the first device under the IOP channel, continue to Step **15** and then go to Step **17**.
 - If the degrowth HSDC is not the first device under the IOP channel, go to Step **16** and then continue to Step **17**.

15. Update the ECD linkages for the degrowth HSDC when the HSDC is the first device under the IOP channel.

UPDATE ECD LINKAGES FOR DEGROWTH HSDC WHEN HSDC IS FIRST DEVICE UNDER IOP CHANNEL PROCEDURE:

- 15.1. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 15.1.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 15.1.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 15.1.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 15.2. Modify the IOP down pointers to bypass the degrowth HSDC.

MODIFY IOP DOWN POINTERS TO BYPASS DEGROWTH HSDC PROCEDURE:

- 15.2.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 15.2.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 15.2.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

15.2.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.2.5. Enter **IOP**

Response: The cursor moves to the **k_unit_number:** attribute.

15.2.6. Enter **a**

Where: **a** = unit number of the IOP.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.2.7. Enter **c**

Response: The system displays **Change Field:**

15.2.8. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

15.2.9. Enter **a**

Where: **a** = unit name of the NLU or ' if there is no NLU (that is, the degrowth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

15.2.10. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

15.2.11. Enter **b**

Where: **b** = unit number of the NLU or ' if there is no NLU (that is, the degrowth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

15.2.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.2.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

15.3. Update the HSDC UCB cntrl pointers.

UPDATE HSDC UCB cntrl POINTERS PROCEDURE:

15.3.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

15.3.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.3.3. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:**
attribute.

15.3.4. Enter **a**

Where: **a** = unit number of the HSDC being degrown.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

15.3.5. Enter **c**

Response: The system displays **Change Field:**

15.3.6. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

15.3.7. Enter **'**

Response: The system displays **Change Field:**

15.3.8. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

15.3.9. Enter '

Response: The system displays **Change Field:**

15.3.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.3.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15.3.12. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

15.4. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

15.4.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

15.4.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

15.4.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

16. Update the ECD linkages for degrowth HSDC when the HSDC is not the first logical unit under the IOP.

UPDATE ECD LINKAGES FOR DEGROWTH HSDC WHEN HSDC IS NOT THE FIRST LOGICAL UNIT UNDER THE IOP PROCEDURE:

- 16.1. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

- 16.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 16.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 16.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 16.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

16.3. Update the PLU to bypass the degrowth HSDC.

UPDATE PLU TO BYPASS DEGROWTH HSDC PROCEDURE:

16.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

16.3.2. Enter **u**

Response: The cursor moves to the **complex_name:**
attribute.

16.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

16.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

16.3.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:**
attribute.

16.3.6. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

16.3.7. Enter **c**

Response: The system displays **Change Field:**

16.3.8. Enter **44**

Response: The cursor moves to the **side unit_name:**
attribute.

16.3.9. Enter *a*

Where: *a* = unit name of the NLU or ' if there is no NLU (that is, the degrowth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

16.3.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

16.3.11. Enter *b*

Where: *b* = unit number of the NLU or ' if there is no NLU (that is, the degrowth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

16.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.3.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

16.4. Update the HSDC side and cntrl pointers.

UPDATE HSDC SIDE AND cntrl POINTERS PROCEDURE:

16.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

16.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

16.4.3. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

16.4.4. Enter **a**

Where: **a** = unit number of the degrowth HSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.4.5. Enter **c**

Response: The system displays **Change Field:**

16.4.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

16.4.7. Enter **'**

Response: The system displays **Change Field:**

16.4.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

16.4.9. Enter **'**

Response: The system displays **Change Field:**

16.4.10. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

16.4.11. Enter **'**

Response: The system displays **Change Field:**

16.4.12. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

16.4.13. Enter **'**

Response: The system displays **Change Field:**

16.4.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.4.15. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

16.4.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

16.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

16.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

16.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

16.5.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 16.6. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.



NOTE:

The PLU name and number were obtained in Step 3.

Response: The system displays **RST a b COMPLETED**

17. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 17.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 17.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 17.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18. Delete the ECD records associated with the HSDC.

DELETE ECD RECORDS ASSOCIATED WITH HSDC PROCEDURE:

- 18.1. Delete the minor device chain table (*mdct*) form.

DELETE *mdct* FORM PROCEDURE:

- 18.1.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 18.1.2. Enter **d**

Response: The cursor moves to the **mdct_name:** attribute.

- 18.1.3. Enter the *mdct* record name of the HSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 18.1.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.

- 18.1.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

18.2. Delete the unit control block (*ucb*) form.

DELETE *ucb* FORM PROCEDURE:

18.2.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

18.2.2. Enter **d**

Response: The cursor moves to the **k_complex_name:**
attribute.

18.2.3. Enter the *ucb* record name of the HSDC being degrown.

Response: The system completes the remainder of the form
and displays **Enter Delete, Validate, screen#, or
Print:**

18.2.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
followed by **Enter Review, Change-insert,
Validate, screen#, or Print:**

18.2.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

19. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 19.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 19.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 19.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

20. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 20.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root
ECD** form.
The cursor moves to the **copy_inc_to_disk:YES**
attribute.

- 20.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 20.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 20.4. Enter **<**

Response: The ECD RC/V is completed.

21. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

22. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

23. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
24. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a High-Speed Data Link Controller (HSDC) into a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the HSDC growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the Previous Logical Unit (PLU) and the Next Logical Unit (NLU).

DETERMINE PLU AND NLU PROCEDURE:

- 3.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. Enter **ioppc**

Response: The cursor moves to the **unit_name:** attribute.

- 3.3. Enter **IOP**

Response: The cursor moves to the **unit_number:** attribute.

- 3.4. Enter **a**

Where: **a** = unit number of the IOP onto which the HSDC will be grown.

Response: The cursor moves to the **Enter Review, Validate, or Print:** attribute.

⇒ NOTE:

The **pc** (in link order) attribute displays the Unit Control Block (UCB) linkage for IOP a subdevices. If the HSDC is not the first unit under the IOP (that is, there are other units under the IOP), examine the **unitname** and **unitnumber** attributes under the **unitname** and **unitnumber** columns and determine which unit is the PLU and which unit is the NLU to the growth HSDC. It is important to note that the PLU will be removed from service in Step **13**. Note the **unitname** and **unitnumber** attributes for the PLU and NLU. These values will be used in the following steps.

- 3.5. Enter **r**

Response: The cursor moves to the **unit_name:** attribute.

- 3.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

3.7. Enter **toggle**

Response: The cursor remains at the **Enter Form Name:** attribute.

4. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

4.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

4.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

4.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

5. Insert the ECD records associated with the growth HSDC.

**INSERT ECD RECORDS ASSOCIATED WITH GROWTH HSDC
PROCEDURE:**

- 5.1. Insert the unit control block (*ucb*) form.

INSERT *ucb* FORM PROCEDURE:

- 5.1.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 5.1.2. Enter **i**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 5.1.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). The fields in Table 8-1 contain default values for fields that are static. All other field values must be as provided by application engineering.

Table 8-1. Default *ucb* Form Field Values

Field	Value
11. device_port	IOP
12. device_type	HSDC
30. pathname	pu/duic
56. error_table	ioperr
66. u_model	5

- 5.1.4. Enter **i**

Response: The system displays **Inserting... FORM
INSERTED** followed by **Enter Review, Change-
insert, Validate, screen#, or Print:**

- 5.1.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

5.2. Insert the minor device chain table (*mdct*) form.

INSERT *mdct* FORM PROCEDURE:

5.2.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

5.2.2. Enter **i**

Response: The cursor moves to the **mdct_name:** attribute.

5.2.3. Populate all fields of the *mdct* form. Static field values are described in Table 8-2. Other field values must be as provided by application engineering.

Table 8-2. Default *mdct* Form Field Values

Field	Value
2. logical_device	io
3. mdct_type	I

5.2.4. Enter **i**

Response: The system displays **Inserting... FORM**
INSERTED
The cursor moves to the **mdct_name:** attribute.

5.2.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

6. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 6.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 6.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

7. Remove IOP a from service.

REMOVE IOP a FROM SERVICE PROCEDURE:

- 7.1. At MTTY Common Processor Display Page (CPDP) 102, verify that the connection is made to the IOP on which the HSDC is to be grown.

- If **yes**, continue to Step 7.2.
- If **no**, go to Step 7.4.

- 7.2. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.

- 7.3. At the MTTY, switch the MTTY to another IOP by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

- 7.4. At MTTY CPDP 102, verify the ROP is connected to the IOP on which the HSDC is to be grown.
- If **yes**, continue to Step 7.5.
 - If **no**, go to Step 7.7.
- 7.5. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.
- 7.6. At the MTTY, switch the ROP to another IOP by entering the appropriate input command.
- If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

- 7.7. At the MTTY, enter the appropriate input command.
- If MML, **RMV:IOP=a;**
 - If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) should light.



NOTE:

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position. See Table 8-3 for IOPPS Equipment Locations (EQLs).

Where: a = unit number of the IOP.

Response: The system displays **REPT POWER REMOVED IOP a**

Table 8-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

9. Install the HSDC circuit pack.
10. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position. Refer to Table 8-3 for IOPPS EQLs.



NOTE 1:

At IOPPS TN1820, the **OFF** LED at IOP a extinguishes.



NOTE 2:

The IOP and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

Where: a = unit number of the IOP.

11. Determine if the growth HSDC is the first device under the IOP channel and if other devices exist under the channel.
 - If the growth HSDC is the first device under the IOP channel, continue to Step **12** and then go to Step **14**.
 - If the growth HSDC is not the first device under the IOP channel, go to Step **13** and then continue to Step **14**.
12. Update the ECD linkages for the growth HSDC when the HSDC is the first logical unit.

UPDATE ECD LINKAGES FOR GROWTH HSDC WHEN HSDC IS FIRST LOGICAL UNIT PROCEDURE:

- 12.1. At the MTTY, remove the IOP from service by entering the appropriate input command.
 - If MML, **RMV:IOP=a;**
 - If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS, the **OOS** LED should light.



NOTE:

Do **not** continue until this request has successfully completed.

- 12.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 12.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 12.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

12.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12.3. Update IOP a down pointers to the growth HSDC.

UPDATE IOP a DOWN POINTERS TO GROWTH HSDC PROCEDURE:

12.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

12.3.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

12.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

12.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

12.3.5. Enter **IOP**

Response: The cursor moves to the **k_unit_number:** attribute.

12.3.6. Enter **a**

Where: **a** = unit number of the IOP.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.3.7. Enter **c**

Response: The system displays **Change Field:**

12.3.8. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

12.3.9. Enter **HSDC**

Response: The system displays **Change Field:**

12.3.10. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

12.3.11. Enter **a**

Where: **a** = unit number of the HSDC.

Response: The system displays **Change Field:**

12.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.3.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

12.4. Update the HSDC cntrl pointers and major status to GROW.

UPDATE HSDC cntrl POINTERS AND MAJOR STATUS TO GROW PROCEDURE:

12.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

12.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

12.4.3. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

12.4.4. Enter **a**

Where: **a** = unit number of the HSDC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.4.5. Enter **c**

Response: The system displays **Change Field:**

12.4.6. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

12.4.7. Enter **IOP**

Response: The system displays **Change Field:**

12.4.8. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

12.4.9. Enter **a**

Where: **a** = unit number of the IOP.

Response: The system displays **Change Field:**

12.4.10. Enter **c**

Response: The system displays **Change Field:**

12.4.11. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

12.4.12. Enter **GROW**

Response: The system displays **Change Field:**

12.4.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.4.14. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

12.4.15. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

12.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

12.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

12.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

12.5.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.
The system displays **REPT HSDC a** in growth
state followed by **REPT HSDC a** growth in
process followed by **REPT HSDC a COMPLETED**

- 12.6. At the MTTY, restore the IOP to service by entering the appropriate input command.

- If MML, **RST:IOP=a;**
- If PDS, **RST:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**



NOTE:

Wait for all subunits of the IOP to restore before continuing.

- 12.7. Go to Step 14.
-

13. Update the ECD linkages for the growth HSDC as an added unit to the IOP.

UPDATE ECD LINKAGES FOR GROWTH HSDC AS AN ADDED UNIT TO IOP PROCEDURE:

- 13.1. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV PLU a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

13.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

13.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

13.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

13.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13.3. Update the UCB of the PLU.

UPDATE UCB OF PLU PROCEDURE:

13.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

13.3.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

13.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

13.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

13.3.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

13.3.6. Enter **a**

Where: **a** = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.3.7. Enter **c**

Response: The system displays **Change Field:**

13.3.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

13.3.9. Enter **HSDC**

Response: The system displays **Change Field:**

13.3.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

13.3.11. Enter **b**

Where: **b** = unit number of the growth HSDC.

Response: The system displays **Change Field:**

13.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.3.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

13.4. Update the HSDC side and cntrl pointers and major status to GROW.

UPDATE HSDC SIDE AND cntrl POINTERS AND MAJOR STATUS TO GROW PROCEDURE:

13.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

13.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

13.4.3. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

13.4.4. Enter **a**

Where: **a** = unit number of the growth HSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.4.5. Enter **c**

Response: The system displays **Change Field:**

13.4.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

13.4.7. Enter **a**

Where: **a** = unit name of the NLU or ' if there is no NLU (that is, the growth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

13.4.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

13.4.9. Enter *b*

Where: *b* = unit number of the NLU or ' if there is no NLU (that is, the growth HSDC is at the end of the chain).

Response: The system displays **Change Field:**

13.4.10. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

13.4.11. Enter **IOP**

Response: The system displays **Change Field:**

13.4.12. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

13.4.13. Enter *a*

Where: *a* = unit number of the IOP.

Response: The system displays **Change Field:**

13.4.14. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

13.4.15. Enter **GROW**

Response: The system displays **Change Field:**

13.4.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.4.17. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

13.4.18. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

13.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

13.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

13.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

13.5.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

13.6. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

14. At the MTTY, diagnose the growth HSDC by entering the appropriate input command.

- If MML, **DGN:HSDC=a,RAW,TLP;**
- If PDS, **DGN:HSDC a,RAW,TLP!**

Response: The system displays **DGN HSDC a ATP MESSAGE COMPLETED**

Where: *a* = unit number of the HSDC being grown.

 NOTE:

Do **not** continue until this request has successfully completed.

15. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 15.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 15.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 15.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

16. Update the HSDC to Out of Service (OOS).

UPDATE HSDC TO OOS PROCEDURE:

- 16.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 16.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 16.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 16.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 16.5. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 16.6. Enter **a**

Where: **a** = unit number of the HSDC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 16.7. Enter **c**

Response: The system displays **Change Field:**

- 16.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 16.9. Enter **OOS**

Response: The system displays **Change Field:**

- 16.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

16.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

17. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

17.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

17.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

17.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

Response: The system displays **REPT HSDC a** in OOS
followed by **REPT HSDC a** growth in process
followed by **REPT HSDC a COMPLETED**

18. At the MTTY, restore the HSDC by entering the appropriate input command.

- If MML, **RST:HSDC=a;**
- If PDS, **RST:HSDC a!**

Where: **a** = unit number of the HSDC being grown.

Response: The system displays **RST HSDC a COMPLETED**

19. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 19.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 19.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 19.4. Enter **<**

Response: The ECD RC/V is completed.

20. Update the ECD for *rootdmly* by repeating Steps **5** through **9** and Steps **18** through **22** using *rootdmly* instead of *incore* when preparing the ECD RC/V terminal, then go to Step **6**.

21. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

22. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

23. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
24. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

IOP 2 or IOP 3 Degrowth

9

Contents

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Introduction

This chapter describes the procedure used to degrow an Input/Output Processor (IOP) 2 or 3 from a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), IOPs, Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-105, *Hardware Reference Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the IOP unit degrowth procedure:

1. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **review only:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

1.1.5. Go to Step 2.

1.2. Invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Obtain a Unit Control Block (UCB) listing.

OBTAIN UCB LISTING PROCEDURE:

2.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

2.2. Enter **/tmp/filename**

filename = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

2.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

2.4. Press the <CR> key.

Response: The cursor moves to the **complex_number:** attribute.

2.5. Press the <CR> key.

Response: The cursor moves to the **unit_name:** attribute.

2.6. Enter **CU**

Response: The cursor moves to the **unit_number:** attribute.

2.7. Enter *a*

Where: *a* = unit number of CU 0 or CU 1.



NOTE:

This procedure provides the UCB pointer linkage for all subunits under the CU.

2.8. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3. At the MTTY, request a hard copy of the form from the Receive-Only Printer (ROP) by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

4. Check the UCB listing for subdevices under the controller.



NOTE:

All subdevices under the IOP must be deleted before continuing. Refer to Chapters 7, 16, 22, 24, 26, and 28 for the IOP subdevice degrowth procedures.

5. Delete the IOP from the ECD.

DELETE IOP FROM ECD PROCEDURE:

- 5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. Enter **iopdel**

Response: The system displays a blank deletion of input/output processor (*iopdel*) form.
The cursor returns to attribute 1.

- 5.3. Enter the unit_name and unit_number values for the IOP being degrown as provided by application engineering.

Response: The system displays **Reading... Please wait...** followed by **Enter Delete, Validate, or Print:**

- 5.4. Enter **d**

Response: The system displays **Deleting...** in the upper right corner of the screen and prompts you to remove the IOP from service.

6. Remove the degrowth IOP from service.

REMOVE DEGROWTH IOP FROM SERVICE PROCEDURE:

- 6.1. Remove the degrowth IOP from service by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Response: The system displays **RMV IOP a COMPLETED**

Where: *a* = unit number of the IOP.

⇒ NOTE:

All subunits are removed from service before the unit **RMV COMPLETED** output message is received.

- 6.2. At the RC/V terminal, press the <CR> and wait for the prompt.
-
-

7. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 7.1. At MTTY CPDP 102, verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step 8.
- If **no**, continue to Step 7.2.

- 7.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

8. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 8.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 0 is unavailable.

- 8.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 0 FORCED ONLINE** followed by **REPT CU 1 UNAVAILABLE**



NOTE:

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 8.3. At the MTTY, press the **NORM DISP** key to return to the Common Processor Display Page (CPDP).
-
-



CAUTION:

The system may sustain a severe maintenance if the mate CU is unavailable.

9. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



NOTE:

Performing Step 9 prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

10. At the RC/V terminal, press the <CR> key and wait for the prompt.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

11. Disconnect the control cables from the Out-of-Service (OOS) Dual Serial Channel (DSCH) and degrowth IOP.

DISCONNECT CONTROL CABLES FROM OOS DSCH AND DEGROWTH IOP PROCEDURE:

- 11.1. Disconnect the control cables from the OOS DSCH and the degrowth IOP.

- 11.2. At the RC/V terminal, press the <CR> key

Response: The system displays **REPT DEGROWTH IOP a IN PROGRESS** followed by **REPT DEGROWTH IOP a COMPLETED** followed by the prompt.

Where: a = unit number of the IOP.

12. At the MTTY, clear all force conditions on the CU by entering **13** on the command line of the EAI page.

Response: The EAI page CU status is cleared of the force condition.

13. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED**
At CUPS TN1821 (EQL-53-060), the **OOS** Light-Emitting Diode (LED) lights.

14. At the MTTY, restore CU 1 to service by entering the appropriate input command.

- If MML, **RST:CU=a:UCL;**
- If PDS, **RST:CU a;UCL!**

Response: The system displays **RST COMPLETED**
At CUPS TN1820 (EQL 53-060), the **OOS** and **RQIP** LEDs extinguish.

15. At the RC/V terminal, press the <CR> key and wait for the prompt.

16. Switch CU 1.

SWITCH CU 1 PROCEDURE:

- 16.1. At the MTTY, switch CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU COMPLETED**

- 16.2. At the MTTY, verify that CU 1 has switched.
-
-

17. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 17.1. At the MTTY, force CU 1 on-line by entering **12** on the command line of the EAI page. This also takes the OOS CU off-line.



NOTE:

During a Recent Change (RC) session, access the EAI page by pressing the **EA DISP** key. Return to RC by pressing the **NORM DISP** key.

Response: The EAI page CU status indicates which CU is FOFL and FONL.

- 17.2. At the RC/V terminal, press the <CR> key and wait for the prompt.
-
-



CAUTION:

The system may sustain a severe maintenance reset while CU 0 is unavailable.

18. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.



NOTE:

Step **18** provides automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

19. At the RC/V terminal, press the <CR> key and wait for the prompt.
20. Disconnect the control cables from the OOS DSCH and the degrowth IOP.
21. At the RC/V terminal, press the <CR> key and wait for the prompt.
22. If the degrowth IOP is the first device under the DSCH, the high-level form will prompt the user to restore CU 0 (go to Step **26**). If a Previous Logical Unit (PLU) to the IOP exists, the high-level form will prompt the user to remove the PLU (go to Step **24**).

23. Remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: a = unit name of the PLU
 b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**

24. At the RC/V terminal, press the <CR> key and wait for the prompt.

25. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: a = unit name of the PLU
 b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

26. At the RC/V terminal, press the <CR> key and wait for the prompt.

27. At the MTTY, clear all force conditions on the CU by entering **13** on the command line of the EAI page.

Response: The EAI page CU status is cleared of the force condition.

28. At Input/Output Processor Power Switch (IOPPS) TN1821 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED**
 At IOPPS TN1821 (EQL-28-060), the **OOS** LED lights.

29. At the MTTY, restore CU 0 to service by entering the appropriate input command.

- If MML, **RST:CU=a:UCL;**
- If PDS, **RST:CU a;UCL!**

Response: The system displays **RST COMPLETED**
 At IOPPS TN1821 (EQL 028-060), the **OOS** and **RQIP** LEDs extinguish.

30. At the RC/V terminal, press the <CR> key.

⇒ **NOTE:**

Wait for the **FORM DELETED** indicator in the upper right corner of the screen.

31. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 31.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 31.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 31.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 31.4. Enter **<**

Response: The ECD RC/V is completed.

32. At the RC/V terminal, enter **<** to exit RC.

Response: The ECD RC/V is completed.

33. Update the backup root file system.

⇒ **NOTE:**

See Appendix A for the procedure to update the backup root file system.

34. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
35. Physically remove the IOP.
36. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a new Input/Output Processor (IOP) 2 or 3 into a 3B21D computer system.

During the procedure, the system requests diagnostics, removals, and restorals of equipment.

- If the Maintenance Terminal (MTTY) is used, pressing the **CMD/MSG** key enables messages to be entered at the same terminal.
- If a Recent Change and Verify (RC/V) terminal is used, another terminal is needed to input the requested messages.

⇒ NOTE 1:

Values for all fields should be provided by application engineering.

⇒ NOTE 2:

If using the MTTY to return to the Equipment Configuration Database (ECD) RC/V session, press the **CMD/MSG** key twice – once to access the command mode where graphic displays could be viewed and a second time to return to the ECD RC/V session.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), IOPs, Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root ECD must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-105, *Hardware Reference Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the IOP unit growth procedure:

1. At the MTTY, inhibit Routine Exercises (REXs) by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL**

2. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **2.1**) or the command mode (Step **2.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At MTTY Common Processor Display Page (CPDP) 102, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays the **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.1.5. Go to Step **2.2.3**.
-
-

- 2.2. Invoke the *incore* database high-level mode RC/V using the command mode.

COMMAND MODE PROCEDURE:

- 2.2.1. At the MTTY, enter the appropriate input command.

- If MML,
RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.



NOTE:

The selected terminal must *not* be connected to an IOP that is to be powered down during the growth procedure. Follow local practices to notify other users of the IOP that is to be powered down.

- 2.2.2. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 2.2.3. Enter **iopadd**

Response: The system displays a blank addition of input/output processor (*iopadd*) form.
The cursor moves to the **unit_name:** attribute.

- 2.2.4. Enter the **unit_name** and **unit_number** values being grown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and then displays **Enter Insert, Change, Substitute, Validate, or Print:**

2.2.5. Enter **i**

Response: The system displays **Inserting ...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *iopadd* form. Messages flash on the screen indicating the database actions currently in progress.

3. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

3.1. At MTTY CPDP 102, verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step 4.
- If **no**, continue to Step 3.2.

3.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

4. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.



NOTE:

Performing Step 4 prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

5. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 5.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 0 is unavailable.

- 5.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 1 UNAVAILABLE** followed by **REPT CU 0 FORCED ONLINE**



NOTE:

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 5.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

6. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

7. Ensure that the growth IOP is powered down by pressing the **ST/ON/OFF** switch to the **OFF** position at Input/Output Processor Power Switch (IOPPS) TN1820 in the growth IOP.
8. Connect the Dual Serial Channel (DSCH) cable from the IOP being grown to the proper Direct Memory Access (DMA) pack (EQL 53-075) on CU 1.

Response: The system begins to make changes to the *incore* ECD in response to the data input on the *iopadd* form. A transaction block is executed to update the growth IOP unit control block (*ucb*) form with channel and controller information. Messages flash on the screen indicating the database actions currently in progress.

9. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 9.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 9.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 9.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

10. Restore power to CU 1.

RESTORE POWER TO CU 1 PROCEDURE:

- 10.1. At the off-line CU power board TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**



NOTE:

CU 1 is restored to service automatically.

- 10.2. At the MTTY, check the diagnostic message queue by entering the appropriate input command.

■ If MML, **OP:DMQ;**

■ If PDS, **OP:DMQ!**



NOTE:

Observe the ROP output for the restoral of CU 1 in progress, and wait until CU 1 is restored to standby before continuing.

11. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 11.1. At MTTY CPDP 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **12**.
- If **no**, continue to Step **11.2**.

- 11.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

12. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step **12** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

13. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 13.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.



CAUTION:

The system could sustain a severe maintenance reset while CU 1 is unavailable.

- 13.2. On the EAI page, force CU 1 on-line by entering **12**

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**



NOTE:

At the MTTY, CU 0 displays an FOFL indicator and CU 1 displays an FONL indicator.

- 13.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

14. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**

15. Connect the DSCH cable.

CONNECT DSCH CABLES PROCEDURE:

- 15.1. Connect the DSCH cable from the IOP being grown to the proper DMA pack (EQL 28-075) on CU 0.
- 15.2. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key based on the data input on the form. Messages flash on the screen indicating the database actions currently in progress.

16. Remove the Previous Logical Unit (PLU) from service.

REMOVE PLU FROM SERVICE PROCEDURE:

- 16.1. At the MTTY, enter the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

The **iopadd** session running on the RC/V terminal indicates which unit to remove. Wait for the unit to be removed from service before continuing.

- 16.2. At the RC/V terminal, press the <CR> key.

Response: The system begins to make changes to the *incore* ECD in response to the <CR> key. The side pointer fields of the PLU are updated to point to the growth IOP. Messages flash on the screen indicating the database actions currently in progress.

17. At the MTTY, restore the PLU by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**

18. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 18.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 18.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 18.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

19. Restore power to CU 0.

RESTORE POWER TO CU 0 PROCEDURE:

- 19.1. At CUPS TN1821 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

CU 0 is restored to service automatically.

CU 0 **OOS** Light-Emitting Diode (LED) extinguishes.

- 19.2. At MTTY CPDP 102, observe the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.



NOTE:

If growing in IOP 2, remove IOP 0 from service and connect the Scanner and Signal Distributor (SCSD) cable at this time. If growing in IOP 3, remove IOP 1 from service and connect the SCSD cable at this time.

20. At IOPPS TN1820, restore power to the growth IOP by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED IOP a**

Where: *a* = unit number of the growth IOP.

21. At the MTTY, diagnose the growth IOP by entering the appropriate input command.

- If MML, **DGN:IOP=a;**
- If PDS, **DGN:IOP a!**

Where: *a* = unit number of the growth IOP.

Response: The system displays **DGN IOP a COMPLETED ATP**

22. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step 22 prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

23. At the MTTY, diagnose growth IOP with CU 0 by entering the appropriate input command.

- If MML, **DGN:IOP=a;PH=15,CU=0;**
- If PDS, **DGN:IOP a;PH 15,CU 0!**

Response: The system displays **DGN IOP a COMPLETED ATP**

24. At the MTTY, restore CU 0 to service by entering the appropriate input command.
- If MML, **RST:CU=0,UCL;**
 - If PDS, **RST:CU 0,UCL!**

Response: The system displays **RST CU 0 COMPLETED**

25. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 25.1. At MTTY CPDP 102, verify that CU 0 is active and CU 1 is in standby.
- If **yes**, go to Step 26.
 - If **no**, continue to Step 25.2.
- 25.2. At the MTTY, enter the appropriate input command.
- If MML, either **400** Poke command or **SW:CU;**
 - If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

26. Remove CU 1 from service.

REMOVE CU 1 FROM SERVICE PROCEDURE:

- 26.1. At the MTTY, enter the appropriate input command.
- If MML, either **201** Poke command or **RMV:CU;**
 - If PDS, either **201** Poke command or **RMV:CU!**

Response: The system displays **RMV CU 1 COMPLETED**

- 26.2. At the RC/V terminal, press the <CR> key.
-
-

27. At the MTTY, diagnose the growth IOP with CU 1 by entering the appropriate input command.

- If MML, **DGN:IOP=a;PH=15,CU=1;**
- If PDS, **DGN:IOP a;PH 15,CU 1!**

Where: *a* = unit number of the growth IOP.

Response: The system displays **DGN IOP a COMPLETED ATP**

28. At the MTTY, restore CU 1 to service by entering the appropriate input command.

- If MML, **RST:CU=1,UCL;**
- If PDS, **RST:CU 1,UCL!**

Response: The system displays **RST CU 1 COMPLETED**

29. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 29.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 29.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 29.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 29.4. Enter **<**

Response: The ECD RC/V is completed.

30. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

31. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

32. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
33. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

**IOP/SCSI Peripheral Unit
Growth (Growth Shelf)**

11

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IOP/SCSI Peripheral Unit Growth (Growth Shelf)

11

Introduction

This chapter describes the procedure used to grow an Input/Output Processor (IOP) Small Computer System Interface (SCSI) peripheral unit into a processor cabinet of a 3B21D computer system. The peripheral unit provides additional slots for the growth of the IOP control circuits and SCSI Peripheral Units (SPUs).

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), IOPs, Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.

Configuration

The peripheral unit for the 3B21D computer provides flexibility in that either the IOP control circuits or the SPUs can be grown in any slot.



CAUTION:

*Due to thermal restrictions, do **not** grow disks above the double high KLV circuit boards (KLVmm, KLVcc) because the heat may affect disk operation.*

Drawing J3T061A-1 contains the equipment configuration options that are supported and shows the optional placements of the IOP control circuits and SPUs.

References

The following information products must be available for reference during this growth procedure:

- *Common Systems Specification for 3B21D Computer System*, J3T060A-1, J3T060AB-1, and J3T061A-1
- Application specific installation engineering documentation for the 3B21D computer
- Drawing ED-3T083-30
- 254-303-105, *Hardware Reference Manual* (power distribution and control chapters and cabling information).

Procedure

The following steps describe the IOP/SCSI peripheral unit growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic diagnostics by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**



NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Install the unit growth.

INSTALL UNIT GROWTH PROCEDURE:

- 2.1. Verify that all required material is unpacked and at the site. (Refer to drawing ED-3T083-30 for the complete list of the material.)
 - 2.2. Slide the IOP 3/SPU growth unit onto the existing shelf. Slide the IOP 2/SPU growth unit onto the existing shelf below CU 0 processor.
 - 2.3. Secure the growth unit with mounting brackets and screws. (Refer to drawings J3T060A-1 and J3T060AB-1.)
-
-

3. Install the cables and power connections per drawing J3T061A-1. For fuse assignments, refer to drawing J3T061A-1.

⇒ NOTE:

This completes the installation of the growth unit. To continue with the growth of an IOP control circuit, refer to Chapters 8, 10, 17, 23, 25, 27, and 29.

If growing an SPU, MHD, Digital Audio Tape (DAT), or 9-track tape, refer to Chapter 20, "SCSI Peripheral Growth."

4. At the MTTY, allow automatic diagnostics by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

5. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

6. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure needed to grow additional Single In-line Memory Modules (SIMMs) into a 3B21D computer system. A SIMM may be either 8 or 32 megabytes. The procedure in this chapter is used for both memory sizes.

Instructions for changing the KLWmm circuit pack labeling information are included as part of this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

Information product 254-303-104, *Recent Change and Verify Manual*, must be available for reference during this growth procedure.

Required Tools and Equipment

The following installation tools are required for this procedure:

- R4986 Antistatic kit (including strap and antistatic mat)
- R4987 Wrist strap antistatic
- R5158 Static-free bags (or equivalent).

Procedure

The following steps describe the memory growth procedure:

This procedure identifies the existing size of the maximum number of memory pages that the operating system can be configured. This value is obtained in the pages field of the boot time parameters (*btparm*) form in the *incore* database.

Since the memory will be increased, the value of the **pages** must be large enough to accommodate the additional memory growth. If it is not, then **pages** value must be increased before proceeding to memory growth.

1. Verify memory page size.

VERIFY MEMORY PAGE SIZE PROCEDURE:

- 1.1. Invoke the *incore* database low-level Recent Change and Verify (RC/V) mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 1.2. Review the *btparm* form by entering **btparm**

Response: The cursor moves to the *btparmname* key field.

- 1.3. Enter **btparm**

Response: The system displays the *btparm* form.
The form is populated.

- 1.4. Record the value of field 7 (pages).

- 1.5. Enter **<**

- 1.6. Enter **<**

- 1.7. Compare the value of **pages** (Step 1.4) with the corresponding memory size and the circuit pack in Table 12-1 to determine the proper value for the pages field to accommodate the memory growth.

Table 12-1. *btparm* Form Pages Values

Memory Size	Minimum Required 'pages' Field Value	Circuit Pack KLWmm
32 MB *	16384	32
40 MB *	20480	40
48 MB *	24576	48
56 MB	28672	—
64 MB *	32768	64
72 MB	36864	—
80 MB	40969	—
88 MB	45056	—
96 MB	49152	—
104 MB	53248	—
112 MB	57344	—
120 MB	61440	—
128 MB *	65536	128
* Officially supported memory size.		

- 1.8. Determine if the **pages** value is large enough for intended growth.
- If **yes**, go to Step 3.
 - If **no**, continue to Step 2.
-
-

2. Update the *btparm* form and boot.

UPDATE *btparm* FORM AND BOOT PROCEDURE:

This following subprocedure updates the *btparm* form (pages field) to reflect the memory size for the intended growth. The update is performed at either the Master Control Center (MCC) terminal or the Supplementary Trunk and Line Work Station (STLWS) terminal. Once completed, then a boot of the database is performed.

- 2.1. Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 2.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 2.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 2.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

2.3. At the RC/V terminal, enter **btparm**

Response: The system displays the **Boot Time Parameters** form.
The cursor moves to the *btparmname* key field.
The system displays **Enter Database Operation, Enter, Review, or Update**

2.4. Update the form by entering **u**

2.5. Enter **btparm**

Response: The system displays the blank *btparm* form, populates the remainder of the form, and displays **Enter Update, Change, Validate, Screen#, or print:**

2.6. Enter **c**

Response: The system displays **Change Field:**

2.7. Enter **7**

Response: The cursor moves to the **pages** field.

2.8. Enter the required **pages** per Table 12-1.

2.9. Press the <CR> key.

Response: The system displays **Enter Update, Change, Validate, Screen#, or Print:**

2.10. Enter **u**

Response: The system displays **updating...FORM EXECUTED** followed by the **Boot Time Parameters** form.
The cursor moves to the *btparmname* key field.

2.11. Enter **<**

Response: The forms selection page is displayed.

2.12. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

2.12.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

2.12.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

2.12.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

2.13. Exit Recent Change (RC).

Response: The ECD RC/V is completed.



WARNING:

*The following step will momentarily affect call processing.
Coordinate this step with the customer before booting, and
schedule the boot during an appropriate low traffic period.*



NOTE:

Booting the system is required on the Emergency Action Interface (EAI) page.

2.14. At the MTTY, enter Poke command **52**

Response: Wait for system to restore to full duplex operation
and continue to Step **3**.

3. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

4. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 4.1. At the MTTY Common Processor Display Page (CPDP) 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step 5.
- If **no**, continue to Step 4.2.

- 4.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

5. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 28-060], remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step 5 prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 0 COMPLETED**

6. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 6.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 6.2. Enter **12**
- 6.3. Verify that the active CU 1 is forced on-line and that the Out-of-Service (OOS) CU 0 is forced off-line.

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

7. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**

 CAUTION:

If not previously set up, set up a static-free area by placing an antistatic mat near the 3B21D computer and properly ground the mat to the computer. If a work table and/or chair is used, it should also be properly grounded.

8. Install the SIMM in the off-line CU 0.

INSTALL SIMM IN OFF-LINE CU 0 PROCEDURE:

 CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.1. Wearing a properly grounded wrist strap, remove the KLWmm (memory) circuit pack at EQL 28-008, place it in an antistatic container, and transfer the circuit pack to the properly grounded work area for the update procedure.
- 8.2. Install the SIMM in the desired SIMM socket on the KLWmm circuit pack.

 NOTE:

Three sockets (SIMM 1, SIMM 2, and SIMM 3) are available for memory growth. Varying combinations of 32- or 8-megabyte SIMMs can be used to equip the needed memory. Table 12-2 shows the combinations that are supported. When inserting a SIMM, the leftmost empty socket should be used.

- 8.3. To insert a SIMM, line up the pins on the SIMM to the pins in the socket and verify the location of the keying slot. Gently press the SIMM in place. Two small metal braces should clasp the SIMM to hold it in place. See to Figure 12.1.

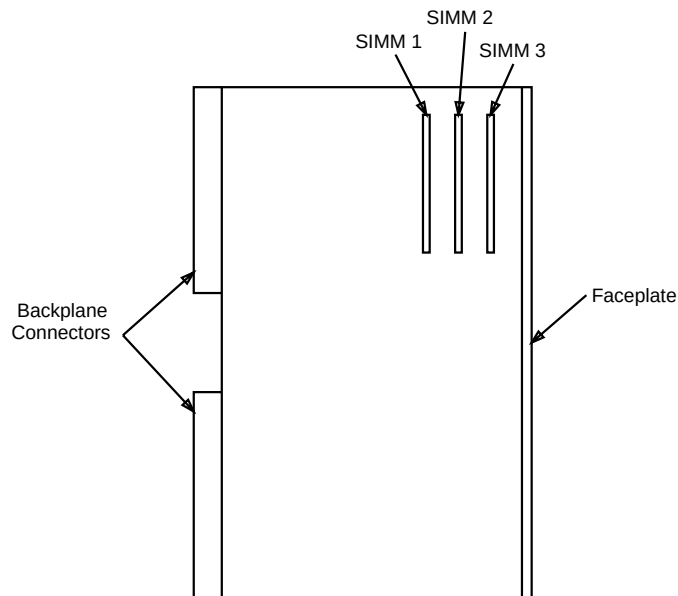


Figure 12-1. KLWmm Circuit Pack

⇒ NOTE:

In some instances of memory growth, you may need to replace an 8-megabyte SIMM with a 32-megabyte SIMM to equip the appropriate amount of memory. In this case, first remove the 8-megabyte SIMM that is no longer needed. This is done by gently pushing down on the metal braces at the top and bottom of the SIMM and gently pulling upward on the SIMM. The SIMM will pop out easily. Once this is done, insert the new SIMM in the appropriate location as previously instructed.

- 8.4. Attach the new memory label over the existing label on the KLWmm circuit pack. The new label should match the total memory after the growth procedure is completed.

- 8.5. Wearing a properly grounded wrist strap, place the updated KLWmm (memory) circuit pack in an antistatic container, transfer the circuit pack to the 3B21D computer, and insert it in EQL 28-008.
-

9. Note the equipage information for the Main Store Controller (MASC) changes.

Table 12-2 lists the equipage values and the SIMM assignments needed when making the updates to the MASC unit control block (*ucb*) forms in the following steps. See Table 12-2 as needed in the procedure.

Table 12-2. Equipage Values

MASC Equipage Field Value	Meaning	Base Memory	SIMM 1	SIMM 2	SIMM 3
0x20	32 MB is equipped*	32	-	-	-
0x28	40 MB is equipped*	32	8	-	-
0x30	48 MB is equipped*	32	8	8	-
0x38	56 MB is equipped	32	8	8	8
0x40	64 MB is equipped*	32	32	-	-
0x48	72 MB is equipped	32	32	8	-
0x50	80 MB is equipped	32	32	8	8
0x58	88 MB is equipped	X†	X†	X†	X†
0x60	96 MB is equipped	32	32	32	-
0x68	104 MB is equipped	32	32	32	8
0x70	112 MB is equipped	X†	X†	X†	X†
0x78	120 MB is equipped	X†	X†	X†	X†
0x80	128 MB is equipped*	32	32	32	32
* Officially supported memory size. † Cannot be physically equipped with currently-supported 8- and 32-MB Single In-line Memory Modules (SIMMs).					

10. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **10.1**) or the command mode (Step **11**).

ACCESS ECD USING MENU MODE PROCEDURE:

- 10.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 10.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 10.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 10.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 10.5. Go to Step **12**.
-
-

11. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 12.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 12.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 12.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13. Update the CU 0 MASC to reflect additional memory.

UPDATE CU 0 MASC TO REFLECT ADDITIONAL MEMORY PROCEDURE:

- 13.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete :**

- 13.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 13.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 13.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 13.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

13.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or print:**

13.7. Enter **c**

Response: The system displays **Change Field:**

13.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.



NOTE:

See Table 12-2 for the correct equipage value for total memory size.

13.9. Enter **0xaa**

Where: *aa* = hexadecimal number representing the total memory now equipped.

Response: The system displays **Change Field:**

13.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

13.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

14. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 14.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 14.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 14.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

15. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.
16. At the MTTY, diagnose the CU 0 MASC by entering the appropriate input command.
- If MML, **DGN:CU=0,MASC=0,RAW,DEX,TLP;**
 - If PDS, **DGN:CU 0,MASC 0;RAW,DEX,TLP!**

⇒ NOTE:

Ensure all phases achieve an ATP condition before continuing.

17. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 17.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 17.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ONLINE**

⇒ NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 17.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

18. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

⇒ NOTE:

Do *not* proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST COMPLETED**
At CUPS TN1821 (EQL 28-060), **OOS** and **RQIP** Light-Emitting Diodes (LEDs) extinguish.

19. Switch the CUs.

SWITCH CUs PROCEDURE:

- 19.1. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 19.2. At MTTY CPDP 102, verify that the CUs have switched.
-
-

20. At CUPS TN1821 (EQL 53-060), remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **20** prevents automatic restoral of the CU 1 when the unit is powered up in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

21. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 21.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

- 21.2. Enter **12**

- 21.3. Verify that the active CU 0 is forced on-line and that the OOS CU 1 is forced off-line.

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

22. At CUPS TN1821 (EQL 53-060), remove power from OOS CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

23. Install the SIMM in the off-line CU 1.

INSTALL SIMM IN OFF-LINE CU 1 PROCEDURE:

- 23.1. Wearing a properly grounded wrist strap, remove the KLWmm (memory) circuit pack at EQL 53-008, place it in an antistatic container, and transfer circuit pack to the properly grounded work area for the upgrade procedure.
- 23.2. Install the SIMM in the desired SIMM socket on the KLWmm circuit pack.



NOTE:

Three sockets (SIMM 1, SIMM 2, and SIMM 3) are available for memory growth. Varying combinations of 32- or 8-megabyte SIMMS can be used to equip the needed memory. Table 12-2 shows the combinations that are supported. When inserting a SIMM, the leftmost empty socket should be used.

- 23.3. To insert a SIMM, line up the pins on the SIMM to the pins in the socket and verify the location of the keying slot. Gently press the SIMM in place. Two small metal braces should clasp the SIMM to hold it in place.



NOTE:

In some instances of memory growth, it may be necessary to replace an 8-megabyte SIMM with a 32-megabyte SIMM to equip the appropriate amount of memory. In this case, first remove the 8-megabyte SIMM that is no longer needed. This is done by gently pushing down on the metal braces at the top and bottom of the SIMM and gently pulling upward on the SIMM. The SIMM will pop out easily. Once this is done, insert the new SIMM in the appropriate location as previously instructed.

- 23.4. Attach the new memory label over the existing label on the KLWmm circuit pack. The new label should match the size of the total memory after the growth procedure is completed.
- 23.5. Wearing a properly grounded wrist strap, place the updated KLWmm (memory) circuit pack in an antistatic container, transfer the circuit pack to the 3B21D computer, and insert it into EQL 53-008.
-
-

24. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 24.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 24.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 24.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

25. Update CU 1 MASC to reflect additional memory.

UPDATE CU 1 MASC TO REFLECT ADDITIONAL MEMORY PROCEDURE:

- 25.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 25.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 25.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 25.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 25.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

25.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or print:**

25.7. Enter **c**

Response: The system displays **Change Field:**

25.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.



NOTE:

See Table 12-2 for the correct equipage value for total memory size.

25.9. Enter **0xaa**

Where: *aa* = hexadecimal number representing the total memory now equipped.

Response: The system displays **Change Field:**

25.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

25.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

25.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

26. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 26.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 26.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 26.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

27. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by pressing the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

28. At the MTTY, diagnose the off-line CU 1 MASC by entering the appropriate input command.

- If MML, **DGN:CU=1,MASC=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,MASC 0,RAW,DEX,TLP!**

⇒ **NOTE:**

Ensure all phases achieve an ATP condition before continuing.

29. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 29.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 29.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**

⇒ **NOTE:**

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 29.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

30. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

⇒ **NOTE:**

Do *not* proceed until all diagnostics run ATP and CU 1 has been marked standby.

Response: The system displays **RST COMPLETED**
At CUPS, **OOS** and **RQIP** LEDs extinguish.

31. When CU is restored, standby memory growth is complete.

- Determine if the memory growth was successful.

Response: The ROP prints **REPT MMGR005 AVAILABLE MEMORY
NOW XXXXX PAGES**

- Determine if the memory growth failed.

Response: The ROP prints **REPT MMGR003 ADD MEMORY
FAILED.
AVAIL MEMORY=XXXXX PAGES
ATTEMPTED TO GROW MEMORY TO XXXXX PAGES.
MUST REGEN SYSTEM TO ADD MEMORY**

⇒ NOTE:

Where XXXXX is the actual number of pages of memory.

32. Determine if there was a failure in the memory growth.

- If **yes**, seek technical assistance. Do not continue until problem is resolved.
- If **no**, continue to Step 33.

33. Allow system to soak for 30 minutes minimum before continuing.

34. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

34.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root
ECD** form.
The cursor moves to the **copy_inc_to_disk:YES**
attribute.

34.2. Press the <CR> key.

Response: The system prompts for the action desired.

34.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

34.4. Enter <

Response: The ECD RC/V is completed.

35. Update the ECD for *rootdmly*. Repeat Steps **10** through **14** for CU 0 mainstore 0 and **24** through **26** using *rootdmly* instead of *incore* when preparing the ECD RC/V terminal, then continue to Step **36**.

36. Update the backup root file system.

 NOTE:

See Appendix A for the procedure to update the backup root file system.

37. At the MTTY, allow Routine Exercises (REXs) by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ COMPLETED**

38. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

39. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow the KLW256 memory board for the 3B21D computer. Instructions for upgrading to the KLW256 circuit pack are included as part of this procedure. The KLW256, as part of the 3B21D/Real-Time Reliable (RTR) Memory and DMAC Performance feature, is supported in RTR Release 21.35 and later releases.

NOTE:

The KLW256 memory board supports conversion to a KBN415 Direct Memory Access Controller (DMAC). See Chapter 33, “KBN15 to KBN415 DMAC Conversion,” for the procedure to convert to the KBN415.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.

CAUTION:

Extreme caution should be used when executing this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Control Units (CUs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) Terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. Refer to the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this growth procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Table 13-1 provides reference information for *btparm* form pages values. Updates to the *btparm* form are included in the “UNIX*/RTR Operating System Memory Growth Boot Procedure” at the end of this chapter.

Table 13-1. KLW Memory Board Page Value Information

Memory Size	Minimum Required "pages" Field Value	Circuit Pack KLWmm
32MB*	16384	32
40MB*	20480	40
48MB*	24576	48
56MB	28672	
64MB*	32768	64
72MB	36864	
80MB	40969	
88MB	45056	
96MB	49152	
104MB	53248	
112MB	57344	
120MB	61440	
128MB*	65536	128
256MB*	131072	256
* Officially supported memory size		

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit pack(s) in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against Electrostatic Discharge (ESD), a properly grounded antistatic wrist strap must be worn and connected when handling circuit packs.

* UNIX is a registered trademark of The Open Group in the United States and other countries.



CAUTION:

Cable replacement and backplane repair requires use of an antistatic wrist strap to prevent damage to the components connected to backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4986	Antistatic kit (including strap and antistatic mat)
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags (or equivalent)

The following equipment is required for this procedure:

Number	Qty.	Description
108649690	2	KLW256 + 1 spare (if site stocks spares)
ED3T079-10,G71	2	KLW256 Designation Strip Label

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of preliminary steps, backout procedures, safe stop points, and conversion procedures used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- CU 0 KLW256 Memory Growth Backout Procedure
- Verify CU 1/0 status
- Remove CU 0
- Install KLW256 circuit pack
- Update CU 0 *ucb* values
- Clear CU 1 force on-line
- Restore CU 0
- Safe Stop Point 2
- CU 1 KLW256 Memory Growth Backout Procedure
- Verify CU 1/0 status
- Remove CU 1
- Install KLW256 circuit pack
- Update CU 1 *ucb* values
- Clear CU 0 force on-line

- Restore CU 1
- Safe Stop Point 3
- KLW256 Memory Growth Final Steps Procedure
- *UNIX/RTR* Operating System Memory Growth Boot Backout Procedure
- *UNIX/RTR* Operating System Memory Growth Boot Procedure
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the KLW256 growth procedures in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays the **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 [Equipment Location (EQL 45-186)] are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

4. At the MTTY Common Processor Display Page (CPDP) **102**, verify that CU 0 is active.

- If **yes**, go to Step 6.
- If **no**, continue to Step 5.

5. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

6. At the MTTY, remove, diagnose, and restore CU 1 by entering the appropriate input command.

- If MML, **RST:CU=1;**
- If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETE**

7. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

8. At the MTTY, remove, diagnose, and restore the CU 0 by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETE**

9. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

10. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, review the backout procedure in the next section before beginning the "KLW256 Memory Growth Procedure."

SAFE STOP POINT 1 PROCEDURE:

10.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

10.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

10.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

11. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

CU 0 KLW256 Memory Growth Backout Procedure

Backout procedures are those actions taken to return the processor to the original operating configuration before the conversion was attempted. This procedure is required to back out the changes made to CU 0. It should be read and understood before proceeding to the "CU 0 KLW256 Memory Growth Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**

- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 2.1. At the MTTY CPDP **102** (Page **111** for 5ESS® switch), verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **3**.

- If **no**, continue to Step **2.2**.

- 2.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**

- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

3. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=0;**
- If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

4. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 4.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 4.2. Enter **12** at the **CMD<** prompt.
- 4.3. Verify that the active CU 1 is forced on-line and that the Out-of-Service (OOS) CU 0 is forced off-line.

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

5. At Control Unit Power Switch (CUPS) TN1821 (EQL 28-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

This prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

6. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 0**

7. Install the original KLW memory board in the off-line CU 0.

**INSTALL ORIGINAL KLW MEMORY BOARD IN OFF-LINE CU 0
PROCEDURE:**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 7.1. Unseat and remove the KLW256 memory board at EQL 28-008.
7.2. Install the ORIGINAL KLW memory board in the 3B21D computer at EQL 28-008.
-
-

8. At CUPS TN1821 (EQL 28-060), power up CU 0 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 0**

9. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 10.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 10.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

11. In *ucb* form, update the CU 0 MASC to reflect ORIGINAL KLW values.

UPDATE CU 0 MASC *ucb* ORIGINAL KLW VALUES PROCEDURE:

- 11.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 11.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 11.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

- 11.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 11.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

11.6. Enter **0**

The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.7. Enter **c**

Response: The system displays **Change Field:**

11.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

11.9. Enter **a**

Where: **a** = equipage value for original KLW pack from Table 13-2.

Response: The system displays **Change Field:**

11.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.11. Enter **0x37**

Response: The system displays **Change Field:**

11.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.14. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

12.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

12.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

12.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

12.4. Enter <

Response: The ECD RC/V is completed.

13. Diagnose the original KLW memory board.

DIAGNOSE ORIGINAL KLW MEMORY BOARD PROCEDURE:

13.1. At the MTTY, diagnose the CU 0 MASC by entering the appropriate input command.

- If MML, **DGN:CU=0,MASC=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,MASC 0;RAW,DEX,TLP!**



NOTE:

Ensure that all MASC phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 MASC 0 ATP
MESSAGE COMPLETE**

14. Clear CU 1 force on-line.

CLEAR CU 1 FORCE ON-LINE PROCEDURE:

- 14.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 14.2. On the EAI page, clear the CU forces by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**

- 14.3. On the EAI page, clear MHD force by entering **21**

Response: **SET** indicators for Pri Disk are cleared



NOTE:

Neither CU 1 nor CU 0 displays a forced indicator at the MTTY.

- 14.4. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

15. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.



NOTE:

Do *not* proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 0 COMPLETED**
At CUPS TN1821 (EQL 28-060), **OOS** and **RQIP** Light-Emitting Diodes (LEDs) extinguish.

16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

CU 0 KLW256 Memory Growth Procedure

Perform the following steps to grow a KLW256 memory board in CU 0.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ **NOTE:**

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 3.1. At the MTTY CPDP **102** (Page **111** for *5ESS* switch), verify that CU 1 is active and CU 0 is in standby.
 - If **yes**, go to Step 4.
 - If **no**, continue to Step 3.2.
- 3.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

4. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=0;**
- If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

5. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 5.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 5.2. Enter **12** at the **CMD<** prompt.
- 5.3. Verify that the active CU 1 is forced on-line and that the OOS CU 0 is forced off-line.

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

6. At CUPS TN1821 (EQL 28-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

This prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

7. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 0**

8. Install the KLW256 in the off-line CU 0.

INSTALL KLW256 IN OFF-LINE CU 0 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.1. Unseat and remove the current KLW memory board at EQL 28-008.
 - 8.2. Install the KLW256 circuit pack in the 3B21D computer at EQL 28-008.
 - 8.3. Install KLW256 designation label.
-
-

9. At CUPS TN1821 (EQL 28-060), power up CU 0 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 0**

10. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

11.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

11.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

12. Update the CU 0 *ucb* values.

UPDATE CU 0 *ucb* VALUES PROCEDURE:

12.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

12.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

12.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

12.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

12.6. Enter **0**

The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.7. Enter **c**.

Response: The system displays **Change Field:**

12.8. Enter **22**

Response: The cursor moves to the **equipage**: attribute.



NOTE:

Record the original KLW equipage value in Table 13-2. This value will be used **only** if a backout is required.

Table 13-2. *ucb* Values

Packs	equipage	mv
Original KLW		0x37
KLW256	0x100	0x38

12.9. Enter **0x100**

Response: The system displays **Change Field:**

12.10. Enter **27**

Response: The cursor moves to the **mv**: attribute.

12.11. Enter **0x38**

Response: The system displays **Change Field:**

12.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name**: attribute.

12.14. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

13. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

13.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

13.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

13.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13.4. Enter <

Response: The ECD RC/V is completed.

14. Diagnose the KLW256 memory board.

DIAGNOSE KLW256 MEMORY BOARD PROCEDURE:

14.1. At the MTTY, diagnose the CU 0 MASC 0 by entering the appropriate input command.

- If MML, **DGN:CU=0,MASC=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,MASC 0;RAW,DEX,TLP!**



NOTE:

Ensure that all MASC phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 MASC 0 ATP MESSAGE COMPLETE**

15. Clear CU 1 force on-line.

CLEAR CU 1 FORCE ON-LINE PROCEDURE:

- 15.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 15.2. On the EAI page, clear the CU forces by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 1 nor CU 0 displays a forced indicator at the MTTY.

- 15.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

16. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.



NOTE:

Do **not** proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 0 COMPLETED**
At CUPS TN1821 (EQL 28-060), **OOS** and **RQIP** LEDs extinguish.

17. Did CU 0 restore to standby?

- If **yes**, continue to Step **19**.
- If **no**, continue to Step **17.1**.

TROUBLESHOOTING PROCEDURE:

- 17.1. At CUPS TN1821 (EQL 28-060), determine if the **OFF** LED for CU 0 is extinguished.
- If **yes**, continue to Step **17.2**.
 - If **no**, perform Step **9** to power up CU 0.
- 17.2. At CUPS TN1821 (EQL 28-060), verify the **ROS/RST** switch is in the **RST** position.
- If **yes**, continue to Step **17.3**.
 - If **no**, perform Step **16** to restore CU 0 to standby.
- 17.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.
- If **yes**, continue to Step **17.4**.
 - If **no**, go back to Step **10** to verify and correct the changes to the *incore* database.
- 17.4. Determine if a spare KLW256 circuit pack is available.
- If **yes**, go back and repeat Steps **5** through **8** to install the spare KLW256 circuit pack. Repeat Steps **14** through **16** to diagnose and restore the CU.
 - If **no**, continue to Step **18**.
-
-

18. BACKOUT POINT 1: CU 0 KLW256 MEMORY GROWTH



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 0 KLW256 Memory Growth Backout Procedure” preceding the main “CU 0 KLW256 Memory Growth Procedure.”

- If **no**, continue to Step **19**.

19. Soak the changes for 5 minutes before performing the remaining steps.

20. At the MTTY, switch the CU by entering the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

21. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

Use the soak period to be sure the MASC and Channels are acting properly.

After each soak period the completed *incore* database changes are activated to disk. This ensures that disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. **No procedures are provided to back out the changes once they are activated to disk.**

22. Does CU 0 function properly?

- If **yes**, go to Step **24**.
- If **no**, continue to Step **22.1**.

TROUBLESHOOTING PROCEDURE:

22.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.

- If **yes**, continue to Step **22.2**.
- If **no**, go back to Step **10** to verify and correct the changes to the *incore* database.

22.2. Determine if a spare KLW256 circuit pack is available.

- If **yes**, go back and repeat Steps **3** through **21** to install and test the spare KLW256 circuit pack.
 - If **no**, continue to Step **23**.
-
-

23. **BACKOUT POINT 2: CU 0 KLW256 MEMORY GROWTH**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 0 KLW256 Memory Growth Backout Procedure” preceding the main “CU 0 KLW256 Memory Growth Procedure.”
- If **no**, continue to Step 24.

24. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

25. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 25.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 25.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 25.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 25.4. Enter **<**

Response: The ECD RC/V is completed.

26. SAFE STOP POINT 2

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, read the "CU 1 KLW256 Memory Growth Backout Procedure" before beginning the "CU 1 KLW256 Memory Growth Procedure."

SAFE STOP POINT 2 PROCEDURE:

26.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

26.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

26.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

26.4. **RESUME THE CONVERSION PROCEDURE** by reading the CU 1 backout procedure before beginning the CU 1 growth procedure.

CU 1 KLW256 Memory Growth Backout Procedure

Backout procedures are those actions taken to return the processor to the original operating configuration before the conversion was attempted. This procedure is required to back out the changes made to CU 1. It should be read and understood before proceeding to the "CU 1 KLW256 Memory Growth Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**

- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**



NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ
INHIBIT ALL ACTIVE**

2. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 2.1. At the MTTY CPDP **102** (Page **111** for 5ESS switch), verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step **3**.

- If **no**, continue to Step **2.2**.

- 2.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**

- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

3. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=1;**
- If PDS, **RMV:CU 1!**

Response: The system displays **RMV CU 1 COMPLETED**

4. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 4.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 4.2. Enter **12** at the **CMD<** prompt.
- 4.3. Verify that the active CU 0 is forced on-line and that the OOS CU 1 is forced off-line.

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

5. At CUPS TN1821 (EQL 53-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

This prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

6. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 1**

7. Install the original memory board in the off-line CU 1.

INSTALL original memory board IN OFF-LINE CU 1 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 7.1. Unseat and remove the KLW256 memory board at EQL 53-008.
7.2. Install the original memory board in the 3B21D computer at EQL 53-008.
-
-

8. At CUPS TN1821 (EQL 53-060), power up CU 1 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 1**

9. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 10.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 10.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11. Update the CU 1 *ucb* values.

UPDATE CU 1 *ucb* VALUES PROCEDURE:

- 11.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 11.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 11.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 11.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 11.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

11.6. Enter **0**

The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.7. Enter **c**

Response: The system displays **Change Field:**

11.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

11.9. Enter **a**

Where: **a** = equipage value for original KLV pack from Table 13-3.

Response: The system displays **Change Field:**

11.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.11. Enter **0x37**

Response: The system displays **Change Field:**

11.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.14. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

12.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

12.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

12.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

12.4. Enter <

Response: The ECD RC/V is completed.

13. Diagnose the original KLW memory board.

DIAGNOSE ORIGINAL KLW MEMORY BOARD PROCEDURE:

13.1. At the MTTY, diagnose the CU 1 MASC 0 by entering the appropriate input command.

- If MML, **DGN:CU=1,MASC=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,MASC 0;RAW,DEX,TLP!**



NOTE:

Ensure that all MASC phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 MASC 0 ATP
MESSAGE COMPLETE**

14. Clear CU 0 force on-line.

CLEAR CU 0 FORCE ON-LINE PROCEDURE:

- 14.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 14.2. On the EAI page, clear the CU forces by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**

⇒ NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 14.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

15. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

⇒ NOTE:

Do *not* proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 1 COMPLETED**
At CUPS TN1821 (EQL 53-060), **OOS** and **RQIP** LEDs
extinguish.

16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

CU 1 KLW256 Memory Growth Procedure

Perform the following steps to grow the KLW256 memory board in CU 1.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ **NOTE:**

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 3.1. At the MTTY CPDP **102** (Page **111** for 5ESS switch), verify that CU 0 is active and CU 1 is in standby.
 - If **yes**, go to Step 4.
 - If **no**, continue to Step 3.2.
- 3.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

4. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=1;**
- If PDS, **RMV:CU 1!**

Response: The system displays **RMV CU 1 COMPLETED**

5. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 5.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 5.2. Enter **12** at the **CMD<** prompt.
- 5.3. Verify that the active CU 0 is forced on-line and that the OOS CU 1 is forced off-line.

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

6. At CUPS TN1821 (EQL 53-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

This prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

7. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 1**

8. Install the KLW256 in the off-line CU 1.

INSTALL KLW256 MEMORY PACK IN OFF-LINE CU 1 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.1. Unseat and remove the current memory board at EQL 53-008.
 - 8.2. Install the KLW256 memory board in the 3B21D computer at EQL 53-008.
 - 8.3. Install KLW256 designation label.
-
-

9. At CUPS TN1821 (EQL 53-060), power up CU 1 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 1**

10. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 11.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 11.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12. Update the CU 1 *ucb* values.

UPDATE CU 1 *ucb* VALUES PROCEDURE:

- 12.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 12.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 12.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 12.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 12.5. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

12.6. Enter **0**

The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.7. Enter **c**

Response: The system displays **Change Field:**

12.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.



NOTE:

Record the original KLW equipage value in Table 13-3. This value will be used **only** if a backout is required.

Table 13-3. *ucb* Values

Packs	equipage	mv
Original KLW		0x37
KLW256	0x100	0x38

12.9. Enter **0x100**

Response: The system displays **Change Field:**

12.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.11. Enter **0x38**

Response: The system displays **Change Field:**

12.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.14. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

13. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

13.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

13.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

13.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13.4. Enter <

Response: The ECD RC/V is completed.

14. Diagnose the KLW256 memory board.

DIAGNOSE KLW256 MEMORY BOARD PROCEDURE:

14.1. At the MTTY, diagnose the CU 1 MASC 0 by entering the appropriate input command.

- If MML, **DGN:CU=1,MASC=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,MASC 0;RAW,DEX,TLP!**



NOTE:

Ensure that all MASC phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 MASC 0 ATP MESSAGE COMPLETE**

15. Clear CU 0 force on-line.

CLEAR CU 0 FORCE ON-LINE PROCEDURE:

- 15.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 15.2. On the EAI page, clear the CU forces by entering **13**

Response: The system displays **REPT CU 0 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 15.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

16. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.



NOTE:

Do **not** proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 1 COMPLETED**
At CUPS TN1821 (EQL 53-060), **OOS** and **RQIP** LEDs extinguish.

17. When CU 1 is restored, standby memory growth is complete. The following is the expected response.

Response: The ROP prints **REPT MMGR003 ADD MEMORY FAILED.**
AVAIL MEMORY=XXXXX PAGES
ATTEMPTED TO GROW MEMORY TO XXXXX PAGES.
MUST REGEN SYSTEM TO ADD MEMORY



NOTE 1:

Where **XXXXX** is the actual number of pages of memory.



NOTE 2:

The response may or may not be printed. If there is no response, it is not a problem.

18. Did CU 1 restore to standby?

- If **yes**, go to Step **20**.
- If **no**, continue to Step **18.1**.

TROUBLESHOOTING PROCEDURE:

18.1. At CUPS TN1821 (EQL 53-060), determine if the **OFF** LED for CU 1 is extinguished.

- If **yes**, continue to Step **18.2**.
- If **no**, perform Step **9** to power up CO 0.

18.2. At CUPS TN1821 (EQL 53-060), verify the **ROS/RST** switch is in the **RST** position.

- If **yes**, continue to Step **18.3**.
- If **no**, perform Step **16** to restore CU 1 to standby.

18.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.

- If **yes**, continue to Step **18.4**.
- If **no**, go back to Step **10** to verify and correct the changes to the *incore* database.

18.4. Determine if a spare KLW256 circuit pack is available.

- If **yes**, go back and repeat steps starting at Steps **5** through **8** to install the spare KLW256 circuit pack. Repeat Steps **14** through **16** to diagnose and restore the CU.
 - If **no**, continue to Step **19**.
-
-

19. **BACKOUT POINT 1: CU 1 KLW256 MEMORY GROWTH**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 1 KLW256 Memory Growth Backout Procedure” preceding the main “CU 1 KLW256 Memory Growth Procedure.”
- If **no**, continue to Step **20**.

20. Soak the changes for 5 minutes before performing the remaining steps.
21. At the MTTY, switch the CU by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

22. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

Use the soak period to be sure the MASC and channels are acting properly.

After each soak period the completed *incore* database changes are activated to disk. This ensures that disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. **No procedures are provided to back out the changes once they are activated to disk.**

23. Does CU 1 function properly?
 - If **yes**, go to Step 25.
 - If **no**, continue to Step 23.1.

TROUBLESHOOTING PROCEDURE:

- 23.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps 10 through 13.
 - If **yes**, continue to Step 23.2.
 - If **no**, go back to Step 10 and repeat the changes to the *incore* database.
 - 23.2. Determine if a spare KLW256 circuit pack is available.
 - If **yes**, go back and repeat Steps 5 through 8 to install the spare KLW256 circuit pack. Repeat Steps 14 through 16 to diagnose and restore the CU.
 - If **no**, continue to Step 24.
-
-

24. **BACKOUT POINT 2: CU 1 KLW256 MEMORY GROWTH**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 1 KLW256 Memory Growth Backout Procedure” preceding the the main “CU 1 KLW256 Memory Growth Procedure.”
- If **no**, continue to Step 25.

25. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

26. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 26.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 26.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 26.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 26.4. Enter **<**

Response: The ECD RC/V is completed.

27. SAFE STOP POINT 3

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, read the "KLW256 Final Steps Memory Growth Backout Procedure" before beginning the "KLW256 Final Steps Memory Growth Procedure."

SAFE STOP POINT 3 PROCEDURE:

27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

27.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

27.4. **RESUME THE CONVERSION PROCEDURE** by proceeding to the "KLW256 Memory Growth Final Steps Procedure."

KLW256 Memory Growth Final Steps Procedure

The following procedure completes the KLW256 memory growth by making database changes to the minimum configuration database (*rootdmly*) and backs up the changes to disk and tape.

1. At the RC/V terminal, update the ECD for *rootdmly* for the MTTYCs. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!"**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3. Update the CU 0/CU 1 MASC to reflect the memory growth.

UPDATE CU 0/CU 1 *ucb* VALUES PROCEDURE:

- 3.1. At the RC/V terminal, enter ***ucb***
Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:
- 3.2. Enter ***u***
Response: The cursor moves to the **k_complex_name:**
attribute.
- 3.3. Enter ***CU***
Response: The cursor moves to the **k_complex_number:**
attribute.
- 3.4. Enter ***0***
Response: The cursor moves to the **k_unit_name:** attribute.
- 3.5. Enter ***MASC***
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.6. Enter ***0***
Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or print:
- 3.7. Enter ***c***
Response: The system displays **Change Field:**
- 3.8. Enter ***22***
Response: The cursor moves to the **equipage:** attribute.
- 3.9. Enter ***0x100***
Response: The system displays **Change Field:**
- 3.10. Enter ***27***
Response: The cursor moves to the **mv:** attribute.
- 3.11. Enter ***0x38***
Response: The system displays **Change Field:**

3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.14. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.15. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

3.16. Enter **MASC**

Response: The cursor moves to the **k_unit_number:** attribute.

3.17. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or print:**

3.18. Enter **c**

Response: The system displays **Change Field:**

3.19. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

3.20. Enter **0x100**

Response: The system displays **Change Field:**

3.21. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.22. Enter **0x38**

Response: The system displays **Change Field:**

3.23. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.24. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:**
attribute.

3.25. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

4. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

4.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

4.2. Press the **<CR>** key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

4.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

4.4. Enter **<**

Response: The ECD RC/V is completed.

5. At this time, do you want to expand the amount of memory used by the *UNIX/RTR* Operating System to 256 megabytes (MB)?

- If **yes**, go to the “*UNIX/RTR* Operating System Memory Growth Boot Procedure.”
- If **no**, continue to Step 6.

6. Copy backup partitions.

⇒ NOTE:

See Appendix A for the procedure to copy backup partitions.

7. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

8. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
9. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

UNIX®/RTR Operating System Memory Growth Boot Backout Procedure

Before beginning the next section, “UNIX/RTR Operating System Memory Growth Boot Procedure,” review the backout procedure in this section.



CAUTION:

Do not continue with the next "boot step" until you understand the boot process expected response and the emergency backout procedure.



NOTE:

This will boot from the unchanged *btparm* form in the root database on MHD 0.

1. Power up DFC 0. At EQL 28-178, toggle the **ST/ON/OFF** switch to **ST** and release to the **ON** position to power up DFC 0.
Response: The **OFF** LED at DFC 0 extinguishes.
The system displays **REPT POWER RESTORED DFC 0**
2. At the MTTY, access the EAI page by pressing the **EA DISP** key.
Response: The system displays the EAI page.
3. On the EAI page, force the secondary disk by entering **22** at the **CMD<** prompt.
Response: The system displays **OK**
4. On the EAI page, boot the system by entering **54** followed by **y**
Response: The system displays **OK** and the CPDP **102** (Page **111** for 5ESS switch) gets repainted.
5. Contact your next level of technical support for further instructions.
6. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

UNIX/RTR Operating System Memory Growth Boot Procedure

Perform the following steps **only** if you want to utilize the full 256MB of memory available to the UNIX-RTR Operating System.



CAUTION:

*This method is available in all releases. In **5ESS** switch systems running 5E12 and later releases, the Off-Line Boot method is available from 3B/RTR Global CTS as a Special Technical Service and is recommended.*

1. Verify CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 1.1. At the MTTY CPDP **102** (Page **111** for 5ESS switch), verify that CU 1 is active and CU 0 is in standby.
 - If **yes**, go to Step 2.
 - If **no**, continue to Step 1.2.
- 1.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

2. At DFC Status Page **120** (Page **123** for 5ESS switch), verify that all the MHDs equipped in the office are active.
3. Write the Automated Message Accounting (AMA) Data.



NOTE:

Prior to booting the 3B21D, all AMA sessions should be suspended and a final write of the AMA data to the disk should be executed. As an alternative, offices can collect AMA data prior to beginning this procedure.

4. Notify remote monitoring stations of maintenance activity.
5. Inhibit Recent/Change and notify other remote users of system maintenance activity.

⇒ **NOTE:**

Use the appropriate command per application procedures.

6. At DFC 0 (EQL 28-178) remove from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

This step prevents automatic restoral of the DFC when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before proceeding with next step

Response: **RMV DFC 0 COMPLETED**
At DFC 0 (EQL 28-178), the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

⇒ **NOTE 4:**

DFC 0 is being removed and powered down in the unlikely event that a backout is necessary.

7. At DFC 0 (EQL 28-178), remove power by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED DFC 0**
At the DFC 0 (EQL 28-178), the **OFF** LED lights.

8. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

9. On the EAI page enter **12** at the **CMD<** prompt.

Response: The system displays **OK**

⇒ **NOTE:**

Verify that the active CU 1 is forced by checking the EAI page. The **FONL** lamp will be enabled on the active CU line. This is located on the left side of the EAI page directly under the **CMD<** prompt.

10. On the EAI page, force the primary disk (Pri-Disk) by entering **20** at the **CMD<** prompt.

Response: The system displays **OK**

⇒ **NOTE:**

Verify that the primary disk is set by checking the EAI page. The **SET** lamp will be enabled on the Pri-Disk line located near the center of the EAI page.

11. Enter *btparm* changes to MHD 1 *incore* ECD.

The following subprocedures update the *btparm* form to reflect the new parameters and memory size for the intended growth. The update is performed at either the Master Control Center (MCC) terminal or the Supplementary Trunk and Line Work Station (STLWS) terminal. When completed, a boot of the database is performed.

Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

12.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

12.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

12.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13. Update the *btparm* form values.

UPDATE THE *btparm* FORM VALUES PROCEDURE:

13.1. At the RC/V terminal, enter **btparm**

Response: The system displays the **Boot Time Parameters** form.
The cursor moves to the *btparmname* key field.
The system displays **Enter Database Operation, Enter, Review, or Update**

13.2. Enter **u**

13.3. Enter **btparm**

Response: The system displays the blank *btparm* form, populates the remainder of the form, and displays **Enter Update, Change, Validate, Screen#, or Print:**

13.4. Enter **c**

Response: The system displays **Change Field:**

13.5. Enter **2**

Response: The cursor moves to the **messages** field.

13.6. Enter **2048**

Response: The system displays **Change Field:**

13.7. Enter **4**

Response: The cursor moves to the **processes** field.

13.8. Enter **512**

Response: The system displays **Change Field:**

13.9. Enter **5**

Response: The cursor moves to the **segments** field.

13.10. Enter **4096**

Response: The system displays **Change Field:**

13.11. Enter **6**

Response: The cursor moves to the **page_tables** field.

13.12. Enter **4096**

Response: The system displays **Change Field:**

13.13. Enter **7**

Response: The cursor moves to the **pages** field.

13.14. Enter **131072**

Response: The system displays **Change Field:**

13.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Validate, Screen#, or Print:**

13.16. Enter **u**

Response: The system displays **updating...FORM EXECUTED** followed by the **Boot Time Parameters** form.
The cursor moves to the *btparmname* key field.

13.17. Enter **<**

Response: The forms selection page is displayed.

14. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 14.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 14.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 14.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 14.4. Enter <

Response: The ECD RC/V is completed.

15. Boot the processor using CU 1 and MHD 1 on the *btparm* form changes. At the EAI Page, boot the system by entering **52** followed by **y**

Response: The system displays **START OF CU 1 RECOVERY** and display PRMs.

Response: Several PRMs will follow; if no errors are present, about 1 to 3 pages of PRMs will print at the ROP.

⇒ NOTE:

When working correctly, the **52 boot** will print one **START OF CU 1 RECOVERY** message followed by a few pages of Processor Recovery Messages (PRMs) in the form: **PRM 1 Exds yyyy yyyy yyyy ...**

SUCCESS: After the message **RCVRY CU 1 COMPLETED** is printed on the ROP and MTTY terminals, continue to Step 15.

FAILURE: Failing PRMs (**PRM 1 Fxxx ...**) or additional **START OF CU 1 RECOVERY** messages indicate the boot attempt failed. If the system fails, see the “UNIX/RTR Operating System Memory Growth Boot Backout Procedure” at the beginning of this growth procedure.

16. Soak 15 minutes after a successful boot.
17. Clear CU 0 force on-line.

CLEAR CU 0 FORCE ON-LINE PROCEDURE:

- 17.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 17.2. On the EAI page, clear the CU forces by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**

- 17.3. On the EAI page, clear MHD force by entering **21**

Response: Set indicators for Pri Disk are cleared.



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 17.4. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

18. At the MTTY, restore the CU 0 by entering the appropriate input command.

- If MML, **RST:CU=0;**
- If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETE**

19. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

20. Soak 5 minutes before proceeding with the remaining steps.

21. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

22. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 22.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 22.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 22.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 22.4. Enter <

Response: The ECD RC/V is completed.

23. At the UN580 circuit pack (EQL 28-178), toggle the **ST/ON/OFF** switch to **ST** and release to the **ON** position to power up DFC 0.

⇒ **NOTE:**

The **OFF** LED at DFC 0 extinguishes.

Response: The system displays **REPT POWER RESTORED DFC 0**

24. At the UN580 circuit pack (EQL 28-178), restore DFC 0 by operating the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST DFC 0 COMPLETED** followed by **RST...COMPLETED** for each subunit under DFC 0.

⇒ **NOTE 1:**

DFC 0 and all subunits controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN DFC 0 ATP MESSAGE COMPLETE**

25. Copy backup partitions.

⇒ **NOTE:**

See Appendix A for the procedure to copy backup partitions.

26. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

27. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

28. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure to degrow the UNIX-to-UNIX Copy (UUCP) link from a 3B21D computer system. The UUCP link feature connects a remote computer using the *UNIX* system in order to transfer files to and from a 3B21D computer using UUCP functionality. A port on a UN582, configured as an asynchronous controller, is used as the UUCP link. Read through this entire procedure before starting.

NOTE:

The UUCP Link Degrowth procedure is based on the TTY degrowth procedure and the existing high-level *ttydel* form is used to degrow the UUCP link. During the degrowth procedure, the user will see prompts referring to TTY. The user should interpret these prompts as “UUCP Link” instead of TTY.

During the high-level Recent Change and Verify (RC/V) session, the system will prompt for diagnostics, removals, and restorals of equipment.

- If the Maintenance Terminal (MTTY) is used, pressing the **CMD/MSG** key enables messages to be entered at the same terminal.
- If an RC/V terminal is used, another terminal is needed to input the requested messages.

Values for all fields should be as provided by application engineering.

NOTE:

If using the MTTY to return to the Equipment Configuration Database (ECD) RC/V session, press the **CMD/MSG** key twice - once to access the command mode where graphic displays could be viewed and the second time to return to the ECD RC/V session.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Input/Output Processors (IOPs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.



CAUTION:

A properly grounded wrist strap (R-4987 or equivalent) must be worn when inserting, removing, unlatching, or handling a plug-in circuit pack. This applies to circuit packs in shipping containers as well as to those installed in cabinets.



CAUTION:

All cable replacement and backplane repairs require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

An antistatic wrist strap (R-4987 or equivalent) is required for this procedure. There is no additional equipment required.

Preliminary Steps

The following preliminary steps must be performed before beginning the UUCP Link Degrowth procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the degrowth procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the maintenance terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 at EQL 45-186 are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and ROP are connected to IOP 1, and that all IOPs are active.
 - If **yes**, go to Step 6.
 - If **no**, continue to Step 5.

5. At the MTTY, switch the MTTY and ROP to IOP 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by
SW PORTSW COMPLETED FOR MTTY

6. At the MTTY, enter the appropriate command to restore IOP 0.
 - If MML, **RST:IOP=0:RAW,TLP;**
 - If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

7. Verify that IOP 0 and all units under it diagnose **ATP** and restore to service successfully?
 - If **yes**, continue to Step 8.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

8. At the MTTY, enter the appropriate command to test the port switch.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by
SW PORTSW COMPLETED FOR MTTY

9. At the EAI page, observe that the MTTY status counter is cycling digits **0** through **9**.

10. At the MTTY, enter the appropriate command to check the date and time.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

11. Verify that the response message is displayed on the MTTY and printed on the ROP.

12. At the MTTY, enter the appropriate Poke command to display the CPDP.

- If 5ESS® switch, access Page **111**.
- For all other applications, access Page **102**.

13. At the CPDP, verify that the MTTY and ROP are active, and they are connected to IOP 0.

14. At the MTTY, enter the appropriate command to restore IOP 1.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

15. Do this IOP and all units under it diagnose **ATP** and restore to service successfully?

- If **yes**, continue to Step **16**.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

16. At the MTTY, enter the appropriate command to test the port switch.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by
SW PORTSW COMPLETED FOR MTTY

17. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

18. At the MTTY, enter the appropriate command to check the date and time.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

19. Verify that the response message is displayed on the MTTY and printed on the ROP.

20. At the MTTY, enter the appropriate Poke command to display the CPDP.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
21. At the CPDP, verify that the MTTY and ROP are active, and they are connected to IOP 1.
22. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **23**.
 - If **no**, go to Step **28**.
23. If IOP 2 is equipped, enter the appropriate command to restore IOP 2.
 - If MML, **RST:IOP=2:RAW,TLP;**
 - If PDS, **RST:IOP 2:RAW,TLP!**
24. Verify that IOP 2 and all units under it diagnose **ATP** and restore to service successfully?
 - If **yes**, continue to Step **25**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
25. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **26**.
 - If **no**, go to Step **28**.
26. If IOP 3 is equipped, enter the appropriate command to restore IOP 3.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**
27. Verify that IOP 3 and all units under it diagnose **ATP** and restore to service successfully?
 - If **yes**, continue to Step **28**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

Procedure

Perform the following steps to degrow the UUCP link on a 3B21D computer.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that the MTTY and the ROP are **not** connected to the same IOP on which the UUCP link will be degrown. Otherwise, configure the port switch by executing the appropriate set of input commands as follows depending on equipment configuration.

If MML, enter:

- **SW:PORTSW;**
- **SW:PORTSW,MTTY;**
- **SW:PORTSW,ROP;**

If PDS, enter:

- **SW:PORTSW!**
- **SW:PORTSW,MTTY!**
- **SW:PORTSW,ROP!**

4. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 4.1) or the command mode (Step 4.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 4.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 4.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 4.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 4.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 4.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 4.1.5. Go to Step 5.
-
-

- 4.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

5. Delete the UUCP link data from the ECD.

DELETE TTY DATA FROM ECD PROCEDURE:

- 5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. Enter **ttydel**

Response: The system displays a blank deletion of teletypewriter (*ttydel*) form.
The cursor returns to attribute 1.



NOTE:

The *ttydel* screen shown in Figure 14-1 is the Real-Time Reliable (RTR) version. The 5ESS switch screen may look different.

ttydel (1/1)

Deletion of Teletypewriter (Delete Only).

1.unit_name:_____

2.unit_number:____

3.pcsdid:_____

4.mdct_name:_____

5.access:_____

6.speed:_____

7.ciopt_name:_____

8.ttopt_name:_____

9.cdopt_name:_____

10.eaiopt_name:_____

controller

11.cntl_unit_name:_____

12.cntl_unit_number:_____

13.logdevs

logical_name

partition

1)_____

2)_____

3)_____

4)_____

Figure 14-1. *ttydel* Form

- 5.3. Enter the `unit_name` and `unit_number` values for the link being degrown as provided by application engineering.

Response: The system displays **Reading... Please wait...** followed by **Enter Insert, Change, Delete, Substitute, Validate, or Print:**

- 5.4. Enter **d**

Response: The system indicates **Deleting....** and prompts you to remove the IOP controlling the Synchronous Data Link (SDL).

⇒ **NOTE:**

The system begins to make changes to the *incore* ECD in response to the data input on the *ttydel* form. The system flashes messages on the screen indicating the activities currently in progress. The system prompts you to perform various steps which are described in sequence from Steps **6** to **15**.

6. To move the cursor to the command line, press the **CMD/MSG** key.
7. At the MTTY, remove IOP *a* from service by entering the appropriate input command.

- If MML, **RMV:IOP=a ;**
- If PDS, **RMV:IOP a !**

Where: *a* = unit number of the IOP.

Response: The system removes all subunits from service and displays **RMV IOP=a COMPLETED**
At Input/Output Processor Power Switch (IOPPS) TN1820, the **OOS** and **ROS** Light-Emitting Diodes (LEDs) light.

8. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove power from IOP *a* and disconnect the remote machine, which is connected to the controller through the UUCP link, from the controller.

9. At IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED**

⇒ NOTE:

At IOPPS TN1820, the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

10. Press the **CMD/MSG** key twice to go to the (ECD) RC/V session.
11. At the RC/V terminal, press the <CR> key.
- Response: The RC/V prompts you to disconnect the TTY from the TTY Controller (TTYC).
12. At the UN582 port, remove the cable connecting the TTY Controller (TTYC) to the remote machine. The port is specified in the pcsdid field of the *tydel* form in Figure 14-1. See Table 14-1 for the correct EQL.

Table 14-1. UN582 Port EQLs

Port	UN582
0	132
1	332
2	532
3	500

13. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress.

⇒ NOTE:

Wait for the system to display the **REPT DEGROWTH TTY a COMPLETED**

Where: a = unit number of the TTY.

14. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED**

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** LED lights.

15. At IOPPS TN1820, restore IOP a to service using frame controls by operating the **ROS/RST** switch to the **ROS** position. Wait one minute, then operate to the **RST** position.

Response: The system restores all subunits to service and displays
RST COMPLETED

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** and **RQIP** LEDs extinguish.

16. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and then displays
FORM DELETED in the upper right corner of the screen.
The cursor moves to the **unit_name** attribute.

17. Enter <

Response: The system returns to the initial high-level forms page.
The cursor moves to the **Enter Form Name:** attribute.

18. Enter **toggle**

Response: The message **Low Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

19. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 19.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 19.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 19.4. Enter **<**

Response: The ECD RC/V is completed.

20. Copy backup partitions.

 NOTE:

See Appendix A for the procedure to copy backup partitions.

21. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

22. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

23. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure to grow the UNIX-to-UNIX Copy (UUCP) link into a 3B21D computer system. The UUCP link feature connects a remote computer using the UNIX system in order to transfer files to and from a 3B21D computer using UUCP functionality. A port on the UN582, configured as an asynchronous controller, is used as the UUCP link. The UUCP link is grown using the teletypewriter (*tyadd*) form.

The UUCP link feature is supported in Real-Time Reliable (RTR) Release 21.35 and later releases. Read through this entire procedure before starting.

⇒ **NOTE:**

The UUCP Link Growth procedure is based on the terminal (TTY) growth procedure and the existing high-level *tyadd* form is used to grow the UUCP link. During the growth procedure, the user will see prompts referring to TTY. The user should interpret these prompts as “UUCP Link” instead of TTY.

During the high-level Recent Change and Verify (RC/V) session, the system will prompt for diagnostics, removals, and restorals of equipment.

- If the Maintenance Terminal (MTTY) is used, pressing the **CMD/MSG** key enables messages to be entered at the same terminal.
- If an RC/V terminal is used, another terminal is needed to input the requested messages.

Values for all fields should be as provided by application engineering.

⇒ **NOTE:**

If using the MTTY to return to the Equipment Configuration Database (ECD) RC/V session, press the **CMD/MSG** key twice - once to access the command mode where graphic displays could be viewed and the second time to return to the ECD RC/V session.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Input/Output Processors (IOPs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root ECD must be consistent with the *incore* ECD.
- This procedure assumes that an RC/V terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.



CAUTION:

A properly grounded antistatic wrist strap (R-4987 or equivalent) must be worn when inserting, removing, unlatching, or handling a plug-in circuit pack. This applies to circuit packs in shipping containers as well as to those installed in cabinets.



CAUTION:

All cable replacement and backplane repairs require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tool and equipment are required for this procedure:

- R-4987 antistatic wrist strap
- ED3T076-20,G52A TTY cable.

Preliminary Steps

The following preliminary steps must be performed before beginning the UUCP Link Growth procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the growth procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding
OP DMQ COMPLETED

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 at EQL 45-186 are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and Receive-Only Printer (ROP) are connected to IOP 1, and that all IOPs are active.

- If **yes**, go to Step 6.
- If **no**, continue to Step 5.

5. At the MTTY, switch the MTTY and ROP to IOP 1 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by
SW PORTSW COMPLETED FOR MTTY

6. At the MTTY, enter the appropriate command to restore IOP 0.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

7. Verify that IOP 0 and all units under it diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 8.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

8. At the MTTY, enter the appropriate command to test the port switch.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
9. At the Emergency Action Interface (EAI) page, observe that the MTTY status counter is cycling digits **0** through **9**.
10. At the MTTY, enter the appropriate command to check the date and time.
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

11. Verify that the response message is displayed on the MTTY and printed on the ROP.
12. At the MTTY, enter the appropriate Poke command to display the CPDP.
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.
13. At the CPDP, verify that both the MTTY and ROP are active and connected to IOP 0.
14. At the MTTY, enter the appropriate command to restore IOP 1.
 - If MML, **RST:IOP=1:RAW,TLP;**
 - If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

15. Verify that IOP 1 and all units under it diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **16**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
16. At the MTTY, enter the appropriate command to test the port switch.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
17. At the EAI page, observe that the MTTY status counter is cycling digits **0** through **9**.

18. At the MTTY, enter the appropriate command to check the date and time.
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

19. Verify that the response message is displayed on the MTTY and printed on the ROP.
20. At the MTTY, enter the appropriate Poke command to display the CPDP.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
21. At the CPDP, verify that both the MTTY and ROP are active and connected to IOP 1.
22. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **23**.
 - If **no**, go to Step **28**.
23. If IOP 2 is equipped, enter the appropriate command to restore IOP 2.
 - If MML, **RST:IOP=2:RAW,TLP;**
 - If PDS, **RST:IOP 2:RAW,TLP!**
24. Verify that IOP 2 and all units under it diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **25**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
25. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **26**.
 - If **no**, go to Step **28**.
26. If IOP 3 is equipped, enter the appropriate command to restore IOP 3.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**

27. Verify that IOP 3 and all units under it diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **28**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

Procedure

Perform the following steps to grow the UUCP link on a 3B21D computer.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that the MTTY and the ROP are **not** connected to the same IOP on which the UUCP link will be grown. Otherwise, configure the port switch by executing the appropriate set of input commands as follows depending on equipment configuration.

If MML, enter:

- **SW:PORTSW;**
- **SW:PORTSW,MTTY;**
- **SW:PORTSW,ROP;**

If PDS, enter:

- **SW:PORTSW!**
- **SW:PORTSW,MTTY!**
- **SW:PORTSW,ROP!**

4. Using the MTTY, invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step 4.1) or the command mode (Step 4.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 4.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 4.1.1. At the MTTY on the CPDP, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 4.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 4.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 4.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 4.1.5. Go to Step 5.
-
-

- 4.2. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW**

Response: The cursor moves to the **Enter Form Name:** attribute.

5. Enter the UUCP link data into the ECD.

ENTER UUCP LINK DATA INTO ECD PROCEDURE:

- 5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. Enter **ttyadd**

Response: The system displays a blank *ttyadd* form.
The cursor returns to attribute 1.



NOTE:

The *ttyadd* screen shown in Figure 15-1 is the RTR version. The 5ESS switch screen may look different.

ttyadd		(1/1)
Addition of Teletypewriter		(Insert Only)
1.unit_name:_____	2.unit_number:____	3.pcsdid:_____
4.mdct_name:_____	5.access_____	6.terminal_type:_____
7.color:_ 8.dap:_	9.speed_____	10.ciopt_name:_____
11.ttopt_name:_____	12.cdopt_name:_____	13.eaiopt_name:_____
controller		
14.cntl_unit_name:_____	15.cntl_unit_number_____	
previous logical unit		
16.plu_unit_name:_____	17.plu_unit_number:_____	

Figure 15-1. *ttyadd* Form

- 5.3. Enter the `unit_name` and the `unit_number` values for the TTY being grown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and displays **Enter Insert, Change, Substitute, Validate, or Print:**

- 5.4. Enter `i`

Response: The system displays **Inserting...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *ttyadd* form. The system flashes messages on the screen indicating the activities currently in progress. The system prompts you to perform various steps which are described in sequence from Step 6 to 21.

-
6. To move the cursor to the command line, press the **CMD/MSG** key.
7. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a ;**
- If PDS, **RMV:IOP a !**

Where: *a* = unit number of the IOP.

Response: The system removed all subunits from service and displays **RMV IOP=a COMPLETED**

8. At the Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP *a* by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** Light-Emitting Diode (LED) lights.

9. Press the **CMD/MSG** key twice to go to the ECD RC/V session.
10. At the RC/V terminal, press the <CR> key.

Response: The RC/V prompts you to connect the TTY to the TTY Controller (TTYC).



CAUTION:

Wear an antistatic wrist strap while handling cables to prevent damage to components.

11. Connect the ED3T076-20,G52A TTY cable from the remote machine side to the TTYC. The port is specified in the `pcsdid` field of the *tyadd* form in Figure 15-1. See Table 15-1 for the correct EQL.

Table 15-1. UN582 Port EQLs

Port	UN582
0	132
1	332
2	532
3	500

12. At the RC/V terminal, press the <CR> key.

Response: The RC/V prompts you to restore power to IOP a.

13. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position.

14. At IOPPS TN1820, verify that the red **OFF** LED extinguishes.

Response: The system displays **RST IOP a COMPLETED**

At IOPPS TN1820, the green LED lights and diagnostics on IOP a start automatically.

The system displays **DGN IOP a ATP MESSAGE COMPLETED**

Where: a = unit number of the IOP.

⇒ NOTE:

Do **not** continue until IOP a and all subunits are restored.

15. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove the TTYC that controls the growth UUCP link.

16. To move the cursor to the command line, press the **CMD/MSG** key.

17. At the MTTY, remove the TTYC identified in fields `unit_name` and `unit_number` of the *ttyadd* form in Figure 15-1 by entering the appropriate input command.

- If MML, **RMV:TTYC=a;**
- If PDS, **RMV:TTYC a!**

Where: *a* = unit number of the TTYC.

Response: The system displays **RMV TTYC a COMPLETED**

18. Press the **CMD/MSG** key twice to go to the ECD RC/V session.

19. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and then prompts you to restore the TTYC.

20. To move the cursor to the command line, press the **CMD/MSG** key.

21. At the MTTY, restore the TTYC identified in fields `unit_name` and `unit_number` of the *ttyadd* form in Figure 15-1 by entering the appropriate input command.

- If MML, **RST:TTYC=a;**
- If PDS, **RST:TTYC a!**

Where: *a* = unit number of the TTYC.

Response: The system displays **RST TTYC a COMPLETED**

The system displays **DGN TTYC a ATP MESSAGE COMPLETED**

22. Press the **CMD/MSG** key twice to go to the ECD RC/V session.

23. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress, flashes **FORM INSERTED** in the upper right corner of the screen, and displays a blank *ttyadd* form.

The cursor returns to attribute 1.

24. Enter <

Response: The system returns to the initial high-level forms page.

The cursor moves to the **Enter Form Name:** attribute.

25. Enter **toggle**

Response: The message **Low Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

26. Test the UUCP link from the remote machine to the 3B21D computer.

⇒ **NOTE:**

Refer to 254-303-106, *System Maintenance Manual*, Chapter 23, "UUCP Feature," for a detailed description of setup/activation/deactivation of the UUCP feature on the 3B21D computer.

**TEST UUCP LINK FROM REMOTE MACHINE TO 3B21D Computer
PROCEDURE:**

- 26.1. Configure the remote system serial parameters for the same baud rate, eight bits, no parity, one start bit, one stop bit.
- 26.2. Execute the remote terminal utility (for example, **cu** command) on the remote system to communicate with the serial line connected to the 3B21D computer.

Response: User gets login and password prompt to log in to 3B21D.

27. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 27.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 27.2. Press the <CR> key.

Response: The system prompts for the action desired.

27.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

27.4. Enter **<**

Response: The ECD RC/V is completed.

28. Copy backup partitions.



NOTE:

See Appendix A for the procedure to copy backup partitions.

29. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

30. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

31. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a peripheral cabinet into a 3B21D computer system. The peripheral cabinet houses the Small Computer System Interface (SCSI) 9-track tape units.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.

Configuration

Two peripheral cabinets may be grown into the 3B21D computer. Each cabinet can house up to two 9-track tape units. The upper 9-track tape unit is mounted in each peripheral cabinet frame when delivered from the factory. This procedure describes how to grow the peripheral cabinet(s) and mount the lower 9-track tape unit(s). The 9-track tape units are grown using the SCSI Peripheral Unit (SPU) high-level forms growth procedure that describes how to complete system Equipment Configuration Database (ECD) changes. Refer to Chapter 21, "SCSI Peripheral Growth."

References

The following information products must be available for reference during this growth procedure:

- *Common Systems Specification for 3B21D Computer System*, J3T061A-1
- *Common Systems Specification for 3B21D Computer Peripheral Growth Cabinet*, J3T059A-1
- Application specific installation engineering documentation for the 3B21D computer
- Drawing ED-3T083-30.

Procedure

The following steps describe the procedure for growing a peripheral cabinet:

1. At the Maintenance Terminal (MTTY), inhibit automatic diagnostics by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Install the growth cabinet.

INSTALL GROWTH CABINET PROCEDURE:

- 2.1. Verify that all site preparation has been completed and that all required material is unpacked and at the site. (Refer to drawing ED-3T083-30 for a complete list of the material.)
 - 2.2. Roll the growth cabinet into position to the right and alongside the processor housing cabinet. Align the cabinet with the floor markings. (Refer to J3T061A-1, sheets B1, B2, and B3.)
 - 2.3. The leveling and junctioning operation of the cabinet to the existing processor cabinet may be performed simultaneously to properly align the cabinets.
 - 2.4. If the upper SCSI 9-track tape unit is not mounted in the peripheral cabinet, mount the 9-track tape unit in the required location. (Refer to J3T059A-1, sheets B1 and B2.)
 - 2.5. If the lower SCSI 9-track tape unit is also to be grown, mount the 9-track tape unit in the required location. (Refer to J3T059A-1, sheets B1 and B2.)
-
-

3. Install the cable assemblies as shown in J3T061A-1 between the processor cabinet and the peripheral cabinet, and connect as directed.
4. Perform the power verification test. Refer to the application specific installation engineering documentation for the 3B21D computer.

⇒ NOTE:

This completes the installation of the growth cabinet.

To continue with growth of the SCSI 9-track tape unit, follow the SCSI SPU high-level forms growth procedure in Chapter 21, "SCSI Peripheral Growth."

5. At the MTTY, allow automatic diagnostics by entering the appropriate input command.
 - If MML, **ALW:DMQ:SRC=ALL;**
 - If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

6. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

7. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a Scanner and Signal Distributor Controller (SCSDC) from a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SCSDC degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Provide database information (*dbinfo*).

The following subprocedure provides the Unit Control Block (UCB) pointer list which shows the form and record names which must be removed later in this procedure.

PROVIDE *dbinfo* PROCEDURE:

3.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

3.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

3.3. Enter **>**

Response: The cursor moves to the **iop_list:** attribute.

3.4. Enter **>**

Response: The cursor moves to the **pointer_list:** attribute.

3.5. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

3.6. Enter **ucb**

Response: The cursor moves to the **form_inst_key keyfield1:** attribute.

3.7. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield2:** attribute.

3.8. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield3:** attribute.

3.9. Enter **SCSDC**

Response: The cursor moves to the **form_inst_key keyfield4:** attribute.

3.10. Enter **aa**

Where: **aa** = unit number of the SCSDC being removed.

Response: The cursor moves to the **get_form_red** attribute.

3.11. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

4. At the MTTY, request hard copies from the ROP for later use by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

5. Determine the Previous Logical Unit (PLU) and the Next Logical Unit (NLU).

DETERMINE PLU AND NLU PROCEDURE:

5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:**
attribute.

5.2. Enter **ioppc**

Response: The cursor moves to the **unit_name:** attribute.

5.3. Enter **IOP**

Response: The cursor moves to the **unit_number:** attribute.

5.4. Enter **a**

Where: **a** = unit number of the IOP from which the SCSDC will be degrown.

Response: The cursor moves to the **Enter Review, Validate, or Print:** attribute.



NOTE:

The **pc** (in link order) attribute displays the Unit Control Block (UCB) linkage for IOP **a** subdevices. If the SCSDC is not the first unit under the IOP (that is, there are other units under the IOP), examine the **unitname** and **unitnumber** attributes under the **unitname** and **unitnumber** columns and determine which unit is the PLU and which unit is the NLU to the degrowth SCSDC. It is important to note that the PLU will be removed from service in Step 16. Note the **unitname** and **unitnumber** attributes for the PLU and NLU. These values will be used in the following steps.

5.5. Enter **r**

Response: The cursor moves to the **unit_name:** attribute.

5.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

5.7. Enter **toggle**

Response: The cursor remains at the **Enter Form Name:** attribute.

6. At the MTTY, remove the SCSDC from service by entering the appropriate input command.

- If MML, **RMV:SCSDC=a;**
- If PDS, **RMV:SCSDC a!**

Where: **a** = unit number of the SCSDC.

Response: The system displays **RMV SCSDC a COMPLETED**

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 7.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

8. Update the SCSDC from Out of Service (OOS) to unequipped.

UPDATE SCSDC FROM OOS TO UNEQUIPPED PROCEDURE:

- 8.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation. I=Insert R=Review U=Update D=Delete:**

- 8.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 8.5. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **a**

Where: **a** = unit number of the SCSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

8.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

9.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

9.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

10. Remove the IOP from service.

REMOVE IOP FROM SERVICE PROCEDURE:

10.1. At Common Processor Display Page (CPDP) 102, determine if the MTTY is connected to the IOP from which the SCSDC is to be degrown.

- If **yes**, continue to Step **10.2**.
- If **no**, go to Step **10.4**.

10.2. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.

10.3. At the MTTY, switch to another IOP by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

- 10.4. At MTTY CPDP 102, verify that the ROP is connected to the IOP from which the SCSDC is to be degrown.
- If **yes**, continue to Step **10.5**
 - If **no**, go to Step **10.7**.
- 10.5. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.
- 10.6. At the MTTY, switch the ROP to another IOP by entering the appropriate input command.
- If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

- 10.7. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Response: The system displays **RMV IOP a COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) should light.

Where: *a* = unit number of the IOP.



NOTE:

Do **not** continue until this request has successfully completed.

11. At IOPPS TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
The **OFF** LED at the IOP *a* lights.

Where: *a* = unit number of the IOP.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Unseat and remove the SCSDC circuit pack.
13. At IOPPS TN1820 restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position. See Table 17-1 for a list of IOPPS EQLs.

Table 17-1. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026



NOTE 1:

At IOPPS TN1820, the **OFF** LED at IOP a extinguishes.



NOTE 2:

The IOP and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

Where: a = unit number of the IOP.

14. Determine if the degrowth SCSDC is the first device under the IOP channel and if other devices exist under the channel.
 - If the degrowth SCSDC is the first device under the IOP channel, continue to Step 15 and then go to Step 17.
 - If the degrowth SCSDC is *not* the first device under the IOP channel, go to Step 16 and then continue Step 17.

15. Update the ECD linkages for the degrowth SCSDC when the SCSDC is the first device under the IOP channel.

UPDATE ECD LINKAGES FOR DEGROWTH SCSDC WHEN SCSDC IS FIRST DEVICE UNDER IOP CHANNEL PROCEDURE:

- 15.1. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 15.1.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 15.1.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 15.1.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 15.2. Modify the IOP down pointers to bypass the degrowth SCSDC.

MODIFY IOP DOWN POINTERS TO BYPASS DEGROWTH SCSDC PROCEDURE:

- 15.2.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 15.2.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 15.2.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

15.2.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.2.5. Enter **IOP**

Response: The cursor moves to the **k_unit_number:** attribute.

15.2.6. Enter *a*

Where: *a* = unit number of the IOP.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.2.7. Enter **c**

Response: The system displays **Change Field:**

15.2.8. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

15.2.9. Enter *a*

Where: *a* = unit name of the NLU or ' if there is no NLU (that is, the degrowth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

15.2.10. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

15.2.11. Enter *b*

Where: *b* = unit number of the NLU or ' if there is no NLU (that is, the degrowth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

15.2.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.2.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

15.3. Update the SCSDC UCB cntrl pointers.

UPDATE SCSDC UCB cntrl POINTERS PROCEDURE:

15.3.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

15.3.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.3.3. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:**
attribute.

15.3.4. Enter **a**

Where: **a** = unit number of the SCSDC being degrown.

Response: The system completes the remainder of the form
and displays **Enter Update, Change, Substitute,
Validate, screen#, or Print:**

15.3.5. Enter **c**

Response: The system displays **Change Field:**

15.3.6. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

15.3.7. Enter **'**

Response: The system displays **Change Field:**

15.3.8. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

15.3.9. Enter '

Response: The system displays **Change Field:**

15.3.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.3.11. Enter u

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15.3.12. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

15.4. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

15.4.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

15.4.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

15.4.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

15.5. Go to Step 17.

16. Update the ECD linkages for the degrowth SCSDC when the SCSDC is not the first logical unit under the IOP.

UPDATE ECD LINKAGES FOR DEGROWTH SCSDC WHEN SCSDC IS NOT FIRST LOGICAL UNIT UNDER IOP PROCEDURE:

- 16.1. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

- 16.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 16.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 16.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 16.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

16.3. Update the PLU to bypass the degrowth SCSDC.

UPDATE PLU TO BYPASS DEGROWTH SCSDC PROCEDURE:

16.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

16.3.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

16.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

16.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

16.3.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

16.3.6. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.3.7. Enter **c**

Response: The system displays **Change Field:**

16.3.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

16.3.9. Enter *a*

Where: *a* = unit name of the NLU or ' if there is no NLU (that is, the degrowth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

16.3.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

16.3.11. Enter *b*

Where: *b* = unit number of the NLU or ' if there is no NLU (that is, the degrowth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

16.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.3.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

16.4. Update the SCSDC side and cntrl pointers.

UPDATE SCSDC SIDE AND cntrl POINTERS PROCEDURE:

16.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

16.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

16.4.3. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

16.4.4. Enter **a**

Where: **a** = unit number of the degrowth SCSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.4.5. Enter **c**

Response: The system displays **Change Field:**

16.4.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

16.4.7. Enter **'**

Response: The system displays **Change Field:**

16.4.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

16.4.9. Enter **'**

Response: The system displays **Change Field:**

16.4.10. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

16.4.11. Enter **'**

Response: The system displays **Change Field:**

16.4.12. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

16.4.13. Enter **'**

Response: The system displays **Change Field:**

16.4.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.4.15. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

16.4.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

16.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

16.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

16.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

16.5.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

16.6. At the MTTY, restore the PLU to service by entering the appropriate
input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: **RST a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

17. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 17.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 17.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 17.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18. Delete the ECD records associated with the SCSDC.

DELETE ECD RECORDS ASSOCIATED WITH SCSDC PROCEDURE:

- 18.1. Delete minor device chain table (*mdct*) form.

DELETE *mdct* FORM PROCEDURE:

- 18.1.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 18.1.2. Enter **d**

Response: The cursor moves to the **mdct_name:** attribute.

- 18.1.3. Enter the *mdct* record name of the SCSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 18.1.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.

18.1.5. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

18.2. Delete the unit control block (*ucb*) form.

DELETE *ucb* FORM PROCEDURE:

18.2.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation.
I=Insert R=Review U=Update D=Delete:**

18.2.2. Enter **d**

Response: The cursor moves to the **k_complex_name:** attribute.

18.2.3. Enter the *ucb* record name of the SCSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

18.2.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED
Enter Review, Change-insert, Validate, screen#, or Print:**

18.2.5. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

- 18.3. Delete the scanner and signal distributor option block head (*scsdopt*) form.

DELETE *scsdopt* FORM PROCEDURE:

- 18.3.1. At the RC/V terminal, enter **scsdopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 18.3.2. Enter **d**

Response: The cursor moves to the **option_name:** attribute.

- 18.3.3. Enter the *scsdopt* record name of the SCSDC being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 18.3.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED
Enter Review, Change-insert, Validate, screen#, or Print:**

- 18.3.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 18.4. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 18.4.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 18.4.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

18.4.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

19. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

19.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

19.2. Press the <CR> key.

Response: The system prompts for the action desired.

19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

19.4. Enter **<**

Response: The ECD RC/V is completed.

20. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

21. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

22. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
23. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter provides the procedure used to grow a Scanner and Signal Distributor Controller (SCSDC) (UN33/UN933 circuit packs) into a 3B21D computer system. The procedure in this chapter is a generic procedure. See to Chapter 22, "SCSDC16 Growth," for the specific procedure.

⇒ NOTE:

UN33 and UN933 circuit packs cannot be mixed in an office.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the system has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SCSDC growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the Previous Logical Unit (PLU) and the Next Logical Unit (NLU).

DETERMINE PLU AND NLU PROCEDURE:

- 3.1. Access the high-level ECD forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. Enter **ioppc**

Response: The cursor moves to the **unit_name:** attribute.

- 3.3. Enter **IOP**

Response: The cursor moves to the **unit_number:** attribute.

- 3.4. Enter **a**

Where: **a** = unit number of the IOP onto which the SCSDC will be grown.

Response: The cursor moves to the **Enter Review, Validate, or Print:** attribute.



NOTE:

The **pc** (in link order) attribute displays the Unit Control Block (UCB) linkage for IOP a subdevices. If the SCSDC is not the first unit under the IOP (that is, there are other units under the IOP), examine the **unitname** and **unitnumber** attributes under the **unitname** and **unitnumber** columns and determine which unit is the PLU and which unit is the NLU to the growth SCSDC. It is important to note that the PLU will be removed from service in Step 13. Note the **unitname** and **unitnumber** attributes for the PLU and NLU. These values will be used in the following steps.

- 3.5. Enter **r**

Response: The cursor moves to the **unit_name:** attribute.

- 3.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

3.7. Enter **toggle**

Response: The cursor remains at the **Enter Form Name:** attribute.

4. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

4.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

4.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

4.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

5. Insert the ECD records for the SCSDC growth.

INSERT ECD RECORDS FOR SCSDC GROWTH PROCEDURE:

5.1. Insert the unit control block (*ucb*) form.

INSERT *ucb* FORM PROCEDURE:

5.1.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

5.1.2. Enter **i**

Response: The cursor moves to the **k_complex_name:** attribute.

5.1.3. Populate all fields of the *ucb* form except fields 36 (down), 41 (side), 46 (cntrl_0), and 51 (cntrl_1). The fields in Table 18-1 contain default values for fields that are static. All other field values must be as provided by application engineering.

Table 18-1. Default *ucb* Form Field Values

Field	Value
11. device_port	IOP
12. device_type	SCSD
30. pathname	pu/scsdc
56. error_table	ioperr
66. u_model	5

5.1.4. Enter **i**

Response: The system displays **Inserting... FORM
INSERTED** followed by
**Enter Review, Change-insert, Validate, screen#,
or Print:**

5.1.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

5.2. Insert the minor device chain table (*mdct*) form.

INSERT *mdct* FORM PROCEDURE:

5.2.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

5.2.2. Enter **i**

Response: The cursor moves to the **mdct_name:** attribute.

5.2.3. Populate all fields of the *mdct* form. Static field values are described in Table 18-2. Other field values must be as provided by application engineering.

Table 18-2. Default *mdct* Form Field Values

Field	Value
2. logical_device	io
3. mdct_type	s

5.2.4. Enter **i**

Response: The system displays **Inserting... FORM
INSERTED**
The cursor moves to the **mdct_name:** attribute.

5.2.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

5.3. Insert the scanner and signal distributor option block head (*scsdopt*) form.

INSERT *scsdopt* FORM PROCEDURE:

5.3.1. At the RC/V terminal, enter **scsdopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

5.3.2. Enter **i**

Response: The cursor moves to the **option_name:** attribute.

5.3.3. Enter the option name of the *scsdopt* record for the growth SCSDC.

5.3.4. Enter **i**

Response: The system displays **Inserting... FORM
INSERTED**
The cursor moves to the **option_name:** attribute.

5.3.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

6. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 6.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 6.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

7. Remove IOP a from service.

REMOVE IOP a FROM SERVICE PROCEDURE:

- 7.1. At MTTY Common Processor Display Page (CPDP) 102, verify that the MTTY is connected to IOP a on which the SCSDC is to be grown.

- If **yes**, continue to Step 7.2.
- If **no**, go to Step 7.4.

- 7.2. Verify that both switches on port switch circuit pack UN377 [at Equipment Location (EQL) 45-186] are in the **AUTO** position and if not, operate switches to the **AUTO** position.

- 7.3. At the MTTY, switch to another IOP a by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

7.4. At MTTY CPDP 102, verify that ROP is connected to IOP *a* on which the SCSDC is to be grown.

- If **yes**, continue to Step 7.5.
- If **no**, go to Step 7.7.

7.5. Verify that both switches on port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position and if not, operate switches to the **AUTO** position.

7.6. At the MTTY, switch the ROP to another IOP *a* by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

7.7. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) at IOP *a* should light.



NOTE:

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**

Where: *a* = unit number of the IOP.



CAUTION:

Wear an antistatic wrist strap to prevent damage to components while handling circuit packs.

9. Install the SCSDC circuit pack.
10. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position. See Table 18-3 for a list of IOPPS EQLs.

Table 18-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026



NOTE 1:

At IOPPS TN1820, the **OFF** LED extinguishes.



NOTE 2:

IOP a and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each equipped unit under IOP a.

Where: a = unit number of the IOP.

Response: SCSDC, a scanner/distributor controller, is not equipped and will not respond.

11. Update the ECD linkages for the SCSDC.
 - If the growth SCSDC is the first device under the IOP channel, continue to Step **12** and then go to Step **14**.
 - If the growth SCSDC is not the first device under the IOP channel, go to Step **13** and then continue to Step **14**.
12. Update the ECD linkages for the SCSDC growth when the SCSDC is the first logical unit.

UPDATE ECD LINKAGES FOR SCSDC GROWTH WHEN SCSDC IS FIRST LOGICAL UNIT PROCEDURE:

- 12.1. At the MTTY, remove IOP *a* from service by entering the appropriate input command.
 - If MML, **RMV:IOP=a;**
 - If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS, the **OOS** LED should light.



NOTE:

Do **not** continue until this request has successfully completed.

- 12.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 12.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 12.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

12.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12.3. Update the IOP down pointers to the growth SCSDC.

UPDATE IOP DOWN POINTERS TO GROWTH SCSDC PROCEDURE:

12.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

12.3.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

12.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

12.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

12.3.5. Enter **IOP**

Response: The cursor moves to the **k_unit_number:** attribute.

12.3.6. Enter **a**

Where: **a** = unit number of the IOP.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.3.7. Enter **c**

Response: The system displays **Change Field:**

12.3.8. Enter **39**

Response: The cursor moves to the **down unit_name:** attribute.

12.3.9. Enter **SCSDC**

Response: The system displays **Change Field:**

12.3.10. Enter **40**

Response: The cursor moves to the **down unit_number:** attribute.

12.3.11. Enter **a**

Where: **a** = unit number of the SCSDC.

Response: The system displays **Change Field:**

12.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.3.13. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

12.4. Update the SCSDC cntrl pointers and major status to GROW.

UPDATE SCSDC cntrl POINTERS AND MAJOR STATUS TO GROW PROCEDURE:

12.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

12.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

12.4.3. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

12.4.4. Enter **a**

Where: **a** = unit number of the SCSDC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.4.5. Enter **c**

Response: The system displays **Change Field:**

12.4.6. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

12.4.7. Enter **IOP**

Response: The system displays **Change Field:**

12.4.8. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

12.4.9. Enter **a**

Where: **a** = unit number of the IOP.

Response: The system displays **Change Field:**

12.4.10. Enter **c**

Response: The system displays **Change Field:**

12.4.11. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

12.4.12. Enter **GROW**

Response: The system displays **Change Field:**

12.4.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.4.14. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name**
attribute.

12.4.15. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

12.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

12.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

12.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

12.5.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 12.6. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position. Refer to Table 17-3 for a list of IOPPS EQLs.



NOTE 1:

At IOPPS TN1820, the **OFF** LED extinguishes.



NOTE 2:

IOP a and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

Where: a = unit number of the IOP.

Response: SCSDC, a scanner/distributor controller, is not equipped and will not respond.



NOTE:

Wait for all subunits of the IOP to restore before continuing.

- 12.7. Go to Step 14.
-

13. Update the ECD linkages for the SCSDC growth as an added unit to the IOP.
-

UPDATE ECD LINKAGES FOR SCSDC GROWTH AS AN ADDED UNIT TO IOP PROCEDURE:

- 13.1. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: a = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

13.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

13.2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

13.2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

13.2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

13.3. Update the UCB of the PLU.

UPDATE UCB OF PLU PROCEDURE:

13.3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

13.3.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

13.3.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

13.3.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

13.3.5. Enter *a*

Where: *a* = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

13.3.6. Enter *b*

Where: *b* = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.3.7. Enter **c**

Response: The system displays **Change Field:**

13.3.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

13.3.9. Enter **SCSDC**

Response: The system displays **Change Field:**

13.3.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

13.3.11. Enter *a*

Where: *a* = unit number of the growth SCSDC.

Response: The system displays **Change Field:**

13.3.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.3.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

13.4. Update the SCSDC side and cntrl pointers and major status to GROW.

UPDATE SCSDC SIDE AND cntrl POINTERS AND MAJOR STATUS TO GROW PROCEDURE:

13.4.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

13.4.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

13.4.3. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

13.4.4. Enter **a**

Where: **a** = unit number of the growth SCSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.4.5. Enter **c**

Response: The system displays **Change Field:**

13.4.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

13.4.7. Enter **a**

Where: **a** = unit name of the NLU or ' if there is no NLU (that is, the growth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

13.4.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

13.4.9. Enter *b*

Where: *b* = unit number of the NLU or ' if there is no NLU (that is, the growth SCSDC is at the end of the chain).

Response: The system displays **Change Field:**

13.4.10. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

13.4.11. Enter **IOP**

Response: The system displays **Change Field:**

13.4.12. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

13.4.13. Enter *a*

Where: *a* = unit number of the IOP.

Response: The system displays **Change Field:**

13.4.14. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

13.4.15. Enter **GROW**

Response: The system displays **Change Field:**

13.4.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

13.4.17. Enter **u**

Response: The system displays **updating... FORM
UPDATED**
The cursor moves to the **k_complex_name** attribute.

13.4.18. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

13.5. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

13.5.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

13.5.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:**
attribute.

13.5.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

13.6. At the MTTY, restore the PLU to service by entering the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RST a b COMPLETED**



NOTE:

The PLU name and number were obtained in Step 3.

14. At the MTTY, diagnose the growth SCSDC by entering the appropriate input command.

- If MML, **DGN:SCSDC=a,RAW,TLP;**
- If PDS, **DGN:SCSDC a,RAW,TLP!**

Response: The system displays **DGN SCSDC a ATP MESSAGE COMPLETED**

Where: *a* = unit number of the SCSDC being grown.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

15. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 15.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 15.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 15.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

16. Update the SCSDC to Out of Service (OOS).

UPDATE SCSDC TO OOS PROCEDURE:

16.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

16.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

16.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

16.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

16.5. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

16.6. Enter **a**

Where: **a** = unit number of the SCSDC being grown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.7. Enter **c**

Response: The system displays **Change Field:**

16.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

16.9. Enter **OOS**

Response: The system displays **Change Field:**

16.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

16.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

16.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

17. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

17.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

17.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

17.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18. At the MTTY, restore the SCSDC by entering the appropriate input command.

- If MML, **RST:SCSDC=a;**
- If PDS, **RST:SCSDC a!**

Where: **a** = unit number of the SCSDC being grown.

Response: The system displays **RST SCSDC a COMPLETED**

19. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 19.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 19.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 19.4. Enter **<**

Response: The ECD RC/V is completed.

20. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

21. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

22. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

23. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

**SCSI 9-Track Tape Device
Degrowth**

19

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SCSI 9-Track Tape Device Degrowth

19

Introduction

This chapter describes the procedure used to degrow a Small Computer System Interface (SCSI) 9-track tape device from a 3B21D computer system. If the 9-track tape device being degrown is Magnetic Tape (MT) 0 and the intent is to replace it with a Digital Audio Tape (DAT) device, the DAT device will need to be grown after performing this procedure. See Chapter 21, "SCSI Peripheral Growth," for the procedure for growing the DAT.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and MT.
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SCSI 9-track tape device degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the SCSI Bus (SBUS) subdevice linkage.

The following subprocedure provides the Unit Control Block (UCB) linkage for the SBUS subdevices from which the 9-track (MT) will be degrown. Side pointer linkage from the Previous Logical Unit (PLU) to the 9-track tape device must be updated in Step **14** in order to bypass the 9-track tape device. Also, the logical device (*logdev*) records associated with the 9-track tape device being degrown are listed in this subprocedure for use later in this procedure.

PROVIDE SBUS SUBDEVICE LINKAGE PROCEDURE:

3.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

3.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

3.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

3.4. Press the <CR> key.

Response: The cursor moves to the **complex_number:** attribute.

3.5. Press the <CR> key.

Response: The cursor moves to the **unit_name:** attribute.

3.6. Enter **DFC**

Response: The cursor moves to the **unit_number:** attribute.

3.7. Enter **a**

Where: *a* = unit number of the DFC under which the MT device is found.

Response: The cursor moves to the **iop_list:** attribute.

3.8. Enter **>**

Response: The cursor moves to the **pointer_list:** attribute.

3.9. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

3.10. Enter **mdct**

Response: The cursor moves to the **form_inst_key keyfield1:** attribute.

3.11. Enter **aaa**

Where: *aaa* = minor device chain table (*mdct*) name for the MT device.

Response: The cursor moves to the **form_inst_key keyfield2:** attribute.

3.12. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. At the MTTY, request hard copies from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

5. At the MTTY, remove the 9-track tape device by entering the appropriate input command.

- If MML, **RMV:MT=a;**
- If PDS, **RMV:MT a!**

Where: *a* = unit number of the MT.

Response: The system displays **RMV MT a COMPLETED**

6. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 6.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 6.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

7. Update the 9-track tape device major status to unequipped.

UPDATE MAJOR STATUS PROCEDURE:

- 7.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 7.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 7.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 7.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 7.5. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

7.6. Enter **a**

Where: **a** = unit number of the 9-track tape device being degrown.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

7.7. Enter **c**

Response: The system displays **Change Field:**

7.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

7.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

7.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

7.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

7.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 8.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 8.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

9. Verify the MHDs on the SBUS.

⇒ NOTE:

To disconnect the MT, remove the SBUS to which the MT is connected. Refer to Common Processor Display Page (CPDP) 120 (DFC status page) to determine the SBUS to be removed.

VERIFY SBUS MHDs PROCEDURE:

- 9.1. Identify all duplex MHDs on the SBUS to be removed.
- 9.2. Determine the mate for each MHD identified.
- 9.3. Verify the MHD mates by entering the appropriate input command.
- If MML, **VFY:MHD=a;**
 - If PDS, **VFY:MHD a!**

Where: *a* = unit number of the mate MHD.

Response: The system displays **VFY MHD a STARTED**
followed by **VFY MHD a IN PROGRESS** (every 2
minutes) followed by **VFY MHD a COMPLETED**

⇒ NOTE:

Do **not** continue until all mate MHDs have been verified.

10. At the MTTY, remove the SBUS by entering the appropriate input command.

- If MML, **RMV:SBUS=a;**
- If PDS, **RMV:SBUS a!**

Where: *a* = unit number of the SBUS from which the 9-track tape device is being removed.

Response: The system displays **RMV SBUS a COMPLETED**

11. Disconnect the 9-track tape device.

DISCONNECT 9-TRACK TAPE DEVICE PROCEDURE:

- 11.1. Power down the 9-track tape device.
- 11.2. Disconnect the SCSI bus cable that connects to the 9-track tape unit from the backplane.
- 11.3. In place of the SCSI bus cable, connect a SCSI Bus Terminating Resistor (BTR) assembly to the backplane.



NOTE 1:

If the 9-track tape device is to be used as an alternative MT device, it will have to be grown back into the system. See Chapter 21, "SCSI Peripheral Growth," for the procedure for growing the 9-track device.



NOTE 2:

If the unit is to be physically removed from the system, seek the assistance of installation technicians after this procedure is completed.

12. Determine the PLU and the Next Logical Unit (NLU) by referring to the ROP output obtained in Step 4.

13. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

13.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

13.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

13.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

14. Update the PLU UCB side pointer to bypass the 9-track tape device.

UPDATE PLU UCB SIDE POINTER PROCEDURE:

14.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

14.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

14.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

14.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

14.5. Enter *a*

Where: *a* = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

14.6. Enter *b*

Where: *b* = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

14.7. Enter *c*

Response: The system displays **Change Field:**

14.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

14.9. Enter *a*

Where: *a* = unit name of the NLU (see the ROP output from Step 5) or ' if the 9-track tape device is the last device.

Response: The system displays **Change Field:**

14.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

14.11. Enter *b*

Where: *b* = unit number of the NLU or ' if the 9-track tape device is the last device.

Response: The system displays **Change Field:**

14.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

14.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name**
attribute.

15. Update the MT UCB cntrl pointer.

UPDATE MT UCB cntrl POINTER PROCEDURE:

15.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

15.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

15.3. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

15.4. Enter **a**

Where: **a** = unit number of the MT.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

15.5. Enter **c**

Response: The system displays **Change Field:**

15.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

15.7. Enter **'**

Response: The system displays **Change Field:**

15.8. Enter **45**

Response: The cursor moves to the **side unit_number:**
attribute.

- 15.9. Enter ' Response: The system displays **Change Field:**
- 15.10. Enter **49** Response: The cursor moves to the **cntrl_0 unit_name:** attribute.
- 15.11. Enter ' Response: The system displays **Change Field:**
- 15.12. Enter **50** Response: The cursor moves to the **cntrl_0 unit_number:** attribute.
- 15.13. Enter ' Response: The system displays **Change Field:**
- 15.14. Press the <CR> key. Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 15.15. Enter **u** Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.
- 15.16. Enter **<** Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

16. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 16.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 16.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 16.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

17. At the MTTY, restore the SBUS to service by entering the appropriate input command.

- If MML, **RST:SBUS=a;**
- If PDS, **RST:SBUS a!**

Where: *a* = unit name of the SBUS.

Response: The system displays **RST SBUS a COMPLETED**

⇒ NOTE:

Do **not** continue until all units have been restored.

18. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 18.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.

- 18.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 18.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

 NOTE:

You must now delete the ECD records for the 9-track tape device. This involves deleting the *logdev* records associated with the 9-track tape device first, followed by the *mdct* record, and the remaining records as specified in the following steps. Removing the records in this order prevents "outstanding reference" database errors.

19. Delete each *logdev* record associated with the 9-track tape device being degrown.

The following is a list of "base" logical device names (*logdev* records) associated with the 9-track tape device. Additional *logdev* records may have been added; refer to the ROP output obtained in Step 4 for the list of all the *logdev* records associated with the MT device being degrown.

- */dev/mtx0*
- */dev/mtx4*
- */dev/mtx8*
- */dev/mtxc*
- */dev/mtxvl0*
- */dev/mtxvl0n*
- */dev/mtxvh0*
- */dev/mtxvh0n*
- */dev/mtxvl12*

- /dev/mtxvl12n
- /dev/mtxvh12
- /dev/mtxvh12n.

⇒ **NOTE:**

The **x** in each logical device name refers to the unit number of the MT device. For example, if MT 0 is being degrown, the logical device names would look like /dev/mt00, /dev/mt04, and so forth and MT 1 would look like /dev/mt10, /dev/mt14, and so forth.

Refer to 254-303-104, *Recent Change and Verify Manual*, for additional information on *logdev* records.

DELETE ECD RECORD PROCEDURE:

- 19.1. At the RC/V terminal, enter **logdev**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 19.2. Enter **d**

Response: The cursor moves to the **logical_name:** attribute.

- 19.3. Enter the *logdev* record name specified in Step 19 or by the ROP output obtained in Step 4.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 19.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **logical_name:** attribute.

- 19.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 19.6. Repeat this subprocedure for each *logdev* record associated with the 9-track tape device.
-
-

20. Delete the *mdct* records associated with the 9-track tape device.

DELETE *mdct* RECORDS PROCEDURE:

- 20.1. At the RC/V terminal, enter **mdct**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 20.2. Enter **d**
- Response: The cursor moves to the **mdct_name:** attribute.
- 20.3. Enter the *mdct* record name.
- Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**
- 20.4. Enter **d**
- Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.
- 20.5. Enter **<**
- Response: The cursor moves to the **Enter Form Name:** attribute.
-
-

21. Delete the unit control block (*ucb*) records associated with the 9-track tape device.

DELETE *ucb* RECORDS PROCEDURE:

- 21.1. At the RC/V terminal, enter **ucb**
- Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**
- 21.2. Enter **d**
- Response: The cursor moves to the **k_complex_name:** attribute.
- 21.3. Press the <CR> key.
- Response: The cursor moves to the **k_complex_number:** attribute.

21.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

21.5. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

21.6. Enter **a**

Where: **a** = unit number of the 9-track tape device being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

21.7. Enter **d**

Response: The system displays **Deleting... FORM DELETED
Enter Review, Change-insert, Validate, screen#,
or Print:**

21.8. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

22. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

22.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form
The cursor moves to the **tr_name:** attribute.

22.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

22.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

23. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 23.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 23.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 23.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 23.4. Enter **<**

Response: The ECD RC/V is completed.

24. Update the ECD for *rootdmly* by repeating Steps **18** through **22** using *rootdmly* instead of *incore* when invoking the database for low-level mode RC/V (Step **2.1** or **2.2**), then continue to Step **25**.

⇒ NOTE:

Skip Step **25** and proceed to Step **26** if a DAT device is to be grown into the system to replace the 9-track tape device. In this case, a backup is done as part of the DAT growth procedure. Otherwise, continue to Step **25** to back up the primary disk partitions.

25. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

26. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

27. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
28. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a Small Computer System Interface (SCSI) Digital Audio Tape (DAT) device from a 3B21D computer system.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.



CAUTION:

This procedure requires a working configured tape drive. Do not start this degrowth procedure for MT 0 or MT 1 if the other drive is unequipped or faulty.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SCSI DAT device degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database low-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

3. Determine the SCSI Bus (SBUS) subdevice linkage.

The following subprocedure provides the Unit Control Block (UCB) linkage for the SBUS subdevices from which the DAT device will be degrown. Side pointer linkage from the Previous Logical Unit (PLU) to the DAT device must be updated in Step **14** in order to bypass the DAT device. For use later in this procedure, this step also provides the UCB pointer list, which shows the forms that must be removed and the Minor Device Chain Table (MDCT) pointer list, which provides the logical device (*logdev*) records associated with the DAT device being degrown.

PROVIDE SBUS SUBDEVICE LINKAGE PROCEDURE:

3.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

3.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

3.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

3.4. Press the <CR> key.

Response: The cursor moves to the **complex_number:** attribute.

3.5. Press the <CR> key.

Response: The cursor moves to the **unit_name:** attribute.

3.6. Enter **DFC**

Response: The cursor moves to the **unit_number:** attribute.

3.7. Enter **a**

Where: *a* = unit number of the DFC under which the MT device is found.

Response: The cursor moves to the **iop_list:** attribute.

3.8. Enter **>**

Response: The cursor moves to the **pointer_list:** attribute.

3.9. Enter **y**

Response: The cursor moves to the **form_type:** attribute.

3.10. Enter **ucb**

Response: The cursor moves to the **form_inst_key keyfield1:** attribute.

3.11. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield2:** attribute.

3.12. Press the <CR> key.

Response: The cursor moves to the **form_inst_key keyfield3:** attribute.

3.13. Enter **MT**

Response: The cursor moves to the **form_inst_key keyfield4:** attribute.

3.14. Enter **aa**

Where: **aa** = unit number of the MT being removed.

Response: The cursor moves to the **get_form_red** attribute.

3.15. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3.16. Enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

3.17. Enter **/tmp/filename**

Where: **filename** = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

3.18. Enter >

Response: The cursor moves to the **iop_list:** attribute.

3.19. Enter >

Response: The cursor moves to the **pointer_list:** attribute.

3.20. Enter y

Response: The cursor moves to the **form_type:** attribute.

3.21. Enter **mdct**

Response: The cursor moves to the **form_inst:key keyfield1** attribute.

3.22. Enter **aaa**

Where: **aaa** = form key name from UCB pointer list.

Response: The cursor moves to the **form_inst_key keyfield2** attribute.

3.23. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

4. At the MTTY, request hard copies from the ROP by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

5. At the MTTY, remove the DAT device unit by entering the appropriate input command.

- If MML, **RMV:MT=a;**
- If PDS, **RMV:MT a!**

Where: *a* = unit number of the MT.

Response: The system displays **RMV MT a COMPLETED**

6. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 6.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 6.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

7. Update the DAT device major status to unequipped.

UPDATE MAJOR STATUS PROCEDURE:

- 7.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 7.2. Enter **u**

Response: The cursor moves to the **k_complex_name:**
attribute.

- 7.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 7.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 7.5. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

- 7.6. Enter **a**

Where: **a** = unit number of the DAT device being degrown.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 7.7. Enter **c**

Response: The system displays **Change Field:**

- 7.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 7.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

7.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

7.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

7.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

8.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

8.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

8.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9. Verify the MHDs on the SBUS.

⇒ **NOTE:**

To disconnect the MT, remove the SBUS to which the MT is connected. Refer to Common Processor Display Page (CPDP) 120 (DFC status page) to determine the SBUS to be removed.

VERIFY SBUS MHDs PROCEDURE:

- 9.1. Identify all duplex MHDs on the SBUS to be removed.
- 9.2. Determine the mate for each MHD identified.
- 9.3. Verify the MHD mates by entering the appropriate input command.

- If MML, **VFY:MHD=a;**
- If PDS, **VFY:MHD a!**

Where: *a* = unit number of the mate MHD.

Response: The system displays **VFY MHD a STARTED**
followed by **VFY MHD a IN PROGRESS** (every 2
minutes) followed by **VFY MHD a COMPLETED**

⇒ **NOTE:**

Do **not** continue until all mate MHDs have been verified.

10. At the MTTY, remove the SBUS by entering the appropriate input command.

- If MML, **RMV:SBUS=a;**
- If PDS, **RMV:SBUS a!**

Where: *a* = unit number of the SBUS from which the DAT device is being removed.

Response: The system displays **RMV SBUS a COMPLETED**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

11. Unseat the DAT device.

UNSEAT DAT DEVICE PROCEDURE:

- 11.1. Power down the DAT device.
 - 11.2. Unseat and remove DAT circuit pack UN376.
 - 11.3. Cover the empty slot with an apparatus blank.
-
-

12. Determine the PLU and the Next Logical Unit (NLU) by referring to the ROP output obtained in Step 4.

13. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 13.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 13.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 13.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

14. Update the PLU UCB side pointer to bypass the DAT device.

UPDATE PLU UCB SIDE POINTER PROCEDURE:

- 14.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 14.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 14.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 14.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 14.5. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

- 14.6. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, screen#, or Print:

- 14.7. Enter **c**

Response: The system displays **Change Field:**

- 14.8. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

14.9. Enter *a*

Where: *a* = unit name of the NLU (see the ROP output from Step 4) or ' if the DAT device is the last device.

Response: The system displays **Change Field:**

14.10. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

14.11. Enter *b*

Where: *b* = unit number of the NLU or ' if the DAT device is the last device.

Response: The system displays **Change Field:**

14.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

14.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15. Update the MT UCB cntrl pointer.

UPDATE MT UCB cntrl POINTER PROCEDURE:

- 15.1. At the RC/V terminal, press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 15.2. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 15.3. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

- 15.4. Enter **a**

Where: **a** = unit number of the MT.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 15.5. Enter **c**

Response: The system displays **Change Field:**

- 15.6. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

- 15.7. Enter **'**

Response: The system displays **Change Field:**

- 15.8. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

- 15.9. Enter **'**

Response: The system displays **Change Field:**

15.10. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

15.11. Enter **'**

Response: The system displays **Change Field:**

15.12. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

15.13. Enter **'**

Response: The system displays **Change Field:**

15.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

15.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

16. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 16.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 16.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 16.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

17. At the MTTY, restore the SBUS to service by entering the appropriate command.

- If MML, **RST:SBUS=a;**
- If PDS, **RST:SBUS a!**

Where: **a** = unit name of the SBUS.

Response: The system displays **RST SBUS a COMPLETED**

 NOTE:

Do **not** continue until all units have been restored.

18. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 18.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.

- 18.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 18.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

 NOTE:

You must now delete the ECD records for the DAT device. This involves deleting the *logdev* records associated with the DAT device first, followed by the minor device chain table (*mdct*) record, and the remaining records as specified in the following steps. Removing records in this order prevents “outstanding reference” database errors.

19. Delete each *logdev* record associated with the DAT device being degrown.

The following is a list of “base” logical device names (*logdev* records). Additional *logdev* records may have been added; refer to the ROP output obtained in Step 4 for the list of all the *logdev* records associated with the MT device being degrown.

- */dev/mtx0*
- */dev/mtx4*
- */dev/mtx8*
- */dev/mtxc*
- */dev/mtxvl0*
- */dev/mtxvl0n*
- */dev/mtxvh0*
- */dev/mtxvh0n*

- /dev/mtxvl12
- /dev/mtxvl12n
- /dev/mtxvh12
- /dev/mtxvh12n.

⇒ **NOTE:**

The **x** in each logical device name refers to the unit number of the MT device. For example, if MT 0 is being degrown, the logical device names would look like /dev/mt00, /dev/mt04, and so forth and MT 1 would look like /dev/mt10, /dev/mt14, and so forth.

Refer to 254-303-104, *Recent Change and Verify Manual*, for additional information on *logdev* records.

DELETE ECD RECORDS PROCEDURE:

- 19.1. At the RC/V terminal, enter **logdev**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 19.2. Enter **d**

Response: The cursor moves to the **logical_name:** attribute.

- 19.3. Enter the *logdev* record name as specified in Step 19 or by the ROP output obtained in Step 4.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 19.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **logical_name:** attribute.

- 19.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 19.6. Repeat this subprocedure for each *logdev* record associated with the DAT device.
-
-

20. Delete the *mdct* records associated with the DAT device.

DELETE *mdct* RECORDS PROCEDURE:

- 20.1. At the RC/V terminal, enter **mdct**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 20.2. Enter **d**

Response: The cursor moves to the **mdct_name:** attribute.

- 20.3. Enter the *mdct* record name.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 20.4. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.

- 20.5. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

21. Delete the scanner and signal distributor block body (*scsdbody*) records associated with the DAT device.

DELETE *scsdbody* RECORDS PROCEDURE:

- 21.1. At the RC/V terminal, enter **scsdbody**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 21.2. Enter **d**

Response: The cursor moves to the **FIELD1** attribute.

- 21.3. Enter the first part of the form key of *scsdbody* from the pointer list of the MT UCB obtained in Step 4.

Response: The cursor moves to the **FIELD2** attribute.

- 21.4. Enter the second part of the form key of *scsdbody* from the pointer list of the MT UCB obtained in Step 4.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

- 21.5. Enter **d**

Response: The system displays **Deleting... FORM DELETED**
The cursor moves to the **mdct_name:** attribute.

- 21.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

22. Delete the unit control block (*ucb*) records associated with the DAT device.
-
-

DELETE *ucb* RECORDS PROCEDURE:

- 22.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 22.2. Enter **d**

Response: The cursor moves to the **k_complex_name:** attribute.

- 22.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 22.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 22.5. Enter **MT**

Response: The cursor moves to the **k_unit_number:** attribute.

22.6. Enter **a**

Where: **a** = unit number of the DAT device being degrown.

Response: The system completes the remainder of the form and displays **Enter Delete, Validate, screen#, or Print:**

22.7. Enter **d**

Response: The system displays **Deleting... FORM DELETED
Enter Review, Change-insert, Validate, screen#,
or Print:**

22.8. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

23. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

23.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

23.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

23.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

24. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 24.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 24.2. At the RC/V terminal, press the <CR> key.

Response: The system prompts for the action desired.

- 24.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 24.4. Enter **<**

Response: The ECD RC/V is completed.

25. Update the ECD for *rootdmly* by repeating Steps **18** through **22** using *rootdmly* instead of *incore* when invoking the database for low-level mode RC/V (Step **2.1** or **2.2**), then continue to Step **26**.
26. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

27. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

28. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
29. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a Small Computer System Interface (SCSI) Moving Head Disk (MHD), a pair of duplex SCSI MHDs, a SCSI Digital Audio Tape (DAT) device, or a SCSI 9-track tape device into a 3B21D computer system. The SCSI MHD, the SCSI DAT device, and the SCSI 9-track tape device are collectively referred to as SCSI Peripheral Units (SPUs).

The SPUs are grown using the *scsiadd* high-level form. Detailed information about the form fields can be found in 254-303-104, *Recent Change and Verify Manual*. Accessing the form, adding correct data, and starting execution causes messages to be displayed on the terminal screen. The messages request you to diagnose, restore, power up, remove power, or install and connect the hardware.

Values for all fields should be provided by application engineering.

⇒ NOTE:

It is necessary to install a Volume Table of Contents (VTOC) on the growth Moving Head Disk (MHD) to allow it to be restored. This is the responsibility of the Application. Therefore, any growth MHDs will be left Out-of-Service (OOS) at the end of this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the CU, DFCs, Input/Output Processors (IOPs), MHDs, and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- The growth shelf where the SPU will be installed must be grown. If the SPU to be installed is a 9-track tape device, the growth cabinet should have already been installed.
- The Scanner and Signal Distributor Controller (SCSDC) pack needed for the Scanner and Signal Distributor (SCSD) points for the SPU being installed (not needed for the 9-track tape devices) must be installed and active.

References

The following information products must be available for reference during this growth procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-105, *Hardware Reference Manual*
- 254-303-106, *System Maintenance Manual*
- *Common Systems Specification for 3B21D Computer System*, J3T061A-1
- *Common Systems 3B21D Processor Computer System Circuit*, SD3T015-01.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit pack(s) in R5158 Det. 2 free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against Electrostatic Discharge (ESD), a properly grounded antistatic wrist strap must be worn and connected when handling a circuit pack.



CAUTION:

Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

REQUIRED TOOLS	
ORDER NUMBER	DESCRIPTION
R-4987	Antistatic wrist strap

The following equipment ordered per ED3T083-30 is required for a growth SPU depending if the SPU is a MHD or DAT and which SPU number is being grown.

REQUIRED EQUIPMENT (depending which SPU is being added)		
ORDER NUMBER	QTY.	DESCRIPTION
108399866	1	UN375F or latest (Per MHD SPU)
108003005	1	UN376E or latest (Per DAT SPU)
406393895	1	WP91768L108-3A FUSE (each SPU)
105776637	1	9824AN SCSI JUMPER (Per MHD or DAT listed in Table 20-2)
ED3T076-20,G17	1	SPU 04 SCSD Cable
ED3T076-20,G17A	1	SPU 05 SCSD Cable
ED3T076-20,G17B	1	SPU 18 SCSD Cable
ED3T076-20,G17C	1	SPU 19 SCSD Cable
ED3T076-20,G17D	1	SPU 20 SCSD Cable
ED3T076-20,G17E	1	SPU 21 SCSD Cable
ED3T076-20,G17F	1	SPU 22 SCSD Cable
ED3T076-20,G17G	1	SPU 23 SCSD Cable
ED3T076-20,G17H	1	SPU 24 SCSD Cable
ED3T076-20,G17J	1	SPU 25 SCSD Cable
ED3T076-20,G17K	1	SPU 26 SCSD Cable
ED3T076-20,G17L	1	SPU 27 SCSD Cable
ED3T079-10,G57	2	Designation Labels for UN376E per DAT SPU
ED3T079-10,G66	2	Designation Labels for UN375F per MHD SPU

Hardware Description

The SCSI is a defined standard for attaching input/output peripherals to host computers. Components that make up the SCSI community are a SCSI Bus (SBUS), devices which attach to the SBUS, and a host adapter. The host adapter attaches the SBUS to the host computer.

The 3B21D computer supports up to 3 SCSI Disk File Controllers (DFCs) that are the SCSI host adapters. Each SCSI DFC is equipped with two SBUSs supporting up to seven SPUs per bus. The SCSI DFCs are attached to the 3B21D computer using the Dual Serial Channels (DSCHs).

The SCSI MHD and DAT device are available as circuit boards. SCSI MHD or DAT may occupy any designated SPU per Table 20-1. If a SPU is equipped in the IOP it will occupy two PC slots. The 9-track tape device is a vertically mounted unit and is installed in the growth cabinet and connected to the SBUS.

Note that the 9-track tape device does *not* need SCSD points. The assignments and locations for SCSDC packs for all SPUs (except 9-track tape devices) are given in Table 21-1. The SCSDC0 and SCSDC1 are always equipped in all offices, so the SCSD points for SPUs 2 through 5 and SPU 54 are always available. However, when growing an SPU 18 through 27, SCSDC16 is needed. If SCSDC16 does *not* exist on the system and is needed, it must be grown and made active.

The J3T061A-1 drawing illustrates the locations of the SPUs in the processor cabinet in the small and large office. The 9-track tape device is located in a growth cabinet as illustrated by the J3T061A-1 drawing. The SPU numbers shown in the J3T061A-1 drawing correspond to those in Table 21-1. The J3T061A-1 drawing needs to be used in conjunction with Table 21-1 to get the Equipment Location (EQL) numbers that correspond to the SPU positions.

Table 21-1. 3B21D Computer SPU Configurations and SCSD Assignment Rules

SPU		Device Type	DFC		SPU Scan/Scan Dist. Location				SCSDC No.
No.	EQL		No.	SBUS	IOP	PC Slot	SC No.	SD No.	
02	19-170	MHD	0	2	0	02	24(x) 25(y)	24(OOS) 25(RQIP)	0
03	45-170	MHD	1	3	1	02	24(x) 25(y)	24(OOS) 25(RQIP)	1
04	28-146	MHD or DAT or PCs *	0	0	0	02	18(x) 19(y)	18(OOS) 19(RQIP)	0
05	53-146	MHD or DAT or PCs *	1	1	1	02	18(x) 19(y)	18(OOS) 19(RQIP)	1
19	62-180	MHD or DAT	1	1 †	0	30	00(x) 01(y)	00(OOS) 01(RQIP)	16
19	62-180	MHD or DAT	1	3	0	30	00(x) 01(y)	00(OOS) 01(RQIP)	16
21	62-164	MHD or DAT or PCs *	0	0 †	0	30	02(x) 03(y)	02(OOS) 03(RQIP)	16
21	62-164	MHD or DAT or PCs *	1	1	0	30	02(x) 03(y)	02(OOS) 03(RQIP)	16
23	62-148	MHD or DAT or PCs *	1	1 †	0	30	04(x) 05(y)	04(OOS) 05(RQIP)	16
23	62-148	MHD or DAT or PCs *	1	3	0	30	04(x) 05(y)	04(OOS) 05(RQIP)	16
25	62-132	MHD or DAT or PCs *	0	0 †	0	30	06(x) 07(y)	06(OOS) 07(RQIP)	16
25	62-132	MHD or DAT or PCs *	1	1	0	30	06(x) 07(y)	06(OOS) 07(RQIP)	16
27	62-116	MHD or DAT or PCs *	1	1 †	0	30	08(x) 09(y)	08(OOS) 09(RQIP)	16
27	62-116	MHD or DAT or PCs *	1	3	0	30	08(x) 09(y)	08(OOS) 09(RQIP)	16
18	11-180	MHD or DAT	0	2	0	30	10(x) 11(y)	10(OOS) 11(RQIP)	16
20	11-164	MHD or DAT or PCs *	0	0	0	30	12(x) 13(y)	12(OOS) 13(RQIP)	16
22	11-148	MHD or DAT or PCs *	0	2	0	30	14(x) 15(y)	14(OOS) 15(RQIP)	16
See legend/footnotes at end of table.									

Table 21-1. 3B21D Computer SPU Configurations and SCSD Assignment Rules (Contd)

SPU		Device Type	DFC		SPU Scan/Scan Dist. Location				SCSDC No.
No.	EQL		No.	SBUS	IOP	PC Slot	SC No.	SD No.	
24	11-132	MHD or DAT or PCs *	0	0	0	30	16(x) 17(y)	16(OOS) 17(RQIP)	16
26	11-116	MHD or DAT or PCs *	0	2	0	30	18(x) 19(y)	18(OOS) 19(RQIP)	16
54	19-186	DAT	0	0	0	02	16(x) 17(y)	16(OOS) 17(RQIP)	0
56	B56-19	DAT or 9-track *	0-1	0-3 ‡	NR	NR	NR	NR	–
57	B57-45	DAT or 9-track *	0-1	0-3 ‡	NR	NR	NR	NR	–
58	B58-19	DAT or 9-track *	0-1	0-3 ‡	NR	NR	NR	NR	–
59	B59-45	DAT or 9-track *	0-1	0-3 ‡	NR	NR	NR	NR	–
Legend: MHD = Moving Head Disk (UN375) DAT = Digital Audio Tape (UN376) PCs = Peripheral Controllers (for example, UN33, TN74, TN75, TN82, TN983, UN582, UN583, UN597, UN933, etc.) NR = Not Required * SCSD points are not required for the PCs or 9-track tape devices. † This SBUS assignment is used when MHDs/DATs are grown in a single growth unit above processor 1 (top portion of the cabinet). ‡ 9-track tape devices can be connected to DFC 0 or DFC 1 (SBUS 0, 1, 2, or 3) using a single cable.									

Procedure

The following steps describe the SCSI peripheral growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Using the J3T061A-1 drawing and Table 21-1, determine the frame position where the growth SPU is to be installed.
3. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step **3.1**) or the command mode (Step **3.2**).

⇒ NOTE:

For the SPU number corresponding to the MHD/DAT device being installed, refer to Table 21-1 to determine which IOP contains the SCSDC that will provide the SCSD points for the SPU being added.

The selected RC/V terminal must **not** be connected to that IOP. From this point on, this procedure refers to the selected terminal as the RC/V terminal.

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 3.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 3.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 3.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 3.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 3.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

5. Enter **scsiadd**

Response: The system displays a blank *scsiadd* form.
The cursor moves to attribute 1.

6. Enter the values for the SPU being grown on the *scsiadd* form shown in Figure 21-1. See Table 21-1 near the beginning of this chapter for the appropriate values. These values are also provided by the equipment supplier to the installers. They will be needed in Step 39 of this procedure. For additional information on the *scsiadd* form, refer to 254-303-104, "Recent Change and Verify Manual."

Form Layout

Addition of SCSI Peripherals		scsiadd	(1/2) (Insert Only)
1.unit_name:___		2.unit_number:___	
3.device_id:___		4.sbus_number:___	
5.spu_location:___		6.type_drive:___	
7.duplex:___		8.duplex_mhd_num:___	
9.disk_option:___		10.scsd_cntrl_num:___	
11.sc_list.sc_entry:		13.sd_list.sd_entry:	
1)___		rqip 1)___	
2)___		oos 2)___	
		scsiadd	(2/2)
15.vtoc_size:___			

Figure 21-1. *scsiadd* Form

⇒ NOTE 1:

If growing a duplex MHD (those numbered 2 through 13), first grow the even-numbered MHD as a simplex unit, and then grow the odd-numbered MHD as a duplex unit.

⇒ **NOTE 2:**

If growing an even-numbered MHD, the `disk_option` field (field 9) of the `scsiadd` form must be set to 0 and the `duplex_mhd_num` field (field 8) must be null.

Response: The system displays **Enter Insert, Change, Substitute, Validate, or Print:**

7. Enter **i**

Response: The system begins to make changes to the ECD in response to the data on the form. A transaction block is executed to add the unit control block (*ucb*), minor device chain table (*mdct*), and logical device (*logdev*) records.

8. Determine if the `type_drive` field on the high-level `scsiadd` form equals **9TRK**.

- If **yes**, go to Step **31**.
- If **no**, continue to Step **9**.

9. The system prompts you to port switch the MTTY and the ROP if they are connected to the IOP that will be powered off in Step **19**. See Table 21-1 to determine which IOP will be powered down. (Table 21-1 provides a correspondence between the SPU number, the SCSDC number, and the IOP number.)

10. Determine if the MTTY is connected to the IOP that will be powered off in Step **19**.

- If **yes**, continue to Step **11**.
- If **no**, go to Step **13**.

11. Verify both switches on the Port Switch Pack UN377 (EQL 45-186) are in the **AUTO** position.

12. Switch the MTTY to the other IOP by entering the appropriate input command.

- If MML, **SW:PORTSW:DATA,MTTY;**
- If PDS, **SW:PORTSW:DATA,MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

13. Determine if the ROP is connected to the IOP that will be powered off in Step **19**.

- If **yes**, continue to Step **14**.
- If **no**, go to Step **16**.

14. Verify both switches on the Port Switch Pack UN377 (EQL 45-186) are in the **AUTO** position.
15. At the MTTY, switch the ROP to the other IOP by entering the appropriate input command.

- If MML, **SW:PORTSW:DATA,ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

16. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove the IOP determined in Step 9.

17. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

18. At the Input/Output Processor Power Switch (IOPPS) of the IOP removed in Step 17, verify that the **OOS** Light-Emitting Diode (LED) is lighted.

⇒ NOTE:

Do **not** continue until this request has been successfully completed.

19. At IOPPS TN1820, remove power from the IOP by operating the **ST/ON/OFF** switch to the **OFF** position. At the MTTY, monitor the progress by watching Common Processor Display Page (CPDP) 102.

Response: The system displays **REPT POWER REMOVED IOP a**

Where: *a* = unit number of the IOP.

20. Verify that the **OFF** LED lights.

21. Press the <CR> key.

Response: The system prompts you to connect the scan cables from the SPU to the SCSDC.

22. Connect the SPU scan cables from the growth SPU to the associated SCSDC Circuit pack from Table 20-1 using the EQL's stamped on the cables and SD3T015-01 drawing as reference.

23. Press the <CR> key.

Response: The system continues to make changes to the ECD, the scanner and signal distributor option block body (*scsdbody*) form is inserted, and the system prompts you to power up and restore the IOP that was removed in Step 17.

24. At IOPPS TN1820, restore power to the IOP by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.
25. Verify that the **OFF** LED extinguishes. The **OOS** LED should be lit.

⇒ **NOTE:**

The IOP and all units controlled by it are restored automatically because the **ROS/RST** switch is in the **RST** position. At the MTTY, monitor the progress by watching CPDP 102.

Response: The system displays **RST IOP a COMPLETED**

Where: *a* = unit number of the IOP.

26. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to switch the MTTY and the ROP to the restored IOP if necessary.

27. Determine if the MTTY and the ROP should be switched to the restored IOP.

- If **yes**, continue to Step 28.
- If **no**, go to Step 31.

28. Verify both switches on the Port Switch Pack UN377 (EQL 45-186) are in the **AUTO** position.

29. Switch the MTTY to the original IOP by entering the appropriate input command.

- If MML, **SW:PORTSW:DATA,MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

30. At the MTTY, switch the ROP to the original IOP by entering the appropriate input command.

- If MML, **SW:PORTSW:DATA,ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

31. If the SPU being installed is either a DAT device or an MHD, press the <CR> key at the RC/V terminal.

⇒ **NOTE:**

If the SPU being installed is a 9-track tape device, you will see a response without pressing the <CR> key. The system displays **executing trend...** and prompts you that the next step will be to remove the SBUS (on which the SPU is being grown) from service.

32. At the MTTY, use CPDP 121 to identify all duplex nongrowth MHDs located on the SBUS where the SPU is being grown.
33. Determine the mate for each duplex MHD identified in Step 32.
34. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to verify all mate MHDs that were determined in the previous step.

35. At the MTTY, enter the appropriate input command.

- If MML, **VFY:MHD=a;**
- If PDS, **VFY:MHD a!**

Where: *a* = unit number of the mate MHD.

Response: The system displays **VFY MHD a STARTED** followed by **VFY MHD a IN PROGRESS** (every 2 minutes) followed by **VFY MHD a COMPLETED**

⇒ **NOTE:**

Do **not** continue until all mate MHDs identified in Step 33 have been verified.

36. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove the SBUS corresponding to the SPU being installed.

37. At the MTTY, enter the appropriate input command.

- If MML, **RMV:SBUS=a;**
- If PDS, **RMV:SBUS a!**

Where: *a* = controlling SBUS for the SPU being installed (see Table 21-1).

Response: The system displays **RMV SBUS a COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has been successfully completed.

38. Verify that the **OOS** LEDs are lit on all MHD's and MT's controlled by the selected SBUS.
39. Set the Identification (ID) of the growth SPU to the value specified in the device_id field on the *scsiadd* form in Step 6. Set the ID by pressing the top button (to increase) or the bottom button (to decrease) the ID number in the window on the front of the SCSI MHD circuit pack.

⇒ **NOTE:**

Refer to 254-303-106, *System Maintenance Manual*, Chapter 19, "SCSI Peripheral System," for additional information on setting ID numbers for 9-track tape drives and DAT drives.

40. Set the **ROS/RST** switch to the **ROS** position on the MHD device.
41. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to physically connect the SPU to the SBUS.

⇒ **NOTE:**

If growth SPU is listed in Table 21-2, install the SCSI Bus jumper cable where shown. All other All other SPU's do not require SCSI Bus jumper.

Table 21-2. 9824AN SCSI Bus Jumper Locations

Unit	EQL	SPU
IOP 3-SPU Growth Unit	62-171-000	SPU21
	62-155-000	SPU23
	62-139-000	SPU25
	62-123-000	SPU27
Processor Unit 1	53-153-000	SPU05
Processor Unit 0	28-153-000	SPU04
IOP 2-SPU Growth Unit	11-171-000	SPU20
	11-155-000	SPU22
	11-139-000	SPU24
	11-123-000	SPU26

42. Install the identified growth SPU in the EQL listed in Table 21-1.
43. Install the associated fuse in the Modular Fuse Filter Unit J5D003FJ-1 located at top of Processor using the fuse assignment flip chart as reference.
44. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to power up the SPU.

45. Press the <CR> key.

Response: The system modifies the down and side pointers of the Previous Logical Unit (PLU) being installed (and the SPU as necessary) and updates the PLU UCB. It then sets the **major status** of the SPU to **GROW**.

46. The system prompts you to restore the SBUS controller corresponding to the SPU being installed by entering the appropriate input command at the MTTY.

- If MML, **RST:SBUS=a:DATA,CONT;**
- If PDS, **RST:SBUS a:CONT!**

Where: *a* = the SBUS to which the SPU being installed is attached.

Response: The system displays **RST SBUS a COMPLETED**

47. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to format the SPU being installed (if this SPU is an MHD).

48. Determine if the SPU being installed is an MHD.

- If **yes**, continue to Step 49.
- If **no**, go to Step 56.

49. At the MTTY, enter the appropriate input command.

- If MML, **INIT:MHD=a;**
- If PDS, **INIT:MHD a!**

Where: *a* = unit number of the MHD being installed.

Response: The system displays **INIT MHD a COMPLETED**

⇒ NOTE:

Do **not** continue until this request has successfully completed.

50. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to verify the SPU being installed (if this SPU is an MHD).

51. At the MTTY, enter the appropriate input command.

- If MML, **VFY:MHD=a;**
- If PDS, **VFY:MHD a!**

Where: *a* = unit number of the MHD being installed.

Response: The system displays **VFY MHD a COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

52. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to diagnose the SPU being installed (if this SPU is an MHD).

53. At the MTTY, enter the appropriate input command.

- If MML, **DGN:a=b:RAW,TLP;**
- If PDS, **DGN:a b:RAW,TLP!**

Where: *a* = name of the unit (for example, MHD or MT)
b = member number of the unit.

Response: The system displays **DGN a b COMPLETED ATP MSG IP**
followed by **DGN a b ATP MSG COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

54. At the RC/V terminal, press the <CR> key.

Response: The **major status** of the device is changed to **OOS**.
The system prompts you to restore all devices under the SBUS
that were removed except the installing SPU in Step 37.

⇒ **NOTE:**

If the SPU being installed is an Duplex MHD, do *not* restore this SPU until the
mate MHD has been grown in.

55. At the MTTY, enter the appropriate input command.

- If MML, **RST:a=b;**
- If PDS, **RST:a b!**

Where: *a* = name of the unit (for example, MT)
b = member number of the unit.

Response: The system displays **RST a b COMPLETED** followed by **DGN a b**
COMPLETED followed by **ATP MESSAGE COMPLETED**

56. At the RC/V terminal, press the <CR> key.

Response: The system displays **Form Inserted** and displays a blank *scsiadd* form.

57. Enter <

Response: The ECD RC/V is completed.

58. Test the SCSI 9-track tape drive or the DAT unit.

TEST 9-TRACK TAPE DRIVE OR DAT UNIT PROCEDURE:

58.1. At the MTTY, enter the appropriate input command to restore the 9-track MT unit to service.

- If MML, **RST:MT=b;**
- If PDS, **RST:MT b!**

Response: **RST MT b COMPLETED**

Where: *b* = member number.

58.2. Load a write-enabled tape.



NOTE:

Refer to 254-303-101, *Routine Maintenance Tasks*, Chapter 10, "Load 9-Track Tape into KS-23909,L10 Tape Drive," or Chapter 11, "Load 9-Track Tape into KS-23909,L21 Tape Drive," for more information on loading a 9-track tape.

- For a 9-track, load a tape reel on the 9-track drive.
- Insert a tape cartridge into the DAT unit.

58.3. At the MTTY, enter the appropriate input command to write a file to the MT (9-track or DAT) unit.

- If MML, **COPY:TAPE:OUT,TD="/dev/mtxx",
FN="cudiagc",BSDIR="/diag/dgnc";**
- If PDS, **COPY:TAPE:OUT,TD "dev/mtxx",
FN="cudiagc",BSIR "/diag/dgnc"!**

Where: *xx* = the MT unit special device filename number (for example, */dev/mt00*).

Response: The system displays
COPY TAPE OUT COMPLETED
(number of blocks)

58.4. At the MTTY, enter the appropriate input command to read a file from the MT (9-track or DAT) unit.

- If MML, **COPY:TAPE:IN,TD="/dev/mtxx", BSDIR="/tmp";**
- If PDS, **COPY:TAPE:IN,TD "/dev/mtxx", BSDIR "/tmp"!**

Where: xx = the MT unit special device filename number (for example, /dev/mt00).

Response: **COPY TAPE IN COMPLETED**
(number of blocks)

58.5. At the MTTY, enter the appropriate input command to verify that the file is written to and read from the MT (9-track or DAT) unit.

- If MML, **OP:STATUS:SUM,FN="/diag/dgnc/cudiagc";**
If MML, **OP:STATUS:SUM,FN="/tmp/cudiagc";**
- If PDS, **OP:STATUS:SUM,FN "/diag/dgnc/cudiagc"!**
If PDS, **OP:STATUS:SUM,FN "/tmp/cudiagc"!**

The numbers output from each command should match.

Response: **OP STATUS SUM COMPLETED**
a b /diag/dgnc/cudiagc
a b /tmp/cudiagc

Where: *a* = 16-bit decimal checksum of file
b = decimal number of blocks.

Both checksum values and both blocks values should match in the output response.

58.6. Unload the tape.



NOTE:

Refer to 254-303-101, *Routine Maintenance Tasks*, for detailed information.

- For a 9-track, unload the tape reel from the 9-track drive.
 - Remove the tape cartridge from the DAT unit.
-

59. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step **59.1**) or the command mode (Step **59.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 59.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 59.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 59.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 59.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 59.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 59.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

60. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 60.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 60.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 60.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 60.4. Enter **<**

Response: The ECD RC/V is completed.

61. End the 9-track tape drive or DAT unit growth procedure.

END 9-TRACK TAPE DRIVE OR DAT UNIT GROWTH PROCEDURE:

- 61.1. If the SPU being installed is a 9-track tape drive or DAT unit, the growth procedure is now complete. Continue to Step **62**.
- 61.2. If the SPU being installed is the even-numbered MHD, return to Step **6** to install the odd-numbered MHD of the pair.
-
-

62. Copy backup partitions.

⇒ NOTE:

See Appendix A for the procedure to copy backup partitions.

63. Allow automatic maintenance requests by entering one of the following input commands.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

64. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
65. It is necessary to install a Volume Table of Contents (VTOC) on the growth MHD to allow it to be restored. This is the responsibility of the application. Therefore, any growth MHDs will be left **OOS** at the end of this procedure.
66. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow the Scanner and Signal Distributor Controller 16 (SCSDC16) (UN33/UN933). The SCSDC16 must be grown and active before growing the Small Computer System Interface (SCSI) Peripheral Units (SPUs) 18 through 27 into a 3B21D computer system. The procedure for growing SPUs 18 through 27 is found in Chapter 21, "SCSI Peripheral Growth."

The SCSDC growth procedure is used for all other growth SCSDC circuit packs. See Chapter 18, "SCSDC Growth," for the specific procedure.

⇒ NOTE:

UN33/UN933 circuit packs cannot be mixed in an office.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SCSDC16 growth procedure:

1. At the Maintenance Terminal (MTTY), inhibit automatic diagnostics in the 3B21D computer by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 2.1) or the command mode (Step 2.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 2.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 2.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 2.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 2.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 2.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

⇒ **NOTE:**

The selected terminal must *not* be connected to IOP 0 when it is powered down. From this point on, this procedure refers to the selected terminal as the RC/V terminal. Follow local practices to notify other users of IOP 0 that the IOP will be powered down during the growth procedure.

3. Determine the Previous Logical Unit (PLU) and the Next Logical Unit (NLU) to SCSDC16.

DETERMINE PLU AND NLU TO SCSDC16 PROCEDURE:

- 3.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 3.2. Enter **ioppc**

Response: The cursor moves to the **unit_name:** attribute.

- 3.3. Enter **IOP**

Response: The cursor moves to the **unit_number:** attribute.

3.4. Enter **0**

Response: The cursor moves to the **Enter Review, Validate, or Print:** attribute.



NOTE:

The **pc** (in link order) attribute displays the Unit Control Block (UCB) linkage for IOP 0 subdevices. Examine the **unitname** and **unitnumber** attributes under the **unitname** and **unitnumber** columns, and determine which unit is the PLU to SCSDC16 and which is the NLU to SCSDC16. It is important to note that the PLU will be removed from service. Note the **unitname** and **unitnumber** attributes for the PLU and NLU for later use.

3.5. Enter **r**

Response: The cursor moves to the **unit_name:** attribute.

3.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

3.7. Enter **toggle**

Response: The cursor remains at the **Enter Form Name:** attribute.

4. Insert the unit control block (*ucb*), minor device chain table (*mdct*), and scanner and signal distributor option block head (*scsdopt*) records.

INSERT *ucb*, *mdct*, AND *scsdopt* RECORDS PROCEDURE:

4.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name** attribute.

4.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

4.3. Enter **e**

Response: The system flashes **executing... FORM EXECUTED** once and then displays **Enter Form Name:**

4.4. Enter **ucb**

Response: The system displays **Enter Database Operation, I=Insert R=Review U=Update D=Delete:**

4.5. Enter **r**

Response: The cursor moves to the **k_complex_name:** attribute.

4.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

4.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.8. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

4.9. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Review, Change-insert, Substitute, Validate, screen#, or Print:**

4.10. Enter **c**

Response: The system displays **Change Field:**

4.11. Enter **4**

Response: The cursor moves to the **k_unit_number:** attribute.

4.12. Enter **16**

Response: The system displays **Change Field:**

4.13. Enter **13**

Response: The cursor moves to the **internal_device** attribute.

4.14. Enter **12**

Response: The system displays **Change Field:**

4.15. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

4.16. Enter **UNEQIP**

Response: The system displays **Change Field:**

4.17. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

4.18. Enter **'**

Response: The system displays **Change Field:**

4.19. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

4.20. Enter **'**

Response: The system displays **Change Field:**

4.21. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

4.22. Enter **'**

Response: The system displays **Change Field:**

4.23. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:** attribute.

4.24. Enter **'**

Response: The system displays **Change Field:**

4.25. Enter **57**

Response: The cursor moves to the **option_name:** attribute.

4.26. Enter **scopt16**

Response: The system displays **Change Field:**

4.27. Enter **58**

Response: The cursor moves to the **pcid:** attribute.

4.28. Enter **12**

Response: The system displays **Change Field:**

4.29. Press the <CR> key.

Response: The system displays **Enter Insert, Change, Substitute, Validate, screen#, or Print:**

4.30. Enter **i**

Response: The system displays **Inserting... FORM INSERTED Enter Review, Change-insert, Validate, screen#, or Print:**

4.31. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

4.32. Enter **mdct**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

4.33. Enter **r**

Response: The cursor moves to the **mdct_name:** attribute.

4.34. Enter **scsd0**

Response: The system displays **Enter Review, Change-insert, Validate, screen#, or Print:**

4.35. Enter **c**

Response: The system displays **Change Field:**

4.36. Enter **1**

Response: The cursor moves to the **mdct_name** attribute.

4.37. Enter **scsd16**

Response: The system displays **Change Field:**

4.38. Enter **4**

Response: The cursor moves to the **mdct_id_char:** attribute.

4.39. Enter **2**

Response: The system displays **Change Field:**

4.40. Enter **9**

Response: The system displays **row:**

4.41. Enter **1**

Response: The cursor moves to the
active_devices.unit_number: attribute.

4.42. Enter **16**

Response: The system displays **row:**

4.43. Press the <CR> key.

Response: The system displays **Change Field:**

4.44. Press the <CR> key.

Response: The system displays **Enter Insert, Change,
Substitute, Validate, screen#, or Print:**

4.45. Enter **i**

Response: The system displays **Inserting... FORM INSERTED
Enter Review, Change-insert, Validate, screen#,
or Print:**

4.46. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

4.47. Enter **scsdopt**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

4.48. Enter **i**

Response: The cursor moves to the **option_name:** attribute.

4.49. Enter **scopt16**

Response: The system displays **Enter Insert, Change,
Substitute, Validate, or Print:**

4.50. Enter **i**

Response: The system displays **Inserting... FORM INSERTED**
The cursor moves to the **option_name:** attribute.

4.51. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.52. Enter **trend**

Response: The cursor moves to the **tr_name:** attribute.

4.53. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

4.54. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

5. At the MTTY, remove the PLU from service by entering the appropriate input command.

- If MML, **RMV:a=b;**
- If PDS, **RMV:a b!**

Where: *a* = unit name of the PLU
b = unit number of the PLU.

Response: The system displays **RMV a b COMPLETED**

⇒ **NOTE:**

The PLU name and number were obtained in Step 3.

6. Update the UCB of the PLU.

UPDATE UCB OF PLU PROCEDURE:

6.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name** attribute.

6.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

6.3. Enter **e**

Response: The system flashes **executing... FORM EXECUTED** once and then displays **Enter Form Name:**

6.4. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

6.5. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

6.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

6.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

6.8. Enter **a**

Where: **a** = unit name of the PLU.



NOTE:

The PLU name was obtained from Step 3.

Response: The cursor moves to the **k_unit_number:** attribute.

6.9. Enter *b*

Where: *b* = unit number of the PLU.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

The PLU number was obtained from Step 3.

6.10. Enter **c**

Response: The system displays **Change Field:**

6.11. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

6.12. Enter **SCSDC**

Response: The system displays **Change Field:**

6.13. Enter **45**

Response: The cursor moves to the **side unit_number:** attribute.

6.14. Enter **16**

Response: The system displays **Change Field:**

6.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

6.16. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

6.17. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Update the SCSDC16 UCB side and cntrl pointers.

UPDATE SCSDC16 UCB SIDE AND cntrl POINTERS PROCEDURE:

- 7.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 7.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 7.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 7.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 7.5. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 7.6. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 7.7. Enter **c**

Response: The system displays **Change Field:**

- 7.8. Determine if the NLU was noted earlier.

- If **yes**, complete Steps **7.9** through **7.12**.
- If **no**, go to Step **7.13**.

- 7.9. Enter **44**

Response: The cursor moves to the **side unit_name:** attribute.

7.10. Enter *a*

Where: *a* = unit name of the NLU or ' ' if there is no NLU
(that is, the SCSDC16 is at the end of the chain).

Response: The system displays **Change Field:**

7.11. Enter **45**

Response: The cursor moves to the **side unit_number:**
attribute.

7.12. Enter *b*

Where: *b* = unit number of the NLU or ' ' if there is no NLU
(that is, the SCSDC16 is at the end of the chain).

Response: The system displays **Change Field:**

7.13. Enter **49**

Response: The cursor moves to the **cntrl_0 unit_name:**
attribute.

7.14. Enter **IOP**

Response: The system displays **Change Field:**

7.15. Enter **50**

Response: The cursor moves to the **cntrl_0 unit_number:**
attribute.

7.16. Enter **0**

Response: The system displays **Change Field:**

7.17. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

7.18. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name**
attribute.

7.19. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

7.20. Enter **trend**

Response: The cursor moves to the **tr_name:** attribute.

7.21. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

7.22. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

8. Install the SCSDC16 circuit pack.

INSTALL SCSDC16 CIRCUIT PACK PROCEDURE:

8.1. At MTTY Common Processor Display Page (CPDP) 111, verify that MTTY is connected to IOP 0.

- If **yes**, continue to Step **8.2**.
- If **no**, go to Step **8.4**.

8.2. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.

8.3. Switch the MTTY to another IOP by entering the appropriate input command on the MTTY:

- If MML, **SW:PORTSW:DATA,MTTY;**
- If PDS, **SW:PORTSW:DATA,MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

8.4. At MTTY CPDP 111, determine if the ROP is connected to IOP 0.

- If **yes**, continue to Step **8.5**.
- If **no**, go to Step **8.7**.

8.5. Verify that the port switches, located at the bottom of the processor cabinet, are both in the **AUTO** position.

- 8.6. At the MTTY, switch the ROP to another IOP by entering the appropriate input command.

- If MML, **SW:PORTSW:DATA,ROP;**
- If PDS, **SW:PORTSW:DATA,ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

- 8.7. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=0;**
- If PDS, **RMV:IOP 0!**

Response: The system displays **RMV IOP 0 COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) at IOP 0 should light.

 NOTE:

Do **not** continue until this request has successfully completed.

- 8.8. At IOPPS TN1820, remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0.**
The **OFF** LED lights and the **ALM** LED flashes.

 CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.9. Insert the SCSDC circuit pack at Equipment Location (EQL) 28-130.

- 8.10. At IOPPS TN1820, restore power to IOP 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position. IOP 0 and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **RST IOP 0 COMPLETED** followed by **RST... COMPLETED** for each unit under IOP 0.

9. Update the SCSDC16 to GROW.

UPDATE SCSDC16 TO GROW PROCEDURE:

9.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

9.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

9.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9.4. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

9.5. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

9.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

9.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

9.8. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

9.9. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.10. Enter **c**

Response: The system displays **Change Field:**

9.11. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

9.12. Enter **GROW**

Response: The system displays **Change Field:**

9.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

9.15. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9.16. Enter **trend**

Response: The cursor moves to the **tr_name:** attribute.

9.17. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

9.18. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10. At the MTTY, diagnose SCSDC16 by entering the appropriate input command.

- If MML, **DGN:SCSDC=a,RAW,TLP;**
- If PDS, **DGN:SCSDC a,RAW,TLP!**

Response: The system displays **DGN SCSDC16 ATP MSG COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

11. Update the SCSDC16 to Out of Service (OOS).

UPDATE SCSDC16 TO OOS PROCEDURE:

11.1. At the RC/V terminal, enter **trbegin**

Response: The cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11.4. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

11.5. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

11.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

11.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

11.8. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

11.9. Enter **16**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.10. Enter **c**

Response: The system displays **Change Field:**

11.11. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

11.12. Enter **OOS**

Response: The system displays **Change Field:**

11.13. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.14. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.15. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11.16. Enter **trend**

Response: The cursor moves to the **tr_name:** attribute.

11.17. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

11.18. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12. At MTTY CPDP 121, verify that SCSDC16 is displayed in the **OOS** state.

13. Restore SCSDC16 by entering the appropriate input command.

- If MML, **RST:SCSDC=16;**
- If PDS, **RST:SCSDC 16!**

Response: The system displays **RST SCSDC 16 COMPLETED**

14. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

14.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

14.2. Press the <CR> key.

Response: The system prompts for the action desired.

14.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

14.4. Enter **<**

Response: The ECD RC/V is completed.

15. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

16. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
17. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a Synchronous Data Link (SDL) from a 3B21D computer system using high-level mode Recent Change and Verify (RC/V).

Prerequisite Conditions

The following initial conditions must exist in the 3B21D computer system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On the equipped units, diagnostics should have been run within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SDL degrowth procedure:

1. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Delete the data link from the ECD.

DELETE DATA LINK FROM ECD PROCEDURE:

- 2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Enter **sdlidel**

Response: The system displays a blank deletion of synchronous data link (*sdlidel*) form.
The cursor returns to attribute 1.

- 2.3. Enter the unit_name and unit_number values for the link being degrown as provided by application engineering.

Response: The system displays **Reading... Please wait...** followed by **Enter Insert, Change, Substitute, Validate, or Print:**

- 2.4. Enter **d**

Response: The system indicates **Deleting....** and prompts you to remove the IOP controlling the SDL.

3. At the MTTY, remove from service the IOP from which the SDL is being degrown by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

 NOTE:

At Input/Output Processor Power Switch (IOPPS) TN1820, the **OOS** and the **ROS** Light-Emitting Diodes (LEDs) light.

4. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove power from IOP *a* and disconnect the SDL.



CAUTION:

The system may sustain a severe maintenance reset if the mate unit is unavailable.

5. At Out-of-Service (OOS) IOPPS TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**

 NOTE:

At IOPPS TN1820, the **OFF** LED lights.

6. Remove the cable from the SDL Controller (SDLC) and the data set (SDL).

 NOTE:

Seek technical assistance from installation engineers if necessary.

7. At the RC/V terminal, press the <CR> key.

Response: The system makes changes to the *incore* ECD to update side pointer information.

8. Wait for the following output messages:

The system displays **REPT DEGROWTH SDL a IN PROGRESS** followed by **REPT DEGROWTH SDL a COMPLETED**

Where: *a* = unit number of the SDL being degrown.

9. At IOPPS TN1820, restore power to IOP *a* by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

⇒ **NOTE 1:**

At IOPPS TN1820, the **OFF** LED at IOP *a* extinguishes.

⇒ **NOTE 2:**

IOP *a* and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the Common Processor Display Page (CPDP).

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP *a*.

Where: *a* = unit number of the IOP.

10. At IOPPS TN1820, restore OOS IOP *a* to service using frame controls by operating the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED**
At IOPPS TN1820, the **OOS** and **RQIP** LEDs extinguish.

⇒ **NOTE:**

At IOPPS TN1820, the green LED lights and diagnostics on the IOP automatically start.

11. At the RC/V terminal, press the <CR> key.

Response: The system flashes **FORM DELETED** in the upper right corner of the screen.
The cursor moves to the **unit_name** attribute.

12. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 12.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 12.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 12.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 12.4. Enter **<**

Response: The ECD RC/V is completed.

13. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

14. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

15. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow Synchronous Data Links (SDLs) into a 3B21D computer system using high-level mode Recent Change and Verify (RC/V). The SDLs are grown using the addition of synchronous data link (*sdladd*) form. Detailed information about the form fields that need to be populated can be found in 254-303-104, *Recent Change and Verify Manual*.

Accessing the *sdladd* form, adding correct data, and starting execution causes messages to be displayed on the terminal screen. The messages request you to diagnose, restore, power up, remove power, or connect hardware.

Values for all fields should be provided by application engineering.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SDL growth procedure:

1. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

1.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Enter link data into the ECD.

ENTER LINK DATA INTO ECD PROCEDURE:

2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

2.2. Enter **sdladd**

Response: The system displays a blank *sdladd* form.
The cursor returns to attribute 1.

2.3. Enter the *unit_name* and *unit_number* values for the link being grown as provided by application engineering.

Response: The system displays **Reading... Please Wait...** prompts for each field value and displays **Enter Insert, Change, Substitute, Validate, or Print:**

2.4. Enter **i**

Response: The system displays **Inserting...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *sdladd* form. Messages flash on the screen indicating the activity currently in progress.

3. At the MTTY, remove the IOP controlling the SDL from service by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

4. At Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.
5. At IOPPS TN1820, verify that the red **OFF** Light-Emitting Diode (LED) lights.
6. At the RC/V terminal, press the <CR> key.
7. Connect the SDL cable to the appropriate location on the associated SDLC.
8. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to power up and restore IOP *a*.

9. At IOPPS TN1820, restore power to IOP *a* by operating the **ST/ON/OFF** switch to the **ON** position.

Response: The system displays **RST IOP a COMPLETED**

Where: *a* = unit number of the IOP.



NOTE:

At IOPPS TN1820, the red **OFF** LED extinguishes, the green LED lights, and diagnostics on IOP *a* automatically start. Do **not** continue until the IOP is restored.

10. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove the SDLC from service.

11. At the MTTY, remove the SDLC from service (the controller to which the link is to be added) by entering the appropriate input command.

- If MML, **RMV:SDLC=a;**
- If PDS, **RMV:SDLC a!**

Where: *a* = unit number of the SDLC being degrown.

Response: The system displays **RMV SDLC a COMPLETED**

12. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and prompts you to restore the SDLC.

13. At the MTTY, restore the SDLC (to which the link is added) to service by entering the appropriate input command.

- If MML, **RST:SDLC=a;**
- If PDS, **RST:SDLC a!**

Where: *a* = unit number of the SDLC being restored.

Response: The system displays **RST SDLC a COMPLETED**

14. At the RC/V terminal, press the <CR> key.

Response: The system indicates activities currently in progress.
The system flashes **FORM INSERTED** in the upper right corner of the screen and then displays a blank *sdladd* form.
The cursor returns to attribute 1.

15. Restore the SDL to service by entering the appropriate input command.

- If MML, **RST:SDL=a;**
- If PDS, **RST:SDL a!**

Where: *a* = unit name of the SDL.

Response: The system displays **RST SDL a COMPLETED**

16. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 16.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 16.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 16.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 16.4. Enter **<**

Response: The ECD RC/V is completed.

17. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

18. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

19. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a Synchronous Data Link Controller (SDLC) from a 3B21D computer system using high-level mode Recent Change and Verify (RC/V).

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run recently within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SDLC degrowth procedure:

1. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Obtain the Unit Control Block (UCB) listing.

OBTAIN UCB LISTING PROCEDURE:

- 2.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

- 2.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

- 2.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

- 2.4. Press the <CR> key.

Response: The cursor moves to the **complex_number:** attribute.

- 2.5. Press the <CR> key.

Response: The cursor moves to the **unit_name:** attribute.

- 2.6. Enter **CU**

Response: The cursor moves to the **unit_number:** attribute.

2.7. Enter *a*

Where: *a* = unit number of CU 0 or 1.



NOTE:

The *ucb_list* provides a list of all subdevices under the CU.

2.8. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3. At the MTTY, request hard copies from the Receive-Only Printer (ROP) by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

4. Check the UCB listing for subdevices under the controller.



NOTE:

All subdevices under the SDLC must be deleted before continuing. If the controller is a TN75C or a TN1839 circuit pack, two ports are supported and the deletion of two subdevices may be required. If the controller is a UN582 circuit pack, four ports are supported and the deletion of four subdevices may be required. See Chapter 23, "SDL Degrowth," for the procedure.

5. Delete the controller link data from the ECD.

DELETE CONTROLLER LINK DATA FROM ECD PROCEDURE:

- 5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. Enter **sdlcdel**

Response: The system displays a blank deletion of synchronous data link controller (*sdlcdel*) form.
The cursor returns to attribute 1.

- 5.3. Enter the **unit_name** and **unit_number** values for the controller being degrown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and then displays **Enter Delete, Validate, or Print:**

- 5.4. Enter **d**

Response: The system displays **Deleting...** in the upper right corner of the screen and prompts you to remove power from the IOP controlling the SDLC.

6. At the Input/Output Processor Power Switch (IOPPS), remove the IOP that is to lose the SDLC from service by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

 NOTE:

At IOPPS, the **OOS** and **ROS** Light-Emitting Diodes (LEDs) light.



CAUTION:

The system may sustain a severe maintenance reset if the mate unit is unavailable.

7. At Out-of-Service (OOS) IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**



NOTE:

At the IOPPS TN1820, the **OFF** LED lights.

8. At the RC/V terminal, press the <CR> key to continue the high-level degrowth process.

Response: The system prompts you to remove the SDLC.

9. Remove the SDLC board.

10. At the RC/V terminal, press the <CR> key to continue the high-level degrowth process.

Response: The system displays the actions currently in progress.

11. Wait for the following output messages:

REPT DEGROWTH SDL a IN PROGRESS

followed by

REPT DEGROWTH SDL a COMPLETED

Where: a = unit number of the SDL.

12. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.



NOTE 1:

At IOPPS TN1820, the **OFF** LED extinguishes.



NOTE 2:

IOP a and all units controlled by it will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the Common Processor Display Page (CPDP).

Response: The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

Where: a = unit number of the IOP.

13. At IOPPS TN1820, restore IOP a to service using frame controls by operating the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED**
At the IOPPS TN1820, the **OOS** and **RQIP** LEDs extinguish.

⇒ NOTE:

At IOPPS TN1820, the green LED lights and diagnostics on the IOP automatically start.

14. At the RC/V terminal, press the <CR> key.

Response: The system flashes **FORM DELETED** in the upper right corner of the screen.
The cursor moves to the **unit_name** attribute.

15. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 15.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 15.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 15.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

15.4. Enter <

Response: The ECD RC/V is completed.

16. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

17. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

18. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow Synchronous Data Link Controllers (SDLCs) into a 3B21D computer system. The SDLCs are grown using the addition of synchronous data link controller (*sdlcadd*) form. Detailed information about the form fields that need to be populated can be found in 254-303-104, *Recent Change and Verify Manual*.

Accessing the *sdlcadd* form, adding correct data, and starting execution causes messages to be displayed on the terminal screen. The messages request you to diagnose, restore, power up, remove power, or connect hardware.

Values for all fields should be provided by application engineering.

Prerequisite Conditions

The following initial conditions must exist before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run recently within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the SDLC growth procedure:

1. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 1.1) or the command mode (Step 1.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

1.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

1.2. At the MTTY, access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Enter values for the controller into the ECD.

ENTER CONTROLLER DATA INTO ECD PROCEDURE:

2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

2.2. Enter **sdlcadd**

Response: The system displays a blank *sdlcadd* form.
The cursor returns to attribute 1.

2.3. Enter the *unit_name* and the *unit_number* values for the controller pack being grown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and then displays **Enter Insert, Change, Substitute, Validate, or Print:**

2.4. Enter **i**

Response: The system displays **Inserting...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *sdlcadd* form. Messages flash on the screen indicating the activities currently in progress.

3. At the MTTY, remove the IOP controlling the SDLC from service by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

4. At Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.
5. At IOPPS TN1820, verify that the red **OFF** Light-Emitting Diode (LED) lights.
6. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to install the SDLC circuit pack.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

7. Install the required SDLC circuit pack by lining up the top and the bottom of the pack with the card guides and sliding the pack into position with the latch at the lower end of the faceplate open. When the circuit pack begins to make contact with the backplane pins (this will be felt by increased resistance while inserting the pack), the bottom of the latch should make contact with the bottom of the unit assembly. Close the latch to push the pack into the final position.
8. At the RC/V terminal, press the <CR> key.

Response: The system displays messages on the screen indicating the activities currently in progress. The growth SDLC status is updated from UNEQIP to GROW.

9. At IOPPS TN1820, restore service to IOP *a* by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position
10. At IOPPS TN1820, verify that the red **OFF** LED extinguishes.

Response: The system displays **RST IOP *a* COMPLETED**

Where: *a* = unit number of the IOP.

 NOTE:

At IOPPS TN1820, the green LED lights and diagnostics on IOP *a* automatically start. Do **not** continue until the IOP is restored.

11. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress, updates the growth SDLC/High-Speed Synchronous Data Link Controller (HSDC) status from **GROW** to **OOS**, flashes **FORM INSERTED** in the upper right corner of the screen, and displays a blank *sdlcadd* form. The cursor returns to attribute 1.

12. At the MTTY, restore the growth SDLC to service by entering the appropriate input command.

- If MML, **RST:SDLC=*a*;**
- If PDS, **RST:SDLC *a*!**

Where: *a* = unit number of the SDLC.

Response: The system displays **DGN SDLC *a* COMPLETED ATP**

13. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 13.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 13.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 13.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 13.4. Enter **<**

Response: The ECD RC/V is completed.

14. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

15. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

16. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow the Teletypewriter (TTY) from a 3B21D computer system.

Values for all fields should be provided by application engineering group.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the TTY degrowth procedure:

1. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Delete the TTY data from the ECD.

DELETE TTY DATA FROM ECD PROCEDURE:

- 2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 2.2. Enter **ttydel**

Response: The system displays a blank deletion of teletypewriter (*ttydel*) form.
The cursor returns to attribute 1.

- 2.3. Enter the *unit_name* and *unit_number* values for the link being degrown as provided by application engineering.

Response: The system displays **Reading... Please wait...** followed by **Enter Insert, Change, Substitute, Validate, or Print:**

- 2.4. Enter **d**

Response: The system indicates **Deleting....** and prompts you to remove the IOP controlling the Synchronous Data Link (SDL).

3. At the MTTY, remove IOP a from service by entering the appropriate input command.

- If MML, **RMV:IOP=a ;**
- If PDS, **RMV:IOP a !**

Where: a = unit number of the IOP.

Response: The system removes all subunits from service and displays **RMV IOP a COMPLETED**
At Input/Output Processor Power Switch (IOPPS) TN1820, the **OOS** and **ROS** Light-Emitting Diodes (LEDs) light.

4. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove power from IOP a and disconnect the TTY from the controller.



CAUTION:

The system may sustain a severe maintenance reset if the mate unit is unavailable.

5. At IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED**



NOTE:

At IOPPS TN1820, the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

6. Remove the cable connecting the TTY Controller (TTYC) to the TTY.

7. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress.
The system prompts you to remove power from IOP a.

⇒ **NOTE:**

Wait for the system to display the **REPT DEGROWTH TTY a COMPLETED**

Where: a = unit number of the TTY.

8. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED**

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** LED lights.

9. At IOPPS TN1820, restore IOP a to service using frame controls by operating the **ROS/RST** switch to the **RST** position.

Response: The system restores all subunits to service and displays **RST COMPLETED**

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** and **RQIP** LEDs extinguish.

10. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and then displays **FORM DELETED** in the upper right corner of the screen.
The cursor moves to the **unit_name** attribute.

11. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 11.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 11.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 11.4. Enter **<**

Response: The ECD RC/V is completed.

12. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

13. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

14. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow the Teletypewriter (TTY) into a 3B21D computer system. The TTY is grown using the addition of teletypewriter (*tyadd*) form.

Accessing the *tyadd* form, adding correct data, and starting execution causes messages to be displayed on the terminal screen. The messages request you to diagnose, restore, power up, remove power, or connect hardware.

Values for all fields should be provided by application engineering.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the TTY growth procedure:

1. Invoke the *incore* database high-level mode Recent Change and Verify (RC/V) by accessing the ECD using either the menu mode (Step 1.1) or the command mode (Step 1.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

1.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Enter the TTY data into the ECD.

ENTER TTY DATA INTO ECD PROCEDURE:

2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

2.2. Enter **ttyadd**

Response: The system displays a blank *ttyadd* form.
The cursor returns to attribute 1.

2.3. Enter the *unit_name* and the *unit_number* values for the TTY being grown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and displays **Enter Insert, Change, Substitute, Validate, or Print:**

2.4. Enter **i**

Response: The system displays **Inserting...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *ttyadd* form. The system flashes messages on the screen indicating the activities currently in progress. The system prompts you to remove IOP *a* from service.

3. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system displays **RMV IOP=a COMPLETED**

4. At Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP *a* by operating the **ST/ON/OFF** switch to the **OFF** position.
5. At IOPPS TN1820, verify that the red **OFF** Light-Emitting Diode (LED) lights.
6. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to connect the TTY to the TTY Controller (TTYC).



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

7. Connect the TTY cable to the TTYC.



NOTE:

If the TTYC is a UN582 circuit pack and the TTY is being grown on port 2 of the TTYC, special cabling is required to connect the TTY to the TTYC.

The pin Equipment Locations (EQLs) for the TTY ports are listed as follows:

- pin EQL 132 - port 0
- pin EQL 332 - port 1
- pin EQL 532 - port 2 (requires special cable)
- pin EQL 500 - port 3.

8. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to restore power to IOP a.

9. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

10. At IOPPS TN1820, verify that the red **OFF** LED extinguishes.

Response: The system displays **RST IOP a COMPLETED**



NOTE:

At the IOPPS TN1820, the green LED lights and diagnostics on IOP a automatically start. Do **not** continue until the IOP and all subunits are restored.

11. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to remove the TTYC that will control the growth TTY.

12. At the MTTY, remove the TTYC to which the TTY is added from service by entering the appropriate input command.

- If MML, **RMV:TTYC=a;**
- If PDS, **RMV:TTYC a!**

Where: *a* = unit number of the TTYC.

Response: The system displays **RMV TTYC=a COMPLETED**

13. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and then prompts you to restore the TTYC.

14. At the MTTY, restore the TTYC to which the TTY is added to service by entering the appropriate input command.

- If MML, **RST:TTYC=a;**
- If PDS, **RST:TTYC a!**

Where: *a* = unit number of the TTYC.

Response: The system displays **RST TTYC=a COMPLETED**

15. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress, flashes **FORM INSERTED** in the upper right corner of the screen, and displays a blank *ttyadd* form.
The cursor returns to attribute 1.

16. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 16.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 16.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 16.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 16.4. Enter **<**

Response: The ECD RC/V is completed.

17. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

18. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

19. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a Teletypewriter Controller (TTYC) from a 3B21D computer system using high-level mode Recent Change and Verify (RC/V).

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).
- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the TTYC degrowth procedure:

1. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step **1.1**) or the command mode (Step **1.2**).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 1.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Obtain the Unit Control Block (UCB) listing to determine TTYC subdevices.

OBTAIN UCB LISTING PROCEDURE:

- 2.1. At the RC/V terminal, enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

- 2.2. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

- 2.3. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

- 2.4. Press the <CR> key.

Response: The cursor moves to the **complex_number:** attribute.

- 2.5. Press the <CR> key.

Response: The cursor moves to the **unit_name:** attribute.

- 2.6. Enter **CU**

Response: The cursor moves to the **unit_number:** attribute.

2.7. Enter *a*

Where: *a* = unit number of CU 0 or 1.



NOTE:

The *ucb_list* provides a list of all subdevices under the CU.

2.8. Type *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

3. At the MTTY, request hard copies of the form from the Receive-Only Printer (ROP) by entering the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Response: The system displays **DUMP FILE ALL COMPLETED**

4. Check the UCB listing for subdevices under the controller.



NOTE:

All subdevices under the TTYC must be deleted before continuing. If the controller is a TN74B circuit pack, two ports are supported and the deletion of two subdevices may be required. If the controller is a UN582 circuit pack, four ports are supported and the deletion of four subdevices may be required. See Chapter 27, "TTY Degrowth," for the TTY degrowth procedure.

5. Invoke the *incore* database high-level mode RC/V.

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 5.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. Access the high-level deletion form for TTYC degrowth by entering **tycdel**

Response: The system displays a blank deletion of teletypewriter controller (*tycdel*) form.

- 5.3. Enter *unit_name* and *unit_number* values for TTYC being degrown.

Response: The system displays **Reading... Please wait...** followed by **Enter Delete, Validate, or Print**

- 5.4. Enter **d**

Response: The system displays **Deleting...** in the upper right of the screen and prompts you to remove and power down the IOP.

6. At the MTTY, remove the IOP from service by entering the appropriate input command.

- If MML, **RMV:IOP=a;**
- If PDS, **RMV:IOP a!**

Where: *a* = unit number of the IOP.

Response: The system removes all subunits from service before displaying the **RMV IOP a COMPLETED** message.
At the Input/Output Processor Power Switch (IOPPS) TN1820, the **OOS** and the **ROS** Light-Emitting Diodes (LEDs) light.



CAUTION:

The system may sustain a severe maintenance reset if the mate unit is unavailable.

7. At the Out-of-Service (OOS) IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED**



NOTE:

At IOPPS TN1820, the **OFF** LED lights.

8. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to disconnect the TTYC.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

9. Remove the TTYC board.

REMOVE TTYC BOARD PROCEDURE:

- 9.1. Carefully release the circuit pack latch to unseat the board.
 - 9.2. Gently pull the circuit pack out from the slot.
 - 9.3. Fill the empty slot with an appropriate blank circuit pack.
-
-

10. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress.

The user is prompted to power up and restore the IOP.

The system displays **REPT DEGROWTH TTYC a COMPLETED**

Where: a = unit number of the TTYC.

11. At IOPPS TN1820 of the powered down IOP, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED**

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** LED lights.

12. At IOPPS TN1820, restore IOP a to service using frame controls by operating the **ROS/RST** switch to the **RST** position.

Response: The system restores all subunits to service and displays **RST COMPLETED**

⇒ **NOTE:**

At IOPPS TN1820, the **OOS** and **RQIP** LEDs extinguish.

13. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress and then displays **FORM DELETED** in the upper right corner of the screen.

14. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 14.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 14.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 14.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

14.4. Enter <

Response: The ECD RC/V is completed.

15. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

16. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

17. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow the Teletypewriter Controller (TTYC) into a 3B21D computer system using high-level mode Recent Change and Verify (RC/V).

The TTYC is grown using the addition of teletypewriter controller (*ttycadd*) form. Detailed information about the form fields that need to be populated can be found in 254-303-104, *Recent Change and Verify Manual*.

Accessing the *ttycadd* form, adding correct data, and starting execution causes messages to be displayed on the terminal screen. The messages request you to diagnose, restore, power up, remove power, or connect hardware.

Values for all fields should be provided by application engineering.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the past 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Unit (CU), Disk File Controllers (DFCs), Input/Output Processors (IOPs), Moving Head Disks (MHDs), and Magnetic Tape (MT).

- Ensure that within the past 24 hours the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the TTYC growth procedure:

1. Invoke the *incore* database high-level mode RC/V by accessing the ECD using either the menu mode (Step 1.1) or the command mode (Step 1.2).

INVOKE INCORE DATABASE HIGH-LEVEL MODE RC/V PROCEDURE:

- 1.1. Invoke the *incore* database high-level mode using the menu mode.

MENU MODE PROCEDURE:

- 1.1.1. At the Maintenance Terminal (MTTY), enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 1.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 1.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

1.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

1.2. At the MTTY, invoke the *incore* database high-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Enter values for the controller into the ECD.

ENTER VALUES FOR CONTROLLER INTO ECD PROCEDURE:

2.1. Access the high-level forms by entering **toggle**

Response: The message **High Level** appears in the upper right corner of the screen.
The cursor moves to the **Enter Form Name:** attribute.

2.2. Enter **ttycadd**

Response: The system displays a blank *ttycadd* form.
The cursor returns to attribute 1.

2.3. Enter the *unit_name* and the *unit_number* values for the controller pack being grown as provided by application engineering.

Response: The system displays **Reading... Please wait...** prompts for each field value and then displays **Enter Insert, Change, Substitute, Validate, or Print:**

2.4. Enter **i**

Response: The system displays **Inserting...**



NOTE:

The system begins to make changes to the *incore* ECD in response to the data input on the *tycadd* form. Messages flash on the screen indicating the activities currently in progress. The system prompts you to remove power from IOP a.

3. At the MTTY, enter the appropriate input command.

- If MML, **RMV:IOP=a ;**
- If PDS, **RMV:IOP a !**

Where: a = unit number of the IOP.

Response: The system displays **RMV IOP a COMPLETED**

4. At Input/Output Processor Power Switch (IOPPS) TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.
5. At IOPPS TN1820, verify that the red **OFF** Light-Emitting Diode (LED) lights.
6. At the RC/V terminal, press the <CR> key.

Response: The system prompts you to install the TTYC circuit pack.



CAUTION:

Wear an antistatic wrist strap while handling circuits packs to prevent damage to components.

7. Install the required TTYC circuit pack by lining up the top and bottom of the pack with the card guides and sliding the pack into position with the latch at the lower end of the faceplate open. When the circuit pack begins to make contact with the backplane pins (this will be felt by increased resistance while inserting the pack), the bottom of the latch should make contact with the bottom of the unit assembly. Close the latch to push the pack into the final position.

8. At the RC/V terminal, press the <CR> key.

Response: The system displays messages on the screen indicating the activities currently in progress. The system prompts you to power up and restore power to IOP a.

9. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

10. At IOPPS TN1820, verify that the red **OFF** LED extinguishes.

Response: The system displays **RST IOP a COMPLETED**

Where: a = unit number of the IOP.

⇒ **NOTE 1:**

At the IOPPS TN1820, the green LED lights and diagnostics on IOP a automatically start.

⇒ **NOTE 2:**

Do **not** continue until the IOP and all subunits are restored.

11. At the RC/V terminal, press the <CR> key.

Response: The system flashes messages on the screen indicating the activities currently in progress, displays **FORM INSERTED** in the upper right corner of the screen, and displays a blank *tycadd* form.
The cursor then returns to attribute 1.

12. At the MTTY, restore the growth TTYC to service by entering the appropriate input command.

- If MML, **RST:TTYC=a;**
- If PDS, **RST:TTYC a!**

Where: a = unit number of the TTYC.

Response: The system displays **DGN TTYC a COMPLETED**

13. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 13.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 13.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 13.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 13.4. Enter **<**

Response: The ECD RC/V is completed.

14. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

15. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

16. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to degrow a UN379 Utility Circuit (UC) from a 3B21D computer system using low-level mode Recent Change and Verify (RC/V). The UC pack is used for debugging purposes. Therefore, the removal of the unit control block (*ucb*) forms which will allow the UN379 UC pack to be regrown quickly is not contained in this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this degrowth procedure:

- No system update activity should be taking place when performing this procedure.
- Ensure that the disks and the Input/Output Processors (IOPs) are in duplex and that the Control Units (CUs) have been in the active-standby mode (with the exception of the routine maintenance and diagnostic request).
- Ensure that diagnostics on both CUs have been run to successful completion within 24 hours prior to start of this procedure (UC degrowth).
- Ensure that all computer and/or system problems have been cleared before degrowth activity begins.
- Ensure that within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available for reference during this degrowth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the UC degrowth procedure:

1. At the Maintenance Terminal (MTTY), inhibit Routine Exercises (REXs) by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 2.1. At MTTY Common Processor Display Page (CPDP) **102**, verify that CU 0 is active and CU 1 is in standby.
 - If **yes**, go to Step 3.
 - If **no**, continue to Step 2.2.
- 2.2. At the MTTY, enter the appropriate input command.
 - If MML, either **400** Poke command or **SW:CU;**
 - If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

3. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Performing Step 3 prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

Response: The system displays **RMV CU 1 COMPLETED**

4. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 4.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 4.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 0 FORCED ONLINE** followed by **REPT CU 1 UNAVAILABLE**

⇒ **NOTE:**

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 4.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

5. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step 5.1) or the command mode (Step 5.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 5.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 5.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 5.1.2. At the RC/V terminal, enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 5.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 5.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 5.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

6. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 6.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction file name.

- 6.2. Press the <CR> key.

Response: The system prompts for the desired action.

- 6.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

7. Update the UC major status to unequipped.

UPDATE UC MAJOR STATUS TO UNEQUIPPED PROCEDURE:

- 7.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 7.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 7.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 7.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 7.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

7.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

7.7. Enter **c**

Response: The system displays **Change Field:**

7.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

7.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

7.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

7.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

7.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 8.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 8.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

9. Exit Recent Change (RC). At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC was entered from input message mode.

10. At CUPS TN1821 (at EQL 53-060), remove power from CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

11. At EQL 45-050 for CU 1, remove the UN379 UC board.

REMOVE UN379 UC BOARD PROCEDURE:

- 11.1. Carefully release the circuit pack latch to unseat the board.
- 11.2. Gently pull the circuit pack out from the slot.
- 11.3. Place circuit pack into a static-free bag and store with spares.
- 11.4. Fill the empty slot with an appropriate blank faceplate to maintain required airflow.



NOTE:

If not supplied, a blank faceplate should be ordered.

12. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 12.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
Response: The system displays the EAI page.
- 12.2. On the EAI page, clear the force on CU 0 by entering **13**
Response: The system displays **REPT CU 0 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 12.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

13. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

- 13.1. At CUPS TN1821 (at EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **13.2**.

- 13.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
CU 1 **OOS** Light-Emitting Diode (LED) extinguishes.

- 13.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 1 in progress and wait until CU 1 is restored to standby before continuing.
-
-

14. Verify CU 1 is active and CU 0 is in standby.

Verify CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 14.1. At MTTY CPDP 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **15**.
- If **no**, continue to Step **14.2**.

- 14.2. At the MTTY, enter the appropriate command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

15. At CUPS TN1821 (at EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step 16.

Response: The system displays **RMV CU 0 COMPLETED**

16. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 16.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 16.2. On the EAI page, force CU 1 on-line by entering **12**

Response: The system displays **REPT CU 1 FORCED ONLINE**
followed by **REPT CU 0 UNAVAILABLE**

⇒ **NOTE:**

At the MTTY, CU 0 displays an FOFL indicator and CU 1 displays an FONL indicator.

- 16.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

17. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **17.1**) or the command mode (Step **17.2**).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 17.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 17.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 17.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 17.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 17.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 17.2. At the MTTY, invoke the *incore* database low-level mode using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

18. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 18.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction file name.

- 18.2. Press the <CR> key.

Response: The system prompts for the desired action.

- 18.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

19. Update the UC major status to unequipped.

UPDATE UC MAJOR STATUS TO UNEQUIPPED PROCEDURE:

- 19.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 19.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 19.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 19.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 19.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

19.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

19.7. Enter **c**

Response: The system displays **Change Field:**

19.8. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

19.9. Enter **UNEQIP**

Response: The system displays **Change Field:**

19.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

19.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

19.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

20. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 20.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 20.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 20.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

21. Exit RC. At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC was entered from input message mode.

22. At CUPS TN1821 (at EQL 28-060), remove power from CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

23. At EQL 19-050 for CU 0, remove the UN379 UC board.

REMOVE UN379 UC BOARD PROCEDURE:

- 23.1. Carefully release the circuit pack latch to unseat the board.
- 23.2. Gently pull the circuit pack out from the slot.
- 23.3. Place circuit pack into a static-free bag and store with spares.
- 23.4. Fill the empty slot with an appropriate blank faceplate to maintain required airflow.



NOTE:

If not supplied, a blank faceplate should be ordered.

24. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 24.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
Response: The system displays the EAI page.
- 24.2. On the EAI page, clear the force on CU 1 by entering **13**
Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 24.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

25. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

- 25.1. At CUPS TN1821 (at EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to Step **25.2**.

- 25.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
CU 0 **OOS** LED extinguishes.

- 25.3. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.
-
-

26. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **26.1**) or the command mode (Step **26.2**).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 26.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 26.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter
Info** form.
The cursor moves to the **database_name:**
attribute.

- 26.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

26.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

26.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

26.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

27. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

27.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

27.2. Press the <CR> key.

Response: The system prompts for the action desired.

27.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

27.4. Enter **<**

Response: The ECD RC/V is completed.

28. Exit RC. At the RC/V terminal, enter `<`

Response: The **CMD<** prompt is given when RC was entered from command mode. The `<` prompt is given when RC was entered from input message.

29. Update the ECD for *rootdmly* by repeating Steps **5** through **9** and Steps **17** through **21** using *rootdmly* instead of the *incore* database when preparing the ECD RC/V terminal, then continue to Step **30**.

30. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

31. At the MTTY, allow automatic maintenance requests by entering the appropriate input command:

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

32. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.

33. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

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Introduction

This chapter describes the procedure used to grow a UN379 Utility Circuit (UC) into a 3B21D computer system using low-level mode Recent Change and Verify (RC/V). The UC pack is used for debugging purposes. This procedure supports the unequipped configuration. Key field information that is to be provided by application engineering is required in this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this growth procedure:

- No system update activity should be taking place when performing this procedure.
- Ensure that the disks and the Input/Output Processors (IOPs) are in duplex and that Control Units (CUs) have been in the active-standby mode (with the exception of routine maintenance and diagnostic request).
- Ensure that diagnostics on both CUs have been run to successful completion within 24 hours prior to start of this procedure (UC growth).
- Ensure that all computer and/or system problems have been cleared before growth activity begins.
- Ensure that within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, or overloads.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.

References

The following information products must be available during this growth procedure:

- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

Procedure

The following steps describe the UC growth procedure:

1. At the Maintenance Terminal (MTTY) terminal, inhibit Routine Exercises (REXs) by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the Receive Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL**

2. Verify that the UC unit control block (*ucb*) form is in the database as unequipped or determine Unit Control Block (UCB) linkage if UC is to be grown.

The following subprocedure verifies if the *ucb* form for the UC is already in the database as unequipped and provides a UCB linkage list needed to update the Previous Logical Unit (PLU) and the Next Logical Unit (NLU) if UC is being grown.

VERIFY IF UC *ucb* FORM IS ALREADY IN DATABASE AS UNEQUIPPED OR DETERMINE UCB LINKAGE IF UC IS TO BE GROWN PROCEDURE:

- 2.1. Determine if the MTTY or the RC/V terminal is to be used.
 - If the MTTY terminal, continue to Step **2.2**.
 - If the RC/V terminal, go to Step **2.5**.
- 2.2. At the MTTY, ensure that the terminal is in the command mode.

2.3. Enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

2.4. Go to Step **2.6**.

2.5. At the RC/V terminal, enter the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD;**
- If PDS, **RCV:MENU:RCVECD!**

Response: The system displays the **RCV ECD Parameter Info** form
The cursor moves to the **database_name:** attribute.

2.6. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

2.7. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

2.8. Press the <CR> key.

Response: The cursor moves to the **print_file:** attribute.

2.9. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **echo_file:** attribute.

2.10. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

2.11. Enter **ucb**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

2.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.13. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

2.14. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

2.15. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.16. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.17. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.18. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

2.19. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

2.20. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

2.21. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

2.22. Enter **p**

Response: The system flashes **Form Printed:** in the upper right corner of the screen and then displays **Enter Review, Validate, screen#, or Print:**

2.23. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.24. Enter <

Response: The system displays the **Data Entry** form.
The cursor moves to the **Enter Form Name:** attribute.

2.25. Enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

2.26. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

2.27. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

2.28. Enter **CU**

Response: The cursor moves to the **complex_number:** attribute.

2.29. Enter **0**

Response: The cursor moves to the **unit_name:** attribute.

2.30. Enter **UC**

Response: The cursor moves to the **unit_number:** attribute.

2.31. Enter **0**

Response: The cursor moves to the **iop_list:** attribute.

2.32. Enter **'**

Response: The system displays **Enter Review, Validate, screen#, or Print:**

2.33. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.
The cursor moves to the **Enter Form Name:** attribute.

2.34. Enter **dbinfo**

Response: The cursor moves to the **dbinfo_opf:** attribute.

2.35. Enter **/tmp/filename**

Where: *filename* = any unique name.

Response: The cursor moves to the **ucb_list:** attribute.

2.36. Enter **y**

Response: The cursor moves to the **complex_name:** attribute.

2.37. Enter **CU**

Response: The cursor moves to the **complex_number:** attribute.

2.38. Enter **1**

Response: The cursor moves to the **unit_name:** attribute.

2.39. Enter **UC**

Response: The cursor moves to the **unit_number:** attribute.

2.40. Enter **0**

Response: The cursor moves to the **iop_list:** attribute.

2.41. Enter **'**

Response: The system displays **Enter Review, Validate, screen#, or Print:**

2.42. Enter **e**

Response: The system flashes **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

2.43. Enter <

Response: The system displays **REPT RCV COMPLETED**

2.44. At the MTTY, enter the appropriate input command.

- If MML, **DUMP:FILE:FN="/tmp/filename",ALL;**
- If PDS, **DUMP:FILE:FN "/tmp/filename",ALL!**

Where: *filename* = any unique name.

2.45. In the previous steps, verify if the UC *ucb* form was already in the database as unequipped.

- If **yes**, then go to Step 9.
 - If **no**, continue to Step 3.
-

3. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step 3.1) or the command mode (Step 3.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

3.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

3.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

3.1.2. At the RC/V terminal, enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

3.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

3.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

4.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction filename.

4.2. Press the <CR> key.

Response: The system prompts for the desired action.

4.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

5. Populate the *ucb* form for the growth UC.

POPULATE *ucb* FORM FOR GROWTH UC PROCEDURE:

- 5.1. At the RC/V terminal, enter **ucb**

- 5.2. Enter **i**

Response: The system displays a blank *ucb* form.

- 5.3. Populate all fields of the *ucb* form except the up, down, and side pointer linkages with data as provided by application engineering.

- 5.4. Enter **i**

Response: The system flashes **FORM INSERTED** once in the upper right corner of the screen and then the display returns to Page 1 of the *ucb* form.

- 5.5. Enter **<**

Response: The screen clears and the data entry page is displayed.

6. Repeat Step 5 for the other CU.

7. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 7.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.

- 7.2. Press the <CR> key four times to default all four fields on the *trend* form.

- 7.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

8. Exit Recent Change (RC). At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC was entered from command mode. The **<** prompt is given when RC was entered from input message mode.

9. Verify CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 9.1. At MTTY Common Processor Display Page (CPDP) 102, verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step 10.
- If **no**, continue to Step 9.2.

- 9.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

10. At Control Unit Power Switch (CUPS) TN1821 [at Equipment Location (EQL) 53-060], remove CU 1 from service by operating the **ROS/RST** switch to the **ROS** position.

Response: The system displays **RMV CU 1 COMPLETED**

11. Force CU 0 on-line.

FORCE CU 0 ON-LINE PROCEDURE:

- 11.1. At the MTTY, access the Emergency Action Interface (EAI) page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 11.2. On the EAI page, force CU 0 on-line by entering **12**

Response: The system displays **REPT CU 0 FORCED ONLINE**
followed by **REPT CU 1 UNAVAILABLE**



NOTE:

At the MTTY, CU 1 displays a Force Off-Line (FOFL) indicator and CU 0 displays a Force On-Line (FONL) indicator.

- 11.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

12. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **12.1**) or the command mode (Step **12.2**).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 12.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 12.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 12.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 12.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 12.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 12.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

13. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 13.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction filename.

- 13.2. Press the <CR> key.

Response: The system prompts for the desired action.

- 13.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

14. Access the *ucb* form of the PLU.

ACCESS *ucb* FORM OF PLU PROCEDURE:

- 14.1. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step 14.2.
- If **no**, go to Step 16.

- 14.2. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 14.3. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 14.4. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

14.5. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

14.6. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

14.7. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form.

15. Update the PLU side pointer linkage to point to the growth UC.

UPDATE PLU SIDE POINTER LINKAGE PROCEDURE:

15.1. At the RC/V terminal, enter **3**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

15.2. Enter **c**

Response: The system displays **Change Field:**

15.3. Enter **41**

Response: The cursor moves to the **complex_name:** attribute.

15.4. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

15.5. Enter **1**

Response: The cursor moves to the **side unit_name:** attribute.

15.6. Enter **UC**

Response: The cursor moves to the **side unit_number:** attribute.

15.7. Enter **0**

Response: The system displays **Change Field:**

15.8. Press the <CR> key.

Response: The system displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

15.9. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen.
The cursor moves to the **k_complex_name:** attribute.

15.10. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

16. Access the *ucb* form of the growth UC.

ACCESS *ucb* FORM OF GROWTH UC PROCEDURE:

16.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

16.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

16.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

16.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

16.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

16.6. Enter **0**

Response: The system completes the remainder of the form.

17. Update the UC up pointer linkage to point to Out-of-Service (OOS) CU, and change major status field from UNEQIP to GROW.

**UPDATE UC UP POINTER LINKAGE AND MAJOR STATUS FIELDS
PROCEDURE:**

17.1. At the RC/V terminal enter **3**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

17.2. Enter **c**

Response: The system displays **Change Field:**

17.3. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step 17.4.
- If **no**, go to Step 17.9.

17.4. Enter **46**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

17.5. Press the <CR> key.

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

17.6. Press the <CR> key.

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

17.7. Enter **CU**

Response: The cursor moves to the **k_unit_number:** attribute.

17.8. Enter **1**

Response: The system displays **Change Field:**

17.9. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

17.10. Enter **GROW**

Response: The system displays **Change Field:**

18. Update the side pointer linkage to the NLU.

UPDATE SIDE POINTER LINKAGE TO NLU PROCEDURE:

18.1. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step **18.2**.
- If **no**, go to Step **18.7**.

18.2. Enter **41**

Response: The cursor moves to the **complex_name:** attribute.

18.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

18.4. Enter **1**

Response: The cursor moves to the **side unit_name:** attribute.

18.5. Enter *aa*

Where: *aa* = unit name of the NLU.

Response: The cursor moves to the **side unit_number:** attribute.

18.6. Enter *bb*

Where: *bb* = unit number of the NLU.

Response: The system displays **Change Field:**

18.7. Press the <CR> key.

Response: The system displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

18.8. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen.
The cursor moves to the **k_complex_name:** attribute.

18.9. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

19. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

19.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.

19.2. Press the <CR> key four times to default all four fields on the *trend* form.

19.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

20. Exit RC. At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC was entered from input message mode.

21. At CUPS TN1821 (EQL 53-060), remove power from CU 1 by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 1**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

22. Install the UN379 UC circuit pack (EQL 45-050). Line up the top and bottom of the circuit pack with the card guides and slide the pack into position with the latch at the lower end of the faceplate open. When the circuit pack begins to make contact with the backplane pins (this will be felt by increased resistance while inserting the pack), the bottom of the latch should make contact with the bottom of the unit assembly. Close the latch to push the pack into the final position.
23. At CUPS TN1821 (EQL 53-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.
Response: The system displays **REPT POWER RESTORED CU 1**
24. Diagnose the growth UC.

DIAGNOSE GROWTH UC PROCEDURE:



NOTE:

During an RC session, input messages may be entered by pressing the **CMD/MSG** key. Return to the RC session by pressing the **CMD/MSG** key twice.

- 24.1. At the MTTY, enter the appropriate input command.

- If MML, **DGN:CU=1,UC=0:RAW,TLP;**
- If PDS, **DGN:CU 1,UC 0;RAW,TLP!**

Response: The system displays **DGN CU 1 UC 0 ATP**

- 24.2. Verify that the **ATP MSG COMPL** output message has been received.



NOTE:

Some diagnostics may require up to 30 minutes to complete.

- If **yes**, you have completed this subprocedure; continue to Step 25.
 - If **no**, clear diagnostics fault per local policy.
-
-

25. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step 25.1) or the command mode (Step 25.2).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 25.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 25.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 25.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 25.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 25.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 25.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

26. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 26.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction filename.

- 26.2. Press the <CR> key.

Response: The system prompts for the desired action.

- 26.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

27. Access the *ucb* form of the growth UC.

ACCESS *ucb* FORM OF GROWTH UC PROCEDURE:

- 27.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 27.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

- 27.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 27.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 27.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 27.6. Enter **0**

Response: The system completes the remainder of the form.

28. Update the growth UC major status field from GROW to OOS.

**UPDATE GROWTH UC MAJOR FIELD FROM GROW TO OOS
PROCEDURE:**

- 28.1. At the RC/V terminal, enter **3**

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

- 28.2. Enter **c**

Response: The system displays **Change Field:**

- 28.3. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 28.4. Enter **OOS**

Response: The system displays **Change Field:**

- 28.5. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen and then the display returns to Page 1 of the *ucb* form.

- 28.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

29. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 29.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.

- 29.2. Press the <CR> key four times to default all four fields on the *trend* form.

- 29.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

30. Exit RC. At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC is entered from input message mode.

31. Clear the force on CU 0.

CLEAR FORCE ON CU 0 PROCEDURE:

- 31.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 31.2. On the EAI page, clear the force on CU 0 by entering **13**

Response: The system displays **REPT CU 0 NO LONGER FORCED ONLINE**

⇒ NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 31.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

32. Restore CU 1 to service.

RESTORE CU 1 TO SERVICE PROCEDURE:

- 32.1. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
CU 1 **OOS** LED extinguishes.

- 32.2. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 1 in progress and wait until CU 1 is restored to standby before continuing.
-
-

33. Verify CU 1 is active and CU 0 is in standby.

Verify CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 33.1. At MTTY CPDP 102, verify that CU 1 is active and CU 0 is in standby.

- If **yes**, go to Step **34**.
- If **no**, continue to Step **33.2**.

- 33.2. At the MTTY, enter the appropriate command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

34. At CUPS TN1821 (EQL 28-060), remove CU 0 from service by operating the **ROS/RST** switch to the **ROS** position.

Response: The system displays **RMV CU 0 COMPLETED**

35. Force CU 1 on-line.

FORCE CU 1 ON-LINE PROCEDURE:

- 35.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 35.2. On the EAI page, force CU 1 on-line by entering **12**

Response: The system displays **REPT CU 1 FORCED ONLINE**
followed by **REPT CU 0 UNAVAILABLE**

⇒ NOTE:

At the MTTY, CU 0 displays an FOFL indicator and CU 1 displays an FONL indicator.

- 35.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

36. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **36.1**) or the command mode (Step **36.2**).

INVOKES INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 36.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 36.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 36.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 36.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

36.1.4. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

36.2. Invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

37. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

37.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction filename.

37.2. Press the <CR> key.

Response: The system prompts for the desired action.

37.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

38. Access the *ucb* form of the PLU.

ACCESS *ucb* FORM OF PLU PROCEDURE:

38.1. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step 38.2.
- If **no**, go to Step 40.

38.2. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

38.3. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

38.4. Enter **CU**

Response: The cursor moves to the **k_complex_number:**
attribute.

38.5. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

38.6. Enter **a**

Where: **a** = unit name of the PLU.

Response: The cursor moves to the **k_unit_number:** attribute.

38.7. Enter **b**

Where: **b** = unit number of the PLU.

Response: The system completes the remainder of the form.

39. Update the PLU side pointer linkage to point to the growth UC.

UPDATE PLU SIDE POINTER LINKAGE PROCEDURE:

- 39.1. At the RC/V terminal, enter **3**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 39.2. Enter **c**

Response: The system displays **Change Field:**

- 39.3. Enter **41**

Response: The cursor moves to the **complex_name:** attribute.

- 39.4. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 39.5. Enter **0**

Response: The cursor moves to the **side unit_name:** attribute.

- 39.6. Enter **UC**

Response: The cursor moves to the **side unit_number:** attribute.

- 39.7. Enter **0**

Response: The system displays **Change Field:**

39.8. Press the <CR> key.

Response: The system displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

39.9. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen.
The cursor moves to the **k_complex_name:** attribute.

39.10. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

40. Access the *ucb* form of the growth UC.

ACCESS *ucb* FORM OF GROWTH UC PROCEDURE:

40.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

40.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

40.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

40.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

40.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

40.6. Enter **0**

Response: The system completes the remainder of the form.

41. Update the UC up pointer linkage to point to the OOS CU, and change major status field from UNEQIP to GROW.

**UPDATE UC UP POINTER LINKAGE AND MAJOR STATUS FIELDS
PROCEDURE:**

- 41.1. At the RC/V terminal, enter **3**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 41.2. Enter **c**

Response: The system displays **Change Field:**

- 41.3. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step **41.4**.
- If **no**, go to Step **41.9**.

- 41.4. Enter **40**

Response: The cursor moves to the **cntrl_0 complex_name:** attribute.

- 41.5. Press the <CR> key.

Response: The cursor moves to the **cntrl_0 complex_number:** attribute.

- 41.6. Press the <CR> key.

Response: The cursor moves to the **cntrl_0 unit_name:** attribute.

- 41.7. Enter **CU**

Response: The cursor moves to the **k_unit_number:** attribute.

- 41.8. Enter **0**

Response: The system displays **Change Field:**

- 41.9. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 41.10. Enter **GROW**

Response: The system displays **Change Field:**

42. Update the side pointer linkage to the NLU.

UPDATE SIDE POINTER LINKAGE TO NLU PROCEDURE:

42.1. Verify that the *ucb* form was inserted in Step 5.

- If **yes**, continue to Step 42.2.
- If **no**, go to Step 42.7.

42.2. Enter **41**

Response: The cursor moves to the **complex_name:** attribute.

42.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

42.4. Enter **0**

Response: The cursor moves to the **side unit_name:** attribute.

42.5. Enter *aa*

Where: *aa* = unit name of the NLU.

Response: The cursor moves to the **side unit_number:** attribute.

42.6. Enter *bb*

Where: *bb* = unit number of the NLU.

Response: The system displays **Change Field:**

42.7. Press the <CR> key.

Response: The system displays **Enter Review, Change, Substitute, Validate, screen#, or Print:**

42.8. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen.
The cursor moves to the **k_complex_name:** attribute.

42.9. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

43. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 43.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.

- 43.2. Press the <CR> key four times to default all four fields on the *trend* form.

- 43.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

44. Exit RC. At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC is entered from input message mode.

45. At CUPS TN1821 (EQL 28-060), remove power from CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED CU 0**



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

46. Install the UN379 UC circuit pack at EQL 19-050 for CU 0. Line up the top and bottom of the circuit pack with the card guides and slide the pack into position with the latch at the lower end of the faceplate open. When the circuit pack begins to make contact with the backplane pins (this will be felt by increased resistance while inserting the pack), the bottom of the latch should make contact with the bottom of the unit assembly. Close the latch to push the pack into the final position.

47. At CUPS TN1821 for CU 0 (EQL 28-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 0**

48. Diagnose the growth UC.

DIAGNOSE GROWTH UC PROCEDURE:



NOTE:

During an RC session, input messages may be entered by pressing the **CMD/MSG** key. Return to the RC session by pressing the **CMD/MSG** key twice.

48.1. At the MTTY, enter the appropriate input command.

- If MML, **DGN:CU=0,UC=0:RAW,TLP;**
- If PDS, **DGN:CU 0,UC 0;RAW,TLP!**

Response: The system displays the **DGN CU 0 UC 0 ATP**

48.2. Verify that the **ATP MSG COMPL** output message is received.



NOTE:

Some diagnostics may require up to 30 minutes to complete.

- If **yes**, you have completed this subprocedure; continue to Step **49**.
 - If **no**, clear diagnostics fault per local policy.
-
-

49. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **49.1**) or the command mode (Step **49.2**).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 49.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 49.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 49.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 49.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 49.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 49.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

50. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

50.1. At the RC/V terminal, enter **trbegin**

Response: The system prompts for an identifiable transaction filename.

50.2. Press the <CR> key.

Response: The system prompts for the desired action.

50.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

51. Access the *ucb* form of the growth UC.

ACCESS *ucb* FORM OF GROWTH UC PROCEDURE:

51.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

51.2. Enter **u**

Response: The cursor moves to the **complex_name:** attribute.

51.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

51.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

51.5. Enter **UC**

Response: The cursor moves to the **k_unit_number:** attribute.

51.6. Enter **0**

Response: The system completes the remainder of the form.

52. Update the growth UC major status field from GROW to OOS.

**UPDATE GROWTH UC MAJOR FIELD FROM GROW TO OOS
PROCEDURE:**

- 52.1. At the RC/V terminal, enter **3**

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

- 52.2. Enter **c**

Response: The system displays **Change Field:**

- 52.3. Enter **21**

Response: The cursor moves to the **major_status:** attribute.

- 52.4. Enter **OOS**

Response: The system displays **Change Field:**

- 52.5. Enter **u**

Response: The system flashes **FORM UPDATED** once in the upper right corner of the screen and then the display returns to Page 1 of the *ucb* form.

- 52.6. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

53. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 53.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.

- 53.2. Press the <CR> key four times to default all four fields on the *trend* form.

- 53.3. Enter **e**

Response: The system flashes **FORM EXECUTED** once in the upper right corner of the screen and then displays the data entry page.

54. Exit RC. At the RC/V terminal, enter <

Response: The **CMD<** prompt is given when RC is entered from command mode. The < prompt is given when RC is entered from input message mode.

55. Clear the force on CU 1.

CLEAR FORCE ON CU 1 PROCEDURE:

- 55.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 55.2. On the EAI page, clear the force on CU 1 by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 55.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-
-

56. Restore CU 0 to service.

RESTORE CU 0 TO SERVICE PROCEDURE:

- 56.1. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.

- 56.2. At the MTTY, observe CPDP 102 and the ROP output for the restoral of CU 0 in progress and wait until CU 0 is restored to standby before continuing.

- 56.3. Allow system to soak 15 minutes before continuing.
-
-

57. Invoke the *incore* database low-level mode RC/V by accessing the ECD using either the menu mode (Step **57.1**) or the command mode (Step **57.2**).

INVOKE INCORE DATABASE LOW-LEVEL MODE RC/V PROCEDURE:

- 57.1. Invoke the *incore* database low-level mode using the menu mode.

MENU MODE PROCEDURE:

- 57.1.1. At the MTTY, enter menu command **199**

Response: The system displays the **RCV ECD Parameter Info** form.
The cursor moves to the **database_name:** attribute.

- 57.1.2. Enter **incore**

Response: The cursor moves to the **reviewonly:** attribute.

- 57.1.3. Enter **n**

Response: The cursor moves to the **journaling:** attribute.

- 57.1.4. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 57.2. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

58. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

58.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

58.2. Press the <CR> key.

Response: The system prompts for the action desired.

58.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

58.4. Enter **<**

Response: The ECD RC/V is completed.

59. Exit RC. At the RC/V terminal, enter **<**

Response: The **CMD<** prompt is given when RC is entered from command mode. The **<** prompt is given when RC is entered from input message mode.

60. Update the backup root file system.

⇒ NOTE:

See Appendix A for the procedure to update the backup root file system.

61. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

62. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications specific instructions or to 254-303-106, *System Maintenance Manual*.
63. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

Lucent Technologies
Bell Labs Innovations



3B21D Computer Common Systems

Growth/Retrofit Tasks
Volume 2

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About This Information Product

Purpose

This information product is part of a documentation set used to support the *UNIX** Real-Time Reliable (RTR) system running on the Lucent Technologies 3B21D computer. It presents the procedures used to grow, degrow, convert, and retrofit major components of the 3B21D computer.

Audience

This information product provides information for a variety of audiences. Anyone interested in the *UNIX* RTR operating system and the 3B21D computer will find this information product useful. However, the primary audience includes the following:

- Software developers
- Hardware developers
- Training course developers
- System administrators
- 3B21D computer system personnel responsible for system engineering, maintenance, operations, and installation.

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Reason for Reissue

This information product is being reissued to incorporate new information for the 3B21D computer and to bring the information product into compliance with new Lucent Technologies documentation standards. The major changes are as follows:

- Expand to two volumes.
- Change the Response in Step **20.4** of Chapter 1.
- Change the title of Chapter 9, "IOP Unit Degrowth" to "IOP 2 or IOP 3 Degrowth."
- Change the title of Chapter 10, "IOP Unit Growth" to "IOP 2 or IOP 3 Growth."
- Change the syntax in Step **11.2** of Chapter 10.
- Divide existing Chapter 13 into two new chapters.
- Add new Chapter 13, "KLW256 Memory Growth."
- Divide existing Chapter 14 into two new chapters.
- Add new Chapter 14, "UUCP Link Degrowth."
- Add new Chapter 15, "UUCP Link Growth."
- Renumber existing Chapters 15 through 31. Add one to each number to accommodate new Chapter 15.
- Make the following changes in existing Chapter 20 that is now Chapter 21:
 - Add 254-303-101, *Routine Maintenance Tasks*, to "References" section.
 - Reference 254-303-106, *System Maintenance Manual*, for more information on setting IDs in Step **39**.
 - Change table title from Table 20-2, "Location of Jumper" to Table 21-2, "9824AN SCSI Bus Jumper Locations." Then, correct the existing data in Table 20-2, "Location of Jumper." The IOP 2 SPU Growth Unit should be Equipment Location (EQL) 11-XXX-XXX and not 62-XXX-XXX.
 - Resequence Steps **57** through **61** at the end of the procedure.
 - Add a new subprocedure to test both a 9-track tape and a DAT unit.
- Add new Chapter 33, "KBN15 to KBN415 DMAC Conversion."
- Add new Chapter 34, "TN983 to UN597 MTTYC Conversion."
- Add new Chapter 35, "UN583 to UN597 MTTYC Conversion."
- Add new Chapter 36, "UN597 1200 to 9600 Baud ROP Conversion."
- Add new Chapter 37, "UN597 to UN597 with ABD Conversion."
- Add new Chapter 38, "TN74B to UN582 TTYC Conversion."
- Add new Chapter 39, "TN82B to UN582 HSDC Conversion."

- Add new Chapter 40, "TN75C to UN582 SDLC Conversion."
- Add new Chapter 41, "TN1839 to UN582 SDLC Conversion."
- Add new Chapter 42, "UN33 to UN933 SCSDC Conversion."
- Add new Chapter 43, "UN373/TN2116/410AA to UN580B DFC Conversion."
- Add new Chapter 44, "Internet Protocol-Data Service Unit Conversion."

How to Use This Information Product

This information product consists of independent chapters and reference information. Each chapter contains procedures for accomplishing a single task. Specific topics are referenced in the "Table of Contents" and in the "Index" with page number locations. The "Glossary" defines terminology used in this information product. This issue has been divided into two volumes as follows:

Volume 1

Volume 1 contains growth and degrowth procedures used to change a 3B21D computer system.

- Master Table of Contents
- About This Information Product
Provides general information about the information product. Information regarding how to audience, reason for reissue, conventions, safety labels, how to order, and how to comment is included. A description of how the information product is organized and a brief description of the contents of each chapter is also provided.
- Chapter 1 — DCI High-Level Degrowth
Describes the procedure used to degrow the Dual Serial Channel (DSCH) Computer Interconnect (DCI) by high-level mode Recent Change and Verify (RC/V).
- Chapter 2 — DCI High-Level Growth
Describes the procedure used to grow the DCI by high-level mode RC/V.
- Chapter 3 — DCI Low-Level Degrowth
Describes the procedure used to degrow the DCI by low-level mode RC/V.
- Chapter 4 — DCI Low-Level Growth
Describes the procedure used to grow the DCI by low-level mode RC/V.
- Chapter 5 — DFC Growth
Describes the procedure used to grow a Disk File Controller (DFC).
- Chapter 6 — DMAC/DSCH Growth
Describes the procedure used to grow a Direct Memory Access Controller (DMAC)/Dual Serial Channel (DSCH) circuit pack (KBN15).

- Chapter 7 — HSDC Degrowth
Describes the procedure used to degrow a High-Speed Data Link Controller (HSDC).
- Chapter 8 — HSDC Growth
Describes the procedure used to grow an HSDC.
- Chapter 9 — IOP 2 or IOP 3 Degrowth
Describes the procedure used to degrow an Input/Output Processor (IOP 2 or IOP 3).
- Chapter 10 — IOP 2 or IOP 3 Growth
Describes the procedure used to grow a new IOP 2 or IOP 3.
- Chapter 11 — IOP/SCSI Peripheral Unit Growth (Growth Shelf)
Describes the procedure used to grow an IOP/Small Computer System Interface (SCSI) peripheral unit into a processor cabinet of a 3B21D computer system.
- Chapter 12 — Memory Growth
Describes the procedure needed to grow additional Single In-line Memory Modules (SIMMs).
- Chapter 13 — KLW256 Memory Growth
Describes the procedure used to grow a KLW256 memory board.
- Chapter 14 — UUCP Link Degrowth
Describes the procedure to degrow a UNIX-to-UNIX Copy (UUCP) link.
- Chapter 15 — UUCP Link Growth
Describes the procedure to grow a UUCP link.
- Chapter 16 — Peripheral Cabinet Growth
Describes the procedure used to grow a peripheral cabinet.
- Chapter 17 — SCSDC Degrowth
Describes the procedure used to degrow a Scanner and Signal Distributor Controller (SCSDC).
- Chapter 18 — SCSDC Growth
Describes the procedure used to grow an SCSDC (UN33/UN933 circuit packs).
- Chapter 19 — SCSI 9-Track Tape Device Degrowth
Describes the procedure used to degrow a SCSI 9-track tape device.
- Chapter 20 — SCSI DAT Device Degrowth
Describes the procedure used to degrow a SCSI Digital Audio Tape (DAT) device.
- Chapter 21 — SCSI Peripheral Growth
Describes the procedure used to grow a SCSI Moving Head Disk (MHD), a pair of duplex SCSI MHDs, a SCSI DAT device, or a SCSI 9-track tape device.

- Chapter 22 — SCSDC16 Growth
Describes the procedure used to grow an SCSDC16 (UN33/UN933).
- Chapter 23 — SDL Degrowth
Describes the procedure used to degrow a Synchronous Data Link (SDL) by high-level mode RC/V.
- Chapter 24 — SDL Growth
Describes the procedure used to grow SDLs by high-level mode RC/V.
- Chapter 25 — SDLC Degrowth
Describes the procedure used to degrow a Synchronous Data Link Controller (SDLC) by high-level mode RC/V.
- Chapter 26 — SDLC Growth
Describes the procedure used to grow SDLCs.
- Chapter 27 — TTY Degrowth
Describes the procedure used to degrow the Terminal (TTY).
- Chapter 28 — TTY Growth
Describes the procedure used to grow the TTY.
- Chapter 29 — TTYC Degrowth
Describes the procedure used to degrow a Terminal Controller (TTYC) by high-level mode RC/V.
- Chapter 30 — TTYC Growth
Describes the procedure used to grow the TTYC by high-level mode RC/V.
- Chapter 31 — UC Degrowth
Describes the procedure used to degrow a UN379 Utility Circuit (UC) by low-level mode RC/V.
- Chapter 32 — UC Growth
Describes the procedure used to grow a UN379 UC by low-level mode RC/V.

Volume 2

Volume 2 contains conversion procedures used to change a 3B21D computer system.

- Master Table of Contents
- About This Information Product
Provides general information about the information product. Information regarding how to audience, reason for reissue, conventions, safety labels, how to order, and how to comment is included. A description of how the information product is organized and a brief description of the contents of each chapter is also provided.

- Chapter 33 — KBN15 to KBN415 DMAC Conversion
Describes the procedure used to convert from a KBN15 Direct Memory Access Controller (DMAC) dual serial channel circuit pack to a KBN415 circuit pack.
- Chapter 34 — TN983 to UN597 MTTYC Conversion
Describes the procedure used to convert a Maintenance Terminal Controller (MTTYC) from a TN983 circuit pack to a UN597 circuit pack.
- Chapter 35 — UN583 to UN597 MTTYC Conversion
Describes the procedure used to convert a MTTYC from a UN583 circuit pack to a UN597 circuit pack.
- Chapter 36 — UN597 1200 to 9600 Baud ROP Conversion
Describes the procedure used to convert a 1200 baud Receive-Only Printer (ROP) to 9600 baud using a UN597 circuit pack.
- Chapter 37 — UN597 to UN597 with ABD Conversion
Describes the procedure used to enable the Alternate Boot Disk (ABD) feature on a UN597 MTTYC circuit pack.
- Chapter 38 — TN74B to UN582 TTYC Conversion
Describes the procedure used to convert from a TN74B Terminal Controller (TTYC) circuit pack to a UN582 Multipurpose Peripheral Controller (MPC) circuit pack.
- Chapter 39 — TN82B to UN582 HSDC Conversion
Describes the procedure used to convert from a TN82B High-Speed Data Link Controller (HSDC) to a UN582 MPC circuit pack.
- Chapter 40 — TN75C to UN582 SDLC Conversion
Describes the procedure used to convert from a TN75C Synchronous Data Link Controller (SDLC) circuit pack to a UN582 MPC circuit pack.
- Chapter 41 — TN1839 to UN582 SDLC Conversion
Describes the procedure used to convert from a TN1839 Synchronous Data Link Controller (SDLC) circuit pack to a UN582 MPC circuit pack.
- Chapter 42 — UN33 to UN933 SCSDC Conversion
Describes the procedure used to convert from a UN33 Scanner and Signal Distributor Controller (SCSDC) circuit pack to a UN933 SCSDC circuit pack.
- Chapter 43 — UN373/TN2116/410AA to UN580B DFC Conversion
Describes the procedure used to convert from a UN373/TN2116/410AA DFC circuit pack to a UN580B DFC circuit pack.

- Chapter 44 — Internet Protocol-Data Service Unit Conversion
Describes the procedure used to add an Internet Protocol-Data Service Unit (IP-DSU) between the Switching Control Center (SCC) channel on the 3B21D computer and the local 10BaseT Local Area Network (LAN) hub or router.
- Appendix A — Copying to Backup Partitions
Describes the procedure used to copy backup partitions.
- Glossary
- Index.

Using Procedures in This Information Product

The procedures in this information product are easy to use for both the experienced and inexperienced user. Steps requiring a more complicated action have “subprocedures” that provide detailed instructions.

- If you know how, you can perform the action described in the main procedure step, skip (or “bypass”) the subprocedure steps, and continue to the next main procedure step.
- If you need help, perform the steps detailed in the subprocedure.

Each subprocedure is set off from the main procedure by double bold horizontal lines that mark the beginning of the subprocedure and double narrow horizontal lines that mark the ending.

Figure 1 shows how bypassing works. If you know how to remove the MHD from service (Step **3**), you can perform the action (without having to read Steps **3.1** and **3.2**), and then skip to Step **4**. If you do not know how to remove the MHD from service, you should read and perform the instructions given in Steps **3.1** and **3.2**, and then continue to Step **4**.

Numbering Conventions

The first step in a main procedure is Step **1** as shown in Figure 1. For example:

1. Verify mate Moving Head Disk (MHD).

The first step in a subprocedure is **X.1**. The **X** varies depending on where in the main procedure the subprocedure step occurs. For example, if we added a subprocedure step after the main procedure Step **3**, the first number of the subprocedure would be **3.1**. See Figure 1 for an example.

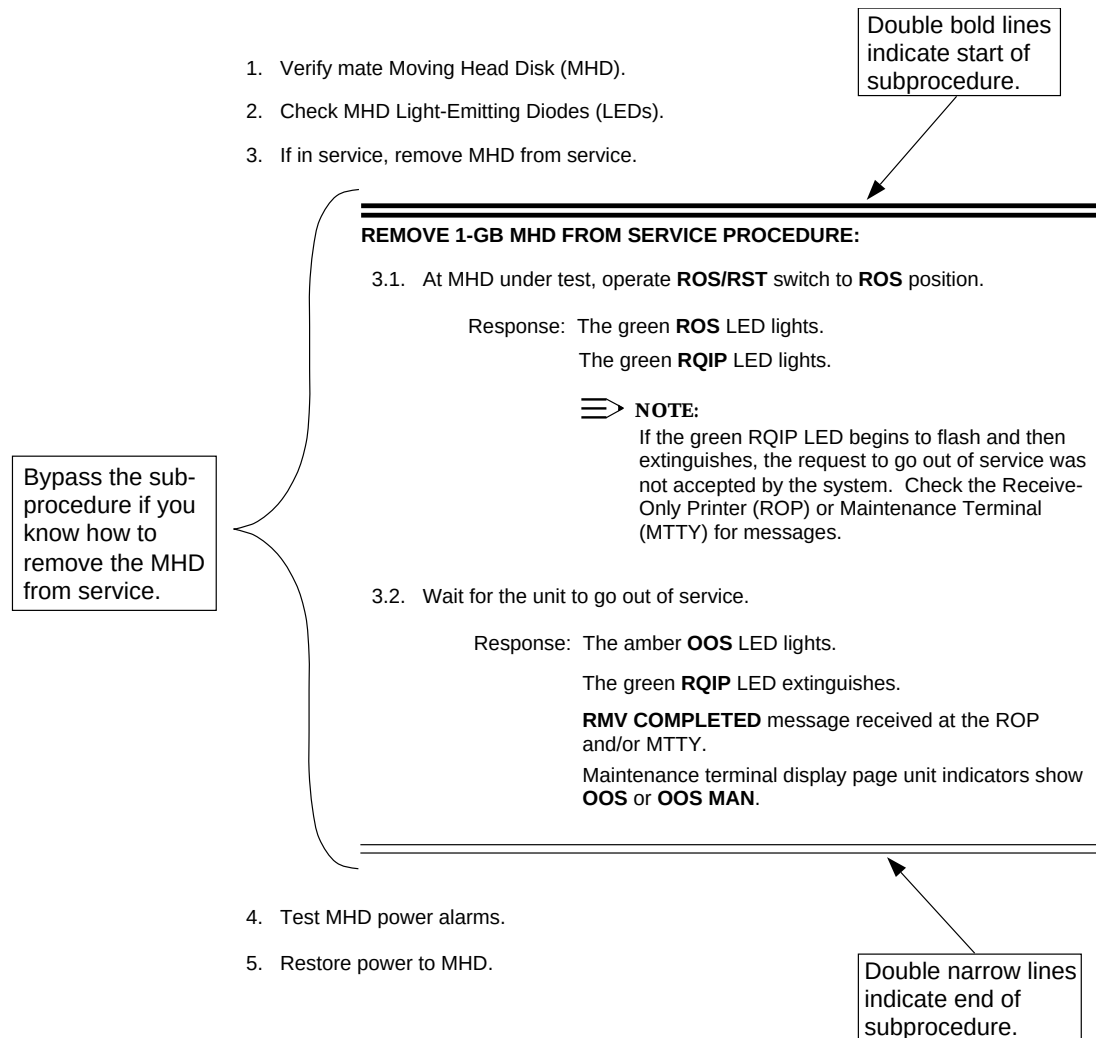


Figure 1. Sample of Subprocedure Bypassing

Conventions Used

Command, Filename, and Display Notations

The input commands contained in this information product are listed in both Man-Machine Language (MML) and Program Documentation Standard (PDS) format. For example, a step instructing the user to enter the appropriate input command to the system would include both formats as follows:

- If MML, **VFY:MHD=b;**
- If PDS, **VFY:MHD b!**

The following notations are used to show commands, filenames, variables, screen displays, and return keys in the text and displays.

⇒ NOTE:

System filenames and command names are case-sensitive, so you must enter them exactly as they are shown.

- Command names in text appear in **bold** type; for example, the **/usr/bin/ls** command. Command names in headings appear in **bold** type.

⇒ NOTE:

Due to the possibility of errors when entering a command, punctuation has been alleviated at the end of a command line unless the punctuation is part of that command.

- Filenames, forms, and record names in text appear in *italic* type; for example, the */usr/lib/uucp/System* file, the *scsdbody* form, or the *sgen* record. Filenames, forms, and record names in headings appear in ***bold-italic*** type.
- Text that you enter such as a command or a response to a prompt appears in **bold** type; for example, the **ls -la** command. The convention of making text **bold** overrides other conventions; for example, enter **scsdbody** for the form name.

⇒ NOTE:

Due to the possibility of errors (comparing actual response with instructions), punctuation has been alleviated at the end of a response unless the punctuation is part of that response.

- Variables that appear in a command line or file appear in *italic* type; for example, **grep *username* /etc/passwd**. In this example, *username* is a variable indicating a user's name is required.

- Screen displays and system messages appear in constant width type; for example, Please enter your password. Program code listings and file listings are also shown in constant width type. Input messages are shown in **constant-width bold** type.
- Comments and explanations within a display are indented and shown in *italic* type. These are for information only and will not appear on your screen.
- Square brackets around an argument on a command line indicate that the argument is optional; for example, the **lpstat [-t]** command. In this example, the **-t** argument is optional and can be omitted.
- A vertical bar (|) between words in an argument on a command line indicates that one of the arguments is to be selected.
- The key identified on your keyboard as Return, Enter, or a bent arrow (↵) is referred to as the Return key. Occasionally, representations of this Return key will be shown as <CR> or boxed; for example, Return.
- There is an implied Return at the end of each command and menu response that you enter. Some examples do not explicitly show the Return. Where you may be expected to enter a Return (as in the case where you are accepting a menu default), the symbol <CR> is shown to indicate that you are to press the Return key.
- Key combinations appear in a hyphenated format; for example, Ctrl-d. Press and hold down the first key of a key combination while pressing the second key.
- Ellipses (three dots) on a command line indicate that the previous argument can be repeated; for example, **ls [file ...]**. In this example, multiple files can be listed after the command.
- References to manual pages are followed by their manual page location number in parentheses; for example, **mount(1M)**.

Hexadecimal Notation

Hexadecimal (base 16) numbers are denoted with a **0x** prefix; for example, 0x00A is decimal 10.

Equipment Locations

A coordinate numbering system is used to identify the Equipment Location (EQL) in units and cabinets. The origin is the lower left front of the cabinet or unit. Vertical increments are measured in inches. Horizontal increments are measured in eighths of an inch. The coordinate location of a circuit pack is expressed as the horizontal and vertical location of the center lines of the connector into which the circuit pack is inserted. The location of a unit in a cabinet is identified by the placement of the lower left corner of the unit in the cabinet.

For example, a connector at EQL 004-080 is located 4 inches above the origin and 10 inches (80 by 0.125 = 10.0) to the right of the origin.

Safety Labels

Safety labels are reminders used to assure the safety of personnel and to minimize service interruptions, loss of data, and damage to equipment, products, and software.

Three types of safety labels are used in Lucent Technologies documentation. The three types, in descending order of priority, are as follows:

1. **DANGER** indicates the presence of a hazard that **will** cause death or severe personal injury if the hazard is not avoided.
2. **WARNING** indicates the presence of a hazard that **can** cause death or severe personal injury if the hazard is not avoided.
3. **CAUTION** indicates the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.

This information product contains safety labels in the form of CAUTION statements.

Related Information Products

Table 1 lists by information product number and Select Code the Lucent Technologies information products supporting the 3B21D computer.

Table 1. Information Products Supporting 3B21D Computer

New Information Product Number	Old Select Code	Title
254-303-100	-	3B21D Computer Growth/Retrofit Tasks
254-303-101	-	3B21D Computer Routine Maintenance Tasks
254-303-102	-	3B21D Computer Trouble Clearing Tasks
254-303-103	303-007	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Processor Recovery Messages Guide
254-303-104	303-010	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Recent Change and Verify Manual
254-303-105	304-045	3B21D Computer Hardware Reference Manual
254-303-106	304-046	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System System Maintenance Manual
254-303-107	303-072	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System Software Troubleshooting Guide
254-303-110	303-080	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System PDS Input Messages Manual
254-303-111	303-081	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System PDS Output Messages Manual
254-303-112	303-082	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System MML Input Messages Manual
254-303-113	303-083	3B20D and 3B21D Computers <i>UNIX</i> RTR Operating System MML Output Messages Manual

Information product references will not include full titles. For example, "Refer to 254-303-104, *Recent Change and Verify Manual*, for more information."

How to Comment on This Information Product

We are constantly striving to improve the quality and usability of this information product. Please use one of the following options to provide us with your comments:

- You may use the on-line comment form at **<http://www.lucent-info.com/comments>**
- You may email your comments to **ctiphotline@lucent.com**
- You may use the enclosed comment form to send us your comments either by fax or mail as follows:
 - Fax to **1-407-767-2760**
 - Mail to the following address:
Lucent Technologies
Documentation Services Coordinator
240 E. Central Parkway
Altamonte Springs, FL 32701-9928
- You may call the hot line with your comments at **1-800-645-6759**. The hot line is staffed Monday through Friday from 8:00 a.m. to 5:00 p.m. Eastern time.

Please include with your comments the title, ordering number, issue number and issue date of the information product, your complete mailing address, and your telephone number.

Mandatory Customer Information

The 3B21D computer is used as the Administrative Module (AM) in various switching system applications and is not provided as a stand-alone product. Therefore, the application documentation is responsible for providing this information.

Refer to the applicable application documentation for "Mandatory Customer Information."

KBN15 to KBN415 DMAC Conversion

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KBN15 to KBN415 DMAC Conversion

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Introduction

This chapter describes the procedure used to convert a KBN15 Direct Memory Access Controller (DMAC) to a KBN415 DMAC in a 3B21D computer. Instructions for converting to the KBN415 circuit packs are included as part of this procedure. The KBN415, as part of the 3B21D/Real-Time Reliable (RTR) Memory and DMAC Performance feature, is supported in RTR Release 21.35 and later releases.

 NOTE:

The KBN415 requires that a K LW256 main memory board be equipped in the 3B21D computer. If a K LW256 memory board is not equipped, see Chapter 13, “K LW256 Memory Growth,” for the procedure to grow the K LW256 memory board.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.

 CAUTION:

Extreme caution should be used when executing this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- A KLV256 main memory board **must** be equipped at Equipment Locations (EQLs 28-008 and 53-008) in the 3B21D computer.
- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Control Units (CUs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this growth procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap must be worn and connected when handling circuit packs.



CAUTION:

Cable replacement and backplane repair requires use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4986	Antistatic kit (including strap and antistatic mat)
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags (or equivalent)

The following equipment is required for this procedure:

Number	Qty	Description
108784612	2-4	KBN415 + 1 spare (if site stocks spares)
ED3T079-10,G70	2-4	KBN415 Designation Strip Label

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and conversion procedures used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- CU 0 KBN15 to KBN415 DMAC Conversion Backout Procedure
- Verify CU 1/0 status
- Remove CU 0
- Install KBN415 circuit pack
- Update CU 0 *ucb* values
- Clear CU 1 forced on-line
- Restore CU 0
- Safe Stop Point 2
- CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure
- Verify CU 1/0 status
- Remove CU 1
- Install KBN415 circuit pack
- Update CU 1 *ucb* values
- Clear CU 0 forced on-line
- Restore CU 1
- Safe Stop Point 3
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the CU 0 and CU 1 KBN15 to KBN415 DMAC conversion procedures in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding
OP DMQ COMPLETED

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the Common Processor Display Page (CPDP), verify that CU 1 is active.
 - If **yes**, go to Step 5.
 - if **no**, continue to Step 4.

4. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

5. At the MTTY, remove, diagnose, and restore CU 1 by entering the appropriate input command.
 - If MML, **RST:CU=1;**
 - If PDS, **RST:CU 1!**

Response: The system displays **RST CU 1 COMPLETE**

6. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

7. At the MTTY, remove, diagnose, and restore CU 0 by entering the appropriate input command.
 - If MML, **RST:CU=0;**
 - If PDS, **RST:CU 0!**

Response: The system displays **RST CU 0 COMPLETE**

8. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

9. SAFE STOP POINT 1

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, review the backout procedure in the next section before beginning the "CU 0 KBN15 to KBN415 DMAC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 9.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 9.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
- 9.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**
-
-

10. **STOP! YOU HAVE COMPLETED THIS PRELIMINARY STEPS PROCEDURE.**

CU 0 KBN15 to KBN415 DMAC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to CU 0. Read and understand the backout procedure before proceeding to the "CU 0 KBN15 to KBN415 DMAC Conversion Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

NOTE:

At the Receive-Only Printer (ROP), the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

2. Verify that CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 2.1. At the MTTY CPDP **102** (Page **111** for 5ESS® switch), verify that CU 1 is active and CU 0 is in standby.
 - If **yes**, go to Step **3**.
 - If **no**, continue to Step **2.2**.
- 2.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

3. At the MTTY, enter the appropriate input command.
 - If MML, **RMV:CU=0;**
 - If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

4. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 4.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 4.2. Enter **12** at the **CMD<** prompt.
- 4.3. Verify that the active CU 1 is forced on-line and that the Out-of-Service (OOS) CU 0 is forced off-line.

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

5. At Control Unit Power Switch (CUPS) TN1821 (EQL 28-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step 5 prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

6. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** Light-Emitting Diode (LED) lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 0**

7. Install the original KBN15 in the off-line CU 0.

INSTALL ORIGINAL KBN15 IN OFF-LINE CU 0 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 7.1. Unseat and remove the KBN415 (DMAC 0) circuit pack at EQL 28-075.
7.2. Install the KBN15 circuit pack in the 3B21D computer at EQL 28-075.



NOTE:

Many 3B21D computers do not have a DMA 1 equipped. If DMA 1 is not equipped, go to Step 8.

- 7.3. If equipped, unseat and remove the KBN415 (DMAC 1) circuit pack at EQL 28-065.
7.4. If equipped, install the KBN15 circuit pack in the 3B21D computer at EQL 28-065.
-
-

8. At CUPS TN1821 (EQL 28-060), power up CU 0 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 0**

9. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 10.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 10.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11. Update the CU 0 *ucb* values.

UPDATE CU 0 *ucb* VALUES PROCEDURE:

- 11.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 11.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 11.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 11.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

11.6. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.7. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.9. Enter **0x3**

Response: The system displays **Change Field:**

11.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.13. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 11.14. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 11.15. Enter **11**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 11.16. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 11.17. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 11.18. Enter **0x3**
Response: The system displays **Change Field:**
- 11.19. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 11.20. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 11.21. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 11.22. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

11.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.24. Enter **12**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.25. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.26. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.27. Enter **0x3**

Response: The system displays **Change Field:**

11.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.31. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.33. Enter **13**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.34. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.35. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.36. Enter **0x3**

Response: The system displays **Change Field:**

11.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.39. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.40. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.41. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.42. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.43. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.44. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.45. Enter **0x3**

Response: The system displays **Change Field:**

11.46. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.47. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **11.93**.

11.48. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.49. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.50. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

11.51. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **11.93**.

11.52. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.53. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.54. Enter **0x3**

Response: The system displays **Change Field:**

11.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.56. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.58. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.59. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.60. Enter **16**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.61. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.62. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.63. Enter **0x3**

Response: The system displays **Change Field:**

11.64. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.65. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.66. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.67. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 11.68. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 11.69. Enter **17**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 11.70. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 11.71. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 11.72. Enter **0x3**
Response: The system displays **Change Field:**
- 11.73. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 11.74. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 11.75. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 11.76. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

11.77. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.78. Enter **18**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.79. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.80. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.81. Enter **0x3**

Response: The system displays **Change Field:**

11.82. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.83. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.84. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.85. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

11.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.87. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.88. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.89. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.90. Enter **0x3**

Response: The system displays **Change Field:**

11.91. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.92. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.93. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 12.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 12.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 12.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 12.4. Enter <

Response: The ECD RC/V is completed.

13. Diagnose the original KBN15 circuit packs.

DIAGNOSE ORIGINAL KBN15 CIRCUIT PACKS PROCEDURE:

- 13.1. At the MTTY, diagnose the CU 0 DMA 0 by entering the appropriate input command.

- If MML, **DGN:CU=0,DMA=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,DMA 0;RAW,DEX,TLP!**



NOTE:

Ensure all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 DMA 0 ATP
MESSAGE COMPLETE**

13.2. Is DMA 1 equipped?

- If **no**, go to Step **14**.
- If **yes**, continue to Step **13.3**.

13.3. At the MTTY, diagnose the CU 0 DMA 1 by entering the appropriate input command.

- If MML, **DGN:CU=0,DMA=1,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,DMA 1;RAW,DEX,TLP!**

⇒ NOTE:

Ensure all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 DMA 1 ATP
MESSAGE COMPLETE**

14. Clear CU 1 that was forced on-line.

CLEAR CU 1 FORCED ON-LINE PROCEDURE:

14.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

14.2. Clear the CU forces by entering **13** at the **CMD<** prompt.

Response: The system displays **REPT CU 1 NO LONGER
FORCED ONLINE**

⇒ NOTE:

Neither CU 1 nor CU 0 displays a forced indicator at the MTTY.

14.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.

15. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

 NOTE:

Do **not** proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 0 COMPLETED**
At CUPS TN1821 (EQL 28-060), **OOS** and **RQIP** LEDs
extinguish.

16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

CU 0 KBN15 to KBN415 DMAC Conversion Procedure

Perform the following steps to convert a KBN15 DMAC board to a KBN415 DMAC board in CU 0.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ
INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding
OP DMQ COMPLETED

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that CU 1 is active and CU 0 is in standby.

VERIFY CU 1 IS ACTIVE AND CU 0 IS IN STANDBY PROCEDURE:

- 3.1. At the MTTY CPDP **102** (Page **111** for *5ESS* switch), verify that CU 1 is active and CU 0 is in standby.
 - If **yes**, go to Step **4**.
 - If **no**, continue to Step **3.2**.
- 3.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

4. At the MTTY, enter the appropriate input command.
 - If MML, **RMV:CU=0;**
 - If PDS, **RMV:CU 0!**

Response: The system displays **RMV CU 0 COMPLETED**

5. Force the active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 5.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 5.2. Enter **12** at the **CMD<** prompt.
- 5.3. Verify that the active CU 1 is forced on-line and that the OOS CU 0 is forced off-line.

Response: The system displays **REPT CU 0 UNAVAILABLE**
followed by **REPT CU 1 FORCED ONLINE**

6. At CUPS TN1821 (EQL 28-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **6** prevents automatic restoral of the CU 0 when the unit is powered up later in this procedure.

7. At CUPS TN1821 (EQL 28-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.



NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 0**

8. Install the KBN415 in the off-line CU 0.

INSTALL KBN415 IN OFF-LINE CU 0 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.1. Unseat and remove the KBN15 (DMAC 0) circuit pack at EQL 28-075.
- 8.2. Install the KBN415 circuit pack in the 3B21D computer at EQL 28-075.
- 8.3. Install the KBN415 designation label.



NOTE:

Many 3B21D computers do not have a DMA 1 equipped. If DMA 1 is not equipped, go to Step 9.

- 8.4. If equipped, unseat and remove the KBN15 (DMAC 1) circuit pack at EQL 28-065.
 - 8.5. If equipped, install the KBN415 circuit pack in the 3B21D computer at EQL 28-065.
 - 8.6. If equipped, install the KBN415 designation label.
-
-

9. At CUPS TN1821 (EQL 28-060), power up CU 0 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 0**

10. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 11.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 11.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12. Update the CU 0 *ucb* values.

UPDATE CU 0 *ucb* VALUES PROCEDURE:

- 12.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 12.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 12.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

12.6. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.7. Enter **c**

Response: The system displays **Change Field:**

12.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.9. Enter **0x5**

Response: The system displays **Change Field:**

12.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.13. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.14. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.15. Enter **11**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.16. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.17. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.18. Enter **0x5**

Response: The system displays **Change Field:**

12.19. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.20. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.21. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.22. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.24. Enter **12**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.25. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.26. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.27. Enter **0x5**

Response: The system displays **Change Field:**

12.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.31. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.33. Enter **13**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.34. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.35. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.36. Enter **0x5**

Response: The system displays **Change Field:**

12.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.39. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.40. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.41. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.42. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.43. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.44. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.45. Enter **0x5**

Response: The system displays **Change Field:**

12.46. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.47. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **12.93**.

12.48. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.49. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.50. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

12.51. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **12.93**.

12.52. Enter **c**

Response: The system displays **Change Field:**

12.53. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.54. Enter **0x5**

Response: The system displays **Change Field:**

12.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.56. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.58. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 12.59. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 12.60. Enter **16**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.61. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 12.62. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 12.63. Enter **0x5**
Response: The system displays **Change Field:**
- 12.64. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.65. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 12.66. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 12.67. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

12.68. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.69. Enter **17**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.70. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.71. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.72. Enter **0x5**

Response: The system displays **Change Field:**

12.73. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.74. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.75. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.76. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.77. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.78. Enter **18**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.79. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.80. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.81. Enter **0x5**

Response: The system displays **Change Field:**

12.82. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.83. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.84. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.85. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

12.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.87. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.88. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.89. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.90. Enter **0x5**

Response: The system displays **Change Field:**

12.91. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.92. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.93. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

13. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

13.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

13.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

13.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

13.4. Enter <

Response: The ECD RC/V is completed.

14. Diagnose the KBN415 circuit pack.

DIAGNOSE KBN415 CIRCUIT PACK PROCEDURE:

14.1. At the MTTY, diagnose the CU 0 DMA 0 by entering the appropriate input command.

- If MML, **DGN:CU=0,DMA=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,DMA 0;RAW,DEX,TLP!**



NOTE:

Ensure that all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 DMA 0 ATP
MESSAGE COMPLETE**

14.2. Is DMA 1 equipped?

- If **no**, go to Step **15**.
- If **yes**, continue to Step **14.3**.

- 14.3. At the MTTY, diagnose the CU 0 DMA 1 by entering the appropriate input command.

- If MML, **DGN:CU=0,DMA=1,RAW,DEX,TLP;**
- If PDS, **DGN:CU 0,DMA 1;RAW,DEX,TLP!**

⇒ **NOTE:**

Ensure that all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 0 DMA 1 ATP MESSAGE COMPLETE**

15. Clear CU 1 that was forced on-line.

CLEAR CU 1 FORCED ON-LINE PROCEDURE:

- 15.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 15.2. Clear the CU forces by entering **13** at the **CMD<** prompt.

Response: The system displays **REPT CU 1 NO LONGER FORCED ONLINE**

⇒ **NOTE:**

Neither CU 1 nor CU 0 displays a forced indicator at the MTTY.

- 15.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

16. At CUPS TN1821 (EQL 28-060), restore CU 0 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

⇒ **NOTE:**

Do *not* proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 0 COMPLETED**
At CUPS TN1821 (EQL 28-060), **OOS** and **RQIP** LEDs extinguish.

17. Did CU 0 restore to standby?

- If **yes**, go to Step **19**.
- If **no**, continue to Step **17.1**.

TROUBLESHOOTING PROCEDURE:

- 17.1. At CUPS TN1821 (EQL 28-060), determine if the **OFF** LED for CU 0 is extinguished.
- If **yes**, continue to Step **17.2**.
 - If **no**, return to Step **9** to power up CU 0.
- 17.2. At CUPS TN1821 (EQL 28-060), verify the **ROS/RST** switch is in the **RST** position.
- If **yes**, continue to Step **17.3**.
 - If **no**, go to Step **16** to restore CU 0 to standby.
- 17.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.
- If **yes**, continue to Step **17.4**.
 - If **no**, return to Step **10** to verify and correct the changes to the *incore* database.
- 17.4. Determine if a spare KBN415 circuit pack is available.
- If **yes**, repeat Steps **5** through **8** to install the spare KBN415 circuit pack. Repeat Steps **14** through **16** to diagnose and restore the CU.
 - If **no**, continue to Step **18**.
-
-

18. **BACKOUT POINT 1: CU 0 KBN15 TO KBN415 DMAC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and make sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 0 KBN15 to KBN415 DMAC Conversion Backout Procedure” preceding the “CU 0 KBN15 to KBN415 DMAC Conversion Procedure.”
- If **no**, continue to Step 19.

19. Soak the changes for 5 minutes before performing the remaining steps.

20. At the MTTY, switch the CU by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

21. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

Use the soak period to be sure the DMA and channels are acting properly.

After each soak period the completed *incore* database changes are activated to disk. This ensures that disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. **No procedures are provided to back out the changes once they are activated to disk.**

22. Does CU 0 function properly?

- If **yes**, go to Step 24.
- If **no**, continue to Step 22.1.

TROUBLESHOOTING PROCEDURE:

22.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps 10 through 13.

- If **yes**, continue to Step 22.2.
- If **no**, return to Step 10 and repeat the changes to the *incore* database.

22.2. Determine if a spare KBN415 circuit pack is available.

- If **yes**, repeat Steps 3 through 20 to install and test the spare KBN415 circuit pack.
 - If **no**, continue to Step 23.
-
-

23. **BACKOUT POINT 2: CU 0 KBN15 TO KBN415 DMAC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and make sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 0 KBN15 to KBN415 DMAC Conversion Backout Procedure” preceding the “CU 0 KBN15 to KBN415 DMAC Conversion Procedure.”
- If **no**, continue to Step 24.

24. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

25. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 25.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 25.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 25.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 25.4. Enter **<**

Response: The ECD RC/V is completed.

26. SAFE STOP POINT 2

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, read the "CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure" before beginning the "CU 1 KBN15 to KBN415 DMAC Conversion Procedure."

SAFE STOP POINT 2 PROCEDURE:

- 26.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 26.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 26.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 26.4. **RESUME THE CONVERSION PROCEDURE** by reading the "CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure" before beginning the "CU 1 KBN15 to KBN415 DMAC Conversion Procedure."
-

CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to CU 1. Read and understand the backout procedure before proceeding to the "CU 1 KBN15 to KBN415 DMAC Conversion Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ
INHIBIT ALL ACTIVE**

2. Verify that CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 2.1. At the MTTY CPDP **102** (Page **111** for 5ESS switch), verify that CU 0 is active and CU 1 is in standby.
 - If **yes**, go to Step **3**.
 - If **no**, continue to Step **2.2**.
- 2.2. At the MTTY, enter the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

3. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=1;**
- If PDS, **RMV:CU 1!**

Response: The system displays **RMV CU 1 COMPLETED**

4. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 4.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 4.2. Enter **12** at the **CMD<** prompt.
- 4.3. Verify that the active CU 0 is forced on-line and that the OOS CU 1 is forced off-line.

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

5. At CUPS TN1821 (EQL 53-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step 5 prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

6. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ NOTE:

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 1**

7. Install the original KBN15 in the off-line CU 1.

INSTALL ORIGINAL KBN15 IN OFF-LINE CU 1 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 7.1. Unseat and remove the KBN415 (DMAC 0) circuit pack at EQL 53-075.
7.2. Install the KBN15 circuit pack in the 3B21D computer at EQL 53-075.



NOTE:

Many 3B21D computers do not have a DMA 1 equipped. If DMA 1 is not equipped, go to Step 8.

- 7.3. If equipped, unseat and remove the KBN415 (DMAC 1) circuit pack at EQL 53-065.
7.4. If equipped, install the KBN15 circuit pack in the 3B21D computer at EQL 53-065.
-
-

8. At CUPS TN1821 (EQL 53-060), power up CU 1 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.



NOTE:

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 1**

9. Access the ECD using the command mode by entering the appropriate input command.
- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 10.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 10.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11. Update the CU 1 *ucb* values.

UPDATE CU 1 *ucb* VALUES PROCEDURE:

- 11.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 11.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 11.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 11.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 11.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

11.6. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.7. Enter **c**

Response: The system displays **Change Field:**

11.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.9. Enter **0x3**

Response: The system displays **Change Field:**

11.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.13. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.14. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.15. Enter **11**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.16. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.17. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.18. Enter **0x3**

Response: The system displays **Change Field:**

11.19. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.20. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.21. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.22. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.24. Enter **12**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.25. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.26. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.27. Enter **0x3**

Response: The system displays **Change Field:**

11.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.31. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.33. Enter **13**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.34. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.35. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.36. Enter **0x3**

Response: The system displays **Change Field:**

11.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.39. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.40. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.41. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.42. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.43. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.44. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.45. Enter **0x3**

Response: The system displays **Change Field:**

11.46. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.47. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **11.93**.

11.48. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.49. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.50. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

11.51. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **11.93**.

11.52. Enter **c**

Response: The system displays **Change Field:**

11.53. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.54. Enter **0x3**

Response: The system displays **Change Field:**

11.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.56. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.58. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.59. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.60. Enter **16**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.61. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.62. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.63. Enter **0x3**

Response: The system displays **Change Field:**

11.64. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.65. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.66. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.67. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.68. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.69. Enter **17**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.70. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.71. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.72. Enter **0x3**

Response: The system displays **Change Field:**

11.73. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.74. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.75. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.76. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.77. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.78. Enter **18**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.79. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.80. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.81. Enter **0x3**

Response: The system displays **Change Field:**

11.82. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.83. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.84. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

11.85. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

11.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

11.87. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.88. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

11.89. Enter **27**

Response: The cursor moves to the **mv:** attribute.

11.90. Enter **0x3**

Response: The system displays **Change Field:**

11.91. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

11.92. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

11.93. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

12. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

12.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

12.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

12.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

12.4. Enter <

Response: The ECD RC/V is completed.

13. Diagnose the original KBN15 circuit pack.

DIAGNOSE ORIGINAL KBN15 CIRCUIT PACKS PROCEDURE:

13.1. At the MTTY, diagnose the CU 1 DMA 0 by entering the appropriate input command.

- If MML, **DGN:CU=1,DMA=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,DMA 0;RAW,DEX,TLP!**

⇒ NOTE:

Ensure that all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 DMA 0 ATP
MESSAGE COMPLETE**

13.2. Is DMA 1 equipped?

- If **no**, go to Step 14.
- If **yes**, continue to Step 13.3.

13.3. At the MTTY, diagnose the CU 1 DMA 1 by entering the appropriate input command.

- If MML, **DGN:CU=1,DMA=1,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,DMA 1;RAW,DEX,TLP!**



NOTE:

Ensure that all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 DMA 1 ATP
MESSAGE COMPLETE**

14. Clear CU 0 that was forced on-line.

CLEAR CU 0 FORCED ON-LINE PROCEDURE:

14.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

14.2. Clear the CU forces by entering **13** at the **CMD<** prompt.

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**



NOTE:

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

14.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.

15. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

 NOTE:

Do **not** proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 1 COMPLETED**
At CUPS TN1821 (EQL 53-060), **OOS** and **RQIP** LEDs
extinguish.

16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

CU 1 KBN15 to KBN415 DMAC Conversion Procedure

Perform the following steps to convert a KBN15 DMAC board to a KBN415 DMAC board in CU 1.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ
INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding
OP DMQ COMPLETED

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 3.1. At the MTTY CPDP **102** (Page **111** for **5ESS** switch), verify that CU 0 is active and CU 1 is in standby.

- If **yes**, go to Step **4**.
- If **no**, continue to Step **3.2**.

3.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

4. At the MTTY, enter the appropriate input command.

- If MML, **RMV:CU=1;**
- If PDS, **RMV:CU 1!**

Response: The system displays **RMV CU 1 COMPLETED**

5. Force the active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

- 5.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.
- 5.2. Enter **12** at the **CMD<** prompt.
- 5.3. Verify that the active CU 0 is forced on-line and that the OOS CU 1 is forced off-line.

Response: The system displays **REPT CU 1 UNAVAILABLE**
followed by **REPT CU 0 FORCED ONLINE**

6. At CUPS TN1821 (EQL 53-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step 6 prevents automatic restoral of the CU 1 when the unit is powered up later in this procedure.

7. At CUPS TN1821 (EQL 53-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At TN1821 CUPS, the **OFF** LED lights.

⇒ **NOTE:**

At the associated unit power converters, the **OFF** LED lights. The following message will be sent to the ROP and MTTY: **REPT POWER REMOVED CU 1**

8. Install the KBN415 in the off-line CU 1.

INSTALL KBN415 IN OFF-LINE CU 1 PROCEDURE:



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

- 8.1. Unseat and remove the KBN15 (DMAC 0) circuit pack at EQL 53-075.
- 8.2. Install the KBN415 circuit pack in the 3B21D computer at EQL 53-075.
- 8.3. Install the KBN415 designation label.

⇒ **NOTE:**

Many 3B21D computers do not have a DMA 1 equipped. If DMA 1 is not equipped, go to Step 9.

- 8.4. If equipped, unseat and remove the KBN15 (DMAC 1) circuit pack at EQL 53-065.
 - 8.5. If equipped, install the KBN415 circuit pack in the 3B21D computer at EQL 53-065.
 - 8.6. If equipped, install the KBN415 designation label.
-
-

9. At CUPS TN1821 (EQL 53-060), power up CU 1 by operating the **ST/ON/OFF** to the **ST** position and releasing to the **ON** position.

Response: At TN1821 CUPS, the **OFF** LED extinguishes.

⇒ **NOTE:**

At the associated unit power converters, the **OFF** LED extinguishes. The following message will be sent to the ROP and MTTY: **REPT POWER RESTORED CU 1**

10. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 11.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 11.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 11.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

12. Update the CU 1 *ucb* values.

UPDATE CU 1 *ucb* VALUES PROCEDURE:

- 12.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 12.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 12.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.4. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

12.6. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.7. Enter **c**

Response: The system displays **Change Field:**

12.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.9. Enter **0x5**

Response: The system displays **Change Field:**

12.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.13. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.14. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.15. Enter **11**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.16. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.17. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.18. Enter **0x5**

Response: The system displays **Change Field:**

12.19. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.20. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.21. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.22. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.24. Enter **12**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.25. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.26. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.27. Enter **0x5**

Response: The system displays **Change Field:**

12.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.31. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 12.32. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 12.33. Enter **13**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.34. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 12.35. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 12.36. Enter **0x5**
Response: The system displays **Change Field:**
- 12.37. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.38. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 12.39. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 12.40. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

12.41. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.42. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.43. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.44. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.45. Enter **0x5**

Response: The system displays **Change Field:**

12.46. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.47. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **12.93**.

12.48. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.49. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.50. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

12.51. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **12.93**.

12.52. Enter **c**

Response: The system displays **Change Field:**

12.53. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.54. Enter **0x5**

Response: The system displays **Change Field:**

12.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.56. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.58. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.59. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.60. Enter **16**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.61. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.62. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.63. Enter **0x5**

Response: The system displays **Change Field:**

12.64. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.65. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.66. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.67. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 12.68. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 12.69. Enter **17**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.70. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 12.71. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 12.72. Enter **0x5**
Response: The system displays **Change Field:**
- 12.73. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 12.74. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 12.75. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 12.76. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

12.77. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.78. Enter **18**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.79. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.80. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.81. Enter **0x5**

Response: The system displays **Change Field:**

12.82. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.83. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.84. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

12.85. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

12.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

12.87. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.88. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

12.89. Enter **27**

Response: The cursor moves to the **mv:** attribute.

12.90. Enter **0x5**

Response: The system displays **Change Field:**

12.91. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

12.92. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

12.93. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

13. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 13.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 13.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 13.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 13.4. Enter <

Response: The ECD RC/V is completed.

14. Diagnose the KBN415 circuit packs.

DIAGNOSE KBN415 CIRCUIT PACKS PROCEDURE:

- 14.1. At the MTTY, diagnose the CU 1 DMA 0 by entering the appropriate input command.

- If MML, **DGN:CU=1,DMA=0,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,DMA 0;RAW,DEX,TLP!**



NOTE:

Ensure all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 DMA 0 ATP
MESSAGE COMPLETE**

- 14.2. Is DMA 1 equipped?

- If **no**, go to Step 15.
- If **yes**, continue to Step 14.3.

- 14.3. At the MTTY, diagnose the CU 1 DMA 1 by entering the appropriate input command.

- If MML, **DGN:CU=1,DMA=1,RAW,DEX,TLP;**
- If PDS, **DGN:CU 1,DMA 1;RAW,DEX,TLP!**

⇒ **NOTE:**

Ensure that all DMA phases achieve an ATP condition before continuing.

Response: The system displays **DGN CU 1 DMA 1 ATP
MESSAGE COMPLETE**

15. Clear CU 0 that was forced on-line.

CLEAR CU 0 FORCED ON-LINE PROCEDURE:

- 15.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 15.2. Clear the CU forces by entering **13** at the **CMD<** prompt.

Response: The system displays **REPT CU 0 NO LONGER
FORCED ONLINE**

⇒ **NOTE:**

Neither CU 0 nor CU 1 displays a forced indicator at the MTTY.

- 15.3. At the MTTY, press the **NORM DISP** key to return to the CPDP.
-

16. At CUPS TN1821 (EQL 53-060), restore CU 1 to service by operating the **ROS/RST** switch to the **RST** position. This causes the CU to automatically restore with diagnostics.

⇒ **NOTE:**

Do **not** proceed until all diagnostics run ATP and the CU has been marked standby.

Response: The system displays **RST CU 1 COMPLETED**
At CUPS TN1821 (EQL 53-060), **OOS** and **RQIP** LEDs
extinguish.

17. Did CU 1 restore to standby?

- If **yes**, go to Step **19**.
- If **no**, continue to Step **17.1**.

TROUBLESHOOTING PROCEDURE:

17.1. At CUPS TN1821 (EQL 53-060), determine if the **OFF** LED for CU 1 is extinguished.

- If **yes**, continue to Step **17.2**.
- If **no**, return to Step **9**.

17.2. At CUPS TN1821 (EQL 53-060), verify the **ROS/RST** switch is in the **RST** position.

- If **yes**, continue to Step **17.3**.
- If **no**, toggle the switch to **RST**. The system should automatically begin the CU restore process, return to Step **14** and verify the results.

17.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.

- If **yes**, continue to Step **17.4**.
- If **no**, return to Step **10** and repeat the changes to the *incore* database.

17.4. Determine if a spare KBN415 circuit pack is available.

- If **yes**, repeat Steps **5** through **8** to install the spare KBN415 circuit pack. Repeat Steps **14** through **16** to diagnose and restore the CU.
 - If **no**, continue to Step **18**.
-
-

18. **BACKOUT POINT 1: CU 1 KBN15 TO KBN415 DMAC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and make sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure” preceding the “CU 1 KBN15 to KBN415 DMAC Conversion Procedure.”
- If **no**, continue to Step **19**.

19. Soak the changes for 5 minutes before performing the remaining steps.

20. At the MTTY, switch the CU by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

21. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

Use the soak period to be sure the DMA and channels are acting properly.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. **No procedures are provided back out the changes once they are activated to disk.**

22. Does CU 1 function properly?

- If **yes**, go to Step **24**.
- If **no**, continue to Step **22.1**.

TROUBLESHOOTING PROCEDURE:

22.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **10** through **13**.

- If **yes**, continue to Step **22.2**.
- If **no**, return to Step **10** and repeat the changes to the *incore* database.

22.2. Determine if a spare KBN415 circuit pack is available.

- If **yes**, repeat Steps **2** through **17** to install and test the spare KBN415 circuit pack.
 - If **no**, continue to Step **23**.
-
-

23. **BACKOUT POINT 2: KBN15 TO KBN415 DMAC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and make sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "CU 1 KBN15 to KBN415 DMAC Conversion Backout Procedure" preceding the main "CU 1 KBN15 to KBN415 DMAC Conversion Procedure."
- If **no**, continue to Step 24.

24. Access the ECD using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

25. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

25.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

25.2. Press the <CR> key.

Response: The system prompts for the action desired.

25.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

25.4. Enter <

Response: The ECD RC/V is completed.

26. **SAFE STOP POINT 3**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, go to the "KBN415 DMAC Final Steps Procedure."

SAFE STOP POINT 3 PROCEDURE:

- 26.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 26.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 26.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 26.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 26.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

KBN415 DMAC Final Steps Procedure

The following procedure completes the KBN15 to KBN415 DMAC conversion by making database changes to the minimum configuration database (*rootdmly*) and backs up the changes to disk and tape.

1. At the RC/V terminal, update the ECD for *rootdmly* for the MTTYCs. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!"**

Response: The cursor moves to the **Enter Form Name:** attribute.

2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 2.1. At the RC/V terminal, enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 2.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

3. Update the CU 0 and CU 1 *ucb* values.

UPDATE CU 0 AND CU 1 *ucb* VALUES PROCEDURE:

- 3.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 3.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

- 3.3. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

- 3.4. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 3.5. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

- 3.6. Enter **0**

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

- 3.7. Enter **c**

Response: The system displays **Change Field:**

- 3.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

- 3.9. Enter **0x5**

Response: The system displays **Change Field:**

- 3.10. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

- 3.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.12. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.13. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

3.14. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.15. Enter **11**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.16. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.17. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.18. Enter **0x5**

Response: The system displays **Change Field:**

3.19. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.20. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.21. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.22. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

3.23. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.24. Enter **12**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.25. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.26. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.27. Enter **0x5**

Response: The system displays **Change Field:**

3.28. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.29. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.30. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.31. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

3.32. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.33. Enter **13**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.34. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.35. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.36. Enter **0x5**

Response: The system displays **Change Field:**

3.37. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.38. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.39. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.40. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

3.41. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.42. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.43. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.44. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.45. Enter **0x5**

Response: The system displays **Change Field:**

3.46. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.47. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **3.93**.

3.48. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.49. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

3.50. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

3.51. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **3.93**.

3.52. Enter **c**

Response: The system displays **Change Field:**

3.53. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.54. Enter **0x5**

Response: The system displays **Change Field:**

3.55. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.56. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.57. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.58. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 3.59. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.60. Enter **16**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.61. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.62. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.63. Enter **0x5**
Response: The system displays **Change Field:**
- 3.64. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.65. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.66. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.67. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

3.68. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.69. Enter **17**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.70. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.71. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.72. Enter **0x5**

Response: The system displays **Change Field:**

3.73. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.74. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.75. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.76. Enter **0**

Response: The cursor moves to the **k_unit_name:** attribute.

- 3.77. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.78. Enter **18**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.79. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.80. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.81. Enter **0x5**
Response: The system displays **Change Field:**
- 3.82. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.83. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.84. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.85. Enter **0**
Response: The cursor moves to the **k_unit_name:** attribute.

3.86. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.87. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.88. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.89. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.90. Enter **0x5**

Response: The system displays **Change Field:**

3.91. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.92. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.93. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.94. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

3.95. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

3.96. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.97. Enter **c**

Response: The system displays **Change Field:**

3.98. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.99. Enter **0x5**

Response: The system displays **Change Field:**

3.100. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.101. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.102. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.103. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

3.104. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.105. Enter **11**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.106. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.107. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.108. Enter **0x5**

Response: The system displays **Change Field:**

3.109. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.110. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.111. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.112. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 3.113. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.114. Enter **12**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.115. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.116. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.117. Enter **0x5**
Response: The system displays **Change Field:**
- 3.118. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.119. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.120. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.121. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

- 3.122. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.123. Enter **13**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.124. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.125. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.126. Enter **0x5**
Response: The system displays **Change Field:**
- 3.127. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.128. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.129. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.130. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

3.131. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.132. Enter **14**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.133. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.134. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.135. Enter **0x5**

Response: The system displays **Change Field:**

3.136. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.137. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.



NOTE:

Many 3B21D computers do not have DMA 1 equipped. If DMA 1 is not equipped, go to Step **3.183**.

3.138. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.139. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

3.140. Enter **DMA**

Response: The cursor moves to the **k_unit_number:** attribute.

3.141. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**



NOTE:

If the system displays **FORM NOT FOUND!**, then DMA 1 is not equipped. Go to Step **3.183**.

3.142. Enter **c**

Response: The system displays **Change Field:**

3.143. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.144. Enter **0x5**

Response: The system displays **Change Field:**

3.145. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.146. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.147. Enter **CU**

Response: The cursor moves to the **k_complex_number:** attribute.

3.148. Enter **1**

Response: The cursor moves to the **k_unit_name:** attribute.

- 3.149. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.150. Enter **16**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.151. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.152. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.153. Enter **0x5**
Response: The system displays **Change Field:**
- 3.154. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.155. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.156. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.157. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

- 3.158. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.159. Enter **17**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.160. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.161. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.162. Enter **0x5**
Response: The system displays **Change Field:**
- 3.163. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.164. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.165. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.166. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

- 3.167. Enter **CH**
Response: The cursor moves to the **k_unit_number:** attribute.
- 3.168. Enter **18**
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.169. Enter **c**
Response: The system displays **Change Field:**
The cursor moves to the : prompt.
- 3.170. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 3.171. Enter **0x5**
Response: The system displays **Change Field:**
- 3.172. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 3.173. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.
- 3.174. Enter **CU**
Response: The cursor moves to the **k_complex_number:** attribute.
- 3.175. Enter **1**
Response: The cursor moves to the **k_unit_name:** attribute.

3.176. Enter **CH**

Response: The cursor moves to the **k_unit_number:** attribute.

3.177. Enter **19**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.178. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

3.179. Enter **27**

Response: The cursor moves to the **mv:** attribute.

3.180. Enter **0x5**

Response: The system displays **Change Field:**

3.181. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

3.182. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

3.183. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 4.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 4.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 4.4. Enter <

Response: The ECD RC/V is completed.

5. Copy backup partitions.

 NOTE:

See Appendix A for the procedure to copy backup partitions.

6. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

7. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

8. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

TN983 to UN597 MTTYC Conversion

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TN983 to UN597 MTTYC Conversion

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Introduction

This chapter describes the procedure needed to convert from a TN983 Maintenance Terminal Controller (MTTYC) circuit pack to a UN597 MTTYC circuit pack. Conversion from a TN983 MTTYC circuit pack to a UN597 MTTYC circuit pack is supported in Real-Time Reliable (RTR) Release 21.27 and later releases.

If problems are encountered during this procedure, contact the next level of technical support. Special training is required to properly install cabling. Read through this entire procedure before starting.



CAUTION:

To ensure that the Maintenance Terminal (MTTY) and Receive-Only Printer (ROP) remain attached to the Input/Output Processor (IOP) that is active, extreme caution should be used when executing this procedure.



CAUTION:

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Control Units (CUs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*
- Documentation specific to the application ROP.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

⇒ NOTE:

Use static-free bags (R-5158 or equivalent) or the original shipping container to store circuit packs that are removed from the unit.



CAUTION:

A properly grounded antistatic wrist strap (R-4987 or equivalent) must be worn when inserting, removing, unlatching, or handling a plug-in circuit pack. This applies to circuit packs in shipping containers as well as to those installed in cabinets.



CAUTION:

All cable replacement and backplane repairs require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
KS-22876,L6	Backplane Pin Repair Kit and instructions
R-5158, Det. 2	Static-free bags (or equivalent)

The following equipment is required for this procedure:

Number	Qty	Description
103342119	6	127C apparatus mountings (retainers)
107999484	2	UN597 + 1 spare (if site stocks spares)
ED3T076-20,G2D	1	MTTYC 0 MTTY cable
ED3T076-20,G2E	1	MTTYC 0 ROP cable
ED3T076-20,G2F	1	MTTYC 1 MTTY cable
ED3T076-20,G2G	1	MTTYC 1 ROP cable
ED3T076-20,G33	1	MTTYC 0 EAI 0 cable
ED3T076-20,G33A	1	MTTYC 1 EAI 1 cable
ED3T076-20,G34	1	MTTYC 0 EAI 1 cable
ED3T076-20,G34A	1	MTTYC 1 EAI 0 cable
ED3T076-20,G51	2	SCC cables (only if SCC connection)
ED3T079-10,G65	2	Designation labels for UN597

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and the conversion procedure used in this chapter.

- Preliminary Steps
- Test MTTYCs from both CUs
- Safe Stop Point 1
- Diagnose CU 0
- Safe Stop Point 2
- Diagnose IOP
- Safe Stop Point 3
- MTTYC 1 TN983 to UN597 Conversion Backout Procedure
- Inhibit diagnostics
- Remove MTTYC 1 from service
- Update MTTYC 1 to UNEQIP
- Remove from service and power down IOP 1
- Remove from service and power down CU 0
- Remove cables from MTTYC 1
- Connect cables to MTTYC 1
- Remove TN983 MTTYC 1 circuit pack
- Isolate backplane pin if needed
- Install UN597 MTTYC 1 circuit pack
- Update MTTYC 1 *ucb* values
- Restore power to IOP 1
- Update MTTYC 1 from UNEQIP to GROW
- Restore service to IOP 1 controller only
- Diagnose MTTYC 1
- Backout Point 1
- Restore MTTYC 1
- Backout Point 2
- Restore Scanner and Signal Distributor Controller (SCSDC) 1
- Power up and restore CU 0

- Backout Point 3
- Remove from service and power down CU 1
- Remove MTTYC 1
- Remove SCSDC 1
- Remove from service and power down IOP 1
- Remove EAI 1 cable from CU 1
- Add EAI 1 cable to CU 1
- Power up and restore IOP 1
- Backout Point 4
- Port switch to MTTYC 1
- Power up and restore CU 1
- Backout Point 5
- Verify MTTYC1
- Activate MTTYC 1 change to disk
- Safe Stop Point 1
- MTTYC 0 TN983 to UN597 Conversion Backout Procedure
- Inhibit diagnostics
- Remove MTTYC 0 from service
- Update MTTYC 0 to UNEQIP
- Remove from service and power down IOP 0
- Remove from service and power down CU 1
- Remove cables from MTTYC 0
- Connect cables to MTTYC 0
- Remove TN983 MTTYC 0 circuit pack
- Isolate backplane pin if needed
- Install UN597 MTTYC 0 circuit pack
- Update MTTYC 0 *ucb* values
- Restore power to IOP 0
- Update MTTYC 0 from UNEQIP to GROW
- Restore service to IOP 0 controller only
- Diagnose MTTYC 0

- Backout Point 1
- Restore SCSDC 0
- Restore MTTYC 0
- Backout Point 2
- Power up and restore CU 1
- Backout Point 3
- Remove from service and power down CU 0
- Remove MTTYC 0
- Remove SCSDC 0
- Remove from service and power down IOP 0
- Remove EAI 0 cable from CU 0
- Add EAI 0 cable to CU 0
- Power up and restore IOP 0
- Backout Point 4
- Power up and restore CU 0
- Backout Point 5
- Verify MTTYC 0
- Switch port switch to test each side
- Activate MTTYC 0 changes to disk
- Safe Stop Point 1
- Activate and exit RC
- Update MTTYC 1 *ucb* values for *rootdmly*
- Update MTTYC 0 *ucb* values for *rootdmly*
- Update backup root file system and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the TN983 to UN597 conversion procedures in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 [Equipment Location (EQL) 045-186] are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. Test MTTYCs from both CUs by executing Steps **5** through **19**.

5. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.

Response: The system displays the CPDP.

6. At the CPDP, verify that CU 0 is active.
 - If **yes**, go to Step **8**.
 - If **no**, continue to Step **7**.

7. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

8. At the CPDP, verify that the MTTY is connected to MTTYC 1.
 - If **yes**, go to Step **10**.
 - If **no**, continue to Step **9**.

9. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

10. At the CPDP, verify that the ROP is connected to the MTTYC 1.
 - If **yes**, go to Step **12**.
 - If **no**, continue to Step **11**.

11. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ **NOTE:**

Performing Step **11** should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

12. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.

13. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

14. Check the ROP and MTTY output by observing the MTTY and ROP activity.
15. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.
16. At the MTTY, switch the ROP and MTTY to MTTYC by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

17. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
18. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

19. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
20. At the MTTY, switch to CU 1 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

21. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 22.

SAFE STOP POINT 1 PROCEDURE:

- 21.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 21.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 21.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 21.4. **RESUME THE CONVERSION PROCEDURE** at the CPDP by verifying that CU 1 is active.

- If **yes**, go to Step **21.6**.
- If **no**, continue to Step **21.5**.

- 21.5. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 21.6. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 21.7. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

22. At the MTTY, diagnose Phases 60 through 65 in CU 0 by entering the appropriate command.

➡ **NOTE:**

Refer to 254-303-106, *System Maintenance Manual*, for additional information on running diagnostics.

- If MML, **DGN:CU=0,CC=0:PH=60&&65;**
- If PDS, **DGN:CU 0,CC 0:PH 60-65!**

23. Observe the following Processor Recovery Messages (PRMs) for Phases 64 and 65 as applicable:

For Phase 64:

```
PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx
```

For Phase 65:

```
PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 AAAA AAAA AAAA AAAA xx xx xx
PRM 0 5555 5555 5555 5555 xx xx xx
PRM 0 EEEE EEEE EEEE EEEE xx xx xx
PRM 0 1111 1111 1111 1111 xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx
```

Response: The system displays **DGN CU 0 CC 0 ATP MESSAGE COMPLETE**

24. Are diagnostics results ATP?
- If **yes**, continue to Step 25.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
25. At the MTTY, enter the appropriate input command to restore CU 0.
- If MML, **RST:CU=0;**
 - If PDS, **RST:CU 0!**
26. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

27. At the MTTY, diagnose Phases 60 through 65 in CU 1 by entering the appropriate command.

⇒ **NOTE:**

Refer to 254-303-106, *System Maintenance Manual*, for additional information on running diagnostics.

- If MML, **DGN:CU=1,CC=0:PH=60&&65;**
- If PDS, **DGN:CU 1,CC 0:PH 60-65!**

28. Observe the following PRMs for Phases 64 and 65 as applicable:

For Phase 64:

```
PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx
```

For Phase 65:

```
PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 AAAA AAAA AAAA AAAA xx xx xx
PRM 1 5555 5555 5555 5555 xx xx xx
PRM 1 EEEE EEEE EEEE EEEE xx xx xx
PRM 1 1111 1111 1111 1111 xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx
```

Response: The system displays **DGN CU 1 CC 0 ATP MESSAGE COMPLETE**

29. Are diagnostics results ATP?
- If **yes**, continue to Step **30**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
30. At the MTTY, restore CU 1 by entering the appropriate input command.
- If MML, **RST:CU=1;**
 - If PDS, **RST:CU 1!**

31. **SAFE STOP POINT 2**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step **32**.

SAFE STOP POINT 2 PROCEDURE:

- 31.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 31.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 31.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 31.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 31.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

32. Verify that both switches on the port switch circuit pack UN377 at EQL 045-186 are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

33. At the CPDP, verify that the MTTY and ROP are connected to IOP 0, and that all IOPs are active.

34. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

35. Verify that IOP 0 and all units under IOP 0 diagnose ATP and restore to service successfully?

- If **yes**, continue to Step **36**.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

36. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

37. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

38. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

39. Verify that the response message is displayed on the MTTY and printed on the ROP.

40. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

41. At the CPDP, verify that both the MTTY and ROP are active and connected to IOP 0.

42. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

43. Verify that IOP 1 and all units under IOP 1 diagnose ATP and restore to service successfully?

- If **yes**, continue to Step **44**.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

44. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

45. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
46. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

47. Verify that the response message is displayed on the MTTY and printed on the ROP.
48. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

49. At the CPDP, verify that both the MTTY and ROP are active and connected to IOP 1.
50. **SAFE STOP POINT 3**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "MTTYC 1 TN983 to UN597 Conversion Procedure."

SAFE STOP POINT 3 PROCEDURE:

- 50.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 50.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
- 50.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 50.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 50.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

51. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

MTTYC 1 TN983 to UN597 Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure will back out the changes made to MTTYC 1. Read and understand the backout procedure before beginning the "MTTYC 1 TN983 to UN597 Conversion Procedure."

1. Determine the step number in the "MTTYC 1 TN983 to UN597 Conversion Procedure" where the problem occurred.
 - For problems encountered in Steps **1** through **29**, continue to Step **5**.
 - For problems encountered in Steps **30** through **50**, go to Step **2** of this backout procedure.
2. Force active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

NOTE:

CU 0 must be active before the on-line force.

- 2.1. At the MTTY, observe the status of the CU at CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 2.2. Is CU 0 active?
 - If yes, go to Step **2.4**.
 - If no, continue to next step.

- 2.3. Make CU 0 active by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 2.4. At the MTTY, access the EAI page.

2.5. Enter menu command **12**

Response: The system displays
REPT CU 0 FORCED ONLINE
REPT CU 1 REMOVED
REPT CU 1 UNAVAILABLE

3. At Control Unit Power Switch (CUPS) TN1821 (EQL 053-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Performing Step 3 prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

4. At CUPS TN1821 (EQL 053-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 053-060), the **OFF** Light-Emitting Diode (LED) lights.
At the MTTY, the system displays **REPT POWER REMOVED CU 1**

5. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to MTTY 0 and ROP 0.
6. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
- If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

7. At Input/Output Processor Power Switch (IOPPS) TN1820 (EQL 045-080), remove IOP 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

Performing Step 7 prevents automatic restoral of IOP 1 when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

Response: The system displays **RMV IOP 1 COMPLETED**
At IOPPS TN1820 at EQL 045-080, the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820 (EQL 045-080), remove power from IOP 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP**
At IOPPS TN1820 (EQL 045-080), the **OFF** LED lights.

9. Unseat and remove the UN597 MTTYC 1 circuit pack at EQL 045-094.
10. Remove the ROP, MTTY, and SCC cables for MTTYC 1 as indicated in Table 34-1.



CAUTION:

ESD precautions required for the following steps.

⇒ **NOTE 1:**

Qualified personnel should perform all cable changes.

⇒ **NOTE 2:**

See Figures 34-1, 34-2, and 34-3 for the 3B21D computer backplane layout of the cable connections for the TN983 and UN597 MTTYC 1 interface.

Table 34-1. Remove New UN597 ROP and SCC Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Remove New ROP Cable - UN597	ED3T076-20,G2G	MTTYC 1	045-094-332	2x12	PROC 1/PS 0	045-186-151	2x6
Remove New SCC Cable (if equipped) - UN597	ED3T076-20,G51	MTTYC 1	045-094-500	2x12	DATA SET	25 Pin	
Remove New MTTY Cable UN597	ED3T076-20,G2F	MTTYC 1	045-094-132	2X12	PROC 1/PS	045-186-351	2x6

11. Reconnect the old TN983 ROP, MTTY, and SCC cables for MTTYC 1 as indicated in Table 34-2.

Table 34-2. Reconnect Old TN983 ROP, MTTY, and SCC Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Reconnect Old SCC Cable (if equipped) - TN983	ED5D517-30,G2	PROC 1/ MTTYC 1	045-094-332		DATA SET		
Reconnect Old ROP Cable - TN983	ED3T076-20,G2C	PROC 1/ MTTYC 1	045-094-132		PROC 1/PS	045-186-151	
Reconnect Old MTTY Cable - TN983	ED3T076-20,G2B	PROC 1/ MTTYC 1	045-094-345		PROC 1/PS	045-186-351	

12. Back out MTTYC 1 end of EAI 1 cable.

⇒ NOTE:

See Figures 34-2 and 34-4 for the 3B21D computer backplane layout of the cable connections.

BACK OUT MTTYC 1 END OF EAI 1 CABLE PROCEDURE:

- 12.1. Remove MTTYC 1 end of the new UN597 EAI 1 cable as indicated in Table 34-3.

Table 34-3. Remove MTTYC 1 End of New UN597 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33A				MTTYC 1/ EAI 1	045-094-117	2x8

- 12.2. Reconnect MTTYC 1 end of the old TN983 EAI 1 cable as indicated in Table 34-4.

Table 34-4. Reconnect MTTYC 1 End of Old TN983 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3B				MTTYC 1	045-094-149	2x4

13. Determine the step number in the “MTTYC 1 TN983 to UN597 Conversion Procedure” where the problem occurred.
 - For problems encountered in Steps **1** through **29**, go to Step **21**.
 - For problems encountered in Steps **30** through **50**, continue to Step **14** of this backout procedure.
14. Remove UN597 MTTYC 1 EAI 1 cable as indicated in Table 34-5.

⇒ NOTE:

Figure 34-4 illustrates the 3B21D computer backplane layout of the cable connections.

Table 34-5. Remove UN597 MTTYC 1 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33A	CU 1/EAI 1	045-038-300	2X6	MTTYC 1/EAI 1	045-094-117	2x8

15. Reconnect the old TN983 MTTYC 1 EAI 1 cable as indicated in Table 34-6.

Table 34-6. Reconnect Old TN983 MTTYC 1 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3B	CU 1/EAI 1	045-038-300	2x6	MTTYC 1	045-094-149	2x4

16. Clear CU forces.

CLEAR CU 0 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 0 nor CU 1 displays a forced indication at the MTTY.

- 16.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 16.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 0 NO LONGER FORCED ON LINE**

- 16.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

17. At CUPS TN1821 (EQL 053-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: At CUPS TN1821 in CU 1, the **OFF** LED extinguishes.

18. At the MTTY, diagnose CU 1 unconditionally by entering the appropriate input command.

- If MML, **DGN:CU=1,UCL;**
- If PDS, **DGN:CU 1,UCL!**

Response:

M DGN CU 1 CC 0 PH 64 STF (4 H'00000000 H'00000000) MSG IP

TEST	MISMATCH	ACTUAL	MASK	EXPECTED
028	H'89abcdef	H'89abcdef	H'ffffff	H'00000000
029	H'01234567	H'01234567	H'ffffff	H'00000000
036	H'ffffff	H'00000000	H'ffffff	H'ffffff
037	H'ffffff	H'00000000	H'ffffff	H'ffffff

M DGN CU 1 CC 0 COMPLETED STF (4 H'00000000 H'00000000) MSG IN PROGRESS

Response: The system displays **DGN CU 1 COMPLETED**



NOTE:

These are the expected diagnostic failures while IOP 1 is powered down. All other CU 1 subunit diagnostics should run ATP.

19. At the MTTY, restore CU 1 unconditionally to service by entering the appropriate input command.

- If MML, **RST:CU=1,UCL;**
- If PDS, **RST:CU 1,UCL!**

Response: The system displays **RST CU 1 COMPLETED**

⇒ **NOTE:**

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

20. Switch CU 1 to active.

SWITCH CU 1 ACTIVE PROCEDURE:

- 20.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 20.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 20.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

21. Force active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

- 21.1. Is CU 1 active?
 - If **yes**, go to Step **21.3**.
 - If **no**, continue to Step **21.2**.
- 21.2. Execute a switch to make CU 1 active by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 21.3. At the MTTY, access the EAI page.
- 21.4. Enter menu command **12**

Response: The system displays
REPT CU 1 FORCED ONLINE
REPT CU 0 REMOVED
REPT CU 0 UNAVAILABLE

22. At CUPS TN1821 (EQL 028-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **22** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

23. At CUPS TN1821 (EQL 028-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 028-060), the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 0

24. Remove UN597 MTTYC 1 EAI 0 cable as indicated in Table 34-7. Figures 34-1 and 34-2 illustrate the layout of the 3B21D computer backplane cable connections.

Table 34-7. Remove UN597 MTTYC 1 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G34A	PROC 0/EAI 0	019-038-300	2X6	MTTYC 1	045-094-320	2x4

25. Reconnect the old TN983 MTTYC 1 EAI 0 cable as indicated in Table 34-8.

Table 34-8. Reconnect Old TN983 MTTYC 1 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3C	MTTYC 1	045-094-153	2x4	PROC 0/EAI 0	019-038-300	2x6

26. Install TN983 MTTYC 1 circuit pack at EQL 045-094, and replace the designation strip.
27. Back out the database changes.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the disk copy of the database will match the current successfully soaked hardware configuration. If backout is required prior to the soak section but after the *incore* database changes have been completed, the *incore* ECD changes must be backed out using the following procedure.



CAUTION:

For emergency backout of the disk copy of the database, the system must be booted with EAI Poke 53 (Boot+ECD) with Backup Root set.

BACK OUT THE DATABASE CHANGES PROCEDURE:

27.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

27.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

27.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

27.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

27.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

27.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

27.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

27.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

27.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

27.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

27.8. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

27.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

27.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

27.11. Enter **0x0**

Response: Field 22 changes to indicate the new value of 0x0.
The system displays **Change Field:**

27.12. Enter **27**

Response: The cursor moves to the **27.mv:** attribute.

27.13. Enter **0x1**

Response: Field 27 changes to indicate the new value of 0x1.
The system displays **Change Field:**

27.14. Enter **62**

Response: The screen is repainted with Page 4, and the
cursor moves to the **62.packcode:** attribute.

27.15. Enter **t983**

Response: Field 62 changes to indicate the new value of
t983.
The system displays **Change Field:**

27.16. Enter **63**

Response: The cursor moves to the **63.issue:** attribute.

27.17. Enter **4**

Response: Field 63 changes to indicate the new value of 4.
The system displays **Change Field:**

27.18. Enter **65**

Response: The cursor moves to the **65.cvaddr:** attribute.

27.19. Enter **0xf900**

Response: Field 65 changes to indicate the new value of
0xf900.
The system displays **Change Field:**

27.20. Press the <CR> key

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

27.21. Enter **u**

Response: The system displays **updating...FORM
UPDATED**
The screen is repainted with Page 1, and the
cursor moves to the **1.k_complex_name:**
attribute.

27.22. Enter <

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

27.23. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

27.23.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

27.23.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

27.23.3. Enter *

Response: The system displays the **executing...FORM EXECUTED**
The screen is repainted and the cursor moves to the **Enter Form Name:** attribute.

27.24. Enter <

Response: The system displays **RCV MENU RCVECD COMPLETED**
The system exits RCVECD.

28. Power up and restore IOP 1.

POWER UP AND RESTORE IOP 1 PROCEDURE:

- 28.1. At IOPPS TN1820 (EQL 045-080), restore power to IOP 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED IOP 1**

- 28.2. At IOPPS TN1820 (EQL 045-080), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **REPT POWER RESTORED IOP 1** followed by **RST IOP 1 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 1.
At IOPPS TN1820 in IOP 1, the **OFF** LED extinguishes.



NOTE 1:

IOP 1 and all units controlled by IOP 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE 2:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE 3:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP 1 ATP MESSAGE COMPLETE**

29. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to the **AUTO** position.

30. Clear CU 1 forced on-line and EAI buffers.

CLEAR CU 1 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 1 nor CU 0 displays a forced indication at the MTTY.

- 30.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 30.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ON LINE**

- 30.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

31. Power up and restore CU 0 with **RST**

POWER UP CU 0 WITH RST PROCEDURE:

- 31.1. At CUPS TN1821 (EQL 028-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to the next step.

- 31.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
At CUPS TN1821 in CU 0, the **OOS** LED
extinguishes.



NOTE:

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

32. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **32** should cause output messages on the ROP. If there are no output messages, contact technical support.

33. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

34. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

MTTYC 1 TN983 to UN597 Conversion Procedure

Perform the following steps to convert a 3B21D computer from an MTTYC 1 with a TN983 circuit pack to a UN597 circuit pack.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. Verify that CU 1 is active.

⇒ NOTE:

The "MTTYC 1 TN983 to UN597 Conversion Procedure" must be performed by using an RC/V terminal that is controlled by IOP 0.

⇒ NOTE:

CU 1 must be active. If CU 1 is on standby, execute a switch to make CU 1 active.

VERIFY CU 1 ACTIVE PROCEDURE:

- 2.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

2.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

2.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 045-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

4. Verify that the MTTY and ROP are connected to MTTYC 0.

VERIFY MTTY AND ROP CONNECTED TO MTTYC 0 PROCEDURE:

4.1. At the CPDP, verify that the MTTY is connected to MTTYC 0.

- If **yes**, go to Step **4.3**.
- If **no**, continue to Step **4.2**.

4.2. At the MTTY, switch the MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

4.3. At the CPDP, verify that the ROP is connected to the MTTYC 0.

- If **yes**, go to Step **4.5**.
- If **no**, continue to Step **4.4**.

- 4.4. At the MTTY, switch the ROP to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW
COMPLETED FOR ROP**

⇒ **NOTE:**

Performing Step 4.4 should cause output messages on ROP. If no output messages appear on the ROP contact technical support.

- 4.5. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.
-

5. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to MTTY 0 and ROP 0.
6. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

7. At IOPPS TN1820 (EQL 045-080), remove IOP 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Performing Step 7 prevents automatic restoral of IOP 1 when the unit is powered up later in this procedure.

⇒ **NOTE:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

Response: The system displays **RMV IOP 1 COMPLETED**
At IOPPS TN1820 (EQL 045-080), the **OOS** LED lights.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820 (EQL 045-080), remove power from IOP 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 1**
At IOPPS TN1820 (EQL 45-080), the **OFF** LED lights.

9. Force active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

⇒ **NOTE:**

CU 1 must be active before the on-line force.

- 9.1. At the MTTY, observe the status of the CU at CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 9.2. Is CU 1 active?

- If yes, go to Step **9.4**.
- If no, continue to next step.

- 9.3. Make CU 1 active by entering the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 9.4. At the MTTY, access the EAI page.

9.5. Enter menu command **12**

Response: The system displays
REPT CU 1 FORCED ONLINE
REPT CU 0 REMOVED
REPT CU 0 UNAVAILABLE

10. At CUPS TN1821 (EQL 028-060), toggle the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step **10** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

11. At CUPS TN1821 (EQL 028-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 028-060), the **OFF**
LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 0

12. Remove the ROP, MTTY, EAI 0 and SCC cables for MTTYC 1 and MTTYC 1 side of EAI 1 cable as indicated in Table 34-9.



CAUTION:

ESD precautions are required for the following steps.

 NOTE:

Qualified personnel should perform all cable changes.

Table 34-9. Remove MTTYC 1 Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Remove Old TN983 MTTYC 1 EAI 0 Cable	ED3T076-20,G3C	MTTYC 1	045-094-153	2x4	PROC 0/EAI 0	019-038-300	2x6
Remove Old SCC Cable (if equipped) - TN983	ED5D517-30,G2	PROC 1/ MTTYC 1	045-094-332		DATA SET		
Remove Old ROP Cable - TN983	ED3T076-20,G2C	PROC 1/ MTTYC 1	045-094-132		PROC 1/PS	045-186-151	
Remove Old MTTY Cable - 983	ED3T076-20,G2B	PROC 1/ MTTYC 1	045-094-345		PROC 1/PS	045-186-351	
Remove Old EAI 1 Cable From MTTYC 1 Side Only (TN983)	ED3T076-20,G3B	PROC 1/ MTTYC 1	045-094-149				

See Figures 34-1, 34-2, and 34-3 for the 3B21D computer backplane layout of the cable connections for the TN983 and UN597 MTTYC 1 interface.

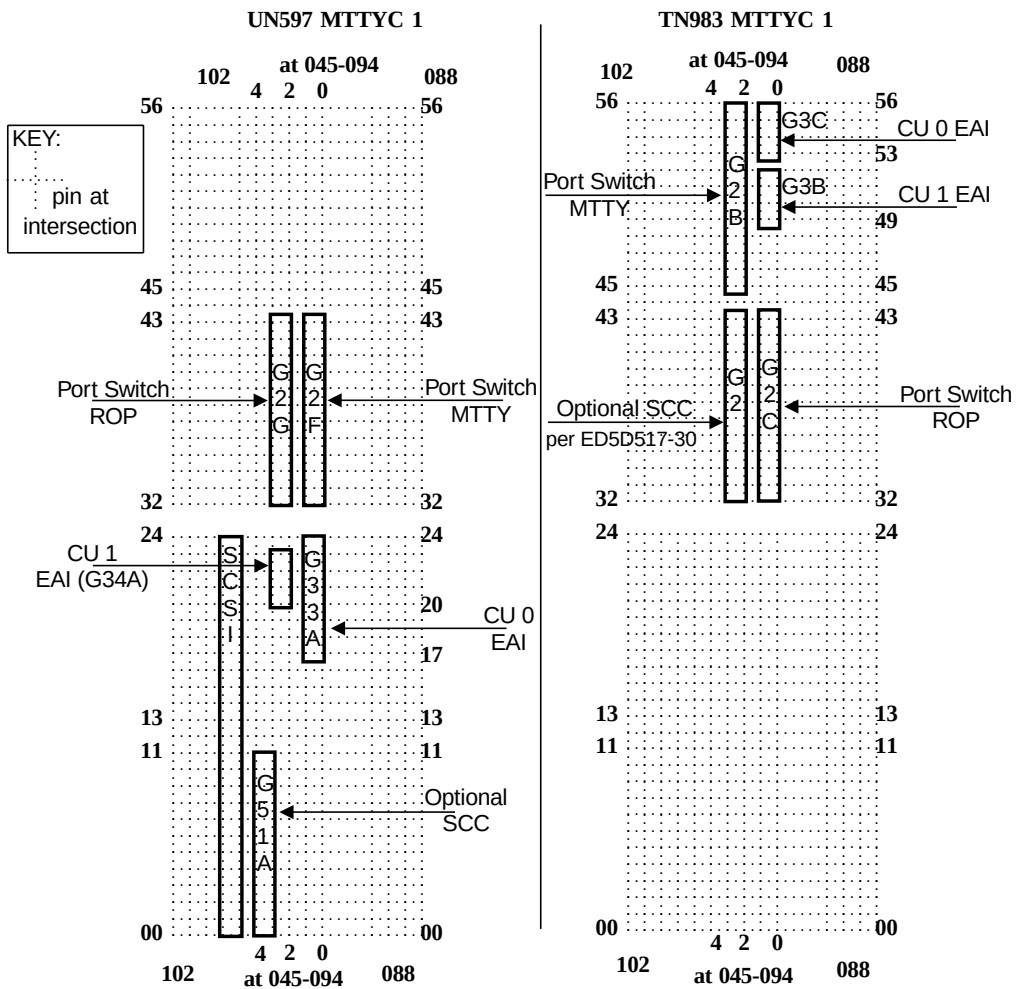


Figure 34-1. MTTYC 1 Backplane Reference

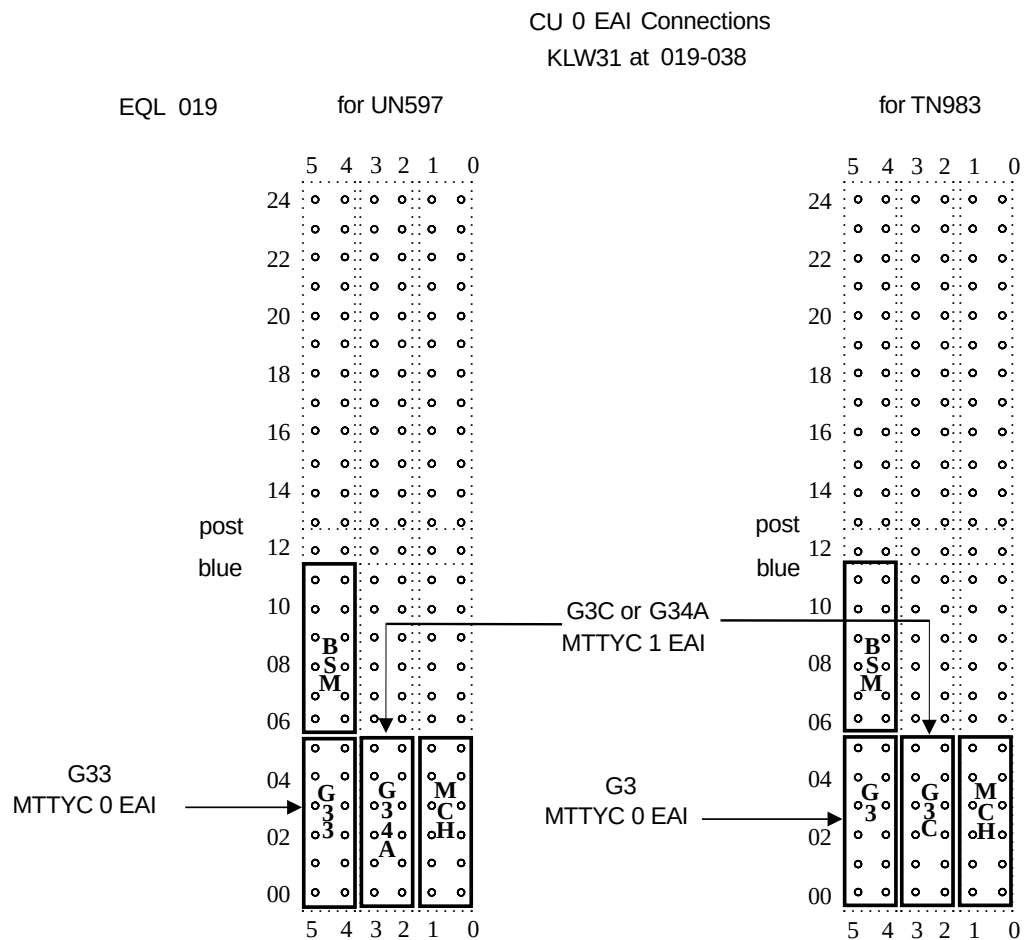


Figure 34-2. EAI 0 (CU 0) Backplane Reference

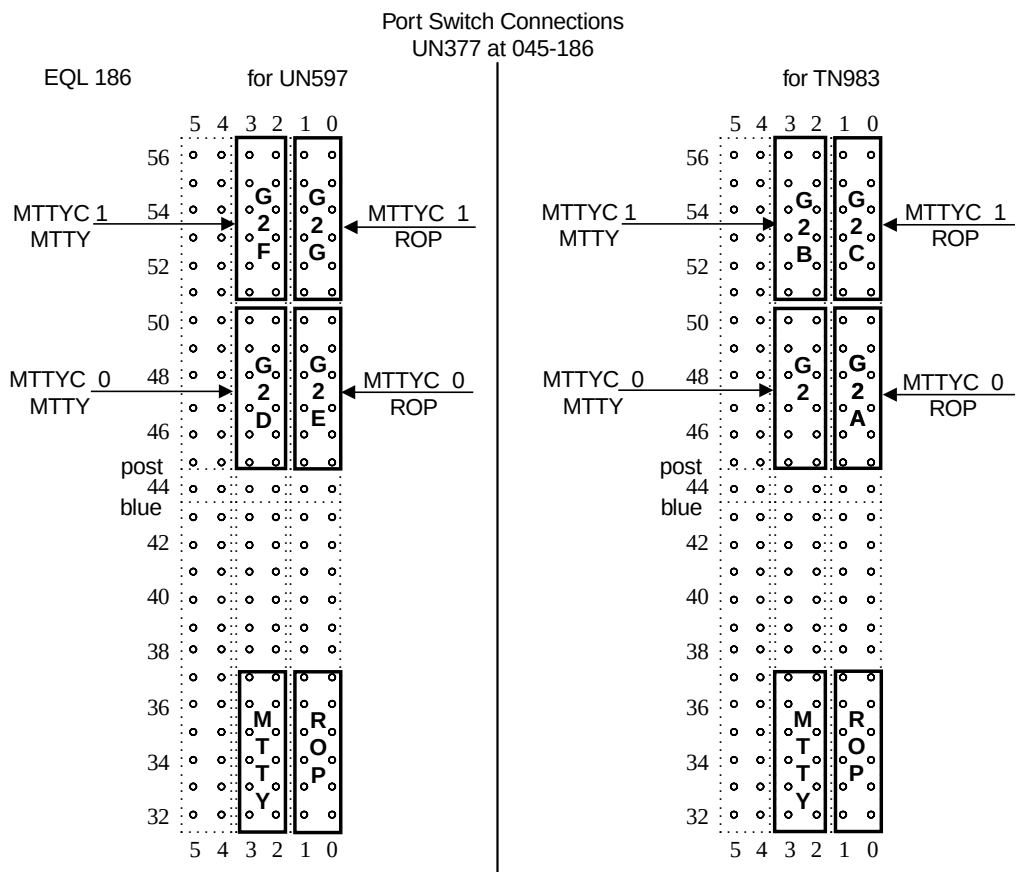


Figure 34-3. Port Switch (UN377) Backplane Reference

13. Unseat and remove the TN983 MTTYC 1 circuit pack at EQL 045-094.
14. Isolate MTTYC 1 backplane pin if needed.

ISOLATE MTTYC 1 BACKPLANE PIN PROCEDURE:

- 14.1. Determine the correct backplane code.
 - If the backplane code is ED3T077-30 G1 (comcode 846912558) or ED3T077-30 G2 (comcode 847249273 **without** MOD C), continue to Step **14.2** and isolate the pin.
 - If code is ED3T077-30 G2 (comcode 847249273 **with** MOD C), go to Step **15**.
 - 14.2. Remove the remaining circuit packs in IOP 1 Community 0 at EQLs 045-102, 045-110, and 045-118. Also remove power module 410AA at EQL 045-088.
 - 14.3. When removing circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158 static-free bags (RMAC-R1629741) or equivalent.
 - 14.4. Remove the 127C apparatus mounting (cable retainer) if in position of pin being isolated.
 - 14.5. Following established practices, remove the existing pin at EQL 045-094-022 using the KS-22876,L6 Pin Kit Instructions.
 - 14.6. Replace the pin removed in the preceding step with a isolating pin supplied with the pin kit labeled "1E5 Insulated Terminal Pin."
 - 14.7. Reinstall power module 410AA at EQL 045-088.
-
-
15. Add 127C apparatus mountings (blue cable retainers) at EQLs 045-094-100, 045-094-300, and 045-094-500.
 16. Connect the new ROP, MTTY, EAI 0, and SCC cables for MTTYC 1 and MTTYC 1 side of EAI 1 cable as indicated in Table 34-10.

Table 34-10. Connect MTTYC 1 Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Add UN597 MTTYC 1 EAI 0 Cable	ED3T076-20,G34A	CU 0/EAI 0	019-038-300	2x6	MTTYC 1	045-094-320	2x4
Add New ROP Cable - UN597	ED3T076-20,G2G	MTTYC 1	045-094-332	2x12	PROC 1/PS	045-186-151	2x6
Add New SCC Cable (if equipped) - UN597	ED3T076-20,G51	PROC 1/ MTTYC 1	045-094-500	2x12	DATA SET		25 PIN
Add New MTTY Cable - UN597	ED3T076-20,G2F	PROC 1/ MTTYC 1	045-094-132	2x12	PROC 1/PS	045-186-351	2x6
Add New EAI 1 Cable To MTTYC 1 Side - UN597	ED3T076-20,G33A	PROC 1/ MTTYC 1	045-094-117	2x8			

17. Install the UN597 MTTYC 1 circuit pack at EQL 045-094 and replace designation strip.
18. Update MTTYC 1 unit control block (*ucb*) to indicate slow ROP UN597. Table 34-11 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN597.

Table 34-11. MTTYC 1 *ucb* Form Field Values

Field/Name	TN983 Value	UN597 Value
22. equipage		0x2
27. mv	0x1	0x3
62. packcode	t983	u597
63. issue	4	0
64. version		0
65. cvaddr	0xf900	0xffff0

UPDATE MTTYC 1 *ucb* PROCEDURE:

18.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

18.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

18.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

18.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

18.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the **:** prompt.

18.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

18.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

18.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

18.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

18.8. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

18.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

18.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

18.11. Enter **0x2**

Response: Field 22 changes to indicate the new value of 0x2.
The system displays **Change Field:**

18.12. Enter **27**

Response: The cursor moves to the **27.mv:** attribute.

18.13. Enter **0x3**

Response: Field 27 changes to indicate the new value of 0x3.
The system displays **Change Field:**

18.14. Enter **62**

Response: The screen is repainted with Page 4, and the cursor moves to the **62.packcode:** attribute.

18.15. Enter **u597**

Response: Field 62 changes to indicate the new value of u597.
The system displays **Change Field:**

18.16. Enter **63**

Response: The cursor moves to the **63.issue:** attribute.

18.17. Enter **0**

Response: Field 63 changes to indicate the new value of zero (0).
The system displays **Change Field:**

18.18. Enter **64**

Response: The cursor moves to the **64.version:** attribute.

18.19. Enter **0**

Response: Field 64 changes to indicate the new value of zero (0).
The system displays **Change Field:**

18.20. Enter **65**

Response: The cursor moves to the **65.cvaddr:** attribute.

18.21. Enter **0xfff0**

Response: Field 65 changes to indicate the new value of 0xfff0.
The system displays **Change Field:**

18.22. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print.**
The cursor moves to the : prompt.

18.23. Enter **u**

Response: The system displays **updating...FORM UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

18.24. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.25. Complete the transaction.

COMPLETE TRANSACTION BLOCK PROCEDURE:

18.25.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

18.25.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

18.25.3. Enter *****

Response: The system displays the **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.26. Enter **<**

Response: The system displays **RCV MENU RCVECD COMPLETED**
The system exits RCVECD.

19. At IOPPS TN1820 (EQL 045-080), restore power to IOP 1 by operating the **ST/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP 1.

Response: The system displays **REPT POWER RESTORED IOP 1**
At IOPPS TN1820 in IOP 1, the **OFF** LED extinguishes.

⇒ NOTE:

Do **not** continue until this request has successfully completed.

20. At the MTTY, restore IOP 1 controller to service entering the appropriate input command.

- If MML, **RST:IOP=1,CONT;**
- If PDS, **RST:IOP 1,CONT!**

Response: The system displays **RST IOP 1 COMPLETED**

21. At the MTTY, run MTTYC 1 diagnostics by entering the appropriate input command.

- If MML, **DGN:MTTYC=1,RAW,TLP;**
- If PDS, **DGN:MTTYC 1,RAW,TLP!**

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 1 ATP MESSAGE COMPLETE.**

 NOTE:

Do **not** continue until this request has successfully completed.

22. **BACKOUT POINT 1: MTTYC 1 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "MTTYC 1 TN983 to UN597 Conversion Backout Procedure."
- If **no**, continue to Step 23.

23. At the MTTY, restore MTTYC 1 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=1;**
- If PDS, **RST:MTTYC 1!**

⇒ **NOTE:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is fully diagnosed, the update for conversion will not occur.

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES, AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY UPDATE PROCESS COMPLETE
RST MTTYC 1 COMPLETED
RST MTTY 1 COMPLETED
RST ROP 1 COMPLETED
RST SCC 1 COMPLETED (if equipped)
DGN MTTYC 1 ATP MESSAGE COMPLETE**

24. **BACKOUT POINT 2: MTTYC 1 TN983 TO UN597 CONVERSION PROCEDURE**

⚠ **CAUTION:**

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 1 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step 25.

25. At the MTTY, restore SCSDC 1 by entering the appropriate input command.

- If MML, **RST:SCSDC=1;**
- If PDS, **RST:SCSDC 1!**

Response: The system displays **RST SCSDC 1 ATP MESSAGE COMPLETE**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

26. Clear CU 1 forced on-line and EAI buffers.

CLEAR CU 1 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 1 nor CU 0 displays a forced indication at the MTTY.

- 26.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 26.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ON LINE**

- 26.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

27. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

- 27.1. At CUPS TN1821 (EQL 028-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing the to next step.

- 27.2. At the MTTY, diagnose CU 0 by entering the appropriate input command.

- If MML, **DGN:CU=0,CC=0:PH=64&&65;**
- If PDS, **DGN:CU 0,CC 0:PH 64-65!**

27.3. Observe the following PRMs for Phases 64 and 65 as applicable:

For Phase 64:

PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx

For Phase 65:

PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 AAAA AAAA AAAA AAAA xx xx xx
PRM 0 5555 5555 5555 5555 xx xx xx
PRM 0 EEEE EEEE EEEE EEEE xx xx xx
PRM 0 1111 1111 1111 1111 xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx

Response: The system displays **DGN CU 0 CC 0 ATP**
 MESSAGE COMPLETE

⇒ **NOTE:**

If any diagnostic failures occur at this point, first suspect a misplaced cable. Refer to the drawing aids and EQL tables for correct cable location.

27.4. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
 At CUPS TN1821 in CU 0, the **OOS** LED
 extinguishes.

⇒ **NOTE:**

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

28. **BACKOUT POINT 3: MTTYC 1 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "MTTYC 1 TN983 to UN597 Conversion Backout Procedure."
- If **no**, continue to Step 29.

29. Switch CU 0 to active.

SWITCH CUs PROCEDURE:

29.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

29.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

29.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

30. Force active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:



NOTE:

CU 0 must be active before the on-line force.

30.1. At the MTTY, observe the status of the CU at the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

30.2. Is CU 0 active?

- If yes, go to Step **30.4**.
- If no, continue to next step.

30.3. Make CU 0 active by entering the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

30.4. At the MTTY, access the EAI page.

30.5. Enter menu command **12**

Response: The system displays
REPT CU 0 FORCED ONLINE
REPT CU 1 REMOVED
REPT CU 1 UNAVAILABLE

31. At CUPS TN1821 (EQL 053-060), toggle the **ROS/RST** switch to the **ROS** position.



NOTE:

Performing Step **31** prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

32. At CUPS TN1821 (EQL 053-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 in CU 1, the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED
CU 1**

33. Remove and power down IOP 1.

REMOVE AND POWER DOWN IOP 1 PROCEDURE:

- 33.1. At the MTTY, remove IOP 1 from service by entering the appropriate input command.

- If MML, **RMV:IOP=1;**
- If PDS, **RMV:IOP 1!**

Response: The system displays **RMV MTTY 1 COMPLETED
RMV ROP 1 COMPLETED
RMV MTTYC 1 COMPLETED
RMV SCSDC 1 COMPLETED
RMV IOP 1 COMPLETED**
At IOPPS TN1820 at EQL 045-080, the **OOS** LED lights.



NOTE:

Do **not** continue until this request has successfully completed.

- 33.2. At IOPPS TN1820 (EQL 045-080), verify the **ROS/RST** switch is in the **ROS** position.



NOTE:

Performing Step **33.2** prevents automatic restoral of IOP 1 when the unit is powered up later in this procedure.

- 33.3. At IOPPS TN1820 (EQL 045-080), remove power from IOP 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED
IOP 1**
At IOPPS TN1820 (EQL 045-080), the **OFF** LED lights.

34. Make MTTYC 1 CU 1 hardware changes.



CAUTION:

ESD precautions required for the following steps.



NOTE:

Qualified personnel should perform all cable changes.

MAKE MTTYC 1 CU 1 HARDWARE CHANGES PROCEDURE:

- 34.1. Remove the MTTYC 1 EAI 1 cable from the CU 1 side as indicated in Table 34-12.

Table 34-12. Remove MTTYC 1 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3B	CU 1/EAI 1	045-038-300	2x6			

- 34.2. Install MTTYC 1 EAI 1 cable to CU 1 side as indicated in Table 34-13.

Table 34-13. Install MTTYC 1 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33A	CU 1/EAI 1	045-038-300	2X6			

Figure 34-4 illustrates the 3B21D computer backplane layout of the cable connections for the TN983 and UN583 CU 1 (EAI 1) interface.

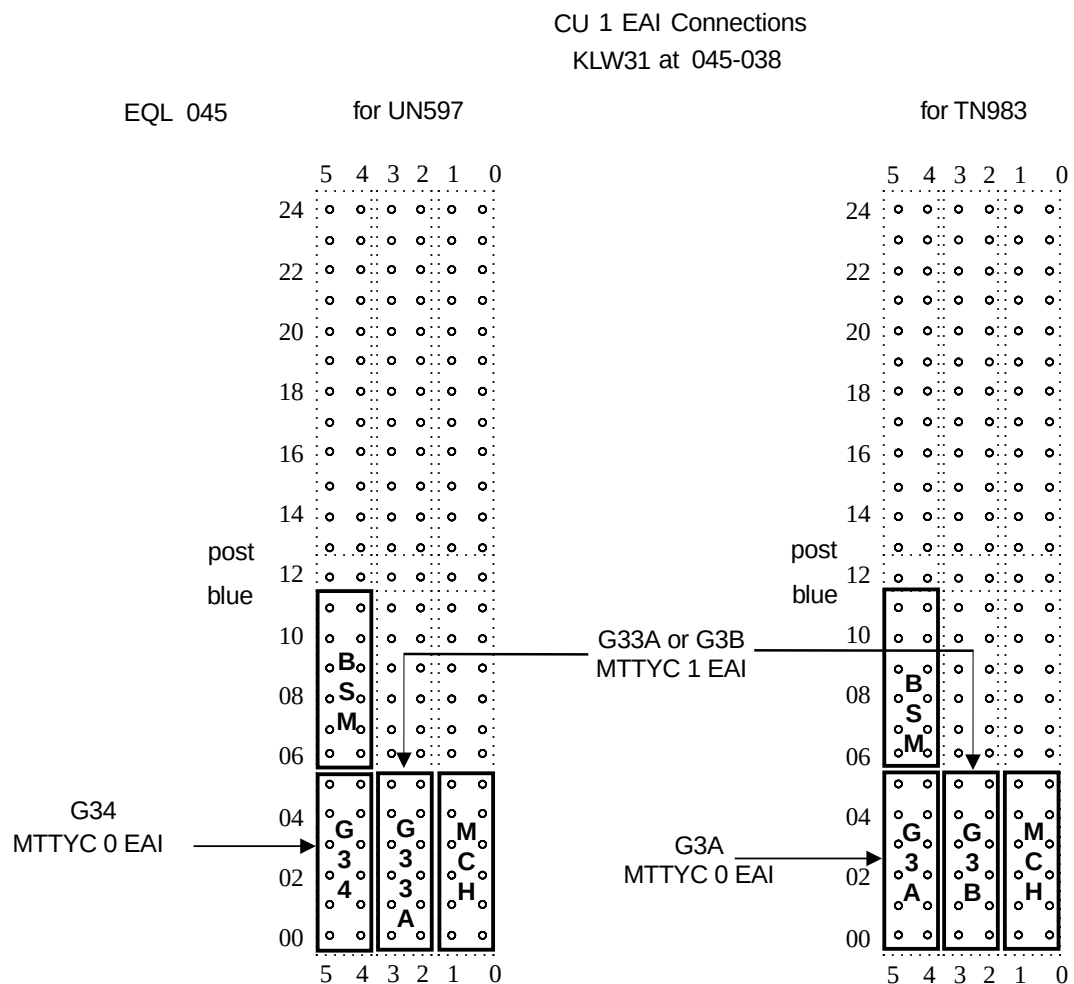


Figure 34-4. EAI 1 (CU 1) Backplane Reference

35. Power up and restore IOP 1.

POWER UP AND RESTORE IOP 1 PROCEDURE:

- 35.1. At IOPPS TN1820 (EQL 045-080), restore power to IOP 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED IOP 1**

- 35.2. At IOPPS TN1820 (EQL 045-080), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **REPT POWER RESTORED IOP 1** followed by **RST IOP 1 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 1.
At IOPPS TN1820 in IOP 1, the **OFF** LED extinguishes.

⇒ **NOTE:**

IOP 1 and all units controlled by IOP 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP 1 ATP MESSAGE COMPLETE**

36. **BACKOUT POINT 4: MTTYC 1 TN983 TO UN597 CONVERSION PROCEDURE**

 CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 1 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step 37.

37. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
38. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ **NOTE:**

Performing Step 38 should cause output messages on the ROP. If there are no messages, contact technical support.

39. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

40. Clear CU forces.

CLEAR CU 0 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:

⇒ **NOTE:**

Neither CU 0 nor CU 1 displays a forced indication at the MTTY.

- 40.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 40.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ON LINE**

40.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

41. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

41.1. At CUPS TN1821 (EQL 053-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**

⇒ NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to the next step.

41.2. At the MTTY, diagnose CU 1 by entering the appropriate input command.

- If MML, **DGN:CU=1,CC=0:PH=64&&65;**
- If PDS, **DGN:CU 1,CC 0:PH 64-65!**

41.3. Observe the following PRMs for Phases 64 and 65 as applicable.

For Phase 64:

PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx

For Phase 65:

PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 AAAA AAAA AAAA AAAA xx xx xx
PRM 1 5555 5555 5555 5555 xx xx xx
PRM 1 EEEE EEEE EEEE EEEE xx xx xx
PRM 1 1111 1111 1111 1111 xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx

Response: The system displays **DGN CU 1 CC 0 ATP
MESSAGE COMPLETE**



NOTE:

If any diagnostic failures occur at this point, check for a misplaced cable. Refer to the drawing aids and EQL tables for correct cable location.

41.4. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
At CUPS TN1821 in CU 1, the **OOS** LED extinguishes.



NOTE:

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

42. **BACKOUT POINT 5: MTTYC 1 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 1 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step **43**.

43. Switch CU 1 to active.

SWITCH CUs PROCEDURE:

43.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

43.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

43.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

44. Verify MTTYC 1.

TEST MTTYCs FROM BOTH CUs PROCEDURE:

44.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

44.2. At the CPDP, verify that CU 0 is active.

- If **yes**, go to Step **44.4**.
- If **no**, continue to Step **44.3**.

- 44.3. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 44.4. At the CPDP, verify that the MTTY is connected to MTTYC 1.
- If **yes**, go to Step **44.6**.
 - If **no**, continue to Step **44.5**.

- 44.5. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

- 44.6. At the CPDP, verify that the ROP is connected to the MTTYC 1.
- If **yes**, go to Step **44.8**.
 - If **no**, continue to Step **44.7**.

- 44.7. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **44.7** should cause output messages on the ROP. If no output messages are displayed on the ROP, contact technical support.

- 44.8. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.

44.9. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

44.10. Observe the MTTY and ROP output.

44.11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.

44.12. At the MTTY, switch the ROP and MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

44.13. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1.

44.14. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.

44.15. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

44.16. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.

45. Soak the changes for 5 minutes before performing the remaining steps.

46. Switch CU 0 to active.

SWITCH CUs PROCEDURE:

- 46.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 46.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 46.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

47. Soak another 5 minutes before performing the remaining steps.

48. Activate MTTYC 1 changes to disk.

⇒ NOTE:

For this procedure, the ECD should be accessed by command mode only.

ACTIVATE MTTYC 1 CHANGES TO DISK PROCEDURE:

- 48.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

48.2. Enter **activate**

Response: The system displays the **Copy Incore ECD To Root ECD** form.
The question **copy incore database to disk?** appears at the bottom of the screen.
The cursor moves to the **1.copy_inc_to_disk:** attribute.

48.3. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

48.4. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

48.5. Enter **<**

Response: The system displays **RCV MENU RCVECD COMPLETED**
The system exits RCVECD.

49. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step **50**.

SAFE STOP POINT 1 PROCEDURE:

49.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

49.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

49.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

49.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**

- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

49.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.

50. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

MTTYC 0 TN983 to UN597 Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure backs out the changes to MTTYC 0. Read and understand the backout procedure before beginning the "MTTYC 0 TN983 to UN597 Conversion Procedure."

1. Determine the step number in the "MTTYC 0 TN983 to UN597 Conversion Procedure" where the problem occurred.
 - For problems encountered in Steps **1** through **29**, continue to Step **5**.
 - For problems encountered in Steps **30** through **50**, go to Step **2** of this backout procedure.
2. Force active CU 1 on-line.

FORCE ACTIVE CONTROL UNIT 1 ON-LINE PROCEDURE:

NOTE:

CU 1 must be active before the on-line force.

- 2.1. At the MTTY, observe the status of the CU on the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 2.2. Is CU 1 active?
 - If yes, go to Step **2.4**.
 - If no, continue to next step.

- 2.3. Make CU 1 active by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 2.4. At the MTTY, access the EAI page.

2.5. Enter menu command **12**

Response: The system displays
REPT CU 1 FORCED ONLINE
REPT CU 0 REMOVED
REPT CU 0 UNAVAILABLE

3. At CUPS TN1821 (EQL 028-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Performing Step 3 prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

4. At CUPS TN1821 (EQL 028-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 028-060), the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 0

5. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to MTTY 1 and ROP 1.
6. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
- If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

7. At IOPPS TN1820 (EQL 019-080), remove IOP 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

Performing Step 7 prevents automatic restoral of IOP 0 when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

Response: The system displays **RMV IOP 1 COMPLETED**
At IOPPS TN1820 (EQL 019-080), the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820 (EQL 019-080), remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 019-080), the **OFF** LED lights.

9. Unseat and remove the UN597 MTTYC 0 circuit pack at EQL 019-094.
10. Remove the ROP, MTTY, and SCC cables for MTTYC 0 as indicated in Table 34-14.



CAUTION:

ESD precautions required for the following steps.

⇒ **NOTE 1:**

Qualified personnel should perform all cable changes.

⇒ **NOTE 2:**

See Figures 34-5, 34-6, and 34-7 for the 3B21D computer backplane layout of the cable connections for the TN983 and UN597 MTTYC 0 interface.

Table 34-14. Remove New UN597 ROP and SCC Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Remove New ROP Cable - UN597	ED3T076-20,G2E	MTTYC 0	019-094-332	2x12	PROC 1/PS 0	045-186-145	2x6
Remove New SCC Cable (if equipped) - UN597	ED3T076-20,G51	MTTYC 0	019-094-500	2x12	DATA SET	25 Pin	
Remove New MTTY Cable UN597	ED3T076-20,G2D	MTTYC 0	019-094-132	2X12	PROC 1/PS	045-186-345	2x6

11. Reconnect the old TN983 ROP, MTTY, and SCC cables for MTTYC 0 as indicated in Table 34-15.

Table 34-15. Reconnect Old TN983 ROP, MTTY, and SCC Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Reconnect Old SCC Cable (if equipped) - TN983	ED5D517-30,G2	PROC 0/ MTTYC 0	019-094-332		DATA SET		
Reconnect Old ROP Cable - TN983	ED3T076-20,G2A	PROC 0/ MTTYC 0	019-094-132		PROC 1/PS	045-186-145	
Reconnect Old MTTY Cable - TN983	ED3T076-20,G2	PROC 0/ MTTYC 0	019-094-345		PROC 1/PS	045-186-345	

12. Back out MTTYC 0 end of EAI 0 cable.

⇒ NOTE:

See Figures 34-5 and 34-8 for the 3B21D computer backplane layout of the cable connections.

BACK OUT MTTYC 0 END OF EAI 0 CABLE PROCEDURE:

- 12.1. Remove MTTYC 0 end of the new UN597 EAI 0 cable as indicated in Table 34-16.

Table 34-16. Remove MTTYC 0 End of New UN597 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33				MTTYC 0	019-094-317	2x8

- 12.2. Reconnect MTTYC 0 end of the old TN983 EAI 0 cable as indicated in Table 34-17.

Table 34-17. Reconnect MTTYC 0 End of Old TN983 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3				MTTYC 0	019-094-153	2x4

13. Determine the step number in the “MTTYC 0 TN983 to UN597 Conversion Procedure” where the problem occurred.
- For problems encountered in Steps **1** through **29**, go to Step **21**.
 - For problems encountered in Steps **30** through **50**, continue to Step **14** of this backout procedure.
14. Remove UN597 MTTYC 0 EAI 0 cable as indicated in Table 34-18.

⇒ NOTE:

Figure 34-8 illustrates the 3B21D computer backplane layout of the cable connections.

Table 34-18. Remove UN597 MTTYC 0 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33	PROC 0/EAI 0	019-038-500	2X6	MTTYC 0	019-094-317	2x8

15. Reconnect the old TN983 MTTYC 0 EAI 0 cable as indicated in Table 34-19.

Table 34-19. Reconnect Old TN983 MTTYC 0 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3	PROC 0/EAI 0	019-038-500	2x6	MTTYC 0	019-094-153	2x4

16. Clear CU forces.

CLEAR CU 1 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 1 nor CU 0 displays a forced indication at the MTTY.

- 16.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 16.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 1 NO LONGER FORCED ON LINE**

- 16.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

17. At CUPS TN1821 (EQL 028-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position, and releasing to the **ON** position.

Response: At CUPS TN1821 in CU 1, the **OFF** LED extinguishes.

18. At the MTTY, diagnose CU 0 unconditionally by entering the appropriate input command.

- If MML, **DGN:CU=0,UCL;**
- If PDS, **DGN:CU 0,UCL!**

Response:

M DGN CU 0 CC 0 PH 64 STF (4 H'00000000 H'00000000) MSG IP

TEST	MISMATCH	ACTUAL	MASK	EXPECTED
024	H'89abcdef	H'89abcdef	H'ffffff	H'00000000
025	H'01234567	H'01234567	H'ffffff	H'00000000
032	H'ffffff	H'00000000	H'ffffff	H'ffffff
033	H'ffffff	H'00000000	H'ffffff	H'ffffff

M DGN CU 0 CC 0 COMPLETED STF (4 H'00000000 H'00000000) MSG IN PROGRESS

Response: The system displays **DGN CU 1 COMPLETED**



NOTE:

These are the expected diagnostic failures while IOP 0 is powered down. All other CU 0 subunit diagnostics should run ATP.

19. At the MTTY, restore CU 0 unconditionally to service by entering the appropriate input command.

- If MML, **RST:CU=0,UCL;**
- If PDS, **RST:CU 0,UCL!**

Response: The system displays **RST CU 0 COMPLETED**

⇒ **NOTE:**

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

20. Switch CU 1 to active.

SWITCH CU 1 ACTIVE PROCEDURE:

- 20.1. At the MTTY, display the system status page by entering menu command **102**.

Response: The system displays the CPDP.

- 20.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 20.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

21. Force active CU 0 on-line.

FORCE ACTIVE CONTROL UNIT 0 ON-LINE PROCEDURE:



NOTE:

CU 0 must be active before the on-line force.

- 21.1. At the MTTY, observe the status of the CU at CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 21.2. Is CU 0 active?

- If yes, go to Step **21.4**.
- If no, continue to next step.

- 21.3. Make CU 0 active by entering the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 21.4. At the MTTY, access the EAI page.

- 21.5. Enter menu command **12**

Response: The system displays
REPT CU 0 FORCED ONLINE
REPT CU 1 REMOVED
REPT CU 1 UNAVAILABLE

22. At CUPS TN1821 (EQL 053-060), toggle the **ROS/RST** switch to the **ROS** position.



NOTE:

Performing Step **22** prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

23. At CUPS TN1821 (EQL 053-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 053-060), the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 1

24. Remove UN597 MTTYC 0 EAI 1 cable as indicated in Table 34-20. Figures 34-5 and 34-8 illustrate the layout of the 3B21D computer backplane cable connections.

Table 34-20. Remove UN597 MTTYC 0 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G34	CU 1/EAI 1	045-038-500	2X6	MTTYC 0	019-094-120	2x3

25. Reconnect the old TN983 MTTYC 0 EAI 1 cable as indicated in Table 34-21.

Table 34-21. Reconnect Old TN983 MTTYC 0 EAI 1 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3A	PROC 1/EAI 1	045-038-500	2x6	MTTYC 0	019-094-149	2x3

26. Install TN983 MTTYC 0 circuit pack at EQL 019-094 and replace the designation strip.
27. Back out the database changes.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the disk copy of the database will match the current successfully soaked hardware configuration. If backout is required prior to the soak section but after the *incore* database changes have been completed the *incore* ECD changes must be backed out using the following procedure:



CAUTION:

For emergency backout of the disk copy of the database, the system must be booted with Poke 53 (Boot+ECD) with Backup Root set.

BACK OUT THE DATABASE CHANGES PROCEDURE:

27.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

27.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

27.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

27.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

27.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

27.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

27.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

27.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

27.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

27.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

27.8. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

27.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

27.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

27.11. Enter **0x0**

Response: Field 22 changes to indicate the new value of 0x0.
The system displays **Change Field:**

27.12. Enter **27**

Response: The cursor moves to the **27.mv:** attribute.

27.13. Enter **0x1**

Response: Field 27 changes to indicate the new value of 0x1.
The system displays **Change Field:**

27.14. Enter **62**

Response: The screen is repainted with Page 4, and the
cursor moves to the **62.packcode:** attribute.

27.15. Enter **t983**

Response: Field 62 changes to indicate the new value of
t983.
The system displays **Change Field:**

27.16. Enter **63**

Response: The cursor moves to the **63.issue:** attribute.

27.17. Enter **4**

Response: Field 63 changes to indicate the new value of 4.
The system displays **Change Field:**

27.18. Enter **65**

Response: The cursor moves to the **65.cvaddr:** attribute.

27.19. Enter **0xf900**

Response: Field 65 changes to indicate the new value of
0xf900.
The system displays **Change Field:**

27.20. Press the <CR> key

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

27.21. Enter **u**

Response: The system displays **updating...FORM
UPDATED**
The screen is repainted with Page 1, and the
cursor moves to the **1.k_complex_name:**
attribute.

27.22. Enter <

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

27.23. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

27.23.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

27.23.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

27.23.3. Enter *

Response: The system displays the **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

27.24. Enter <

Response: The system displays **RCV MENU RCVECD COMPLETED**
The system exits RCVECD.

28. Power up and restore IOP 0.

POWER UP AND RESTORE IOP 0 PROCEDURE:

- 28.1. At IOPPS TN1820 (EQL 019-080), restore power to IOP 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED IOP 0**

- 28.2. At IOPPS TN1820 (EQL 019-080), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **RST IOP 0 COMPLETED** followed by **RST... COMPLETED** for each unit under IOP 0.
At IOPPS TN1820 (EQL 019-080), the **OFF** LED extinguishes.



NOTE 1:

IOP 0 and all units controlled by IOP 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE 2:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE 3:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP 0 ATP MESSAGE COMPLETE**

29. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to the **AUTO** position.

30. Clear CU 0 forced on-line and EAI buffers.

CLEAR CU 0 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 0 nor CU 1 displays a forced indication at the MTTY.

- 30.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 30.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ON LINE**

- 30.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

31. Power up and restore CU 1 with **RST**.

POWER UP CU 1 WITH RST PROCEDURE:

- 31.1. At CUPS TN1821 (EQL 053-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to the next step.

- 31.2. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
At CUPS TN1821 in CU 1, the **OOS** LED extinguishes.



NOTE:

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

32. At the MTTY, switch the ROP to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **32** should cause output messages on the ROP. If there are no messages, contact technical support.

33. At the MTTY, switch the MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

34. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

MTTYC 0 TN983 to UN597 Conversion Procedure

Perform the following steps to convert a 3B21D computer from an MTTYC 0 with a TN983 circuit pack to a UN597 circuit pack.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. Verify CU 0 is active.

⇒ NOTE:

The "MTTYC 0 TN983 to UN597 Conversion Procedure" must be performed using an RC/V terminal that is controlled by IOP 1.

⇒ NOTE:

CU 0 must be active. If CU 0 is on standby, execute a switch to make CU 0 active.

VERIFY CU 0 ACTIVE PROCEDURE:

- 2.1. At the MTTY, enter the appropriate Poke command to display the CPDP.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

2.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

2.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 045-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

4. Verify that the MTTY and ROP are connected to MTTYC 1.

VERIFY MTTY AND ROP CONNECTED TO MTTYC 1 PROCEDURE:

4.1. At the CPDP, verify that the MTTY is connected to MTTYC 1.

- If **yes**, go to Step **4.3**.
- If **no**, continue to Step **4.2**.

4.2. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

4.3. At the CPDP, verify that the ROP is connected to the MTTYC 1.

- If **yes**, go to Step **4.5**.
- If **no**, continue to Step **4.4**.

- 4.4. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ **NOTE:**

Performing Step 4.4 should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

- 4.5. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1.
-

5. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to MTTY 1 and ROP 1.
6. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
- If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

7. At IOPPS TN1820 (EQL 019-080), remove IOP 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE:**

Performing Step 7 prevents automatic restoral of IOP 0 when the unit is powered up later in this procedure.

⇒ **NOTE:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

Response: The system displays **RMV IOP 0 COMPLETED**
At IOPPS TN1820 (EQL 019-080), the **OOS** LED lights.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

8. At IOPPS TN1820 (EQL 019-080), remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 019-080), the **OFF** LED lights.

9. Force active CU 0 on-line.

FORCE ACTIVE CU 0 ON-LINE PROCEDURE:

⇒ **NOTE:**

CU 0 must be active before the on-line force.

- 9.1. At the MTTY, observe the status of the CU at CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 9.2. Is CU 0 active?

- If yes, go to Step **9.4**.
- If no, continue to next step.

- 9.3. Make CU 0 active by entering the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 9.4. At the MTTY, access the EAI page.

9.5. Enter menu command **12**

Response: The system displays
REPT CU 0 FORCED ONLINE
REPT CU 1 REMOVED
REPT CU 1 UNAVAILABLE

10. At CUPS TN1821 (EQL 053-060), toggle the **ROS/RST** switch to the **ROS** position.

 NOTE:

Performing Step **10** prevents automatic restoral of CU 1 when the unit is powered up later in this procedure.

11. At CUPS TN1821 (EQL 053-060), power down CU 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821 (EQL 053-060), the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 1

12. Remove the ROP, MTTY, EAI 1, and SCC cables for MTTYC 0 and MTTYC 0 side of EAI 0 cable as indicated in Table 34-22.



CAUTION:

ESD precautions are required for the following steps.

 NOTE:

Qualified personnel should perform all cable changes.

Table 34-22. Remove MTTYC 0 Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Remove Old TN983 MTTYC 0 EAI 0 Cable	ED3T076-20,G3A	PROC 1/ EAI 1	045-038-500	2x6	MTTYC 0	019-094-149	2x3
Remove Old SCC Cable (if equipped) - TN983	ED5D517-30,G2	PROC 0/ MTTYC 0	019-094-332		DATA SET		
Remove Old ROP Cable - TN983	ED3T076-20,G2A	PROC 0/ MTTYC 0	019-094-132		PROC 1/PS	045-186-145	
Remove Old MTTY Cable - TN983	ED3T076-20,G2	PROC 0/ MTTYC 0	045-094-345		PROC 1/PS	045-186-345	
Remove Old EAI 0 Cable From MTTYC 0 Side Only (TN983)	ED3T076-20,G3B	PROC 0/ MTTYC 0	045-094-153				

See Figures 34-5, 34-6, and 34-7 for the 3B21D computer backplane layout of the cable connections for the TN983 and UN597 MTTYC 0 interface.

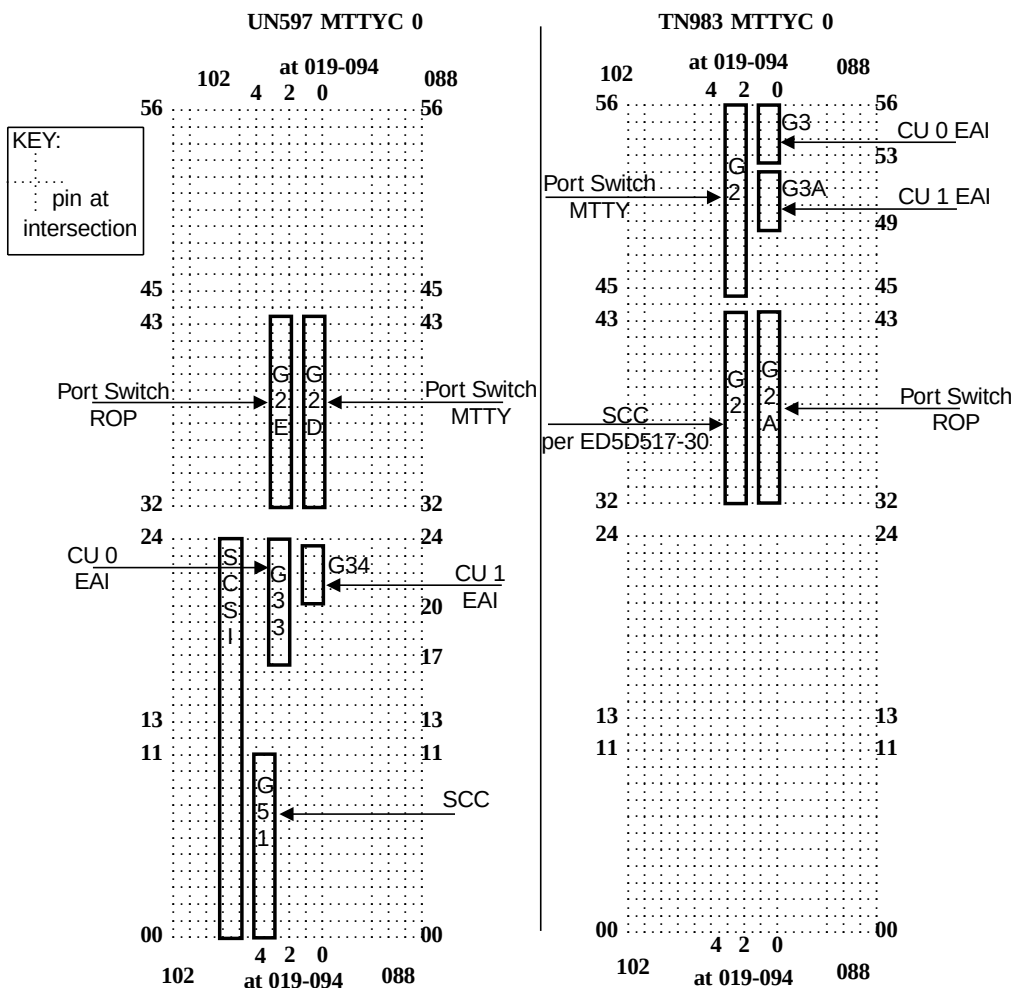


Figure 34-5. MTTYC 0 Backplane Reference

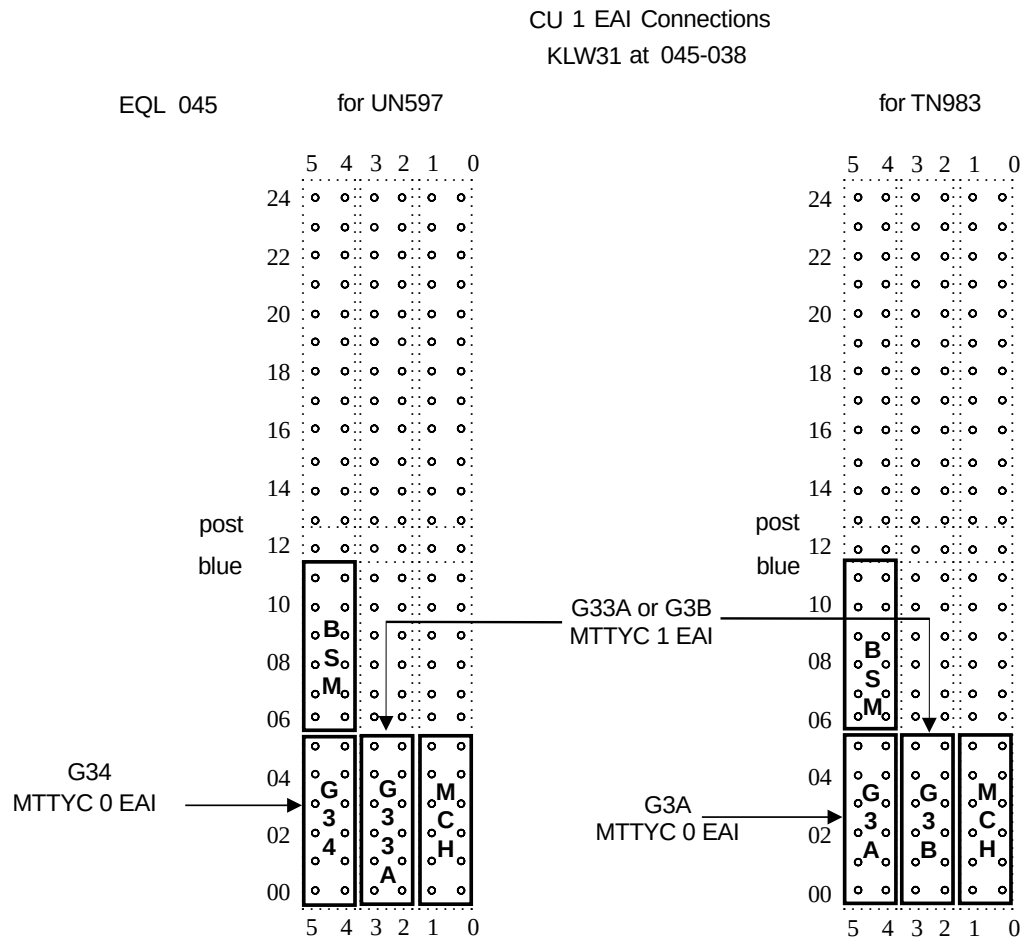


Figure 34-6. EAI 1 (CU 1) Backplane Reference

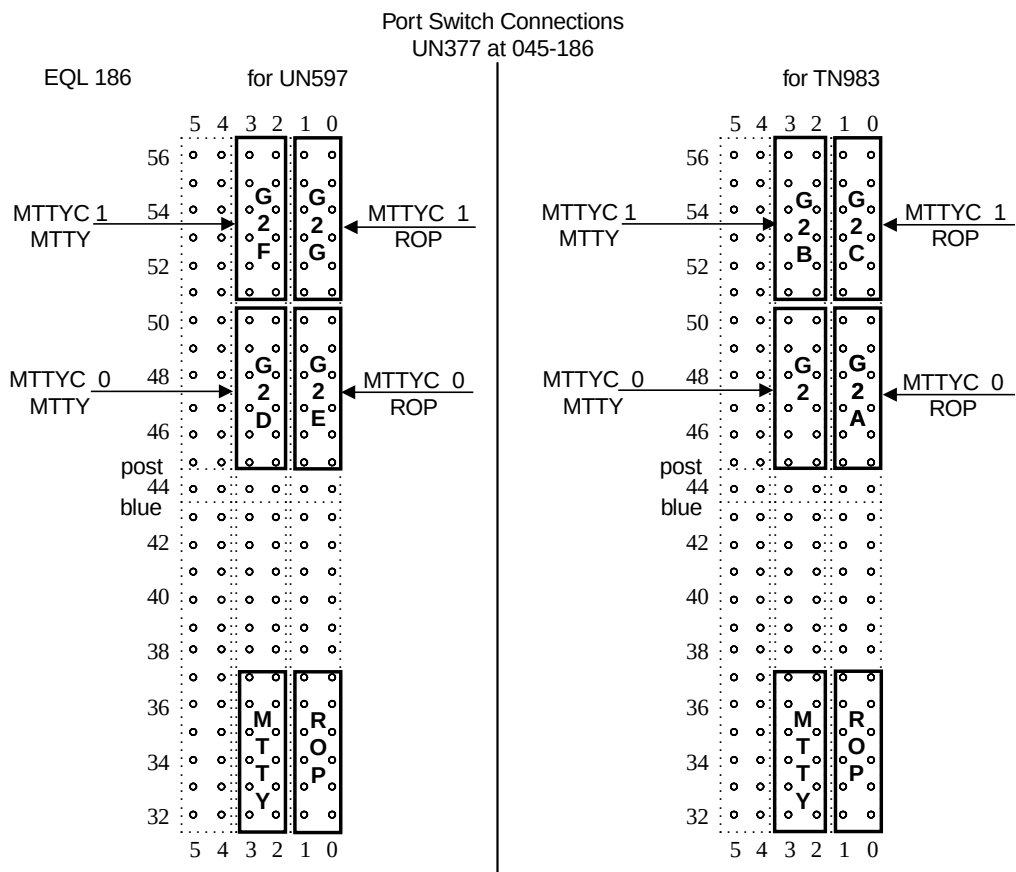


Figure 34-7. Port Switch (UN377) Backplane Reference

13. Unseat and remove the TN983 MTTYC 0 circuit pack at EQL 019-094.
14. Isolate MTTYC 0 backplane pin if needed.

ISOLATE MTTYC 0 BACKPLANE PIN PROCEDURE:

- 14.1. Determine the correct backplane code.
 - If the backplane code is ED3T077-30 G1 (comcode 846912558) or ED3T077-30 G2 (comcode 847249273 **without** MOD C), continue with Step **14.2** and isolate pin.
 - If code is ED3T077-30 G2 (comcode 847249273 **with** MOD C), go to Step **15**.
 - 14.2. Remove the remaining circuit packs in IOP 0 Community 0 at EQLs 019-102, 019-110, and 019-118. Also remove power module 410AA at EQL 019-088.
 - 14.3. When removing circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158 static-free bags (RMAC-R1629741) or equivalent.
 - 14.4. Remove the 127C apparatus mounting (cable retainer) if in position of pin being isolated.
 - 14.5. Following established practices, remove the existing pin at EQL 019-094-022 using the KS-22876,L6 Pin Kit Instructions.
 - 14.6. Replace the pin removed in the preceding step with an isolating pin supplied with the pin kit labeled "1E5 Insulated Terminal Pin."
 - 14.7. Reinstall power module 410AA at EQL 019-088.
-
-
15. Add 127C apparatus mountings (blue cable retainers) at EQLs 019-094-100, 019-094-300, and 019-094-500.
 16. Connect the new ROP, MTTY, EAI 1 and SCC cables for MTTYC 0 and MTTYC 0 side of EAI 0 cable as indicated in Table 34-23.

Table 34-23. Connect MTTYC 0 Cables

TASK	ED,G	FROM			TO		
		CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
Add UN597 MTTYC 0 EAI 1 Cable	ED3T076-20,G34	PROC 1/ EAI 1	045-038-500	2x6	MTTYC 0	019-094-120	2x4
Add New ROP Cable - UN597	ED3T076-20,G2E	MTTYC 0	019-094-332	2x12	PROC 1/PS	045-186-145	2x6
Add New SCC Cable (if equipped) - UN597	ED3T076-20,G51	PROC 1/ MTTYC 0	019-094-500	2x12	DATA SET		25 PIN
Add New MTTY Cable - UN597	ED3T076-20,G2D	PROC 1/ MTTYC 0	019-094-132	2x12	PROC 1/PS	045-186-345	2x6
Add New EAI 0 Cable To MTTYC 0 Side - UN597	ED3T076-20,G33	PROC 1/ MTTYC 0	019-094-317	2x8			

17. Install the UN597 MTTYC 0 circuit pack at EQL 019-094 and replace designation strip.
18. Update MTTYC 0 *ucb* to indicate slow ROP UN597. Table 34-24 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN597.

Table 34-24. MTTYC 0 *ucb* Form Field Values

Field/Name	TN983 Value	UN597 Value
22. equipage		0x2
27. mv	0x1	0x3
62. packcode	t983	u597
63. issue	4	0
64. version		0
65. cvaddr	0xf900	0xffff0

UPDATE MTTYC 0 ucb PROCEDURE:

18.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

18.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

18.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

18.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

18.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the **:** prompt.

18.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

18.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

18.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

18.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

18.8. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

18.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

18.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

18.11. Enter **0x2**

Response: Field 22 changes to indicate the new value of 0x2.
The system displays **Change Field:**

18.12. Enter **27**

Response: The cursor moves to the **27.mv:** attribute.

18.13. Enter **0x3**

Response: Field 27 changes to indicate the new value of 0x3.
The system displays **Change Field:**

18.14. Enter **62**

Response: The screen is repainted with Page 4, and the cursor moves to the **62.packcode:** attribute.

18.15. Enter **u597**

Response: Field 62 changes to indicate the new value of u597.
The system displays **Change Field:**

18.16. Enter **63**

Response: The cursor moves to the **63.issue:** attribute.

18.17. Enter **0**

Response: Field 63 changes to indicate the new value of zero (0).
The system displays **Change Field:**

18.18. Enter **64**

Response: The cursor moves to the **64.version:** attribute.

18.19. Enter **0**

Response: Field 64 changes to indicate the new value of zero (0).
The system displays **Change Field:**

18.20. Enter **65**

Response: The cursor moves to the **65.cvaddr:** attribute.

18.21. Enter **0xfff0**

Response: Field 65 changes to indicate the new value of 0xfff0.
The system displays **Change Field:**

18.22. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print.**
The cursor moves to the : prompt.

18.23. Enter **u**

Response: The system displays **updating...FORM
UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

18.24. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.25. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

18.25.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

18.25.2. Press the **<CR>** key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

18.25.3. Enter *****

Response: The system displays the **executing...FORM
EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

18.26. Enter **<**

Response: The system displays **RCV MENU RCVECD
COMPLETED**
The system exits RCVECD.

19. At IOPPS TN1820 (EQL 045-080), restore power to IOP 0 by operating the **ST/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP 0.

Response: The system displays **REPT POWER RESTORED IOP 0**
At IOPPS TN1820 in IOP 0, the **OFF** LED extinguishes.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

20. At the MTTY, restore IOP 0 controller to service by entering the appropriate input command.

- If MML, **RST:IOP=0,CONT;**
- If PDS, **RST:IOP 0,CONT!**

Response: The system displays **RST IOP 0 COMPLETED**

21. At the MTTY, run MTTYC 0 diagnostics by entering the appropriate input command.

- If MML, **DGN:MTTYC=0,RAW,TLP;**
- If PDS, **DGN:MTTYC 0,RAW,TLP!**

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 0 ATP MESSAGE COMPLETE**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

22. BACKOUT POINT 1: MTTYC 0 TN983 TO UN597 CONVERSION PROCEDURE



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "MTTYC 0 TN983 to UN597 Conversion Backout Procedure."
- If **no**, continue to Step 23.

23. At the MTTY, restore MTTYC 0 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=0;**
- If PDS, **RST:MTTYC 0!**



NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is fully diagnosed, the update for the conversion will not occur.

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES, AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY UPDATE PROCESS COMPLETE
DGN MTTYC 0 COMPLETED ATP MESSAGE IN PROGRESS
RST MTTYC 0 COMPLETED
RST MTTY 0 COMPLETED
RST ROP 0 COMPLETED
RST SCC 0 COMPLETED (if equipped)
DGN MTTYC 0 ATP MESSAGE COMPLETE**

24. **BACKOUT POINT 2: MTTYC 0 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "MTTYC 1 TN983 to UN597 Conversion Backout Procedure."
- If **no**, continue to Step 25.

25. At the MTTY, restore SCSDC 0 by entering the appropriate input command.

- If MML, **RST:SCSDC=0;**
- If PDS, **RST:SCSDC 0!**

Response: The system displays **RST SCSDC 0 ATP MESSAGE
COMPLETE**



NOTE:

Do **not** continue until this request has successfully completed.

26. Clear CU 0 forced on-line and EAI buffers.

CLEAR CU 0 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:



NOTE:

Neither CU 0 nor CU 1 displays a forced indication at the MTTY.

26.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

26.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 0 NO LONGER
FORCED ON LINE**

26.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

27. Power up and restore CU 1.

POWER UP AND RESTORE CU 1 PROCEDURE:

- 27.1. At CUPS TN1821 (EQL 053-060), restore power to CU 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 1**

⇒ NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to the next step.

- 27.2. At the MTTY, diagnose CU 0 by entering the appropriate input command.

- If MML, **DGN:CU=1,CC=0:PH=64&&65;**
- If PDS, **DGN:CU 1,CC 0:PH 64-65!**

- 27.3. Observe the following PRMs for Phases 64 and 65 as applicable:

For Phase 64:

PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx

For Phase 65:

PRM 1 0123 4567 89AB CDEF xx xx xx
PRM 1 AAAA AAAA AAAA AAAA xx xx xx
PRM 1 5555 5555 5555 5555 xx xx xx
PRM 1 EEEE EEEE EEEE EEEE xx xx xx
PRM 1 1111 1111 1111 1111 xx xx xx
PRM 1 0000 0000 0000 0000 xx xx xx
PRM 1 FFFF FFFF FFFF FFFF xx xx xx

Response: The system displays **DGN CU 1 CC 0 ATP
MESSAGE COMPLETE**

⇒ NOTE:

If any diagnostic failures occur at this point, first suspect a misplaced cable. Refer to the drawing aids and EQL tables for correct cable location.

27.4. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 1 is restored to service automatically.
At CUPS TN1821 in CU 1, the **OOS** LED
extinguishes.



NOTE:

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

28. **BACKOUT POINT 3: MTTYC 0 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 0 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step 29.

29. Switch CU 1 to active.

SWITCH CUs PROCEDURE:

29.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

29.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

29.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

30. Force active CU 1 on-line.

FORCE ACTIVE CU 1 ON-LINE PROCEDURE:

⇒ NOTE:

CU 1 must be active before the on-line force.

30.1. At the MTTY, observe the status of the CU at CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

30.2. Is CU 1 active?

- If yes, go to Step **30.4**.
- If no, continue to next step.

30.3. Make CU 1 active by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

30.4. At the MTTY, access the EAI page.

30.5. Enter menu command **12**

Response: The system displays
REPT CU 1 FORCED ONLINE
REPT CU 0 REMOVED
REPT CU 0 UNAVAILABLE

31. At CUPS TN1821 (EQL 028-060), toggle the **ROS/RST** switch to the **ROS** position.

⇒ NOTE:

Performing Step **31** prevents automatic restoral of CU 0 when the unit is powered up later in this procedure.

32. At CUPS TN1821 (EQL 053-060), power down CU 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: At CUPS TN1821, the **OFF** LED lights.
At the MTTY, the system displays **REPT POWER REMOVED**
CU 0

33. Remove and power down IOP 0.

REMOVE AND POWER DOWN IOP 0 PROCEDURE:

- 33.1. At the MTTY, remove IOP 0 from service by entering the appropriate input command.

- If MML, **RMV:IOP=0;**
- If PDS, **RMV:IOP 0!**

Response: The system displays **RMV MTTY 0 COMPLETED**
RMV ROP 0 COMPLETED
RMV MTTYC 0 COMPLETED
RMV SCSDC 0 COMPLETED
RMV IOP 0 COMPLETED
At IOPPS TN1820 at EQL 019-080, the **OOS** LED lights.

⇒ NOTE:

Do **not** continue until this request has successfully completed.

- 33.2. At IOPPS TN1820 (EQL 045-080), verify the **ROS/RST** switch is in the **ROS** position.



NOTE:

Performing Step **33.2** prevents automatic restoral of IOP 0 when the unit is powered up later in this procedure.

- 33.3. At IOPPS TN1820 (EQL 019-080), remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 019-080), the **OFF** LED lights.

34. Make MTTYC 0 CU 0 hardware changes.



CAUTION:

ESD precautions required for the following steps.



NOTE:

Qualified personnel should perform all cable changes.

MAKE MTTYC 0 CU 0 HARDWARE CHANGES PROCEDURE:

- 34.1. Remove MTTYC 0 EAI 0 cable from CU 0 side as indicated in Table 34-25.

Table 34-25. Remove MTTYC 0 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G3	PROC 0/EAI 0	019-038-500	2x6			

34.2. Install MTTYC 0 EAI 0 cable to CU 0 side as indicated in Table 34-26.

Table 34-26. Install MTTYC 0 EAI 0 Cable

ED,G	FROM			TO		
	CABINET/ UNIT	EQL	CONN SIZE	CABINET/ UNIT	EQL	CONN SIZE
ED3T076-20,G33	PROC 0/EAI 0	019-038-500	2X6			

Figure 34-8 illustrates the 3B21D computer backplane layout of the cable connections for the TN983 and UN583 CU 0 (EAI 0) interface.

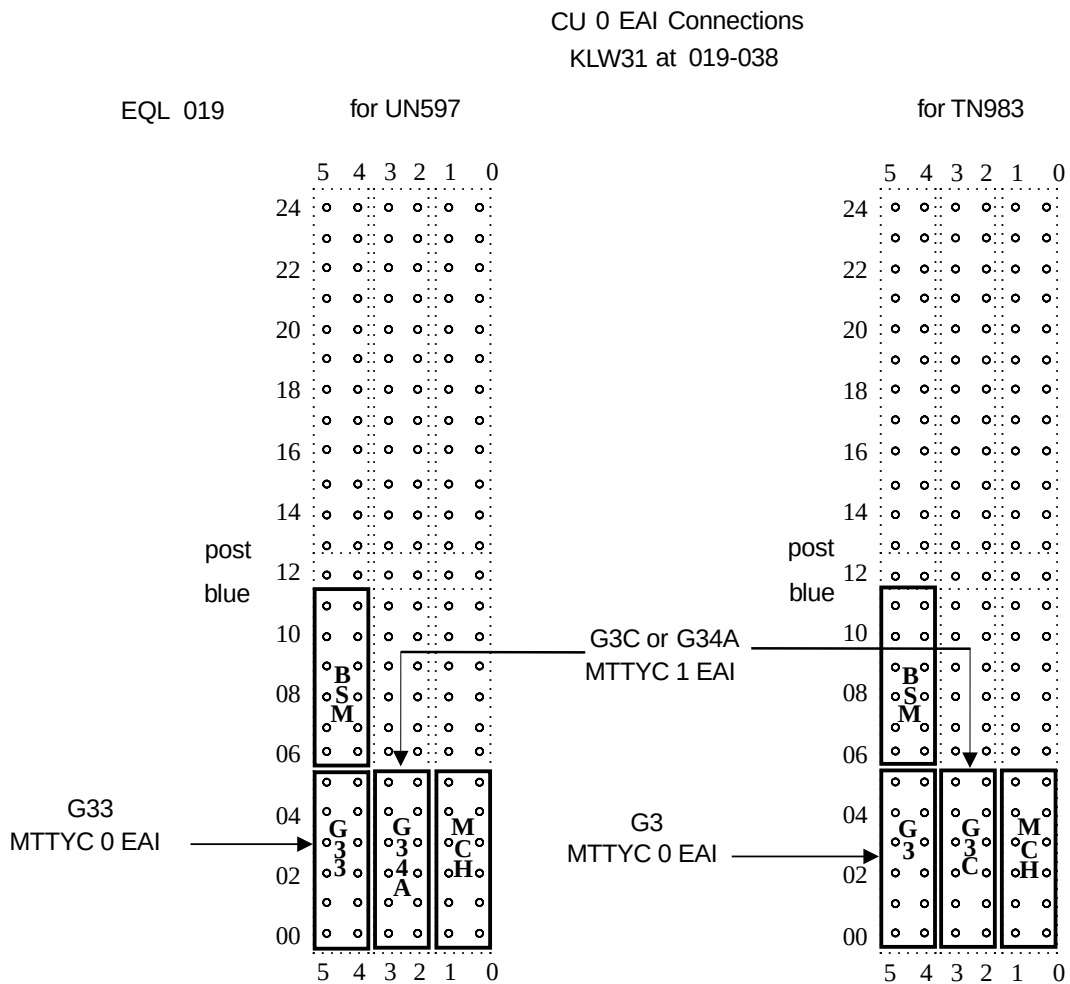


Figure 34-8. EAI 0 (CU 0) Backplane Reference

35. Power up and restore IOP 0.

POWER UP AND RESTORE IOP 0 PROCEDURE:

- 35.1. At IOPPS TN1820 (EQL 019-080), restore power to IOP 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED IOP 0**

- 35.2. At IOPPS TN1820 (EQL 019-080), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **RST IOP 0 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 0.
At IOPPS TN1820 in IOP 0, the **OFF** LED extinguishes.



NOTE:

IOP 0 and all units controlled by IOP 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP 0 ATP MESSAGE COMPLETE**

36. **BACKOUT POINT 4: MTTYC 0 TN983 TO UN597 CONVERSION PROCEDURE**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 0 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step 37.

37. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to the **AUTO** position.
38. At the MTTY, switch the ROP to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ **NOTE:**

Performing Step 38 should cause output messages on the ROP. If there are no messages, contact technical support.

39. At the MTTY, switch the MTTY to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

40. Clear CU forces.

CLEAR CU 1 FORCED ON-LINE AND EAI BUFFERS PROCEDURE:

⇒ **NOTE:**

Neither CU 1 nor CU 0 displays a forced indication at the MTTY.

- 40.1. At the MTTY, access the EAI page by pressing the **EA DISP** key.

Response: The system displays the EAI page.

- 40.2. On the EAI page, clear the force by entering **13**

Response: The system displays **REPT CU 1 NO LONGER
FORCED ON LINE**

40.3. On the EAI page, clear EAI by entering **14**

Response: Any forces or sets are cleared.

41. Power up and restore CU 0.

POWER UP AND RESTORE CU 0 PROCEDURE:

41.1. At CUPS TN1821 (EQL 028-060), restore power to CU 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED
CU 0**



NOTE:

Wait for the **RQIP** light to come on and then to extinguish before continuing to the next step.

41.2. At the MTTY, diagnose CU 0 by entering the appropriate input command.

- If MML, **DGN:CU=0,CC=0:PH=64&&65;**
- If PDS, **DGN:CU 0,CC 0:PH 64-65!**

41.3. Observe the following PRMs for Phases 64 and 65 as applicable.

For Phase 64:

PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx

For Phase 65:

PRM 0 0123 4567 89AB CDEF xx xx xx
PRM 0 AAAA AAAA AAAA AAAA xx xx xx
PRM 0 5555 5555 5555 5555 xx xx xx
PRM 0 EEEE EEEE EEEE EEEE xx xx xx
PRM 0 1111 1111 1111 1111 xx xx xx
PRM 0 0000 0000 0000 0000 xx xx xx
PRM 0 FFFF FFFF FFFF FFFF xx xx xx

Response: The system displays **DGN CU 0 CC 0 ATP
MESSAGE COMPLETE**

⇒ **NOTE:**

If any diagnostic failures occur at this point, check for a misplaced cable. Refer to the drawing aids and EQL tables for correct cable location.

41.4. Operate the **ROS/RST** switch to the **RST** position.

Response: CU 0 is restored to service automatically.
At CUPS TN1821 in CU 0, the **OOS** LED extinguishes.

⇒ **NOTE:**

Wait until CU 1 is restored to standby before continuing. The progress of restoring CU 1 can be observed on either the ROP output or the CPDP.

42. **BACKOUT POINT 5: MTTYC 0 TN983 TO UN597 CONVERSION PROCEDURE**

⚠ **CAUTION:**

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 0 TN983 to UN597 Conversion Backout Procedure.”
- If **no**, continue to Step **43**.

43. Switch CU 0 to active.

SWITCH CUs PROCEDURE:

43.1. At the MTTY, enter the appropriate Poke command to display the CPDP.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

43.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

43.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

44. Verify MTTYC 0.

TEST MTTYCs FROM BOTH CUs PROCEDURE:

44.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

44.2. At the CPDP, verify that CU 0 is active.

- If **yes**, go to Step **44.4**.
- If **no**, continue to Step **44.3**.

44.3. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

44.4. At the CPDP, verify that the MTTY is connected to MTTYC 1.

- If **yes**, go to Step **44.6**.
- If **no**, continue to Step **44.5**.

44.5. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

44.6. At the CPDP, verify that the ROP is connected to the MTTYC 1.

- If **yes**, go to Step **44.8**.
- If **no**, continue to Step **44.7**.

44.7. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED
FOR ROP**

⇒ **NOTE:**

Performing Step **44.7** should cause output messages on ROP. If output messages are not displayed on ROP, contact technical support.

44.8. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.

- 44.9. At the MTTY, switch to CU 1 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 44.10. Observe the MTTY and ROP output.
- 44.11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.
- 44.12. At the MTTY, switch ROP and MTTY to MTTYC 0 by entering the appropriate input command.
- If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

- 44.13. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.
- 44.14. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
- 44.15. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 44.16. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
-

45. Soak the changes for 5 minutes before performing the remaining steps.
46. Switch CU 1 to active.

SWITCH CUs PROCEDURE:

- 46.1. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

- 46.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU**;
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 46.3. At the MTTY, verify that the CUs have switched on the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The system displays the CPDP.

47. Soak another 5 minutes before performing the remaining steps.

48. Activate MTTYC 0 changes to disk.

⇒ NOTE:

For this procedure, the ECD should be accessed by command mode only.

ACTIVATE MTTYC 0 CHANGES TO DISK PROCEDURE:

- 48.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

48.2. Enter **activate**

Response: The system displays the **Copy Incore ECD To Root ECD** form.
The question **copy incore database to disk?** appears at the bottom of the screen.
The cursor moves to the **1.copy_inc_to_disk:** attribute.

48.3. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

48.4. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

48.5. Enter **<**

Response: The system displays **RCV MENU RCVECD COMPLETED**
The system exits RCVECD.

49. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step **50**.

SAFE STOP POINT 1 PROCEDURE:

49.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 49.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
- 49.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**
- 49.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.
- If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 49.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.

-
50. At the RC/V terminal, update the ECD for *rootdmly* for MTTYC 1 and MTTYC 0. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: This command has updated *rootdmly* with the same information that updated the *incore* database.

51. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 51.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 51.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 51.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

51.4. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

51.5. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

51.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

51.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

51.8. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

51.9. Enter **1**

Response:
The system completes the remainder of the form and
displays **Enter Update, Change, Substitute, Validate,**
screen#, or Print:

51.10. Enter **c**

Response: The system displays **Change Field:**

51.11. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

51.12. Enter **0x2**

Response: The system displays **Change Field:**

51.13. Enter **27**

Response: The cursor moves to the **mv:** attribute.

51.14. Enter **0x3**

Response: The system displays **Change Field:**

51.15. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

51.16. Enter **u597**

Response: The system displays **Change Field:**

51.17. Enter **63**

Response: The cursor moves to the **issue:** attribute.

51.18. Enter **0**

Response: The system displays **Change Field:**

51.19. Enter **64**

Response: The cursor moves to the **64.version:** attribute.

51.20. Enter **0**

Response: Field 64 changes to indicate the new value of
zero (0).
The system displays **Change Field:**

51.21. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

51.22. Enter **0xfff0**

Response: The system displays **Change Field:**

51.23. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, screen#, or Print:**

51.24. Enter **u**

Response: The system displays **updating... FORM UPDATED**

51.25. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

51.26. Press the <CR> key.

Response: The cursor moves to the **k_unit_number:** attribute.

51.27. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

51.28. Enter **0**

Response:
The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

51.29. Enter **c**

Response: The system displays **Change Field:**

51.30. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

51.31. Enter **0x2**

Response: The system displays **Change Field:**

51.32. Enter **27**

Response: The cursor moves to the **mv:** attribute.

51.33. Enter **0x3**

Response: The system displays **Change Field:**

51.34. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

51.35. Enter **u597**

Response: The system displays **Change Field:**

51.36. Enter **63**

Response: The cursor moves to the **issue:** attribute.

51.37. Enter **0**

Response: The system displays **Change Field:**

51.38. Enter **64**

Response: The cursor moves to the **64.version:** attribute.

51.39. Enter **0**

Response: The system displays **Change Field:**

51.40. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

51.41. Enter **0xffff0**

Response: The system displays **Change Field:**

51.42. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

51.43. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

51.44. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

52. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

52.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

52.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

52.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

52.4. Enter <

Response: The ECD RC/V is completed.

53. Copy backup partitions.

⇒ NOTE:

See Appendix A for the procedure to copy backup partitions.

54. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

55. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

56. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

UN583 to UN597 MTTYC Conversion

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UN583 to UN597 MTTYC Conversion

35

Introduction

This chapter describes the procedures used to convert from a UN583 Maintenance Terminal Controller (MTTYC) circuit pack to a UN597 MTTYC circuit pack in a 3B21D computer. The UN583 to UN597 MTTYC conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.27 and later releases.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.



CAUTION:

To ensure the Maintenance Terminal (MTTY) and the Receive-Only Printer (ROP) remain attached to the IOP 0 or IOP 1 that is active, extreme caution should be used when executing this procedure.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.
- 254-303-102, *Trouble Clearing Tasks*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD a properly grounded antistatic wrist strap must be worn and connected when handling circuit pack



CAUTION:

Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags (or equivalent)

The following equipment is required for this procedure:

Number	Qty	Description
107999484	2	UN597 + 1 spare (if site stocks spares)
ED3T079-10,G65	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and conversion procedures used in this chapter:

- Preliminary Steps
- MTTYC 1 UN583 to UN597 Conversion Backout Procedure
- Inhibit DMQ requests
- Force port switches to MTTYC 0
- Remove MTTYC 1 from service
- Remove IOP 1 from service
- Update MTTYC 1 unit control block (*ucb*) values
- Power down IOP 1
- Replace MTTYC 1 circuit pack
- Power up IOP 1
- Restore service to IOP 1 and all subunits
- Force port switches to AUTO position
- Switch ports to MTTYC 1
- Verify CU 0 is active
- Verify EAI connections from CU 0
- Switch CUs
- Verify EAI connections from CU 1
- Soak for 15 minutes
- Activate and exit RC
- Safe Stop Point 1
- MTTYC 0 UN583 to UN597 Conversion Backout Procedure
- Allow DMQ requests
- Force port switches to MTTYC 1
- Remove MTTYC 0 from service

- Remove IOP 0 from service
- Update MTTYC 0 *ucb* values
- Power down IOP 0
- Replace MTTYC 0 circuit pack
- Power up IOP 0
- Restore service to IOP 0 and all subunits
- Force port switches to AUTO position
- Switch ports to MTTYC 0
- Verify CU 0 is active
- Verify EAI connections from CU 0
- Switch CUs
- Verify EAI connections from CU 1
- Soak for 15 minutes
- Activate and exit RC
- Safe Stop Point 1
- Update MTTYC 1/MTTYC 0 *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes
- Allow DMQ requests.

Preliminary Steps

The following preliminary steps must be performed before beginning the UN583 to UN597 MTTYC conversion procedures in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. Verify that both switches on the port switch circuit pack UN377 [Equipment Location (EQL) 045-186] are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
3. Test MTTYCs from both CUs by executing Steps 4 through 18.
4. At the MTTY, display the Common Processor Display Page (CPDP) by entering the appropriate Poke command.
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.
5. At the CPDP, verify that CU 0 is active.
 - If **yes**, go to Step 7.
 - If **no**, continue to Step 6.

6. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

7. At the CPDP, verify that the MTTY is connected to MTTYC 1.

- If **yes**, go to Step 9.
- If **no**, continue to Step 8.

8. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

9. At the CPDP, verify that the ROP is connected to the MTTYC 1.

- If **yes**, go to Step 11.
- If **no**, continue to Step 10.

10. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

 NOTE:

Performing Step 10 should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.
12. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

13. Check the ROP and MTTY output by observing the MTTY and ROP activity.
14. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.
15. At the MTTY, switch ROP and MTTY to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by **SW PORTSW COMPLETED FOR MTTY**

16. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
17. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

18. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
19. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, review the backout procedure in the next section before beginning the "MTTYC 1 UN583 to UN597 Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 19.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 19.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 19.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 19.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 19.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.

-
-
20. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

MTTYC 1 UN583 to UN597 Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to backout the *ucb* values and replace the UN597 with the original UN583. Read and understand before beginning the "MTTYC 1 UN583 to UN597 Conversion Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position and if not, operate switches to the **AUTO** position.

⇒ NOTE:

The "MTTYC 1 UN583 to UN597 Conversion Procedure" must be performed using an RC/V terminal that is not controlled by IOP 1.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 0 to active.



CAUTION:

The IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command:
 - If MML, **RMV:MTTYC=1;**
 - If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1 COMPLETED**

5. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the MTTY, remove IOP 1 from service by entering the appropriate input command.

- If MML, **RMV:IOP=1;**
- If PDS, **RMV:IOP 1!**

Response: The system displays **RMV IOP 1 COMPLETED**
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) at IOP 1 lights.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

7. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 8.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

8.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9. Update MTTYC 1 *ucb* values.

UPDATE MTTYC 1 *ucb* VALUES PROCEDURE:

Table 35-1 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN583 circuit pack.

Table 35-1. MTTYC 1 *ucb* Form Field Values for UN583

Field/Name	UN583 Value	UN597 Value
27. mv	0x2	0x3
62. packcode	u583	u597
63. issue	1	0

9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

9.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

9.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

9.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

9.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

9.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.7. Enter **c**

Response: The system displays **Change Field:**

9.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

9.9. Enter **0x2**

Response: The system displays **Change Field:**

9.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

9.11. Enter **u583**

Response: The system displays **Change Field:**

9.12. Enter **63**

Response: The cursor moves to the **issue:** attribute.

9.13. Enter **1**

Response: The system displays **Change Field:**

9.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

9.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 10.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 10.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 10.4. Enter **<**

Response: The ECD RC/V is completed.

11. At IOPPS TN1820 (EQL 45-080), remove power from IOP 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 1**
At IOPPS TN1820 (EQL 45-080), the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Replace MTTYC 1 circuit pack at EQL 45-094.

REPLACE MTTYC 1 CIRCUIT PACK AT EQL 45-094 PROCEDURE:

- 12.1. Unseat and remove the UN597 MTTYC circuit pack.
12.2. Install the UN583 MTTYC circuit pack.
-
-

13. At IOPPS TN1820 (EQL 45-080), power up and restore service to IOP 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: At IOPPS TN1820 in IOP 1, the **OFF** and **OOS** LEDs extinguish.

⇒ **NOTE 1:**

IOP 1 and all units controlled by IOP 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP or ROP output.

⇒ **NOTE 2:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **REPT POWER RESTORED IOP 1** followed by **DGN IOP 1 COMPLETED ATP MESSAGE COMPLETE** followed by **RST IOP 1 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 1, specifically for MTTYC 1.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

Response: The system displays **RST MTTYC 1 COMPLETED** followed by **DGN IOP 1 ATP MESSAGE COMPLETE**

14. SAFE STOP POINT

The backout procedure is completed. The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation by executing the following steps:

SAFE STOP POINT PROCEDURE:

- 14.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 14.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 14.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 14.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 14.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

15. STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.

MTTYC 1 UN583 to UN597 Conversion Procedure

Perform the following steps to convert the 3B21D computer MTTYC 1 from a UN583 to a UN597 circuit pack.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position and if not, operate switches to the **AUTO** position.

⇒ NOTE:

The "MTTYC 1 UN583 to UN597 Conversion Procedure" must be performed using an RC/V terminal that is controlled by IOP 1.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 0 to active.



CAUTION:

IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1 COMPLETED**

5. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the MTTY, remove IOP 1 from service by entering the appropriate input command.

- If MML, **RMV:IOP=1;**
- If PDS, **RMV:IOP 1!**

Response: The system displays **RMV IOP 1 COMPLETED**
At the IOPPS in IOP 1, the **OOS** LED lights.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

7. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 8.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

8.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9. Update MTTYC 1 *ucb* values.

UPDATE MTTYC 1 *ucb* VALUES PROCEDURE:

Table 35-2 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN597 circuit pack.

Table 35-2. MTTYC 1 *ucb* Form Field Values for UN597

Field/Name	UN583 Value	UN597 Value
27. mv	0x2	0x3
62. packcode	u583	u597
63. issue	1	0

9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

9.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

9.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

9.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

9.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

9.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.7. Enter **c**

Response: The system displays **Change Field:**

9.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

9.9. Enter **0x3**

Response: The system displays **Change Field:**

9.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

9.11. Enter **u597**

Response: The system displays **Change Field:**

9.12. Enter **63**

Response: The cursor moves to the **issue:** attribute.

9.13. Enter **0**

Response: The system displays **Change Field:**

9.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

9.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 10.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 10.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 10.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 10.4. Enter **<**

Response: The ECD RC/V is completed.

11. At IOPPS TN1820 (EQL 45-080), remove power from IOP 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 1**
At IOPPS TN1820 (EQL 45-080), the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Replace MTTYC 1 circuit pack at EQL 45-094.

REPLACE MTTYC 1 CIRCUIT PACK AT EQL 45-094 PROCEDURE:

- 12.1. Unseat and remove the UN583 MTTYC circuit pack.
12.2. Install the UN597 MTTYC circuit pack.
12.3. Install the UN597 designation labels (ED3T079-10,G65).
-

13. At IOPPS TN1820 (EQL 45-080), power up and restore service to IOP 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: At IOPPS TN1820 in IOP 1, the **OFF** and **OOS** LEDs extinguish.

⇒ **NOTE 1:**

IOP 1 and all units controlled by IOP 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP or ROP output.

⇒ **NOTE 2:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **REPT POWER RESTORED IOP 1** followed by **DGN IOP 1 COMPLETED ATP MESSAGE COMPLETE** followed by **RST IOP 1 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 1, specifically for MTTYC 1.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

Response: The system displays **RST MTTYC 1 COMPLETED** followed by **DGN IOP 1 ATP MESSAGE COMPLETE**

14. If MTTYC fails restore or diagnostics, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 14.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP 0 is extinguished.
- If **yes**, continue to Step **14.2**.
 - If **no**, return to Step **13**.
- 14.2. At the IOPPS verify the **ROS/RST** switch is in the **RST** position.
- If **yes**, continue to Step **14.3**.
 - If **no**, toggle the switch to **RST**. The system should automatically begin the IOP restore process; return to Step **13** and verify results.
- 14.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **7** through **10**.
- If **yes**, continue to Step **14.4**.
 - If **no**, return to Step **7**.
- 14.4. Determine if a spare UN597 circuit pack is available.
- If **yes**, repeat Steps **11** through **13** to install the spare UN597 circuit pack.
 - If **no**, determine if a backout is needed. If so, see the "MTTYC 1 UN583 to UN597 Conversion Backout Procedure."
-
-
15. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.

16. Verify that CU 0 is active and that CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 16.1. At MTTY CPDP **102**, verify that CU 0 is active and that CU 1 is in standby.

- If **yes**, go to Step **17**.
- If **no**, continue to Step **16.2**.

- 16.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU;**
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

17. At the MTTY, switch the ROP and MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by **SW PORTSW COMPLETED FOR MTTY**

18. At the MTTY, test the function of CU 0 to MTTYC 1 Processor Recovery Message (PRM) by entering the appropriate input command.

- If MML, **ALW:FILESYS:MOUNT,FN="/dev/root",BSDIR="/";**
- If PDS, **ALW:FILESYS:MOUNT,FN "/dev/root",BSDIR "/"!**

Response: The system displays **ALW FILESYS MOUNT COMPLETED**
The system displays **PRM 0 E800 0001 040x xxxx 79 00 00** on
the ROP and EAI.

⇒ **NOTE 1:**

The x values in the previous PRM vary per office.

⇒ **NOTE 2:**

DO NOT CONTINUE UNTIL THE PREVIOUS PRM IS DISPLAYED.

19. Switch the CUs.

SWITCH CUs PROCEDURE:

19.1. At the MTTY, switch the CUs by entering menu command **102**

Response: The system displays the CPDP.

19.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

19.3. At MTTY CPDP **102**, verify that the CUs have switched.

20. At the MTTY, test the function of CU 1 to MTTYC 1 PRM by entering the appropriate input command.

- If MML, **ALW:FILESYS:MOUNT,FN="/dev/root",BSDIR="/";**
- If PDS, **ALW:FILESYS:MOUNT,FN "/dev/root",BSDIR "/"!**

Response: The system displays **ALW FILESYS MOUNT COMPLETED**
The system displays **PRM 1 E800 0001 040x xxxx 79 00 00** on
the ROP and EAI.

⇒ **NOTE 1:**

The x values in the previous PRM vary per office.

⇒ **NOTE 2:**

DO NOT CONTINUE UNTIL THE PREVIOUS PRM IS DISPLAYED.

21. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

*Use the soak period to be sure the MTTYC is acting properly. After each soak period, the completed incore database changes are activated to disk. This ensures that the disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the incore database changes are provided before the main conversion procedure. **No procedures are provided to backout the changes once they are activated to disk.***

22. If MTTYC fails to function properly, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 22.1. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position.
- If **yes**, continue to Step **22.2**.
 - If **no**, return to Step **15**.
- 22.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **7** through **10**.
- If **yes**, continue to Step **22.3**.
 - If **no**, repeat to Step **7** and repeat the changes to the *incore* database.
- 22.3. Determine if a spare UN597 circuit pack is available.
- If **yes**, repeat Steps **11** through **13** to install the spare UN597 circuit pack.
 - If **no**, determine if a backout is needed. If so, see the "MTTYC 1 UN583 to UN597 Conversion Backout Procedure."
-
-

23. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

24. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 24.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 24.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 24.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 24.4. Enter **<**

Response: The ECD RC/V is completed.

25. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to the next section "MTTYC 0 UN583 to UN597 Conversion Backout Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 25.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 25.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 25.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 25.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 25.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

26. **STOP! YOU HAVE COMPLETED THIS CONVERSION PROCEDURE.**

MTTYC 0 UN583 to UN597 Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the *ucb* values for UN597 to UN583. Read and understand before proceeding to the "MTTYC 0 UN583 to UN597 Conversion Procedure."

The following procedure identifies the steps required to back out the changes in IOP 0. Use this procedure to change the UN597 MTTYC circuit board back to the UN583 MTTYC circuit board for MTTYC 0.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position and if not, operate switches to the **AUTO** position.

⇒ NOTE:

Use an RC/V terminal that is not controlled by IOP 0 to do the conversion for MTTYC 0.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 1 to active.



CAUTION:

The IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**

- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0 COMPLETED**

5. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**

- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the MTTY, remove IOP 0 from service by entering the appropriate input command.

- If MML, **RMV:IOP=0;**

- If PDS, **RMV:IOP 0!**

Response: The system displays **RMV IOP 0 COMPLETED**
At the IOPPS, the **OOS** LED at IOP 0 lights.

 NOTE:

Do **not** continue until this request has successfully completed.

7. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**

- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 8.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 8.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9. Update MTTYC 0 *ucb* values.

UPDATE MTTYC 0 *ucb* VALUES PROCEDURE:

Table 35-3 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN583 circuit pack.

Table 35-3. MTTYC 0 *ucb* Form Field Values for UN583

Field/Name	UN583 Value	UN597 Value
27. mv	0x2	0x3
62. packcode	u583	u597
63. issue	1	0

- 9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 9.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

9.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

9.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

9.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

9.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.7. Enter **c**

Response: The system displays **Change Field:**

9.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

9.9. Enter **0x2**

Response: The system displays **Change Field:**

9.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

9.11. Enter **u583**

Response: The system displays **Change Field:**

9.12. Enter **63**

Response: The cursor moves to the **issue:** attribute.

9.13. Enter **1**

Response: The system displays **Change Field:**

9.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

9.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

10.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

10.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

10.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10.4. Enter **<**

Response: The ECD RC/V is completed.

11. At IOPPS TN1820 (EQL 19-080), remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 19-080), the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Replace MTTYC 0 circuit pack at EQL 19-094.

REPLACE MTTYC 0 CIRCUIT PACK AT EQL 19-094 PROCEDURE:

- 12.1. Unseat and remove the UN597 MTTYC circuit pack.
12.2. Install the UN583 MTTYC circuit pack.
-
-

13. At IOPPS TN1820 (EQL 19-080), power up and restore service to IOP 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: At IOPPS TN1820 in IOP 0, the **OFF** and **OOS** LEDs extinguish.

⇒ **NOTE 1:**

IOP 0 and all units controlled by IOP 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP or ROP output.

⇒ **NOTE 2:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **DGN IOP 0 COMPLETED ATP MESSAGE COMPLETE** followed by **RST IOP 0 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 0, specifically for MTTYC 0.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

Response: The system displays **RST MTTYC 0 COMPLETED** followed by **DGN IOP 0 ATP MESSAGE COMPLETE**

14. **SAFE STOP POINT 1**

The backout procedure is completed. The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation by executing the following steps.

SAFE STOP POINT 1 PROCEDURE:

- 14.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 14.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 14.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 14.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 14.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

15. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

MTTYC 0 UN583 to UN597 Conversion Procedure

Perform the following steps to convert the 3B21D computer MTTYC 0 from a UN583 circuit pack to a UN597 circuit pack:

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position and if not, operate switches to the **AUTO** position.

⇒ NOTE:

The "MTTYC 0 UN583 to UN597 Conversion Procedure" must be performed using an RC/V terminal that is not controlled by IOP 0 to do the conversion for MTTYC 0.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 1 to active.



CAUTION:

The IOP units may be equipped with simplex PCs. Before removing any IOP notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**
- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0 COMPLETED**

5. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the MTTY, remove IOP 0 from service by entering the appropriate input command.

- If MML, **RMV:IOP=0;**
- If PDS, **RMV:IOP 0!**

Response: The system displays **RMV IOP 0 COMPLETED**
At the Input/Output IOPPS, the **OOS** LED at IOP 0 lights.

 NOTE:

Do **not** continue until this request has successfully completed.

7. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

8. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 8.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 8.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 8.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

9. Update the MTTYC 0 *ucb* values.

UPDATE MTTYC 0 *ucb* VALUES PROCEDURE:

Table 35-4 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN597 circuit pack.

Table 35-4. MTTYC 0 *ucb* Form Field Values for UN597

Field/Name	UN583 Value	UN597 Value
27. mv	0x2	0x3
62. packcode	u583	u597
63. issue	1	0

- 9.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

9.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

9.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

9.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

9.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

9.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.7. Enter **c**

Response: The system displays **Change Field:**

9.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

9.9. Enter **0x3**

Response: The system displays **Change Field:**

9.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

9.11. Enter **u597**

Response: The system displays **Change Field:**

9.12. Enter **63**

Response: The cursor moves to the **issue:** attribute.

9.13. Enter **0**

Response: The system displays **Change Field:**

9.14. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

9.15. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

9.16. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

10. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

10.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

10.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

10.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10.4. Enter **<**

Response: The ECD RC/V is completed.

11. At IOPPS TN1820 (EQL 19-080), remove power from IOP 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 19-080), the **OFF** LED lights.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

12. Replace MTTYC 0 circuit pack at EQL 19-094.

REPLACE MTTYC 0 CIRCUIT PACK AT EQL 19-094 PROCEDURE:

- 12.1. Unseat and remove the UN583 MTTYC circuit pack.
12.2. Install the UN597 MTTYC circuit pack.
12.3. Install the UN597 designation labels (ED3T079-10,G65).
-
-

13. At IOPPS TN1820 (EQL 19-080), power up and restore service to IOP 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: At IOPPS TN1820 in IOP 0, the **OFF** and **OOS** LEDs extinguish.

⇒ **NOTE 1:**

IOP 0 and all units controlled by IOP 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP or ROP output.

⇒ **NOTE 2:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **DGN IOP 0 COMPLETED ATP MESSAGE COMPLETE** followed by **RST IOP 0 COMPLETED** and then followed by **RST... COMPLETED** for each unit under IOP 0, specifically for MTTYC 0.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

Response: The system displays **RST MTTYC 0 COMPLETED** followed by **DGN IOP 0 ATP MESSAGE COMPLETE**

14. If MTTYC fails restore or diagnostics, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 14.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP 0 is extinguished.
- If **yes**, continue to Step **14.2**.
 - If **no**, return to Step **13**.
- 14.2. At the IOPPS verify the **ROS/RST** switch is in the **RST** position.
- If **yes**, continue to Step **14.3**.
 - If **no**, toggle the switch to **RST**. The system should automatically begin the IOP restore process; return to Step **13** and verify results.
- 14.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **7** through **10**.
- If **yes**, continue to Step **14.4**.
 - If **no**, return to Step **7** and repeat the changes to the *incore* database.
- 14.4. Determine if a spare UN597 circuit pack is available.
- If **yes**, repeat Steps **11** through **13** to install the spare UN597 circuit pack.
 - If **no**, determine if a backout is needed. If so, see the "MTTYC 0 UN583 to UN597 Conversion Backout Procedure."
-
-

15. Set both switches on the port switch circuit pack UN377 (EQL 19-186) to the **AUTO** position.

16. Verify that CU 0 is active and that CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 16.1. At MTTY CPDP **102**, verify that CU 0 is active and that CU 1 is in standby.

- If **yes**, go to Step **17**.
- If **no**, continue to Step **16.2**.

- 16.2. At the MTTY, enter the appropriate input command.

- If MML, either **400** Poke command or **SW:CU**;
- If PDS, either **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

17. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW**;
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by **SW PORTSW COMPLETED FOR MTTY**

18. At the MTTY, test the function of CU 0 to MTTYC 0 PRM by entering the following input command.

- If MML, **ALW:FILESYS:MOUNT,FN="/dev/root",BSDIR="/";**
- If PDS, **ALW:FILESYS:MOUNT,FN "/dev/root",BSDIR "/"!**

Response: The system displays **ALW FILESYS MOUNT COMPLETED**
The system displays **PRM 0 E800 0001 040x xxxx 79 00 00** on
the ROP and EAI.

⇒ **NOTE 1:**

The x values in the previous PRM vary per office.

⇒ **NOTE 2:**

DO NOT CONTINUE UNTIL THE PREVIOUS PRM IS DISPLAYED.

19. Switch the CUs.

SWITCH CUs PROCEDURE:

- 19.1. At the MTTY, switch the CUs by entering menu command **102**

Response: The system displays the CPDP.

- 19.2. At the MTTY, enter the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 19.3. At MTTY CPDP **102**, verify that the CUs have switched.
-

20. At the MTTY, test the function of CU 1 to MTTYC 0 PRM by entering the following input command.

- If MML, **ALW:FILESYS:MOUNT,FN="/dev/root",BSDIR="/";**
- If PDS, **ALW:FILESYS:MOUNT,FN "/dev/root",BSDIR "/"!**

Response: The system displays **ALW FILESYS MOUNT COMPLETED**
The system displays **PRM 1 E800 0001 040x xxxx 79 00 00** on the ROP and EAI.

⇒ **NOTE 1:**

The x values in the previous PRM vary per office.

⇒ **NOTE 2:**

DO NOT CONTINUE UNTIL THE PREVIOUS PRM IS DISPLAYED.

21. Soak the changes for 15 minutes before performing the remaining steps.



CAUTION:

*Use the soak period to be sure the MTTYC is acting properly. After each soak period, the completed incore database changes are activated to disk. This ensures that the disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the incore database changes are provided before the main conversion procedure. **No procedures are provided to backout the changes once they are activated to disk.***

22. If MTTYC fails to function properly, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 22.1. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position.
- If **yes**, continue to Step **22.2**.
 - If **no**, return to Step **15**.
- 22.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Steps **7** through **10**.
- If **yes**, continue to Step **22.3**.
 - If **no**, return to Step **7** and repeat the changes to the *incore* database.
- 22.3. Determine if a spare UN597 circuit pack is available.
- If **yes**, repeat Steps **11** through **13** to install the spare UN597 circuit pack.
 - If **no**, determine if a backout is needed. If so, see the "MTTYC 0 UN583 to UN597 Conversion Backout Procedure."
-
-

23. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

24. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 24.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 24.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 24.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 24.4. Enter **<**

Response: The ECD RC/V is completed.

25. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to the next section "UN583 to UN597 Conversion Procedure Final Steps."

SAFE STOP POINT 1 PROCEDURE:

- 25.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 25.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 25.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 25.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 25.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

26. **STOP! YOU HAVE COMPLETED THIS CONVERSION PROCEDURE.**

UN583 to UN597 Conversion Procedure Final Steps

Perform the following steps to complete the 3B21D computer UN583 circuit pack to a UN597 circuit pack conversion procedure.

1. Update the ECD for *rootdmly* for MTTYC 1 and MTTYC 0. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: This command has updated *rootdmly* with the same information that updated the *incore* database.

2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 2.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 2.2. Press <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 2.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

- 2.4. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 2.5. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

- 2.6. Press <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

2.7. Press <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

2.8. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

2.9. Enter **1**

Response:

The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

2.10. Enter **c**

Response: The system displays **Change Field:**

2.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

2.12. Enter **0x3**

Response: The system displays **Change Field:**

2.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

2.14. Enter **u597**

Response: The system displays **Change Field:**

2.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

2.16. Enter **0**

Response: The system displays **Change Field:**

2.17. Press <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

2.18. Enter **u**

Response: The system displays **updating... FORM UPDATED**

2.19. Press the <CR> key.

Response: The cursor moves to the **k_complex_name:** attribute.

2.20. Press the <CR> key.

Response: The cursor moves to the **k_unit_number:** attribute.

2.21. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

2.22. Enter **0**

Response:
The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

2.23. Enter **c**

Response: The system displays **Change Field:**

2.24. Enter **27**

Response: The cursor moves to the **mv:** attribute.

2.25. Enter **0x3**

Response: The system displays **Change Field:**

2.26. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

2.27. Enter **u597**

Response: The system displays **Change Field:**

2.28. Enter **63**

Response: The cursor moves to the **issue:** attribute.

2.29. Enter **0**

Response: The system displays **Change Field:**

2.30. Press <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

2.31. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

2.32. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

3. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

3.1. Enter **trend**

Response: The system displays the **Transaction End** form. The
cursor moves to the **tr_name:** attribute.

3.2. Press **<CR>** key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

3.3. Enter *****

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

3.4. Enter **<**

Response: The ECD RC/V is completed.

4. Copy backup partitions.

⇒ NOTE:

See Appendix A for the procedure to copy backup partitions.

5. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

6. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

7. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

UN597 1200 to 9600 Baud ROP Conversion

36

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UN597 1200 to 9600 Baud ROP Conversion

36

Introduction

This chapter describes the procedure needed to convert from a UN597 Maintenance Terminal Controller (MTTYC) circuit pack with 1200 baud Receive-Only Printer (ROP) to a UN597 circuit pack with 9600 baud ROP in a 3B21D computer. The 9600 baud ROP feature on the UN597 circuit pack is supported in Real-Time Reliable (RTR) Release 21.27 and later releases.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.



CAUTION:

Input/Output Processor (IOP) units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the “Preliminary Steps” section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the “Required Tools and Equipment” section for specific information.

References

The following information products must be available for reference during this procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.



CAUTION:

A properly grounded, antistatic wrist strap (R-4987 or equivalent) must be worn when inserting, removing, unlatching, or handling a plug-in circuit pack. This applies to circuit packs in shipping containers as well as to those installed in cabinets.

Required Tools and Equipment

An antistatic wrist strap (R-4987 or equivalent) is required for this procedure. There is no additional equipment required.

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and conversion procedures used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- UN597 1200 to 9600 Baud ROP Conversion Procedure
- Remove MTTYC 1 from service
- Update the MTTYC 1 *ucb* values
- Restore power to MTTYC 1
- Restore MTTYC 1 to service
- Backout Point 1
- Change ROP speed to 9600 baud
- Backout Point 2
- Remove MTTYC 0 from service
- Update the MTTYC 0 *ucb* values
- Restore power to MTTYC 0
- Backout Point 3
- Test MTTYCs from both CUs
- Activate and exit RC
- Safe Stop Point 2
- Update MTTYC 1 and MTTYC 0 *ucb* values for *rootdmly*
- Update backup root file system and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the 1200 to 9600 baud conversion procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 [Equipment Location (EQL) 45-186] are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. Test MTTYCs from both CUs by executing Steps **5** through **19**.

5. At the MTTY, display the Common Processor Display Page (CPDP) by entering the appropriate Poke command.
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.
6. At the CPDP, verify that CU 0 is active.
 - If **yes**, go to Step **8**.
 - If **no**, continue to Step **7**.
7. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

8. At the CPDP, verify that the MTTY is connected to MTTYC 1.
 - If **yes**, go to Step **10**.
 - If **no**, continue to Step **9**.
9. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

10. At the CPDP, verify that the ROP is connected to the MTTYC 1.
 - If **yes**, go to Step **12**.
 - If **no**, continue to Step **11**.
11. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **11** should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

12. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.
13. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

14. Check the ROP and MTTY output by observing the MTTY and ROP activity.
15. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.
16. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

17. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
18. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

19. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
20. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

21. SAFE STOP POINT 1

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, review the backout procedures in the next section before beginning the "UN597 1200 to 9600 Baud ROP Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

21.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

21.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

21.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

21.4. **RESUME THE CONVERSION PROCEDURE** at the CPDP by verifying that CU 1 is active.

- If **yes**, go to Step **21.6**.
- If **no**, continue to Step **21.5**.

21.5. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

21.6. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

21.7. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.

22. STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.

UN597 1200 to 9600 Baud ROP Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the baud rate changes to MTTYC 0, MTTYC 1, and the physical ROP. Read and understand the backout procedure before beginning the "UN597 1200 to 9600 Baud ROP Conversion Procedure."

Determine the step number in the "UN597 1200 to 9600 Baud ROP Conversion Procedure" where the problem occurred and the related Backout Point number.

- For problems encountered in Steps **1** through **9**, continue to the "Backout Point 1" procedure on this page and execute only the "Backout Point 1" procedure.
- For problems encountered in Steps **11** through **16**, go to the "Backout Point 2" procedure. After completing "Backout Point 2," execute the procedure for "Backout Point 1."
- For problems encountered in Steps **18** through **30**, go to the "Backout Point 3" procedure. After completing "Backout Point 3," execute the procedures for "Backout Point 2" and "Backout Point 1" in that order.

Backout Point 1: MTTYC 1 1200 to 9600 Baud Conversion Procedure

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTY 0 and ROP 0.
2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays either **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays either **RMV MTTYC 1 COMPLETED**
 or **RMV MTTYC 1 STOPPED H'5**

⇒ **NOTE:**

The first time the **RMV:MTTYC** command is entered, all devices under MTTYC 1 are removed from service but the MTTYC 1 circuit pack may not be removed from service.

4. Observe the system response.
 - If the **RMV MTTYC 1 COMPLETED** message is received, go to Step 5.
 - If the **RMV MTTYC 1 STOPPED H'5** message is received, continue to Step 4.1.

TROUBLESHOOTING PROCEDURE:

- 4.1. At the MTTY, display the CPDP by entering the appropriate command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
- 4.2. Observe the CPDP and ROP to see if MTTYC 1 is **OOS**.
 - If MTTYC 1 is **OOS**, go to Step 4.7.
 - If MTTYC 1 is still active, continue to Step 4.3.
- 4.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**
- 4.4. Observe the CPDP and ROP to see if **RMV MTTYC 1** is still active.
 - If the system displays **OP DMQ COMPLETED**, go to Step 4.7.
 - If **RMV MTTYC 1** is still active, continue to Step 4.5.

- 4.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.

- If MML, **STOP:DMQ;**
- If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

- 4.6. At the RC/V terminal, repeat the **OP:DMQ** command to verify that no requests are active or waiting by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

- 4.7. At the MTTY, repeat the command to remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1
COMPLETED**

5. Update the MTTYC 1 unit control block (*ucb*) to indicate UN597 1200 baud ROP.

UPDATE *ucb* TO INDICATE UN597 1200 BAUD ROP PROCEDURE:

- 5.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

⇒ NOTE:

For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

5.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

5.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

5.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

5.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

5.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

5.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

5.8. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

5.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

5.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

5.11. Enter **0x2**

Response: Field 22 changes to indicate the new value of 0x6.
The system displays **Change Field:**

5.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

5.13. Enter **u**

Response: The system displays **updating...FORM UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

5.14. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.15. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

5.15.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

5.15.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

5.15.3. Enter *

Response: The system displays the **executing...FORM EXECUTED** form.
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.16. Enter <

Response: The ECD RC/V is completed.

6. At the MTTY, restore MTTYC 1 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=1;**
- If PDS, **RST:MTTYC 1!**

⇒ NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY
UPDATE PROCESS COMPLETE
DGN MTTYC 1 COMPLETED ATP MESSAGE IN
PROGRESS
RST MTTYC 1 COMPLETED
RST MTTY 1 COMPLETED
RST ROP 1 COMPLETED
RST SCC 1 COMPLETED (if equipped)
DGN MTTYC 1 ATP MESSAGE COMPLETE**

7. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
8. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

Backout Point 2: Change Physical ROP Speed to 9600 Conversion Procedure

1. Consult the ROP owner's manual to determine how to change baud rate from 9600 to 1200. If you use the supported Lucent Technologies 577 or C.ITOH CI 5000 dot matrix printers, use the following procedure to change the baud rate:

CHANGE ROP SPEED TO 1200 BAUD PROCEDURE:

- 1.1. At the physical ROP, locate the keys under the Liquid Crystal Display (LCD) window screen.
- 1.2. Press and release the [ON LINE] key to set the ROP **OFFLINE**.

Response: The LCD screen changes from **ONLINE** to **OFFLINE**.
- 1.3. Press and hold the [RESET] key while pressing the [QUIET/SET-UP] key to change to the ROP configuration mode. Release both keys once **CONFIG MODE** appears on the LCD screen.

Response: The LCD screen displays **CONFIG MODE** momentarily.
- 1.4. Press and release the [FWD/ LN FEED] or [REV/ LN FEED] key to toggle through the configuration field menu until you reach the field indicating **9600 BPS** (the **BAUD RATE** field).

Response: The LCD screen displays different field numbers with its corresponding values.

- 1.5. Press and release the [TEAR FORM] or [FORM FEED] key to toggle until the **BAUD RATE** value of **1200 BPS** appears on the LCD screen.

Response: The LCD screen displays different values for the **BAUD RATE** field.

- 1.6. Press the [QUIET SET-UP] key to save the **BAUD RATE** change to **1200 BPS** and exit the ROPs configuration mode.

Response: The LCD changes from displaying **1200 BPS** to **OFFLINE**.

- 1.7. Press the [ON LINE] key to bring the physical ROP back **ONLINE**.

Response: The LCD screen changes from **OFFLINE** to **ONLINE**.



NOTE:

Unintelligible characters may be displayed until the ROP is switched to MTTYC 0 configured for **1200 BAUD ROP**.

-
2. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
3. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.
- If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

4. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.
5. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

Backout Point 3: MTTYC 0 1200 to 9600 Baud ROP Conversion Procedure

1. Set both switches on the port switch circuit pack UN377 (EQL 045-186) to MTTY 1 and ROP 1.
2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.
 - If MML, **RMV:MTTYC=0;**
 - If PDS, **RMV:MTTYC 0!**

Response: The system displays either **RMV MTTYC 0 COMPLETED**
or **RMV MTTYC 0 STOPPED H'5**

⇒ NOTE:

The first time the **RMV:MTTYC** command is entered, all devices under MTTYC 0 are removed from service but the MTTYC 1 circuit pack may not be removed from service.

4. Observe the system response.
 - If the **MV MTTYC 0 COMPLETED** message is received, go to Step 5.
 - If the **RMV MTTYC 0 STOPPED H'5** message is received, go to Step 4.1.

TROUBLESHOOTING PROCEDURE:

- 4.1. At the MTTY, display the CPDP by entering the appropriate command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
- 4.2. Observe the CPDP and ROP to see if MTTYC 0 is **OOS**.
 - If MTTYC 0 is **OOS**, go to Step **4.7**.
 - If MTTYC 0 is still active, continue to Step **4.3**.
- 4.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ**;
 - If PDS, **OP:DMQ!**
- 4.4. Observe the CPDP and ROP to see if **RMV MTTYC 0** is still active.
 - If the system displays **OP DMQ COMPLETED**, go to Step **4.7**.
 - If **RMV MTTYC 0** is still active, continue to Step **4.5**.
- 4.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.
 - If MML, **STOP:DMQ**;
 - If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

- 4.6. At the RC/V terminal, repeat the **OP:DMQ** command to verify that no requests are active or waiting by entering the appropriate input command.
 - If MML, **OP:DMQ**;
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

- 4.7. At the MTTY, repeat the command to remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**
- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0
COMPLETED**

5. Update the MTTYC 0 *ucb* to indicate UN597 1200 baud ROP.

UPDATE *ucb* TO INDICATE UN597 1200 BAUD ROP PROCEDURE:

- 5.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

⇒ **NOTE:**

For this procedure, the ECD should be accessed by command mode only:

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:**
attribute.

- 5.2. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 5.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin**
form.
The cursor moves to the **tr_name:** attribute.

- 5.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute,
Change, Substitute, Validate, or Print:**

5.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

5.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

5.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

5.8. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

5.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

5.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

5.11. Enter **0x2**

Response: Field 22 changes to indicate the new value of 0x2.
The system displays **Change Field:**

5.12. Press the <CR> key

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

5.13. Enter **u**

Response: The system displays **updating...FORM
UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

5.14. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.15. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

5.15.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

5.15.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

5.15.3. Enter *

Response: The system displays the **executing...FORM EXECUTED** form.
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

5.16. Enter <

Response: The ECD RC/V is completed.

6. At the MTTY, restore MTTYC 0 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=0;**
- If PDS, **RST:MTTYC 0!**

⇒ **NOTE:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY
UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS
DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS
PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES
AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS
REQUIRED.**

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY
UPDATE PROCESS COMPLETE DGN MTTYC 0 COMPLETED
ATP MESSAGE IN PROGRESS
RST MTTYC 0 COMPLETED
RST MTTY 0 COMPLETED
RST ROP 0 COMPLETED
RST SCC 0 COMPLETED (if equipped)
DGN MTTYC 0 ATP MESSAGE COMPLETE**

7. STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.

UN597 1200 to 9600 Baud ROP Conversion Procedure

1. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate switches to the **AUTO** position.
2. Verify that the MTTY and ROP are connected to MTTYC 0.

VERIFY PORT SWITCH (ROP AND MTTY) TO MTTYC 0 PROCEDURE:

- 2.1. At the CPDP, verify that the MTTY is connected to MTTYC 0.
 - If **yes**, go to Step 2.3.
 - If **no**, continue to Step 2.2.
- 2.2. At the MTTY, switch the MTTY to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED
FOR MTTY**

- 2.3. At the CPDP, verify that the ROP is connected to MTTYC 0.
 - If **yes**, go to Step 2.5.
 - If **no**, continue to Step 2.4.
- 2.4. At the MTTY, switch the ROP to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED
FOR ROP**

⇒ **NOTE:**

Performing Step 2.4 should cause output messages on the ROP. If there are no output messages, contact technical support.

- 2.5. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.
-

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTY 0 and ROP 0.
4. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

5. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command.
 - If MML, **RMV:MTTYC=1**
 - If PDS, **RMV:MTTYC 1**

Response: The system displays either **RMV MTTYC 1 COMPLETED** or **RMV MTTYC 1 STOPPED H'5**

⇒ **NOTE:**

The first time the **RMV:MTTYC** command is entered, all devices under MTTYC 1 are removed from service but the MTTYC 1 circuit pack may not be removed.

6. Observe the system response.
 - If the **RMV MTTYC 1 COMPLETED** message is received, go to Step 7.
 - If the **RMV MTTYC 1 STOPPED H'5** message is received, go to Step 6.1.

TROUBLESHOOTING PROCEDURE:

- 6.1. At the MTTY, display the CPDP by entering the appropriate input command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
- 6.2. Observe the CPDP and ROP to see if MTTYC 1 is **OOS**.
 - If MTTYC 1 is **OOS**, go to Step **6.7**.
 - If MTTYC 1 is still active, continue to Step **6.3**.
- 6.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ**;
 - If PDS, **OP:DMQ!**
- 6.4. Observe the CPDP and ROP to see if **RMV MTTYC 1** is still active.
 - If the system displays **OP DMQ COMPLETED**, go to Step **6.7**.
 - If **RMV MTTYC 1** is still active, continue to Step **6.5**.
- 6.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.
 - If MML, **STOP:DMQ**;
 - If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

- 6.6. At the RC/V terminal, repeat the **OP:DMQ** command to verify that no requests are active or waiting by entering the appropriate input command.
 - If MML, **OP:DMQ**;
 - If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

- 6.7. At the MTTY, repeat the command to remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1
COMPLETED**

7. Change the MTTYC 1 *ucb* to 9600 baud.

See Table 36-1 for the correct *ucb* form equipage field values for the UN597 circuit pack.

Table 36-1. MTTYC 1 *ucb* Values for Baud Rate Changes

Field/Name	UN597 1200 Baud Value	UN597 9600 Baud Value
22. equipage	0x2	0x6



CAUTION:

If field 22 contains a value other than 0x2, contact technical support before updating the ucb record. Update the MTTYC 1 ucb to indicate UN597 9600 baud ROP.

CHANGE MTTYC 1 *ucb* TO UN597 9600 BAUD PROCEDURE:

- 7.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 7.2. Prepare a transaction block.

PREPARE TRANSACTION PROCEDURE:

7.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

7.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

7.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

7.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

7.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

7.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

7.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

7.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

7.8. Enter **1**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

7.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

7.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

7.11. Enter **0x6**

Response: Field 22 changes to indicate the new value of .
The system displays **Change Field:**

7.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

7.13. Enter **u**

Response: The system displays **updating...FORM UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

7.14. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

7.15. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

7.15.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

7.15.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

7.15.3. Enter *

Response: The system displays the **executing...FORM EXECUTED** form.
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

7.16. Enter <

Response: The ECD RC/V is completed.

8. At the MTTY, restore MTTYC 1 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=1;**
- If PDS, **RST:MTTYC 1!**

⇒ NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 1 - FLASH MEMORY
UPDATE PROCESS COMPLETE
DGN MTTYC 1 COMPLETED ATP MESSAGE IN
PROGRESS
RST MTTYC 1 COMPLETED
RST MTTY 1 COMPLETED
RST ROP 1 COMPLETED
RST SCC 1 COMPLETED (if equipped)
DGN MTTYC 1 ATP MESSAGE COMPLETE**

9. If you encounter a problem, perform the following troubleshooting tasks. Otherwise, go to Step 10.

TROUBLESHOOTING PROCEDURE:

- 9.1. Check to see if the physical ROP displays an **ALL DATA ERROR** in the ROP LCD window.
- If **no**, continue to Step 9.2.
 - If **yes**, power cycle the physical ROP.
- 9.2. Verify that the physical ROP is set to 9600 baud.
- If **no**, follow the physical ROP owner's manual to change the baud rate from 1200 to 9600.
 - If **yes**, continue to Step 9.3.
- 9.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 7.1.
- If **no**, set the value of the equipage field 22 to 0x6.
 - If **yes**, consult the ROP owner's manual.
-
-

10. **BACKOUT POINT 1: MTTYC 1 1200 to 9600 Baud ROP Conversion**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “UN597 1200 to 9600 Baud ROP Conversion Backout Procedure” in this chapter.
- If **no**, continue to Step **11**.

11. Change the physical ROP speed to 9600 baud.

Consult the ROP owner's manual to determine how to change the baud rate from 1200 to 9600. If you use the supported Lucent Technologies 577 or C.ITOH CI 5000 dot matrix printers, use the following procedure to change the baud rate:

CHANGE ROP SPEED TO 9600 BAUD PROCEDURE:

- 11.1. At the physical ROP, locate the keys under the Liquid Crystal Display (LCD) window screen.
- 11.2. Press and release the [ON LINE] key to set the ROP **OFFLINE**.
Response: The LCD screen changes from **ONLINE** to **OFFLINE**.
- 11.3. Press and hold the [RESET] key while pressing the [QUIET/SET-UP] key to change to the ROP configuration mode. Release both keys once **CONFIG MODE** appears on the LCD screen.
Response: The LCD screen displays **CONFIG MODE** momentarily.
- 11.4. Press and release the [FWD/ LN FEED] or [REV/ LN FEED] key to toggle through the configuration field menu until you reach the field indicating **1200 BPS** (the **BAUD RATE** field).
Response: The LCD screen displays different field numbers with its corresponding values.

- 11.5. Press and release the [TEAR FORM] or [FORM FEED] key to toggle until the **BAUD RATE** value of **9600 BPS** appears on the LCD screen.

Response: The LCD screen displays different values for the **BAUD RATE** field.

- 11.6. Press the [QUIET SET-UP] key to save the **BAUD RATE** change to **9600 BPS** and exit the ROP's configuration mode.

Response: The LCD changes from displaying **9600 BPS** to **OFFLINE**.

- 11.7. Press the [ON LINE] key to bring the physical ROP back **ONLINE**.

Response: The LCD screen changes from **OFFLINE** to **ONLINE**.

 NOTE:

Unintelligible characters may be displayed until the ROP is switched to MTTYC 1 configured for **9600 BAUD ROP**.

12. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
13. At the MTTY, switch the ROP and MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

14. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1.
15. Observe the MTTY and ROP activity.

16. If you encounter a problem, perform the following troubleshooting tasks. Otherwise, continue to Step 17.

TROUBLESHOOTING PROCEDURE:

- 16.1. Check to see if the physical ROP displays an **ALL DATA ERROR** in the ROP LCD window.
- If **no**, continue to Step 16.2.
 - If **yes**, power cycle the physical ROP.
- 16.2. Verify that the physical ROP is set to 9600 baud.
- If **no**, follow the physical ROP owner's manual to change the baud rate from 1200 to 9600.
 - If **yes**, continue to Step 16.3.
- 16.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 7.1.
- If **no**, set the value of equipage field 22 to 0x6.
 - If **yes**, consult the ROP owner's manual or seek technical assistance.
-
-

17. **BACKOUT POINT 2: Change Physical ROP Speed to 9600 Conversion**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "1200 Baud ROP to 9600 Baud ROP Conversion Backout Procedure" in this chapter.
 - If **no**, continue to Step 18.
18. Change the MTTYC 0 to 9600 baud. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate switches to the **AUTO** position.

19. Verify that the MTTY and ROP are connected to MTTYC 1.

VERIFY PORTSW (ROP AND MTTY) TO MTTYC 1 PROCEDURE:

- 19.1. At the CPDP, verify that the MTTY is connected to MTTYC 1.
- If **yes**, go to Step **19.3**.
 - If **no**, continue to Step **19.2**.
- 19.2. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

- 19.3. At the CPDP, verify that the ROP is connected to MTTYC 1.
- If **yes**, go to Step **19.5**.
 - If **no**, continue to Step **19.4**.
- 19.4. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ NOTE:

Performing Step **19.4** should cause output messages on the ROP. If there are no output messages, contact technical support.

- 19.5. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1.
-
-

20. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTY 1 and ROP 1.

21. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

22. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0**
- If PDS, **RMV:MTTYC 0**

Response: The system displays either **RMV MTTYC 0 COMPLETED** or **RMV MTTYC 0 STOPPED H'5**

⇒ **NOTE:**

The first time the **RMV:MTTYC** command is entered, all devices under MTTYC 0 are removed from service but the MTTYC 0 circuit pack may not be removed from service.

23. Observe the system response.

- If the **RMV MTTYC 0 COMPLETED** message is received, go to Step 24.
- If the **RMV MTTYC 0 STOPPED H'5** message is received, continue to Step 23.1.

TROUBLESHOOTING PROCEDURE:

- 23.1. At the MTTY, display the CPDP by entering the appropriate input command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

- 23.2. Observe the CPDP and ROP to see if MTTYC 0 is **OOS**.

- If MTTYC 0 is **OOS**, go to Step 23.7.
- If MTTYC 0 is still active, continue to Step 23.3.

23.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

23.4. Observe the CPDP and ROP to see if **RMV MTTYC 0** is still active.

- If the system displays **OP DMQ COMPLETED**, go to Step **23.7**.
- If **RMV MTTYC 0** is still active, continue to Step **23.5**.

23.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.

- If MML, **STOP:DMQ;**
- If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

23.6. At the RC/V terminal, repeat the **OP:DMQ** command to verify that no requests are active or waiting by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

23.7. At the MTTY, repeat the command to remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**
- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0
COMPLETED**

24. Change the MTTYC 0 *ucb* to 9600 baud.

See Table 36-2 for the correct *ucb* form **equipage** field values for the UN597 circuit pack.

Table 36-2. MTTYC 0 *ucb* Values for Baud Rate Changes

Field/Name	UN597 1200 Baud Value	UN597 9600 Baud Value
22. equipage	0x2	0x6



CAUTION:

If field 22 contains a value other than 0x2, contact technical support before updating the ucb record. Update the MTTYC 0 ucb to indicate UN597 9600 baud ROP.

CHANGE MTTYC 0 *ucb* TO UN597 9600 BAUD PROCEDURE:

- 24.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command. For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 24.2. Prepare a transaction block.

PREPARE TRANSACTION PROCEDURE:

- 24.2.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

24.2.2. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

24.2.3. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

24.3. Enter **ucb**

Response: The system displays the **Enter Data Operation** followed by **I=Insert R=Review U=Update D=Delete:**
The cursor moves to the : prompt.

24.4. Enter **u**

Response: The system displays the **Information About Each Physical Device (ucb)** form.
The cursor moves to the **k_complex_name:** attribute.

24.5. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

24.6. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

24.7. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

24.8. Enter **0**

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

24.9. Enter **c**

Response: The system displays **Change Field:**
The cursor moves to the : prompt.

24.10. Enter **22**

Response: The screen is repainted with Page 2, and the cursor moves to the **22.equipage:** attribute.

24.11. Enter **0x6**

Response: Field 22 changes to indicate the new value of 0x6.
The system displays **Change Field:**

24.12. Press the <CR> key

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
The cursor moves to the : prompt.

24.13. Enter **u**

Response: The system displays **updating...FORM UPDATED**
The screen is repainted with Page 1, and the cursor moves to the **1.k_complex_name:** attribute.

24.14. Enter **<**

Response: The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

24.15. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

24.15.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

24.15.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

24.15.3. Enter *

Response: The system displays the **executing...FORM EXECUTED** form. The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

24.16. Enter <

Response: The ECD RC/V response is completed.

25. At the MTTY, restore MTTYC 0 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=0;**
- If PDS, **RST:MTTYC 0!**

⇒ **NOTE:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY UPDATE PROCESS IN PROGRESS. DO NOT STOP THIS DIAGNOSTIC DURING FLASH MEMORY UPDATE. THIS PROCESS SHOULD RUN NO LONGER THAN 15 MINUTES AND MAY RUN ONLY A FEW SECONDS IF NO UPDATE IS REQUIRED.**

Response: The system displays **DGN MTTYC 0 - FLASH MEMORY UPDATE PROCESS COMPLETE**
DGN MTTYC 0 COMPLETED ATP MESSAGE IN PROGRESS
RST MTTYC 0 COMPLETED
RST MTTY 0 COMPLETED
RST ROP 0 COMPLETED
RST SCC 0 COMPLETED (if equipped)
DGN MTTYC 0 ATP MESSAGE COMPLETE

26. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
27. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

28. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.
29. Observe the MTTY and ROP output activity.

30. If you encounter a problem, perform the following troubleshooting tasks. Otherwise, go to Step **31**.

TROUBLESHOOTING PROCEDURE:

- 30.1. Check to see if the physical ROP displays an **ALL DATA ERROR** in the ROP LCD window.
- If **no**, continue to Step **30.2**.
 - If **yes**, power cycle the physical ROP.
- 30.2. Verify that the physical ROP is set to 9600 baud.
- If **no**, follow the physical ROP's owner's manual to change the baud rate from 1200 to 9600.
 - If **yes**, continue to Step **30.3**.
- 30.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **7.1**.
- If **no**, set the value of the equipage field 22 to 0x6.
 - If **yes**, consult the ROP owner's manual.
-
-

31. **BACKOUT POINT 3: MTTYC 0 1200 to 9600 Baud ROP Conversion**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "1200 Baud ROP to 9600 Baud ROP Conversion Backout Procedure" in this chapter.
- If **no**, continue to Step **32**.

32. Perform the final testing procedure and activate changes to disk.

⇒ NOTE:

Because of the extensive changes made to the MTTYCs, Steps **32** through **35** are **not optional**. Perform all steps as listed.

33. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate switches to the **AUTO** position.

34. Testing the MTTYCs from both CUs requires execution of Steps **34.1** through **34.16**.

TEST MTTYCs FROM BOTH CUs PROCEDURE:

- 34.1. At the MTTY, display the CPDP by entering the appropriate input command.
- If **5ESS** switch, access Page **111**.
 - For all other applications, access Page **102**.
- 34.2. At the CPDP, verify that CU 0 is active.
- If **yes**, go to Step **34.4**.
 - If **no**, continue to Step **34.3**.
- 34.3. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU**;
 - If PDS, **SW:CU!**
- Response: The system displays **SW CU 0 COMPLETED**
- 34.4. At the CPDP, verify that the MTTY is connected to MTTYC 1.
- If **yes**, go to Step **34.6**.
 - If **no**, continue to Step **34.5**.
- 34.5. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW=MTTY**;
 - If PDS, **SW:PORTSW:MTTY!**
- Response: The system displays **SW PORTSW COMPLETED FOR MTTY**
- 34.6. At the CPDP, verify that the ROP is connected to the MTTYC 1.
- If **yes**, go to Step **34.8**.
 - If **no**, continue to Step **34.7**.

34.7. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

 NOTE:

Performing Step **34.7** should cause output messages on the ROP. If there are no output messages, contact technical support.

34.8. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.

34.9. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

34.10. Observe the MTTY and ROP output activity.

34.11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.

34.12. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

34.13. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0.

34.14. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.

34.15. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 34.16. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
-

35. Activate 9600 baud changes to disk.

ACTIVATE 9600 CHANGES TO DISK PROCEDURE:

- 35.1. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.



NOTE:

For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

- 35.2. Enter **activate**

Response: The system displays the **Copy Incore ECD To Root ECD** form.
The question **copy incore database to disk?** appears at the bottom of the screen.
The cursor moves to the **1.copy_inc_to_disk:** attribute.

- 35.3. Press the <CR> key.

Response: The system displays the **Enter Execute, Change, Substitute, Validate, or Print:**

- 35.4. Enter **e**

Response: The system displays **executing...FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

- 35.5. Enter **<**

Response: The ECD RC/V is completed.

36. SAFE STOP POINT 2

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 37.

SAFE STOP POINT 2 PROCEDURE:

- 36.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 36.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 36.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 36.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 36.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

37. At the RC/V terminal, update the ECD for *rootdmly* for MTTYC 1 and MTTYC 0. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: This command has updated *rootdmly* with the same information that updated the incore database.

38. Prepare a transaction block.

PREPARE TRANSACTION PROCEDURE:

38.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

38.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

38.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The screen is repainted, and the cursor moves to the **Enter Form Name:** attribute.

38.4. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

38.5. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **complex_name:** attribute.

38.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

38.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

38.8. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

38.9. Enter **1**

Response:
The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

- 38.10. Enter **c**
Response: The system displays **Change Field:**
- 38.11. Enter **22**
Response: The cursor moves to the **equipage:** attribute.
- 38.12. Enter **0x6**
Response: The system displays **Change Field:**
- 38.13. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 38.14. Enter **u**
Response: The system displays **updating... FORM UPDATED**
- 38.15. Press the <CR> key.
Response: The cursor moves to the **k_complex_name:** attribute.
- 38.16. Press the <CR> key.
Response: The cursor moves to the **k_unit_number:** attribute.
- 38.17. Enter **MTTYC**
Response: The cursor moves to the **k_unit_number:** attribute.
- 38.18. Enter **0**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**
- 38.19. Enter **c**
Response: The system displays **Change Field:**
- 38.20. Enter **22**
Response: The cursor moves to the **equipage:** attribute.
- 38.21. Enter **0x6**
Response: The system displays **Change Field:**

38.22. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

38.23. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

38.24. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

39. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

39.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

39.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

39.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

39.4. Enter <

Response: The ECD RC/V is completed.

40. Copy backup partitions.

 NOTE:

See Appendix A for the procedure to copy backup partitions.

41. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

42. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

43. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

UN597 to UN597 with ABD Conversion

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UN597 to UN597 with ABD Conversion

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Introduction

This chapter describes the procedures used to enable the Alternate Boot Disk (ABD) feature on a UN597 Maintenance Terminal Controller (MTTYC) circuit pack in a 3B21D computer. If a TN983 MTTYC circuit pack is being used, see Chapter 34, "TN983 to UN597 MTTYC Conversion." If a UN583 MTTYC circuit pack is being used, see Chapter 35, "UN583 to UN597 MTTYC Conversion." Install the UN597 circuit pack before beginning this procedure.

The ABD feature is supported in Real-Time Reliable (RTR) Release 21.27 and later releases. The UN597 MTTYC circuit pack will be shipped in all new shipments beginning with RTR 21.27.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure:

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file system.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the Control Units (CUs) within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this procedure:

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-102, *Trouble Clearing Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.



CAUTION:

A properly grounded antistatic wrist strap (R-4987 or equivalent) must be worn when inserting, removing, unlatching, or handling a plug-in circuit pack. This applies to circuit packs in shipping containers as well as to those installed in cabinets.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags (or equivalent).

The following equipment is required for this procedure:

Number	Qty	Description
107999484	2	UN597 + 1 spare (if site stocks spares)

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and the conversion procedure used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- UN597 to UN597 with ABD Conversion Backout Procedures
- Remove MTTYC 1
- Update MTTYC 1 *ucb* values
- Restore MTTYC 1
- Verify MTTYC 1
- Switch MTTY and ROP to MTTYC 1
- Backout Point 1
- Safe Stop Point 2
- Remove MTTYC 0
- Update MTTYC 0 *ucb* values
- Restore MTTYC 0
- Verify MTTYC 0
- Backout Point 2
- Safe Stop Point 3
- Activate and exit RC
- Update MTTYC 1/MTTYC 0 *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the UN597 to UN597 with ABD conversion procedures in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

3. Verify that both switches on the port switch circuit pack UN377 [Equipment Location (EQL) 45-186] are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. Test MTTYCs from both CUs by executing Steps **5** through **20**.

5. At the MTTY, display the Common Processor Display Page (CPDP) by entering the appropriate Poke command
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.
6. At the CPDP, verify that CU 0 is active.
 - If **yes**, go to Step **8**.
 - If **no**, continue to Step **7**.
7. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

8. At the CPDP, verify that the MTTY is connected to MTTYC 1.
 - If **yes**, go to Step **10**.
 - If **no**, continue to Step **9**.
9. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=MTTY;**
 - If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

10. At the CPDP, verify that the Receive-Only Printer (ROP) is connected to MTTYC 1.
 - If **yes**, go to Step **12**.
 - If **no**, continue to Step **11**.
11. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
 - If MML, **SW:PORTSW=ROP;**
 - If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**

⇒ NOTE:

Performing Step **11** should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

12. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.
13. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

14. Check the ROP and MTTY output by observing the MTTY and ROP activity.
15. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.
16. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by **SW PORTSW COMPLETED FOR MTTY**

17. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
18. At the MTTY, switch to CU 0 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

19. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.
20. At the MTTY, switch to CU 1 by entering the appropriate input command.
 - If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

21. SAFE STOP POINT 1

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "MTTYC 1 UN597 to UN597 with ABD Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

21.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

21.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

21.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

21.4. **RESUME THE CONVERSION PROCEDURE** at the CPDP by verifying that CU 1 is active.

- If **yes**, go to Step **21.6**.
- If **no**, continue to Step **21.5**.

21.5. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 21.6. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 21.7. Inhibit automatic diagnostics on all office equipment by entering the appropriate commands.
-

22. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

MTTYC 1 UN597 to UN597 with ABD Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes to MTTYC 1. Read and understand the backout procedure before beginning the "MTTYC 1 UN597 to UN597 with ABD Conversion Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear:
REPT DMQ INHIBIT ALL ACTIVE

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

⇒ NOTE:

The "MTTYC 1 UN597 to UN597 with ABD Conversion Procedure" must be performed using an RC/V terminal that is controlled by IOP 0.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 0 to active.



CAUTION:

IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1 COMPLETED**

5. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 7.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

8. Update MTTYC 1 (unit control block) *ucb* values.

See Table 37-1 for the correct *ucb* form equipage values for the UN597 circuit pack with ABD.

Table 37-1. MTTYC 1 *ucb* Values for UN597 with ABD

Field/Name	UN597 Value	UN597 With ABD
22. equipage	0x2	0x3



CAUTION:

*If field 22 contains a value other than 0x3, contact technical support before updating the *ucb* record.*

UPDATE MTTYC 1 *ucb* VALUES PROCEDURE:

- 8.1. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 8.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

8.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

8.9. Enter **0x2**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

9.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

9.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

9.4. Enter <

Response: The ECD RC/V is completed.

10. At the MTTY, restore MTTYC 1 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=1;**
- If PDS, **RST:MTTYC 1!**

Response: The system displays **RST MTTYC 1 COMPLETED**

⇒ NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED.

If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur. Do not continue until this request has successfully completed.

11. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

MTTYC 1 UN597 to UN597 with ABD Conversion Procedure

Perform the following steps to update the 3B21D computer MTTYC from a UN597 circuit pack to a UN597 with ABD feature activated.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear:
REPT DMQ INHIBIT ALL ACTIVE

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTYC 0.

⇒ NOTE:

The "MTTYC 1 UN597 to UN597 with ABD Conversion" must be performed using an RC/V terminal that is controlled by IOP 0.

4. At the MTTY, remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1**
- If PDS, **RMV:MTTYC 1**

Response: The system displays either **RMV MTTYC 1 COMPLETED**
or **RMV MTTYC 1 STOPPED H'5**

⇒ NOTE:

The first time the **RMV:MTTYC** command is entered, devices under MTTYC 1 are removed from service but the MTTYC 1 circuit pack may not be removed from service.

5. Observe the system response.
 - If the **RMV MTTYC 1 COMPLETED** message is received, go to Step 6.
 - If the **RMV MTTYC 1 STOPPED H'5** message is received, continue to Step 5.1.

CHECK STATUS OF RMV MTTYC 1 COMMAND PROCEDURE:

- 5.1. At the MTTY, display the CPDP by entering the appropriate command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
- 5.2. Observe the CPDP and ROP to see if MTTYC 1 is **OOS**.
 - If MTTYC 1 is **OOS**, go to Step 5.7.
 - If MTTYC 1 is still active, continue to Step 5.3.
- 5.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**
- 5.4. Observe the CPDP and ROP to see if **RMV MTTYC 1** is still active.
 - If the system displays **OP DMQ COMPLETED**, go to Step 5.7.
 - If **RMV MTTYC 1** is still active, continue to Step 5.5.
- 5.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.
 - If MML, **STOP:DMQ;**
 - If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

- 5.6. At the RC/V terminal, repeat the **OP DMQ** command to verify that no requests are active or waiting by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

- 5.7. At the MTTY, repeat the command to remove MTTYC 1 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=1;**
- If PDS, **RMV:MTTYC 1!**

Response: The system displays **RMV MTTYC 1
COMPLETED**

6. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

⇒ NOTE:

For this procedure, the ECD should be accessed by command mode only.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

7.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

8. Update MTTYC 1 *ucb* values.

See Table 37-2 for the correct *ucb* form equipage values for the UN597 circuit pack with ABD.

Table 37-2. MTTYC 1 *ucb* Values for UN597 with ABD

Field/Name	UN597 Value	UN597 With ABD
22. equipage	0x2	0x3



CAUTION:

*If field 22 contains a value other than 0x2, contact technical support before updating the *ucb* record.*

UPDATE MTTYC 1 *ucb* VALUES PROCEDURE:

8.1. Enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

8.2. Enter **u**

Response: The cursor moves to the **k_complex_name:** attribute.

8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

8.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

8.9. Enter **0x3**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 9.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 9.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 9.4. Enter <

Response: The ECD RC/V is completed.

10. At the MTTY, restore MTTYC 1 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=1;**
- If PDS, **RST:MTTYC 1!**

Response: The system displays **RST MTTYC 1 COMPLETED**

⇒ NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED.

If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur. Do not continue until this request has successfully completed.

11. Did MTTYC 1 restore to service?
 - If **yes**, continue to Step **13**.
 - If **no**, continue to Step **12**.
12. If MTTYC 1 fails to restore, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 12.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **6** and verifying MTTYC 1 *ucb* form value for UN597.
 - If **no**, set the value of the equipage field 22 to 0x3.
 - If **yes**, continue to Step **12.2**.
 - 12.2. Determine if the MTTYC 1 circuit pack needs to be replaced.
 - If **yes**, refer to 254-303-102, *Trouble Clearing Tasks*, for the procedure to replace a circuit pack in the MTTYC. Repeat Step **10** to diagnose and restore the MTTY.
 - If **no**, go to Step **13**.
 - 12.3. Did MTTYC 1 restore to service?
 - If **yes**, continue to Step **13**.
 - If **no**, continue to Step **14**.
-
-

13. Verify MTTYC 1.

VERIFY MTTYC 1 PROCEDURE:

- 13.1. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
- 13.2. At the CPDP, verify that CU 0 is active.
 - If **yes**, go to Step **13.4**.
 - If **no**, continue to Step **13.3**.

13.3. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

13.4. At the CPDP, verify that the MTTY is connected to MTTYC 1.

- If **yes**, go to Step **13.6**.
- If **no**, continue to Step **13.5**.

13.5. At the MTTY, switch the MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

13.6. At the CPDP, verify that the ROP is connected to the MTTYC 1.

- If **yes**, go to Step **13.8**.
- If **no**, continue to Step **13.7**.

13.7. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **13.7** should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

13.8. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 0 is active.

13.9. At the MTTY, switch to CU 1 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

13.10. Check the ROP and MTTY output by observing the MTTY and ROP activity.

13.11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 1 and that CU 1 is active.

13.12. At the MTTY, switch the ROP and MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

13.13. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.

13.14. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

13.15. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.

14. BACKOUT POINT 1: MTTYC 1 ABD CONVERSION

CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 1 UN597 to UN597 with ABD Conversion Backout Procedure.”
- If **no**, continue to Step 15.

15. **SAFE STOP POINT 2**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the following section before beginning the "MTTYC 0 UN597 to UN597 with ABD Procedure."

SAFE STOP POINT 2 PROCEDURE:

15.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

15.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

16. **STOP! YOU HAVE COMPLETED THIS CONVERSION PROCEDURE.**

MTTYC 0 UN597 to UN597 with ABD Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes to MTTYC 0. Read and understand the backout procedure before beginning the "MTTYC 0 UN597 to UN597 with ABD Conversion Procedure."

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

For this procedure, the ECD should be accessed by command mode only.

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.

⇒ NOTE:

The "MTTYC 0 UN597 to UN597 with ABD Conversion Procedure" must be performed using an RC/V terminal that is controlled by IOP 1.

3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to force MTTYC and ROP 0 to active.



CAUTION:

IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

4. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**
- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0 COMPLETED**

5. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

6. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 7.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

8. Update MTTYC 0 *ucb* values.

See Table 37-3 for the correct *ucb* form equipage values for the UN597 circuit pack with ABD.

Table 37-3. MTTYC 0 *ucb* Values for UN597 with ABD

Field/Name	UN597 Value	UN597 With ABD
22. equipage	0x2	0x3



CAUTION:

*If field 22 contains a value other than 0x3, contact technical support before updating the *ucb* record.*

UPDATE MTTYC 0 *ucb* VALUES PROCEDURE:

8.1. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

8.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

8.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

8.9. Enter **0x2**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

9.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

9.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

9.4. Enter **<**

Response: The ECD RC/V is completed.

10. At the MTTY, restore MTTYC 0 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=0;**
- If PDS, **RST:MTTYC 0!**

Response: The system displays **RST MTTYC 0 COMPLETED**



NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED.

If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur. Do not continue until this request has successfully completed.

11. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

MTTYC 0 UN597 to UN597 with ABD Conversion Procedure

Perform the following steps to update the 3B21D computer MTTYC from a UN597 circuit pack to a UN597 with ABD feature activated.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear:
REPT DMQ INHIBIT ALL ACTIVE

2. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
3. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTYC 1.

⇒ NOTE:

The "MTTYC 0 UN597 to UN597 with ABD Conversion Procedure" must be performed using an RC/V terminal that is controlled by IOP 1.

4. At the MTTY, remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0**
- If PDS, **RMV:MTTYC 0**

Response: The system displays either **RMV MTTYC 0 COMPLETED** or **RMV MTTYC 0 STOPPED H'5**

⇒ NOTE:

The first time the **RMV:MTTYC** command is entered, devices under MTTYC 0 are removed from service but the MTTYC 0 circuit pack may not be removed from service.

5. Observe the system response.

- If the **RMV MTTYC 0 COMPLETED** message is received, go to Step 6.
- If the **RMV MTTYC 0 STOPPED H'5?** message is received, continue to Step 5.1.

CHECK STATUS OF RMV MTTYC 0 COMMAND PROCEDURE:

5.1. At the MTTY, display the CPDP by entering the appropriate command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

5.2. Observe the CPDP and ROP to see if MTTYC 0 is **OOS**.

- If MTTYC 0 is **OOS**, go to Step 5.7.
- If MTTYC 0 is still active, continue to Step 5.3.

5.3. At the RC/V terminal, repeat the query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

5.4. Observe the CPDP and ROP to see if **RMV MTTYC 0** is still active.

- If the system displays **OP DMQ COMPLETED**, go to Step 5.7.
- If **RMV MTTYC 0** is still active, continue to Step 5.5.

5.5. At the RC/V terminal, stop the DMQ by entering the appropriate input command.

- If MML, **STOP:DMQ;**
- If PDS, **STOP:DMQ!**

Response: The system displays **STOP DMQ COMPLETED**

- 5.6. At the RC/V terminal, repeat the **OP DMQ** command to verify that no requests are active or waiting.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: The system displays **OP DMQ COMPLETED**

- 5.7. At the MTTY, repeat the command to remove MTTYC 0 from service by entering the appropriate input command.

- If MML, **RMV:MTTYC=0;**
- If PDS, **RMV:MTTYC 0!**

Response: The system displays **RMV MTTYC 0 COMPLETE**

6. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

7. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 7.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 7.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 7.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

8. Update MTTYC 0 *ucb* values.

See Table 37-4 for the correct *ucb* form equipage values for the UN597 circuit pack with ABD.

Table 37-4. MTTYC 0 *ucb* Values for UN597 with ABD

Field/Name	UN597 Value	UN597 With ABD
22. equipage	0x2	0x3



CAUTION:

*If field 22 contains a value other than 0x2, contact technical support before updating the *ucb* record.*

UPDATE MTTYC 0 *ucb* VALUES PROCEDURE:

- 8.1. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 8.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 8.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 8.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 8.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

8.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.7. Enter **c**

Response: The system displays **Change Field:**

8.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

8.9. Enter **0x3**

Response: The system displays **Change Field:**

8.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

8.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

8.12. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 9.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 9.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 9.4. Enter <

Response: The ECD RC/V is completed.

10. At the MTTY, restore MTTYC 0 to service by entering the appropriate input command.

- If MML, **RST:MTTYC=0;**
- If PDS, **RST:MTTYC 0!**

Response: The system displays **RST MTTYC 0 COMPLETED**

 NOTE:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED.

If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur. Do not continue until this request has successfully completed.

11. Did MTTYC 0 restore to service?

- If **yes**, go to Step **13**.
- If **no**, continue to Step **12**.

12. If MTTYC 0 fails to restore, perform the following troubleshooting tasks:

TROUBLESHOOTING PROCEDURE:

- 12.1. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 6 and verifying MTTYC 0 *ucb* form values for UN597.
- If **no**, set the value of the equipage field 22 to 0x3.
 - If **yes**, continue to Step 12.2.
- 12.2. Determine if the MTTYC 0 circuit pack needs to be replaced.
- If **yes**, refer to 254-303-102, *Trouble Clearing Tasks*, for the procedure to replace a circuit pack in the MTTYC. Repeat Step 10 to diagnose and restore the MTTY.
 - If **no**, continue to Step 12.3.
- 12.3. Did MTTYC 0 restore to service?
- If **yes**, go to Step 13.
 - If **no**, continue to Step 14.
-
-

13. Verify MTTYC 0.

VERIFY MTTYC 0 PROCEDURE:

- 13.1. At the MTTY, display the CPDP by entering the appropriate Poke command.
- If 5ESS switch, access Page 111.
 - For all other applications, access Page 102.
- 13.2. At the CPDP, verify that CU 0 is active.
- If **yes**, go to Step 13.4.
 - If **no**, continue to Step 13.3.

13.3. At the MTTY, switch to CU 0 by entering the appropriate input command.

- If MML, **SW:CU;**
- If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

13.4. At the CPDP, verify that the MTTY is connected to MTTYC 0.

- If **yes**, go to Step **13.6**.
- If **no**, continue to Step **13.5**.

13.5. At the MTTY, switch the MTTY to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=MTTY;**
- If PDS, **SW:PORTSW:MTTY!**

Response: The system displays **SW PORTSW COMPLETED FOR MTTY**

13.6. At the CPDP, verify that the ROP is connected to the MTTYC 0.

- If **yes**, go to Step **13.8**.
- If **no**, continue to Step **13.7**.

13.7. At the MTTY, switch the ROP to MTTYC 0 by entering the appropriate input command.

- If MML, **SW:PORTSW=ROP;**
- If PDS, **SW:PORTSW:ROP!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**



NOTE:

Performing Step **13.7** should cause output messages on the ROP. If there are no output messages, contact the next level of technical support.

13.8. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.

- 13.9. At the MTTY, switch to CU 1 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

- 13.10. Check the ROP and MTTY output by observing the MTTY and ROP activity.
- 13.11. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
- 13.12. At the MTTY, switch the ROP to MTTYC 1 by entering the appropriate input command.
- If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP** followed by **SW PORTSW COMPLETED FOR MTTY**

- 13.13. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 1 is active.
- 13.14. At the MTTY, switch to CU 0 by entering the appropriate input command.
- If MML, **SW:CU;**
 - If PDS, **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

- 13.15. At the CPDP, verify that the MTTY and ROP are connected to MTTYC 0 and that CU 0 is active.

14. BACKOUT POINT 2: MTTYC 0 ABD CONVERSION



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “MTTYC 0 UN597 to UN597 with ABD Conversion Backout Procedure.”
- If **no**, continue to Step 15.

15. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

16. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 16.1. Enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 16.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 16.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 16.4. Enter **<**

Response: The ECD RC/V is completed.

17. SAFE STOP POINT 3

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step **18**.

SAFE STOP POINT 3 PROCEDURE:

- 17.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 17.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 17.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**
-
-

18. Resume the conversion procedure at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

19. At the RC/V terminal, update the ECD for *rootdmly* for the MTTYCs. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!"**

Response: The cursor moves to the **Enter Form Name:** attribute.

20. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 20.1. Enter **trbegin**

Response: The system displays the **Transaction Begin** form.
The cursor moves to the **tr_name:** attribute.

- 20.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 20.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

21. Update the MTTYC *ucb* values.

UPDATE MTTYC 1 *ucb* VALUES PROCEDURE:

- 21.1. Enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 21.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 21.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 21.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 21.5. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

21.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

21.7. Enter **c**

Response: The system displays **Change Field:**

21.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

21.9. Enter **0x3**

Response: The system displays **Change Field:**

21.10. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

21.11. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name:** attribute.

21.12. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

21.13. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

21.14. Enter **MTTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

21.15. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

21.16. Enter **c**

Response: The system displays **Change Field:**

21.17. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

21.18. Enter **0x3**

Response: The system displays **Change Field:**

21.19. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, screen#, or Print:**

21.20. Enter **u**

Response: The system displays **updating... FORM UPDATED**

21.21. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

22. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

22.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

22.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

22.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

22.4. Enter **<**

Response: The ECD RC/V is completed.

23. Copy backup partitions.

⇒ NOTE:

See Appendix A for the procedure to copy backup partitions.

24. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

25. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to your applications-specific instructions or to 254-303-106, *System Maintenance Manual*.
26. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

TN74B to UN582 TTYC Conversion

38

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TN74B to UN582 TTYC Conversion

38

Introduction

This chapter describes the procedure needed to convert from a TN74B Terminal Controller (TTYC) circuit pack to a UN582 TTYC circuit pack in a 3B21D computer. The TN74B to UN582 conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

NOTE:

If procedures are needed to convert all of the TN74Bs in an office to UN582s, contact 3B/RTR Global Customer Technical Support (CTS) for customized instructions.

If problems are encountered during this procedure, contact the next level of technical support. Special training is required to properly install cabling. Only qualified personnel should perform cable changes. Read through this entire procedure before starting.

CAUTION:

To ensure that the Maintenance Terminal (MTTY) and the Receive-Only Printer (ROP) remain attached to IOP 0 or IOP 1 that is active, extreme caution should be used when executing this procedure.

CAUTION:

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

Required Data Collection

The **TTYC** number or its Equipment Location (EQL) must be known before beginning this procedure. This information should be recorded in the spaces that follow. If only the EQL is known, the TTYC can be determined by locating its controller and PCID in Table 38-4 in Step 9 of the "TN74B to UN582 TTYC Conversion Procedure."

Once the TTYC number is identified, all additional data collection can be retrieved from the database by performing Step 4 of the "TN74B to UN582 TTYC Conversion Procedure."

TTYC # _____ and/or **TTYC EQL #** _____

➤ NOTE:

There are multiple step numbers in this chapter; for example, Steps 4 and 9. Be sure you are not referencing the steps in the backout procedure.

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap (R-4987) must be worn and connected when handling circuit packs.



CAUTION:

Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags

The following equipment is required for this procedure:

Number	Qty	Description
107952558	1	UN582 + 1 spare (if site stocks spares)
ED3T079-10,G64	2	Designation labels

The cable requirements for a TN74B to UN582 conversion depend on what hardware is connected to the TN74 ports. Use the following equipment table to select the **dataset/terminal/printer** type for this application and the cabling required by this interface. Quantities specified in the table are per Terminal (TTY).

Required Cable by Application Interface Hardware		
Number	Qty	Description
ED3T076-20,G52	1	202T or 3800 Series Data Set 50' max. cable
ED3T076-20,G41A	1	202T or 3800 Series Data Set 250' max. cable
ED3T076-20,G53	1	<i>Gandalf</i> * 3309 Dataset 50' max. cable
ED3T076-20,G53A	1	<i>Gandalf</i> 3309 Dataset 250' max. cable
ED3T076-20,G54	1	212AR Dataset 50' max. cable
ED3T076-20,G55	1	STU-11 Secure 1900 Dataset 50' max. cable
ED3T076-20,G56	1	ROP (572 or 577) KS-23996,L1 VT or 2900 VT 50' max. cable
ED3T076-20,G56A	1	ROP (572 or 577) KS-23996,L1 VT or 2900 VT 250' max. cable
ED3T076-20,G57	1	VT100 Terminal 50' max. cable
ED3T076-20,G57A	1	VT100 Terminal 250' max. cable
ED3T076-20,G58	1	ColorScan VT pr ROP (444) 50' max. cable
ED3T076-20,G58A	1	ColorScan VT pr ROP (444) 250' max. cable
* Registered trademark of Gandalf Data Communications Limited Corporation.		

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.

CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, backout procedures, safe stop points, and the conversion procedure used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- TN74B to UN582 TTYC Conversion Backout Procedure
- Inhibit automatic maintenance requests
- Identify and record IOP controller for TTYC
- Safe Stop Point 2
- Set port switch to MTTYC not controlled by IOP being removed
- Remove IOP with ROS key
- Power down IOP
- Update TTYC and TTY status to UNEQIP
- Remove old TN74 from IOP
- Remove cables from old TN74
- Connect new UN582 cables for IOP
- Install UN582 TTYC circuit pack for IOP
- Update TTYC *ucb* values

- Update TTY *ciopt* values for each TTY
- Power up IOP
- Update TTYC and TTY status from UNEQIP to GROW
- Restore IOP controller only
- Diagnose TTYCs for IOP
- Update TTYCs from GROW to OOS for IOP
- Backout Point 1
- Restore IOP using ROS/RST key
- Backout Point 2
- Soak changes for 15 minutes
- Set port switch to AUTO
- Activate IOP changes and exit RC
- Safe Stop Point 3
- Update TTYC *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the TN74B to UN582 conversion procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and ROP are connected to IOP 1 and that all IOPs are active.

5. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

6. Verify that IOP 0 and all units under IOP 0 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 7.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

7. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

8. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

9. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

10. Verify that the response message is displayed on the MTTY and printed on the ROP.

11. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS® switch, access Page **111**.
- For all other applications, access Page **102**.

Response: The CPDP is displayed.

12. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 0.

13. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

14. Verify that IOP 1 and all units under IOP 1 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **15**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
15. At the MTTY, test the port switch by entering the appropriate input command.
 - If MML, **SW:PORTSW**;
 - If PDS, **SW:PORTSW!**
16. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
17. At the MTTY, check the date and time by entering the appropriate input command.
 - If MML, **OP:CLK**;
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**
18. Verify that the response message is displayed on the MTTY and printed on the ROP.
19. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.

Response: The CPDP is displayed.
20. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 1.
21. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **22**.
 - If **no**, go to Step **24**.
22. If IOP 2 is equipped, restore IOP 2 by entering the appropriate input command.
 - If MML, **RST:IOP=2:RAW,TLP**;
 - If PDS, **RST:IOP 2:RAW,TLP!**
23. Verify that IOP 2 and all units under IOP 2 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **24**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

24. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step 25.
 - If **no**, go to Step 28.
25. If IOP 3 is equipped, restore IOP 3 by entering the appropriate input command.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**
26. Verify that IOP 3 and all units under it diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step 28.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

27. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "TN74B to UN582 TTYC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.
 - If MML, **ALW:DMQ:SRC=ALL;**
 - If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**
 - 27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

TN74B to UN582 TTYC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the TTYC in this chapter. Read and understand the backout procedure before beginning the "TN74B to UN582 TTYC Conversion Procedure."

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC not controlled by the IOP being removed in the Step 2.
2. At Input/Output Processor Power Switch (IOPPS) TN1820, remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE 1:

Performing Step 2 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 3.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** Light-Emitting Diode (LED) lights.

Where: a = the IOP being removed.

⇒ NOTE 3:

Do **not** continue until this request has successfully completed.

3. At IOPPS TN1820, remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position. See Table 38-3 in Step 8 of the "TN74B to UN582 TTYC Conversion Procedure" to determine the EQL.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

Where: a = the IOP being removed.

4. Unseat and remove the UN582 TTYC circuit pack using the EQL identified in Step 8 of the "TN74B to UN582 TTYC Conversion Procedure."



CAUTION:

Do not insert the TN74B TTYC at this time. Wait for cable changes to be completed.

5. Remove the Terminal (TTY) cables from the UN582 TTYC. See Table 38-1 to determine the EQLs where cables should be removed.

Table 38-1. Backplane Cable EQLs

Port	TN74B	UN582	PRT
0	145	132	
1	132	332	
2	345	532	-
3	332	500	-

6. Reconnect the old TTY cables for the TN74B TTYC using Table 38-1 and the tags attached while performing the "TN74B to UN582 TTYC Conversion Procedure."
7. Reinstall the TN74B circuit pack.
8. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 9.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 9.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10. Update the TTYC unit control block (*ucb*) values.

UPDATE TTYC *ucb* VALUES PROCEDURE:

Table 38-2 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the TN74B.

Table 38-2. TTYC *ucb* Form Field Values

Field/Name	TN74B Value	UN582 Value
27. mv	0x0	0x2
62. packcode	t074	u582
63. issue	81	4
64. version	0	0
65. cvaddr	0x7f00	0xff0

- 10.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 10.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 10.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 10.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 10.5. Enter **TTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 10.6. Enter **a**

Where: **a** = unit number of the TTYC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

10.7. Enter **c**

Response: The system displays **Change Field:**

10.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

10.9. Enter **a**

Where: **a** = original TN74B port equipage value.



NOTE:

The original TN74B equipage value is the number logged in Step **21.9** of the “TN74B to UN582 TTYC Conversion Procedure.”

Response: The system displays **Change Field:**

10.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

10.11. Enter **0x1**

Response: The system displays **Change Field:**

10.12. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

10.13. Enter **t074**

Response: The system displays **Change Field:**

10.14. Enter **63**

Response: The cursor moves to the **issue:** attribute.

10.15. Enter **81**

Response: The system displays **Change Field:**

10.16. Enter **64**

Response: The cursor moves to the **version:** attribute.

10.17. Enter **20**

Response: The system displays **Change Field:**

10.18. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

10.19. Enter **0x7f00**

Response: The system displays **Change Field:**

10.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

10.21. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

10.22. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

11.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

11.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11.4. Enter **<**

Response: The ECD RC/V is completed.

12. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the OFF LED extinguishes.

13. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the MTTY or ROP output.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

14. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

15. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

TN74B to UN582 TTYC Conversion Procedure

Perform the following steps to convert a TN74B TTYC circuit pack to a UN582 TTYC circuit pack in a 3B21D computer.

⇒ NOTE:

If procedures are needed to convert all of the TN74s in an office to UN582s, contact 3B/RTR Global CTS for customized instructions.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

The "TN74B to UN582 TTYC Conversion Procedure" must be performed using an RC/V terminal that is not controlled by the IOP that is identified in Step 4.6.

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore";**
- If PDS, **RCV:MENU:RCVECD,DB "incore"!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Identify the required TTYC and TTY *ucb* values.

IDENTIFY REQUIRED TTYC AND TTY *ucb* VALUES PROCEDURE:

The controller and subdevices for the TTYC must be identified to complete this procedure. This section will identify the data to complete the procedure and verify the EQL from the "Required Data Collection" section.

- 4.1. At the RC/V terminal, enter **ucb**

Response: The *ucb* field is displayed.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 4.3. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 4.4. Enter **TTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 4.5. Enter **a**

Where: **a** = unit number of the TTYC recorded in the "Required Data Collection" section.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.6. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

46.cntrl_0:	IOP	_____
36.down:	TTY	_____
58.pcid:	PCID	_____

4.7. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.8. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

4.9. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.10. Enter **TTY**

Response: The cursor moves to the **k_unit_number:** attribute.

4.11. Enter **a**

Where: *a* = unit number of the TTY previously recorded.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.12. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

41.side:	TTY	_____
57.option_name:		_____
59.pcsdid:		_____

4.13. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.14. Determine if a second TTY exists under the TTYC.

- If **yes**, continue to Step 4.15.
- If **no**, go to Step 4.20.

4.15. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.16. Enter **TTY**

Response: The cursor moves to the **k_unit_number:** attribute.

4.17. Enter *a*

Where: *a* = unit number of the second TTY.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

4.18. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

57.option_name: _____
59.pcsdid: _____

4.19. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.20. Enter <

Response: The ECD RC/V is completed.

5. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 6.

SAFE STOP POINT 2 PROCEDURE:

- 5.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 5.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 5.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 5.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 5.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

6. Determine the correct IOP to remove from service by using the information acquired in Step 4.6.

- If **IOP 0** or **1**, continue to Step 7.
- If **IOP 2** or **3**, go to Step 8.

7. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).

For example,

- If IOP 0, set to ROP 1 and MTTYC 1.
 - If IOP 1, set to ROP 0 and MTTYC 0.
8. See Table 38-3 to determine the correct EQL for the IOP identified in Step 4.6.
- IOPPS EQL: _____

Table 38-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026

9. Table 38-4 should be used to verify the EQL for the TTYC circuit pack. Use the pcid (field 58) identified in Step 4.6 to determine the correct EQL for the pack being replaced. This EQL should be identical to the one supplied in the "Required Data Collection" section. Record the EQL in the space provided.

TTYC EQL: _____

Table 38-4. TTYC PCID to EQL Conversions

UCB PCID	PC #	IOP 0	IOP 1	IOP 2	IOP 3
0	00			11-040	62-040
1	01	19-102	45-102	11-048	62-048
2	02	19-110	45-110	11-056	62-056
3	03	19-118	45-118	11-064	62-064
4	10	19-130	45-130	11-072	62-072
5	11	19-138	45-138	11-080	62-080
6	12	19-146	45-146	11-088	62-088
7	13	19-154	45-154	11-096	62-096
8	20	28-094	53-094	11-108	62-108
9	21	28-102	53-102	11-116	62-116
10	22	28-110	53-110	11-124	62-124
11	23	28-118	53-118	11-132	62-132
12	30	28-130	53-130	11-140	62-140
13	31	28-138	53-138	11-148	62-148
14	32	28-146	53-146	11-156	62-156
15	33			11-164	62-164

10. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).
11. At IOPPS TN1820 (see the EQL recorded in Step 8), remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.



NOTE 1:

Performing Step 11 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before continuing to Step 12.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS TN1820, the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

12. At IOPPS TN1820 (see the EQL recorded in Step 8), remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

13. Unseat and remove the TN74B TTYC circuit pack using the TTYC EQL recorded in Step 9.



CAUTION:

Do not insert the UN582 TTYC at this time. Wait for cable changes to be completed.

14. Verify EQLs and **tag all old TTY cables** in case a backout procedure is necessary later.

⇒ **NOTE:**

The ports on the UN582 circuit pack for the TTY cables do not have the same EQL as the TN74B circuit pack. Use the *ucb* record for each TTY being removed to determine which port is used.

15. Record any TTYs that are equipped with an auxiliary ROP (PRT) connected to Port 0 or Port 1 of the TN74B. Using Table 38-5, record a “Yes” or “No” in the **PRT** column if a cable is removed from Port 0 or Port 1.

⇒ **NOTE 1:**

The database *ciopt* may not be correct; the UN582 will not work properly if the database is inaccurate.

⇒ **NOTE 2:**

If no PRT cable exists, then the PRT is not equipped.

Table 38-5. Backplane Cable EQLs

Port	TN74B	UN582	PRT
0	145	132	
1	132	332	
2	345	532	-
3	332	500	-

16. Remove the TTY cables from the TN74B TTYC. Select the hardware for this application from Table 38-6 to determine which cables to remove.

Table 38-6. Remove TTY Cable from TN74B

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED5D517-30,G3	TTYC	See Table 38-5	202T or 3800 Series Modem, Async RS232C 50' max. cable
ED5D517-30,G15	TTYC	See Table 38-5	202T or 3800 Series Modem, Async RS232C 250' max. cable
ED5D517-30,G3A	TTYC	See Table 38-5	<i>Gandalf</i> * 3309 Dataset 50' max. cable
ED5D517-30,G15A	TTYC	See Table 38-5	<i>Gandalf</i> 3309 Dataset 250' max. cable
ED5D517-30,G12	TTYC	See Table 38-5	212AR Dataset 100' max. cable
ED5D517-30,G22	TTYC	See Table 38-5	STU-11 Secure 1900 Dataset 50' max. cable
ED5D500-21,G64	TTYC	See Table 38-5	ROP (572 or 577) KS-23996, L1 VT or 2900 VT 50' max. cable
ED5D500-21,G66A	TTYC	See Table 38-5	ROP (572 or 577) KS-23996, L1 VT or 2900 VT 250' max. cable
ED5D502-30,G11	TTYC	See Table 38-5	VT100 Terminal 50' max. cable
ED5D502-30,G15	TTYC	See Table 38-5	VT100 Terminal 250' max. cable
ED5D502-30,G13	TTYC	See Table 38-5	ColorScan VT pr ROP (444) 50' max. cable
ED5D502-30,G16	TTYC	See Table 38-5	ColorScan VT pr ROP (444) 250' max. cable
* Registered trademark of Gandalf Data Communications Limited Corporation.			

17. Connect the new TTY cables for the UN582 TTYC. See Table 38-7 to determine which cables apply for this hardware application.

Table 38-7. Add New TTY Cable to UN582

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED3T076-20,G52	TTYC	See Table 38-5	202T or 3800 Series Modem, Async RS232C 50' max. cable
ED3T076-20,G41A	TTYC	See Table 38-5	202T or 3800 Series Modem, Async RS232C 250' max. cable
ED3T076-20,G53	TTYC	See Table 38-5	<i>Gandalf</i> * 3309 Dataset 50' max. cable
ED3T076-20,G53A	TTYC	See Table 38-5	<i>Gandalf</i> 3309 Dataset 250' max. cable
ED3T076-20,G54	TTYC	See Table 38-5	212AR Dataset 100' max. cable
ED3T076-20,G55	TTYC	See Table 38-5	STU-11 Secure 1900 Dataset 50' max. cable
ED3T076-20,G56	TTYC	See Table 38-5	ROP (572 or 577) KS-23996, L1 VT or 2900 VT 50' max. cable
ED3T076-20,G56A	TTYC	See Table 38-5	ROP (572 or 577) KS-23996, L1 VT or 2900 VT 250' max. cable
ED3T076-20,G57	TTYC	See Table 38-5	VT100 Terminal 50' max. cable
ED3T076-20,G57A	TTYC	See Table 38-5	VT100 Terminal 250' max. cable
ED3T076-20,G58	TTYC	See Table 38-5	ColorScan VT pr ROP (444) 50' max. cable
ED3T076-20,G58A	TTYC	See Table 38-5	ColorScan VT pr ROP (444) 250' max. cable
* Registered trademark of Gandalf Data Communications Limited Corporation.			

18. Install the UN582 TTYC circuit pack and replace the designation strip.
19. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

20. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 20.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 20.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 20.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

21. Update the TTYC *ucb* values.

UPDATE TTYC *ucb* VALUES PROCEDURE:

Table 38-8 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582. Table 38-9 indicates the equipage value that needs to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582.

Table 38-8. TTYC *ucb* Form Field Values

Field/Name	TN74B Value	UN582 Value
27. mv	0x0	0x2
62. packcode	t074	u582
63. issue	81	4
64. version	0	0
65. cvaddr	0x7f00	0xff0

Table 38-9. Port Equipage Values

UN582 Port	Equipage Value
No port	0x0
Port 2	0x4
Port 3	0x8
Using both ports	0xc

21.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

21.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

21.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

21.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

21.5. Enter **TTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

21.6. Enter *a*

Where: *a* = unit number of the TTYC.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

21.7. Enter **c**

Response: The system displays **Change Field:**

21.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

- 21.9. Log the existing TN74B equipage value for reference in the event that a backout is necessary.

TN74B equipage: _____

- 21.10. Enter a

Where: a = appropriate port equipage value from Table 38-9.

Response: The system displays **Change Field:**

- 21.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

- 21.12. Enter **0x2**

Response: The system displays **Change Field:**

- 21.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

- 21.14. Enter **u582**

Response: The system displays **Change Field:**

- 21.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

- 21.16. Enter **4**

Response: The system displays **Change Field:**

- 21.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

- 21.18. Enter **0**

Response: The system displays **Change Field:**

- 21.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

- 21.20. Enter **0xffff0**

Response: The system displays **Change Field:**

21.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

21.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

21.23. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

22. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

22.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

22.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

22.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

22.4. Enter <

Response: The ECD RC/V is completed.

23. At the RC/V terminal, change the *incore* database *ciopt* form for each TTY by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

24. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 24.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 24.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 24.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

25. Update the TTY *ciopt* values for all the TTYs under this TTYC.

UPDATE TTY *ciopt* VALUES PROCEDURE:

- 25.1. At the RC/V terminal, enter **ciopt**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 25.2. Enter **u**

Response: The system displays a blank *ciopt* form.
The cursor moves to the **option_name:** attribute.

- 25.3. Enter **option name** recorded in Step 4.12.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

- 25.4. Enter **c**

Response: The system displays **Change Field:**

25.5. Enter **8**

Response: The cursor moves to the **port1:** attribute.
The system displays **port assignment: noport, prt, vdu**

25.6. Enter **vdu**

Response: The system displays **Change Field:**

25.7. Enter **9**

Response: The cursor moves to the **port2:** attribute.
The system displays **port assignment: noport, prt, vdu**

25.8. Enter **b**

Where: **b = noport** (No) to indicate no auxiliary printer.
b = prt (Yes) to indicate auxiliary printer equipped.
(See the PRT column for Port 0 in Table 38-5.)

Response: The system displays **Change Field:**

25.9. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

25.10. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **option_name** attribute.

25.11. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

25.12. Determine if EQLs 145 and 132 are both connected to a printer.

- If **yes**, continue to Step **25.13**.
- If **no**, go to Step **26**.

25.13. At the RC/V terminal, enter **ciopt**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

25.14. Enter **u**

Response: The system displays a blank *ciopt* form.
The cursor moves to the **option_name:** attribute.

25.15. Enter **option name** recorded in Step 4.18.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

25.16. Enter **c**

Response: The system displays **Change Field:**

25.17. Enter **8**

Response: The cursor moves to the **port1** attribute.
The system displays **port assignment: noport, prt, vdu**

25.18. Enter **vdu**

Response: The system displays **Change Field:**

25.19. Enter **9**

Response: The cursor moves to the **port2** attribute.
The system displays **port assignment: noport, prt, vdu**

25.20. Enter **b**

Where: *b* = **noport** (No) to indicate no auxiliary printer.
b = **prt** (Yes) to indicate auxiliary printer equipped.
(See the PRT column for Port 1 in Table 38-5.)

Response: The system displays **Change Field:**

25.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate or Print:**

25.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **option_name** attribute.

25.23. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

26. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

26.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

26.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

26.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

26.4. Enter <

Response: The ECD RC/V is completed.

27. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

28. At the MTTY, restore IOP a controller **only** to service by entering the appropriate input command.

- If MML, **RST:IOP=a,CONT;**
- If PDS, **RST:IOP a,CONT!**

Where: a = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**

29. At the MTTY, diagnose the TTYC by entering the appropriate input command.
- If MML, **DGN:TTYC=a,RAW,TLP;**
 - If PDS, **DGN:TTYC a,RAW,TLP!**

Where: *a* = unit number of the TTYC.

Response: The system displays **DGN TTYC a ATP MESSAGE
COMPLETE**



NOTE:

Do **not** continue until this request has successfully completed.

30. Did the TTYC pass diagnostics?
- If **yes**, go to Step **32**.
 - If **no**, continue to Step **30.1**.

TROUBLESHOOTING PROCEDURE:

- 30.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP *a* is extinguished.
- If **yes**, continue to Step **30.2**.
 - If **no**, repeat Step **27**.
- 30.2. Determine if the cable connections are correct using Steps **15** through **17**.
- If **yes**, continue to Step **30.3**.
 - If **no**, make the necessary cable changes.
- 30.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **19** and reviewing Tables 38-8 and 38-9.
- If **yes**, continue to Step **30.4**.
 - If **no**, return to Step **19** and repeat the changes to the *incore* database.
- 30.4. Determine if a spare UN582 circuit pack is available.
- If **yes**, repeat Steps **10** through **29** to install the spare UN582 circuit pack.
 - If **no**, continue to Step **31**.
-
-

31. **BACKOUT POINT 1: TN74B TO UN582 TTYC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “TN74B to UN582 TTYC Conversion Backout Procedure” before the main conversion procedure.
- If **no**, continue to Step 32.

32. At IOPPS TN1820 (see the IOPPS EQL recorded in Step 8), operate the **ROS/RST** switch to the **RST** position.

Response: The **OOS** LED at IOP a extinguishes.
The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.



NOTE 1:

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE 2:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE 3:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

33. Did the TTYC and IOP restore successfully?
- If **yes**, go to Step **35**.
 - If **no**, continue to Step **33.1**.

TROUBLESHOOTING PROCEDURE:

- 33.1. Determine if the cable connections are correct using Steps **15** through **17**.
- If **yes**, continue to Step **33.2**.
 - If **no**, make the necessary cable changes.
- 33.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **19** and reviewing Tables 38-8 and 38-9.
- If **yes**, continue to Step **34**.
 - If **no**, return to Step **19** and repeat the changes to the *incore* database.
-
-

34. **BACKOUT POINT 2: TN74B TO UN582 TTYC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN74B to UN582 TTYC Conversion Backout Procedure" before the main conversion procedure.
 - If **no**, continue to Step **35**.
35. Soak the changes for 15 minutes before performing the remaining steps.
36. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.

37. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

38. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 38.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to **copy_inc_to_disk:YES** attribute.

- 38.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 38.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 38.4. Enter **<**

Response: The ECD RC/V exits.

39. **SAFE STOP POINT 3**

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 40.

SAFE STOP POINT 2 PROCEDURE:

- 39.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 39.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 39.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 39.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 39.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

40. At the RC/V terminal, update the ECD for *rootdmly* for the TTYC. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

41. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 41.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 41.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 41.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

42. Update the TTYC *ucb* values and TTY *ciopt* values for *rootdmly*.

UPDATE TTYC *ucb* VALUES AND TTY *ciopt* VALUES PROCEDURE:

- 42.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 42.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 42.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 42.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 42.5. Enter **TTYC**

Response: The cursor moves to the **k_unit_number:** attribute.

42.6. Enter **a**

Where: **a** = unit number of the TTYC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

42.7. Enter **c**

Response: The system displays **Change Field:**

42.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

42.9. Log the existing TN74B equipage value for reference in the event that a backout is necessary.

TN74B equipage: _____

42.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 38-9.

Response: The system displays **Change Field:**

42.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

42.12. Enter **0x54**

Response: The system displays **Change Field:**

42.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

42.14. Enter **u582**

Response: The system displays **Change Field:**

42.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

42.16. Enter **2**

Response: The system displays **Change Field:**

- 42.17. Enter **64**
Response: The cursor moves to the **version:** attribute.
- 42.18. Enter **0**
Response: The system displays **Change Field:**
- 42.19. Enter **65**
Response: The cursor moves to the **cvaddr:** attribute.
- 42.20. Enter **0xffff0**
Response: The system displays **Change Field:**
- 42.21. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**
- 42.22. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.
- 42.23. Enter **<**
Response: The cursor moves to the **Enter Form Name:** attribute.
- 42.24. Enter **ciopt**
Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:
- 42.25. Enter **u**
Response: The system displays a blank *ciopt* form.
The cursor moves to the **option_name:** attribute.

42.26. Enter **option name** recorded in Step 4.12.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

42.27. Enter **c**

Response: The system displays **Change Field:**

42.28. Enter **8**

Response: The cursor moves to the **port1:** attribute.
The system displays **port assignment: noport, prt, vdu**

42.29. Enter **vdu**

Response: The system displays **Change Field:**

42.30. Enter **9**

Response: The cursor moves to the **port2** attribute.
The system displays **port assignment: noport, prt, vdu**

42.31. Enter **b**

Where: **b = noport** (No) to indicate no auxiliary printer.
b = prt (Yes) to indicate auxiliary printer equipped.

Response: The system displays **Change Field:**

42.32. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

42.33. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **option_name** attribute.

- 42.34. Determine if EQLs 145 and 132 are both connected to a printer.
- If **yes**, continue to Step **42.35**.
 - If **no**, go to Step **42.43**.
- 42.35. Enter **option name** recorded in Step **4.18**.
- Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**
- 42.36. Enter **c**
- Response: The system displays **Change Field:**
- 42.37. Enter **8**
- Response: The cursor moves to the **port1** attribute.
The system displays **port assignment: noport, prt, vdu**
- 42.38. Enter **vdu**
- Response: The system displays **Change Field:**
- 42.39. Enter **9**
- Response: The cursor moves to the **port2** attribute.
The system displays **port assignment: noport, prt, vdu**
- 42.40. Enter **b**
- Where: **b = noport** (No) to indicate no auxiliary printer.
b = prt (Yes) to indicate auxiliary printer equipped.
- 42.41. Press the <CR> key.
- Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

42.42. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **option_name** attribute.

42.43. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

43. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

43.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

43.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

43.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

43.4. Enter **<**

Response: The ECD RC/V is completed.

44. Copy backup partitions.



NOTE:

See Appendix A for the procedure to copy backup partitions.

45. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

46. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

47. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

TN82B to UN582 HSDC Conversion

39

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TN82B to UN582 HSDC Conversion

39

Introduction

This chapter describes the procedure needed to convert from a TN82B High-Speed Data Link Controller (HSDC) circuit pack to a UN582 HSDC circuit pack in a 3B21D computer. The TN82B to UN582 conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

 NOTE:

If procedures are needed to convert all of the TN82Bs in an office to UN582s, contact 3B/RTR Global Customer Technical Support (CTS) for customized instructions.

If problems are encountered during this procedure, contact the next level of technical support. Special training is required to properly install cabling. Only qualified personnel should perform cable changes. Read through this entire procedure before starting.

 CAUTION:

To ensure that the Maintenance Terminal (MTTY) and the Receive-Only Printer (ROP) remain attached to the IOP 0 or IOP 1 that is active, extreme caution should be used when executing this procedure.

 CAUTION:

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Diagnostics and other tests as indicated in the “Preliminary Steps” section should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the “Required Tools and Equipment” section for specific information.

Required Data Collection

The HSDC number or its Equipment Location (EQL) must be known before beginning this procedure. This information should be recorded in the spaces that follow. If only the EQL is known, the HSDC number can be determined by locating its IOP controller and UCB PCID number in Table 39-4 (Step 9) of the “TN82B to UN582 HSDC Conversion Procedure.”

Once the HSDC number is identified, all additional data collection can be retrieved from the database by performing Step 4 of the “TN82B to UN582 HSDC Conversion Procedure.”

HSDC # _____ **and/or HSDC EQL #** _____

NOTE:

There are multiple step numbers in this chapter; for example, Steps 4 and 9. Be sure you are not referencing the steps in the backout procedure.

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.

 **CAUTION:**
In order to protect against ESD, a properly grounded antistatic wrist strap (R-4987) must be worn and connected when handling circuit packs.

 **CAUTION:**
Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags

The following equipment is required for this procedure:

Number	Qty	Description
107952558	1	UN582 + 1 spare (if site stocks spares)
ED3T076-20,G62	1	Sync V.35/V.36 50' max. cable
ED3T079-10,G64	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of preliminary steps, a backout procedure, safe stop points, and the conversion procedure which are used in this chapter.

- Preliminary Steps
- Safe Stop Point 1

- TN82B to UN582 HSDC Conversion Backout Procedure
- Inhibit automatic maintenance requests
- Identify and record IOP controller for HSDC
- Safe Stop Point 2
- Set port switch to MTTYC not controlled by IOP being removed
- Remove IOP with ROS key
- Power down IOP
- Update HSDC and HSD status to UNEQIP
- Remove old TN74 from IOP
- Remove cables from old TN74
- Connect new UN582 cables for IOP
- Install UN582 HSDC circuit pack for IOP
- Update HSDC *ucb* values
- Update HSD *ciopt* values for each HSD
- Power up IOP
- Update HSDC and HSD status from UNEQIP to GROW
- Restore IOP controller only
- Diagnose HSDCs for IOP
- Update HSDCs from GROW to OOS for IOP
- Backout Point 1
- Restore IOP using ROS/RST key
- Backout Point 2
- Soak changes for 15 minutes
- Set port switch to AUTO
- Activate IOP changes and exit RC
- Safe Stop Point 3
- Update HSDC *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the TN82B to UN582 conversion procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the maintenance terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and ROP are connected to IOP 1 and that all IOPs are active.

5. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

6. Verify that IOP 0 and all units under IOP 0 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 7.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

7. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

8. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

9. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

10. Verify that the response message is displayed on the MTTY and printed on the ROP.

11. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS switch, access Page **111**.
- For all other applications, access Page **102**.

12. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 0.

13. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

14. Verify that IOP 1 and all units under IOP 1 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 15.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

15. At the MTTY, test the port switch by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
16. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
17. At the MTTY, check the date and time by entering the appropriate input command.
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

18. Verify that the response message is displayed on the MTTY and printed on the ROP.
19. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
20. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 1.
21. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **22**.
 - If **no**, go to Step **24**.
22. If IOP 2 is equipped, restore IOP 1 by entering the appropriate input command.
 - If MML, **RST:IOP=2:RAW,TLP;**
 - If PDS, **RST:IOP 2:RAW,TLP!**
23. Verify that IOP 2 and all units under IOP 2 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **24**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
24. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **25**.
 - If **no**, go to Step **28**.
25. If IOP 3 is equipped, restore IOP 3 by entering the appropriate input command.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**

26. Verify that IOP 3 and all units under IOP 3 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step **28**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
-

27. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "TN82B to UN582 HSDC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
-

28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

TN82B to UN582 HSDC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the HSDC in this chapter. Read and understand the backout procedure before beginning the "TN82B to UN582 HSDC Conversion Procedure."

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC not controlled by the IOP being removed in Step 2.
2. At Input/Output Processor Power Switch (IOPPS) TN1820, remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE 1:

Performing Step 2 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 3.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** Light-Emitting Diode (LED) lights.

Where: a = the IOP being removed.

⇒ NOTE 3:

Do **not** continue until this request has successfully completed.

3. At IOPPS TN1820, remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position. See Table 39-3 in Step 8 of the "TN82B to UN582 HSDC Conversion Procedure" to determine the EQL.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

Where: a = the IOP being removed.
4. Unseat and remove the UN582 HSDC circuit pack using the EQL identified in Step 8 of the "TN82B to UN582 HSDC Conversion Procedure."



CAUTION:

Do not insert the TN82B HSDC at this time. Wait for cable changes to be completed.

5. Remove the High-Speed Synchronous Data Link (HSD) cables from the UN582 HSDC. See Table 39-1 to determine the EQLs where cables should be removed.

Table 39-1. Backplane Cable EQLs

Port	TN82B	UN582
2	345	532
3	332	500

6. Reconnect the old HSD cables for the TN82B HSDC using Table 39-1 and the tags attached while performing the "TN82B to UN582 HSDC Conversion Procedure."
7. Reinstall the TN82B circuit pack.
8. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 9.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 9.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10. Update the HSDC unit control block (*ucb*) values.

UPDATE HSDC *ucb* VALUES PROCEDURE:

See Table 39-2 for the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the TN82B.

Table 39-2. HSDC *ucb* Form Field Values

Field/Name	TN82B Value	UN582 Value
27. mv	0x52	0x54
62. packcode	t082	u582
63. issue	` (blank)	2
64. version	21	` (blank)
65. cvaddr	` (blank)	0xff0

- 10.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 10.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 10.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 10.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 10.5. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 10.6. Enter **a**

Where: **a** = unit number of the HSDC.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

10.7. Enter **c**

Response: The system displays **Change Field:**

10.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

10.9. Enter **a**

Where: **a** = original TN82B port equipage value.



NOTE:

The original TN82B equipage value is the number logged in Step **20.9** of the “TN82B to UN582 HSDC Conversion Procedure.”

Response: The system displays **Change Field:**

10.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

10.11. Enter **0x1**

Response: The system displays **Change Field:**

10.12. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

10.13. Enter **t074**

Response: The system displays **Change Field:**

10.14. Enter **63**

Response: The cursor moves to the **issue:** attribute.

10.15. Enter **91**

Response: The system displays **Change Field:**

10.16. Enter **64**

Response: The cursor moves to the **version:** attribute.

10.17. Enter **20**

Response: The system displays **Change Field:**

10.18. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

10.19. Enter **0x7f00**

Response: The system displays **Change Field:**

10.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

10.21. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

10.22. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

11.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

11.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11.4. Enter **<**

Response: The ECD RC/V is completed.

12. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

13. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by
RST... COMPLETED for each unit under IOP a.

⇒ NOTE 1:

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the MTTY or ROP output.

⇒ NOTE 2:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

14. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

15. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

TN82B to UN582 HSDC Conversion Procedure

Perform the following steps to convert a TN82B HSDC circuit pack to a UN582 HSDC circuit pack in a 3B21D computer.

⇒ NOTE:

If procedures are needed to convert all of the TN74s in an office to UN582s, contact 3B/RTR Global CTS for customized instructions.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**

- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

The "TN82B to UN582 HSDC Conversion Procedure" must be performed by using an RC/V terminal not controlled by the IOP that is not removed from service.

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**

- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore";**
- If PDS, **RCV:MENU:RCVECD,DB "incore"!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Identify the required HSDC and HSD *ucb* values.

IDENTIFY REQUIRED HSDC AND HSD *ucb* VALUES PROCEDURE:

The controller and subdevices for the HSDC must be identified to complete this procedure. This section will identify the data to complete the procedure and verify the EQL that was recorded earlier in the "Required Data Collection" section.

- 4.1. At the RC/V terminal, enter **ucb**

Response: The *ucb* field is displayed.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 4.3. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 4.4. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 4.5. Enter *a*

Where: *a* = unit number of the HSDC recorded in the "Required Data Collection" section.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.6. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

46.cntrl_0: IOP _____
36.down: HSD _____
58.pcid: PCID _____

4.7. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.8. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

4.9. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.10. Enter **HSD**

Response: The cursor moves to the **k_unit_number:** attribute.

4.11. Enter *a*

Where: *a* = unit number of the HSD previously recorded.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.12. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

41.side: HSD _____
57.option_name: _____
59.pcsdid: _____

4.13. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.14. Determine if a second HSD exists under the HSDC.

- If **yes**, continue to Step 4.15.
- If **no**, go to Step 4.20.

4.15. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.16. Enter **HSD**

Response: The cursor moves to the **k_unit_number:** attribute.

4.17. Enter *a*

Where: *a* = unit number of the second HSD.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

4.18. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

57.option_name: _____
59.pcsdid: _____

4.19. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.20. Enter <

Response: The ECD RC/V is completed.

5. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 6.

SAFE STOP POINT 2 PROCEDURE:

- 5.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 5.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 5.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 5.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 5.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

6. Determine the correct IOP to remove from service by using the information acquired in Step 4.6.

- If **IOP 0** or **1**, continue to Step 7.
- If **IOP 2** or **3**, go to Step 8.

7. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).

For example,

- If **IOP 0**, set to ROP 1 and MTTYC 1.
 - If **IOP 1**, set to ROP 0 and MTTYC 0.
8. See Table 39-3 to determine the correct EQL for the IOP identified in Step 4.6.
- IOPPS EQL: _____

Table 39-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026

9. See Table 39-4 to verify the EQL for the HSDC circuit pack. Use the pcid (field 58) identified in Step 4.6 to determine the correct EQL for the circuit pack being replaced. The EQL should be identical to the one identified in the "Required Data Collection" section. Record the EQL in the space provided.
- HSDC EQL: _____

Table 39-4. HSDC PCID to EQL Conversions

UCB PCID	PC #	IOP 0	IOP 1	IOP 2	IOP 3
0	00			11-040	62-040
1	01	19-102	45-102	11-048	62-048
2	02	19-110	45-110	11-056	62-056
3	03	19-118	45-118	11-064	62-064
4	10	19-130	45-130	11-072	62-072
5	11	19-138	45-138	11-080	62-080
6	12	19-146	45-146	11-088	62-088
7	13	19-154	45-154	11-096	62-096
8	20	28-094	53-094	11-108	62-108
9	21	28-102	53-102	11-116	62-116
10	22	28-110	53-110	11-124	62-124
11	23	28-118	53-118	11-132	62-132
12	30	28-130	53-130	11-140	62-140
13	31	28-138	53-138	11-148	62-148
14	32	28-146	53-146	11-156	62-156
15	33			11-164	62-164

10. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).
11. At IOPPS TN1820 (see the EQL recorded in Step 8), remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE 1:

Performing Step 11 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 12.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS TN1820, the **OOS** LED lights.

⇒ NOTE 3:

Do **not** continue until this request has successfully completed.

12. At IOPPS TN1820 (see the EQL recorded in Step 8), remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

13. Unseat and remove the TN82B HSDC circuit pack using the HSDC EQL recorded in Step 8.



CAUTION:

Do not insert the UN582 HSDC at this time. Wait for cable changes to be completed.

14. Verify EQLs and **tag all old HSD cables** in case a backout procedure is necessary later.



NOTE:

The ports on the UN582 circuit pack for the HSD cables do not have the same EQL as the TN82B circuit pack. Use the *ucb* record for each HSD being removed to determine which port is used.

15. Remove the HSD cables from the TN82B HSDC. Select the hardware for this application from Table 39-6 and the EQL from Table 39-5 to determine which cables to remove from the TN82B.

Table 39-5. Backplane Cable EQLs

Port	TN82B	UN582
2	345	532
3	332	500

Table 39-6. Remove HSD Cable from TN82B

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED5D517-30,G16	HSDC	Depends on port	Sync V.35/V.36 50' max. cable

16. Connect the new HSD cable for the UN582 HSDC. See Table 39-7 to determine which cable applies for this hardware application and Table 39-5 to find the correct EQL for the UN582.

Table 39-7. Add New HSD Cable to UN582

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED3T076-30,G62	HSDC	Depends on port	Sync V.35/V.36 50' max. cable

17. Install the UN582 HSDC circuit pack and replace the designation strip.
18. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

19. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 19.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 19.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change,
Substitute, Validate, or Print:**

- 19.3. Enter **e**

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

20. Update the HSDC *ucb* values.

UPDATE HSDC *ucb* VALUES PROCEDURE:

See Table 39-8 for the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582. See Table 39-9 for the equipage value that needs to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582.

Table 39-8. HSDC *ucb* Form Field Values

Field/Name	TN82B Value	UN582 Value
27. mv	0x52	0x54
62. packcode	t082	u582
63. issue	` (blank)	2
64. version	21	` (blank)
65. cvaddr	` (blank)	0xff0

Table 39-9. Port Equipage Values

UN582 Port	Equipage Value
No port	0x0
Port 2	0x80
Port 3	0x100
Using both ports	0x180

20.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

20.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

20.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

20.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

20.5. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

20.6. Enter **a**

Where: **a** = unit number of the HSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

20.7. Enter **c**

Response: The system displays **Change Field:**

20.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

20.9. Log the existing TN82B equipage value for reference in the event that a backout is necessary.

TN82B equipage: _____

20.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 39-9.

Response: The system displays **Change Field:**

20.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

20.12. Enter **0x2**

Response: The system displays **Change Field:**

20.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

20.14. Enter **u582**

Response: The system displays **Change Field:**

20.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

20.16. Enter **4**

Response: The system displays **Change Field:**

20.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

20.18. Enter **0**

Response: The system displays **Change Field:**

20.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

20.20. Enter **0xffff0**

Response: The system displays **Change Field:**

20.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

20.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

20.23. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

21. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

21.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

21.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

21.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

21.4. Enter <

Response: The ECD RC/V is completed.

22. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

23. At the MTTY, restore IOP a controller **only** to service by entering the appropriate input command.

- If MML, **RST:IOP=a,CONT;**
- If PDS, **RST:IOP a,CONT!**

Where: a = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**

24. At the MTTY, diagnose the HSDC by entering the appropriate input command.

- If MML, **DGN:HSDC=a,RAW,TLP;**
- If PDS, **DGN:HSDC a,RAW,TLP!**

Where: a = unit number of the HSDC.

Response: The system displays **DGN HSDC a ATP MESSAGE
COMPLETE**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

25. Did the HSDC pass diagnostics?

- If **yes**, go to Step 27.
- If **no**, continue to Step 25.1.

TROUBLESHOOTING PROCEDURE:

- 25.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP a is extinguished.
- If **yes**, continue to Step **25.2**.
 - If **no**, repeat Step **22**.
- 25.2. Determine if the cable connections are correct using Steps **15** and **16**.
- If **yes**, continue to Step **25.3**.
 - If **no**, make the necessary cable changes.
- 25.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **18** and reviewing Tables 39-8 and 39-9.
- If **yes**, continue to Step **25.4**.
 - If **no**, return to Step **18** and repeat the changes to the *incore* database.
- 25.4. Determine if a spare UN582 circuit pack is available.
- If **yes**, repeat Steps **10** through **24** to install the spare UN582 circuit pack.
 - If **no**, continue to Step **26**.
-
-

26. BACKOUT POINT 1: TN82B TO UN582 HSDC CONVERSION



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN82B to UN582 HSDC Conversion Backout Procedure" before the main conversion procedure.
- If **no**, continue to Step **27**.

27. At IOPPS TN1820 (see the IOPPS EQL recorded in Step 8), operate the **ROS/RST** switch to the **RST** position.

Response: The **OOS** LED at IOP a extinguishes.
The system displays **REPT POWER RESTORED IOP a**
followed by **RST IOP a COMPLETED** followed by **RST...
COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE 2:**

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE
COMPLETE**

28. Did the HSDC and IOP restore successfully?

- If **yes**, go to Step 30.
- If **no**, continue to Step 28.1.

TROUBLESHOOTING PROCEDURE:

- 28.1. Determine if the cable connections are correct using Steps 15 and 16.

- If **yes**, continue to Step 28.2.
- If **no**, make the necessary cable changes.

- 28.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 18 and reviewing Tables 39-8 and 39-9.

- If **yes**, continue to Step 29.
 - If **no**, return to Step 18 and repeat the changes to the *incore* database.
-
-

29. BACKOUT POINT 2: TN82B TO UN582 HSDC CONVERSION



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN82B to UN582 HSDC Conversion Backout Procedure" before the main conversion procedure.
 - If **no**, continue to Step 30.
30. Soak the changes for 15 minutes before performing the remaining steps.
31. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
32. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.
- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

33. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 33.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form. The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 33.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 33.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

33.4. Enter <

Response: The ECD RC/V exits.

34. **SAFE STOP POINT 3**

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 40.

SAFE STOP POINT 2 PROCEDURE:

34.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

34.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

34.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

34.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

34.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.

35. At the RC/V terminal, update the ECD for *rootdmly* for the HSDC. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

36. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 36.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed. The cursor moves to the **tr_name:** attribute.

- 36.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 36.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

37. Update the HSDC *ucb* values for *rootdmly*.

UPDATE HSDC *ucb* VALUES PROCEDURE:

- 37.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 37.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

37.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

37.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

37.5. Enter **HSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

37.6. Enter **a**

Where: **a** = unit number of the HSDC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

37.7. Enter **c**

Response: The system displays **Change Field:**

37.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

37.9. Log the existing TN82B equipage value for reference in the event that a backout is necessary.

TN82B equipage: _____

37.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 39-9.

Response: The system displays **Change Field:**

37.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

37.12. Enter **0x54**

Response: The system displays **Change Field:**

37.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

37.14. Enter **u582**

Response: The system displays **Change Field:**

37.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

37.16. Enter **2**

Response: The system displays **Change Field:**

37.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

37.18. Enter **0**

Response: The system displays **Change Field:**

37.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

37.20. Enter **0xffff0**

Response: The system displays **Change Field:**

37.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

37.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

37.23. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

38. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 38.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 38.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 38.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 38.4. Enter <

Response: The ECD RC/V is completed.

39. Copy backup partitions.



NOTE:

See Appendix A for the procedure to copy backup partitions.

40. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

41. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

42. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

TN75C to UN582 SDLC Conversion

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TN75C to UN582 SDLC Conversion

40

Introduction

This chapter describes the procedure needed to convert from a TN75C Synchronous Data Link Circuit (SDLC) circuit pack to a UN582 SDLC circuit pack in a 3B21D computer. The TN75C to UN582 conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

 NOTE:

If procedures are needed to convert all of the TN75Cs in an office to UN582s, contact 3B/RTR Global Customer Technical Support (CTS) for customized instructions.

If problems are encountered during this procedure, contact the next level of technical support. Special training is required to properly install cabling. Only qualified personnel should perform cable changes. Read through this entire procedure before starting.

 CAUTION:

To ensure that the Maintenance Terminal (MTTY) and the Receive-Only Printer (ROP) remain attached to the IOP 0 or IOP 1 that is active, extreme caution should be used when executing this procedure.

 CAUTION:

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

Required Data Collection

The SDLC number or its Equipment Location (EQL) must be known before beginning this procedure. This information should be recorded in the spaces that follow. If only the EQL is known, the SDLC number can be determined by locating its IOP controller and UCB PCID number in Table 40-4 (Step 9) of the "TN75C to UN582 SDLC Conversion Procedure."

Once the SDLC number is identified, all additional data collection can be retrieved from the database by performing Step 4 of the "TN75C to UN582 SDLC Conversion Procedure."

SDLC # _____ and/or **SDLC EQL #** _____

⇒ NOTE:

There are multiple step numbers in this chapter; for example, Steps 4 and 9. Be sure you are not referencing the steps in the backout procedure.

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap (R-4987) must be worn and connected when handling circuit packs.



CAUTION:

Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags

The following equipment is required for this procedure:

Number	Qty	Description
107952558	1	UN582 + 1 spare (if site stocks spares)
ED3T076-20,G50	1	Sync RS232C 50' max. cable
ED3T076-20,G61	1	Sync RS449 50' max. cable
ED3T079-10,G64	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.

CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.

CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of the preliminary steps, a backout procedure, safe stop points, and the conversion procedure in used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- TN75C to UN582 SDLC Conversion Backout Procedure
- Inhibit automatic maintenance requests
- Identify and record IOP controller for SDLC
- Safe Stop Point 2
- Set port switch to MTTYC not controlled by IOP being removed
- Remove IOP with ROS key
- Power down IOP
- Update SDLC and SDL status to UNEQIP
- Remove old TN74 from IOP
- Remove cables from old TN74
- Connect new UN582 cables for IOP
- Install UN582 SDLC circuit pack for IOP
- Update SDLC *ucb* values
- Power up IOP
- Update SDLC and SDL status from UNEQIP to GROW
- Restore IOP controller only
- Diagnose SDLCs for IOP
- Update SDLCs from GROW to OOS for IOP
- Backout Point 1
- Restore IOP using ROS/RST key
- Backout Point 2

- Soak changes for 15 minutes
- Set port switch to AUTO
- Activate IOP changes and exit RC
- Safe Stop Point 3
- Update SDLC *ucb* values for *rootdml*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the TN75C to UN582 conversion procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and ROP are connected to IOP 1 and that all IOPs are active.

5. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

6. Verify that IOP 0 and all units under IOP 0 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 7.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

7. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

8. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

9. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

10. Verify that the response message is displayed on the MTTY and printed on the ROP.

11. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS® switch, access Page **111**.
- For all other applications, access Page **102**.

12. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 0.

13. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

14. Verify that IOP 1 and all units under IOP 1 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 15.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

15. At the MTTY, test the port switch by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
16. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
17. At the MTTY, check the date and time by entering the appropriate input command.
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

18. Verify that the response message is displayed on the MTTY and printed on the ROP.
19. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS® switch, access Page **111**.
 - For all other applications, access Page **102**.
20. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 1.
21. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **22**.
 - If **no**, go to Step **24**.
22. If IOP 2 is equipped, restore IOP 2 by entering the appropriate input command.
 - If MML, **RST:IOP=2:RAW,TLP;**
 - If PDS, **RST:IOP 2:RAW,TLP!**
23. Verify that IOP 2 and all units under IOP 2 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **24**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
24. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **25**.
 - If **no**, go to Step **28**.
25. If IOP 3 is equipped, restore IOP 3 by entering the appropriate input command.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**

26. Verify that IOP 3 and all units under IOP 3 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 28.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

27. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "TN75C to UN582 SDLC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

TN75C to UN582 SDLC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the SDLC in this chapter. Read and understand the backout procedure before beginning the "TN75C to UN582 SDLC Conversion Procedure."

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC not controlled by the IOP being removed in Step 2.
2. At Input/Output Processor Power Switch (IOPPS) TN1820, remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE 1:

Performing Step 2 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to the Step 3.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** Light-Emitting Diode (LED) lights.

Where: a = the IOP being removed.

⇒ NOTE 3:

Do **not** continue until this request has successfully completed.

3. At IOPPS TN1820, remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position. See Table 40-3 in Step 8 of the "TN75C to UN582 SDLC Conversion Procedure" to determine the EQL.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

Where: a = the IOP being removed.

4. Unseat and remove the UN582 SDLC circuit pack using the EQL identified in Step 9 of the "TN75C to UN582 SDLC Conversion Procedure."



CAUTION:

Do not insert the TN75C SDLC at this time. Wait for cable changes to be completed.

5. Remove the Synchronous Data Link (SDL) cables from the UN582 SDLC. See Table 40-1 to determine the EQLs where cables should be removed.

Table 40-1. Backplane Cable EQLs

Port	TN75C	UN582
2	345	532
3	332	500

6. Reconnect the old SDL cables for the TN75C SDLC using Table 40-1 and the tags attached while performing the "TN75C to UN582 SDLC Conversion Procedure."
7. Reinstall the TN75C circuit pack.
8. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 9.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 9.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10. Update the SDLC unit control block (*ucb*) values.

UPDATE SDLC *ucb* VALUES PROCEDURE:

Table 40-2 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the TN75C.

Table 40-2. SDLC *ucb* Form Field Values

Field/Name	TN75C Value	UN582 Value
27. mv	0x0	0x2
62. packcode	t075	u582
63. issue	` (blank)	2
64. version	21	` (blank)
65. cvaddr	0x5517	0xff0

- 10.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 10.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 10.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 10.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 10.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 10.6. Enter **a**

Where: **a** = unit number of the SDLC.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

10.7. Enter **c**

Response: The system displays **Change Field:**

10.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

10.9. Enter **a**

Where: **a** = original TN75C port equipage value.



NOTE:

The original TN75C equipage value is the number logged in Step **20.9** of the “TN75C to UN582 SDLC Conversion Procedure.”

Response: The system displays **Change Field:**

10.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

10.11. Enter **0x1**

Response: The system displays **Change Field:**

10.12. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

10.13. Enter **t074**

Response: The system displays **Change Field:**

10.14. Enter **63**

Response: The cursor moves to the **issue:** attribute.

10.15. Enter **91**

Response: The system displays **Change Field:**

10.16. Enter **64**

Response: The cursor moves to the **version:** attribute.

10.17. Enter **20**

Response: The system displays **Change Field:**

10.18. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

10.19. Enter **0x7f00**

Response: The system displays **Change Field:**

10.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

10.21. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

10.22. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

11.1. Enter **trend**

Response: The system displays the **Transaction End** form and the cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

11.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11.4. Enter **<**

Response: The ECD RC/V is completed.

12. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

13. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the MTTY or ROP output.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

14. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

15. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

TN75C to UN582 SDLC Conversion Procedure

Perform the following steps to convert a TN75C SDLC circuit pack to a UN582 SDLC circuit pack in a 3B21D computer.

⇒ NOTE:

If procedures are needed to convert all of the TN74s in an office to UN582s, contact 3B/RTR Global CTS for customized instructions.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

The "TN75C to UN582 SDLC Conversion Procedure" must be performed using an RC/V terminal not controlled by the IOP that is removed from service.

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore";**
- If PDS, **RCV:MENU:RCVECD,DB "incore"!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Identify the required SDLC and SDL *ucb* values.

IDENTIFY REQUIRED SDLC AND SDL *ucb* VALUES PROCEDURE:

The controller and subdevices for the SDLC must be identified to complete this procedure. This section will identify the data to complete the procedure and verify the EQL from the "Required Data Collection" section.

- 4.1. At the RC/V terminal, enter **ucb**

Response: The *ucb* field is displayed.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 4.3. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 4.4. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 4.5. Enter **a**

Where: **a** = unit number of the SDLC recorded in the "Required Data Collection" section.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.6. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

46.cntrl_0:	IOP _____
36.down:	SDL _____
58.pcid:	PCID _____

4.7. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.8. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

4.9. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.10. Enter **SDL**

Response: The cursor moves to the **k_unit_number:** attribute.

4.11. Enter **a**

Where: *a* = unit number of the SDL previously recorded.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.12. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

41.side:	SDL _____
57.option_name:	_____
59.pcsdid:	_____

4.13. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.14. Determine if a second SDL exists under the SDLC.

- If **yes**, continue to Step 4.15.
- If **no**, go to Step 4.20.

4.15. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.16. Enter **SDL**

Response: The cursor moves to the **k_unit_number:** attribute.

4.17. Enter *a*

Where: *a* = unit number of the second SDL.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

4.18. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

57.option_name: _____
59.pcsdid: _____

4.19. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.20. Enter <

Response: The ECD RC/V is completed.

5. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 6.

SAFE STOP POINT 2 PROCEDURE:

- 5.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 5.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 5.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 5.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 5.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

6. Determine the correct IOP to remove from service by using the information acquired in Step 4.6.

- If **IOP 0** or **1**, continue to Step 7.
- If **IOP 2** or **3**, go to Step 8.

7. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).

For example,

- If **IOP 0**, set to ROP 1 and MTTYC 1.
 - If **IOP 1**, set to ROP 0 and MTTYC 0.
8. See Table 40-3 to determine the correct EQL for the IOP identified in Step 4.6.
- IOPPS EQL: _____

Table 40-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026

9. Table 40-4 should be used to verify the EQL for the SDLC circuit pack. Use the pcid (field 58) identified in Step 4.6 to determine the correct EQL for the circuit pack being replaced. The EQL should be identical to the one identified in the "Required Data Collection" section. Record the EQL in the space provided.

SDLC EQL: _____

Table 40-4. SDLC PCID to EQL Conversions

UCB PCID	PC #	IOP 0	IOP 1	IOP 2	IOP 3
0	00			11-040	62-040
1	01	19-102	45-102	11-048	62-048
2	02	19-110	45-110	11-056	62-056
3	03	19-118	45-118	11-064	62-064
4	10	19-130	45-130	11-072	62-072
5	11	19-138	45-138	11-080	62-080
6	12	19-146	45-146	11-088	62-088
7	13	19-154	45-154	11-096	62-096
8	20	28-094	53-094	11-108	62-108
9	21	28-102	53-102	11-116	62-116
10	22	28-110	53-110	11-124	62-124
11	23	28-118	53-118	11-132	62-132
12	30	28-130	53-130	11-140	62-140
13	31	28-138	53-138	11-148	62-148
14	32	28-146	53-146	11-156	62-156
15	33			11-164	62-164

10. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).
11. At IOPPS TN1820 (see the EQL recorded in Step 8), remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.



NOTE 1:

Performing Step 11 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.



NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 12.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS TN1820, the **OOS** LED lights.



NOTE 3:

Do **not** continue until this request has successfully completed.

12. At IOPPS TN1820 (see the EQL recorded in Step 8), remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

13. Unseat and remove the TN75C SDLC circuit pack using the SDLC EQL recorded in Step 9.



CAUTION:

Do not insert the UN582 SDLC at this time. Wait for cable changes to be completed.

14. Verify EQLs and **tag all old SDL cables** in case a backout procedure is necessary later.



NOTE:

The ports on the UN582 circuit pack for the SDL cables do not have the same EQL as the TN75C circuit pack. Use the *ucb* record for each SDL being removed to determine which port is used.

15. Remove the SDL cables from the TN75C SDLC. Select the hardware for this application from Table 40-6 and the EQL from Table 40-5 to determine which cables to remove from the TN75C.

Table 40-5. Backplane Cable EQLs

Port	TN75C	UN582
2	345	532
3	332	500

Table 40-6. Remove SDL Cable from TN75C

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED5D517-30,G1	SDLC	Depends on port	Sync RS232C 50' max. cable
ED5D517-30,G4	SDLC	Depends on port	Sync RS449/RS422 V.36 50' max. cable
ED5D517-30,G5	SDLC	Depends on port	Sync RS449/RS422 V.36 150' max. cable

16. Connect the new SDL cable for the UN582 SDLC. See Table 40-7 to determine which cable applies for this hardware application and Table 40-5 to find the correct EQL for the UN582.

Table 40-7. Add New SDL Cable to UN582

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED3T076-20,G50	SDLC	Depends on port	Sync RS232C 50' max. cable
ED3T076-20,G61	SDLC	Depends on port	Sync RS449/RS422 V.36 50' max. cable
ED3T076-20,G65	SDLC	Depends on port	Sync RS449/RS422 V.36 150' max. cable

17. Install the UN582 SDLC circuit pack and replace the designation strip.
18. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

19. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 19.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 19.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

20. Update the SDLC *ucb* values.

UPDATE SDLC *ucb* VALUES PROCEDURE:

Table 40-8 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582. Table 40-9 indicates the equipage value that needs to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582.

Table 40-8. SDLC *ucb* Form Field Values

Field/Name	TN75C Value	UN582 Value
27. mv	0x0	0x1
62. packcode	t075	u582
63. issue	` (blank)	2
64. version	21	` (blank)
65. cvaddr	0x5517	0xff0

Table 40-9. Port Equipage Values

UN582 Port	Equipage Value
No port	0x0
Port 2	0x10
Port 3	0x20
Using both ports	0x30

- 20.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 20.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 20.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

20.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

20.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

20.6. Enter **a**

Where: **a** = unit number of the SDLC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

20.7. Enter **c**

Response: The system displays **Change Field:**

20.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

20.9. Log the existing TN75C equipage value for reference in the event that a backout is necessary.

TN75C equipage: _____

20.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 40-9.

Response: The system displays **Change Field:**

20.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

20.12. Enter **0x2**

Response: The system displays **Change Field:**

20.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

20.14. Enter **u582**

Response: The system displays **Change Field:**

20.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

20.16. Enter **4**

Response: The system displays **Change Field:**

20.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

20.18. Enter **0**

Response: The system displays **Change Field:**

20.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

20.20. Enter **0xffff0**

Response: The system displays **Change Field:**

20.21. Press the <CR> key.

Response: The system displays **Enter Update, Change,
Substitute, Validate, or Print:**

20.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

20.23. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

21. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

21.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

21.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

21.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

21.4. Enter <

Response: The ECD RC/V is completed.

22. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED a extinguishes.

23. At the MTTY, restore IOP a controller **only** to service by entering the appropriate input command.

- If MML, **RST:IOP=a,CONT;**
- If PDS, **RST:IOP a,CONT!**

Where: a = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**

24. At the MTTY, diagnose the SDLC by entering the appropriate input command.

- If MML, **DGN:SDLC=a,RAW,TLP;**
- If PDS, **DGN:SDLC a,RAW,TLP!**

Where: *a* = unit number of the SDLC.

Response: The system displays **DGN SDLC a ATP MESSAGE
COMPLETE**



NOTE:

Do **not** continue until this request has successfully completed.

25. Did the SDLC pass diagnostics?

- If **yes**, go to Step 27.
- If **no**, continue to Step 25.1.

TROUBLESHOOTING PROCEDURE:

25.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP *a* is extinguished.

- If **yes**, continue to Step 25.2.
- If **no**, repeat Step 22.

25.2. Determine if the cable connections are correct using Steps 15 and 16.

- If **yes**, continue to Step 25.3.
- If **no**, make the necessary cable changes.

25.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 18 and reviewing Tables 40-8 and 40-9.

- If **yes**, continue to Step 25.4.
- If **no**, return to Step 18 and repeat the changes to the *incore* database.

25.4. Determine if a spare UN582 circuit pack is available.

- If **yes**, repeat Steps 10 through 24 to install the spare UN582 circuit pack.
 - If **no**, continue to Step 26.
-
-

26. **BACKOUT POINT 1: TN75C TO UN582 SDLC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “TN75C to UN582 SDLC Conversion Backout Procedure” before the main conversion procedure.
- If **no**, continue to Step 27.

27. At IOPPS TN1820 (see the IOPPS EQL recorded in Step 8), operate the **ROS/RST** switch to the **RST** position.

Response: The **OOS** LED at IOP a extinguishes.
The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.



NOTE 1:

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE 2:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE 3:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

28. Did the SDLC and IOP restore successfully?

- If **yes**, go to Step **30**.
- If **no**, continue to Step **28.1**.

TROUBLESHOOTING PROCEDURE:

28.1. Determine if the cable connections are correct using Steps **15** and **16**.

- If **yes**, continue to Step **28.2**.
- If **no**, make the necessary cable changes.

28.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **18** and reviewing Tables 40-8 and 40-9.

- If **yes**, continue to Step **29**.
 - If **no**, return to Step **18** and repeat the changes to the *incore* database.
-
-

29. **BACKOUT POINT 2: TN75C TO UN582 SDLC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN75C to UN582 SDLC Conversion Backout Procedure" before the main conversion procedure.
- If **no**, continue to Step **30**.

30. Soak the changes for 15 minutes before performing the remaining steps.

31. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.

32. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

33. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 33.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 33.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 33.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 33.4. Enter <

Response: The ECD RC/V exits.

34. **SAFE STOP POINT 3**

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 40.

SAFE STOP POINT 2 PROCEDURE:

- 34.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 34.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 34.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 34.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 34.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

35. At the RC/V terminal, update the ECD for *rootdmly* for the SDLC. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

36. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 36.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 36.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 36.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

37. Update the SDLC *ucb* values for *rootdmly*.

UPDATE SDLC *ucb* VALUES PROCEDURE:

- 37.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 37.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

- 37.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 37.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 37.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 37.6. Enter **a**

Where: *a* = unit number of the SDLC.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

- 37.7. Enter **c**

Response: The system displays **Change Field:**

- 37.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

- 37.9. Log the existing TN75C equipage value for reference in the event that a backout is necessary.

TN75C equipage: _____

- 37.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 40-9.

Response: The system displays **Change Field:**

- 37.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

- 37.12. Enter **0x54**

Response: The system displays **Change Field:**

- 37.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

- 37.14. Enter **u582**

Response: The system displays **Change Field:**

- 37.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

- 37.16. Enter **2**

Response: The system displays **Change Field:**

- 37.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

- 37.18. Enter **0**

Response: The system displays **Change Field:**

- 37.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

- 37.20. Enter **0xffff0**

Response: The system displays **Change Field:**

37.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

37.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

37.23. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

38. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

38.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

38.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

38.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

38.4. Enter <

Response: The ECD RC/V is completed.

39. Copy backup partitions.



NOTE:

See Appendix A for the procedure to copy backup partitions.

40. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

41. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.
42. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

TN1839 to UN582 SDLC Conversion

41

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TN1839 to UN582 SDLC Conversion

41

Introduction

This chapter describes the procedure needed to convert from a TN1839 Synchronous Data Link Controller (SDLC) circuit pack to a UN582 SDLC circuit pack in a 3B21D computer. The TN1839 to UN582 conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

 NOTE:

If procedures are needed to convert all of the TN1839s in an office to UN582s, contact 3B/RTR Global Customer Technical Support (CTS) for customized instructions.

If problems are encountered during this procedure, contact the next level of technical support. Special training is required to properly install cabling. Only qualified personnel should perform cable changes. Read through this entire procedure before starting.

 CAUTION:

To ensure that the Maintenance Terminal (MTTY) and the Receive-Only Printer (ROP) remain attached to the IOP 0 or IOP 1 that is active, extreme caution should be used when executing this procedure.

 CAUTION:

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the "Preliminary Steps" section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, PC recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

Required Data Collection

The SDLC number or its Equipment Location (EQL) must be known before beginning this procedure. This information should be recorded in the spaces that follow. If only the EQL is known, the SDLC number can be determined by locating its IOP controller and UCB PCID number Table 41-4 (Step 9) of the "TN1839 to UN582 SDLC Conversion Procedure."

Once the SDLC number is identified, all additional data collection can be retrieved from the database by performing Step 4 of the "TN1839 to UN582 SDLC Conversion Procedure."

SDLC # _____ and/or **SDLC EQL #** _____

NOTE:

There are multiple step numbers in this chapter; for example, Steps 4 and 9. Be sure you are not referencing the steps in the backout procedure.

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap (R-4987) must be worn and connected when handling circuit packs.



CAUTION:

Cable replacement and backplane repair require use of an antistatic wrist strap to prevent damage to the components connected to the backplane.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags

The following equipment is required for this procedure:

Number	Qty	Description
107952558	1	UN582 + 1 spare (if site stocks spares)
ED3T076-20,G50	1	Sync RS232C 50' max. cable
ED3T076-20,G61	1	Sync RS449 50' max. cable
ED3T079-10,G64	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of preliminary steps, a backout procedure, safe stop points, and the conversion procedure in used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- TN1839 to UN582 SDLC Conversion Backout Procedure
- Inhibit automatic maintenance requests
- Identify and record IOP controller for SDLC
- Safe Stop Point 2
- Set port switch to MTTYC not controlled by IOP being removed
- Remove IOP with ROS key
- Power down IOP
- Update SDLC and SDL status to UNEQIP
- Remove old TN74 from IOP
- Remove cables from old TN74
- Connect new UN582 cables for IOP
- Install UN582 SDLC circuit pack for IOP
- Update SDLC *ucb* values
- Power up IOP
- Update SDLC and SDL status from UNEQIP to GROW
- Restore IOP controller only
- Diagnose SDLCs for IOP
- Update SDLCs from GROW to OOS for IOP
- Backout Point 1
- Restore IOP using ROS/RST key
- Backout Point 2

- Soak changes for 15 minutes
- Set port switch to AUTO
- Activate IOP changes and exit RC
- Safe Stop Point 3
- Update SDLC *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the TN1839 to UN582 conversion procedure in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 45-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and ROP are connected to IOP 1 and that all IOPs are active.

5. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

6. Verify that IOP 0 and all units under IOP 0 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 7.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

7. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

8. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

9. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

10. Verify that the response message is displayed on the MTTY and printed on the ROP.

11. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS® switch, access Page **111**.
- For all other applications, access Page **102**.

12. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 0.

13. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

14. Verify that IOP 1 and all units under IOP 1 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 15.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

15. At the MTTY, test the port switch by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
16. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
17. At the MTTY, check the date and time by entering the appropriate input command
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

18. Verify that the response message is displayed on the MTTY and printed on the ROP.
19. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
20. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 1.
21. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **22**.
 - If **no**, go to Step **24**.
22. If IOP 2 is equipped, restore IOP 2 by entering the appropriate input command.
 - If MML, **RST:IOP=2:RAW,TLP;**
 - If PDS, **RST:IOP 2:RAW,TLP!**
23. Verify that IOP 2 and all units under IOP 2 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **24**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
24. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **25**.
 - If **no**, go to Step **28**.
25. If IOP 3 is equipped, restore IOP 3 by entering the appropriate input command.
 - If MML, **RST:IOP=3:RAW,TLP;**
 - If PDS, **RST:IOP 3:RAW,TLP!**

26. Verify that IOP 3 and all units under IOP 3 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 28.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

27. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "TN1839 to UN582 SDLC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

TN1839 to UN582 SDLC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the SDLC in this chapter. Read and understand the backout procedure before beginning the "TN1839 to UN582 SDLC Conversion Procedure."

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC not controlled by the IOP being in Step 2.
2. At Input/Output Processor Power Switch (IOPPS) TN1820, remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

 NOTE 1:

Performing Step 2 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

 NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 3.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** Light-Emitting Diode (LED) lights.

Where: a = the IOP being removed.

 NOTE 3:

Do **not** continue until this request has successfully completed.

3. At IOPPS TN1820, remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position. See Table 41-3 in Step 8 of the "TN1839 to UN582 SDLC Conversion Procedure" to determine the EQL.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

Where: a = the IOP being removed.
4. Unseat and remove the UN582 SDLC circuit pack using the EQL identified in Step 9 of the "TN1839 to UN582 SDLC Conversion Procedure."



CAUTION:

Do not insert the TN1839 SDLC at this time. Wait for cable changes to be completed.

5. Remove the Synchronous Data Link (SDL) cables from the UN582 SDLC. See Table 41-1 to determine the EQLs where cables should be removed.

Table 41-1. Backplane Cable EQLs

Port	TN1839	UN582
2	345	532
3	332	500

6. Reconnect the old SDL cables for the TN1839 SDLC using Table 41-1 and the tags attached while performing the "TN1839 to UN582 SDLC Conversion Procedure."
7. Reinstall the TN1839 circuit pack.
8. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

9. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 9.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 9.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 9.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

10. Update the SDLC unit control block (*ucb*) values.

UPDATE SDLC *ucb* VALUES PROCEDURE:

Table 41-2 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the TN1839.

Table 41-2. SDLC *ucb* Form Field Values

Field/Name	TN1839 Value	UN582 Value
27. mv	0x2	0x1
62. packcode	t183	u582
63. issue	01	2
64. version	90	` (blank)
65. cvaddr	0x5517	0xffff0

- 10.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

- 10.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 10.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 10.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 10.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 10.6. Enter **a**

Where: **a** = unit number of the SDLC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

10.7. Enter **c**

Response: The system displays **Change Field:**

10.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

10.9. Enter **a**

Where: **a** = original TN1839 port equipage value.



NOTE:

The original TN1839 equipage value is the number logged in Step **20.9** of the “TN1839 to UN582 SDLC Conversion Procedure.”

Response: The system displays **Change Field:**

10.10. Enter **27**

Response: The cursor moves to the **mv:** attribute.

10.11. Enter **0x1**

Response: The system displays **Change Field:**

10.12. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

10.13. Enter **t074**

Response: The system displays **Change Field:**

10.14. Enter **63**

Response: The cursor moves to the **issue:** attribute.

10.15. Enter **91**

Response: The system displays **Change Field:**

10.16. Enter **64**

Response: The cursor moves to the **version:** attribute.

10.17. Enter **20**

Response: The system displays **Change Field:**

10.18. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

10.19. Enter **0x7f00**

Response: The system displays **Change Field:**

10.20. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

10.21. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

10.22. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

11. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

11.1. Enter **trend**

Response: The system displays the **Transaction End** form and the cursor moves to the **tr_name:** attribute.

11.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

11.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

11.4. Enter **<**

Response: The ECD RC/V is completed.

12. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

13. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the MTTY or ROP output.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

14. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

15. Set both switches on port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
16. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

TN1839 to UN582 SDLC Conversion Procedure

Perform the following steps to convert a TN1839 SDLC circuit pack to a UN582 SDLC circuit pack in a 3B21D computer.

⇒ NOTE:

If procedures are needed to convert all of the TN74s in an office to UN582s, contact 3B/RTR Global CTS for customized instructions.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE 1:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ NOTE 2:

The "TN1839 to UN582 SDLC Conversion Procedure" must be performed using an RC/V terminal not controlled by the IOP that is removed from service.

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore";**
- If PDS, **RCV:MENU:RCVECD,DB "incore"!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Identify the required SDLC and SDL *ucb* values.

IDENTIFY REQUIRED SDLC AND SDL *ucb* VALUES PROCEDURE:

The controller and subdevices for the SDLC must be identified to complete this procedure. This section will identify the data to complete the procedure and verify the EQL from the "Required Data Collection" section.

- 4.1. At the RC/V terminal, enter **ucb**

Response: The *ucb* field is displayed.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 4.3. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 4.4. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 4.5. Enter **a**

Where: **a** = unit number of the SDLC recorded in the "Required Data Collection" section.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.6. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

46.cntrl_0:	IOP _____
36.down:	SDL _____
58.pcid:	PCID _____

4.7. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.8. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

4.9. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.10. Enter **SDL**

Response: The cursor moves to the **k_unit_number:** attribute.

4.11. Enter **a**

Where: *a* = unit number of the SDL previously recorded.

Response: The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

4.12. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

41.side:	SDL _____
57.option_name:	_____
59.pcsdid:	_____

4.13. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.14. Determine if a second SDL exists under the SDLC.

- If **yes**, continue to Step 4.15.
- If **no**, go to Step 4.20.

4.15. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

4.16. Enter **SDL**

Response: The cursor moves to the **k_unit_number:** attribute.

4.17. Enter *a*

Where: *a* = unit number of the second SDL.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

4.18. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

Record the values for the following:

57.option_name: _____
59.pcsdid: _____

4.19. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.20. Enter <

Response: The ECD RC/V is completed.

5. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 6.

SAFE STOP POINT 2 PROCEDURE:

- 5.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 5.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 5.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 5.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 5.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

6. Determine the correct IOP to remove from service by using the information acquired in Step 4.6.

- If **IOP 0** or **1**, continue to Step 7.
- If **IOP 2** or **3**, go to Step 8.

7. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).

For example,

- If **IOP 0**, set to ROP 1 and MTTYC 1.
 - If **IOP 1**, set to ROP 0 and MTTYC 0.
8. See Table 41-3 to determine the correct EQL for the IOP identified in Step 4.6.
- IOPPS EQL: _____

Table 41-3. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026

9. Table 41-4 should be used to verify the EQL for the SDLC circuit pack. Use the pcid (field 58) identified in Step 4.6 to determine the correct EQL for the circuit pack being replaced. The EQL should be identical to the one identified in the "Required Data Collection" section. Record the EQL in the space provided.

SDLC EQL: _____

Table 41-4. SDLC PCID to EQL Conversions

UCB PCID	PC #	IOP 0	IOP 1	IOP 2	IOP 3
0	00			11-040	62-040
1	01	19-102	45-102	11-048	62-048
2	02	19-110	45-110	11-056	62-056
3	03	19-118	45-118	11-064	62-064
4	10	19-130	45-130	11-072	62-072
5	11	19-138	45-138	11-080	62-080
6	12	19-146	45-146	11-088	62-088
7	13	19-154	45-154	11-096	62-096
8	20	28-094	53-094	11-108	62-108
9	21	28-102	53-102	11-116	62-116
10	22	28-110	53-110	11-124	62-124
11	23	28-118	53-118	11-132	62-132
12	30	28-130	53-130	11-140	62-140
13	31	28-138	53-138	11-148	62-148
14	32	28-146	53-146	11-156	62-156
15	33			11-164	62-164

10. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the MTTY and ROP of the MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).
11. At IOPPS TN1820 (see the EQL recorded in Step 8), remove the IOP from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ NOTE 1:

Performing Step 11 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ NOTE 2:

Wait for the **RQIP** light to extinguish before continuing to Step 12.

Response: The system displays **RMV IOP a COMPLETED**
At the IOPPS TN1820, the **OOS** LED lights.

⇒ NOTE 3:

Do **not** continue until this request has successfully completed.

12. At IOPPS TN1820 (see the EQL recorded in Step 8), remove power from the IOP by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

13. Unseat and remove the TN1839 SDLC circuit pack using the SDLC EQL recorded in Step 9.



CAUTION:

Do not insert the UN582 SDLC at this time. Wait for cable changes to be completed.

14. Verify EQLs and **tag all old SDL cables** in case a backout procedure is necessary later.



NOTE:

The ports on the UN582 circuit pack for the SDL cables do not have the same EQL as the TN1839 circuit pack. Use the *ucb* record for each SDL being removed to determine which port is used.

15. Remove the SDL cables from the TN1839 SDLC. Select the hardware for this application from Table 41-6 and the EQL from Table 41-5 to determine which cables to remove from the TN1839.

Table 41-5. Backplane Cable EQLs

Port	TN1839	UN582
2	345	532
3	332	500

Table 41-6. Remove SDL Cable from TN1839

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED5D517-30,G1	SDLC	Depends on port	Sync RS232C 50' max. cable
ED5D517-30,G4	SDLC	Depends on port	Sync RS449/RS422 V.36 50' max. cable
ED5D517-30,G5	SDLC	Depends on port	Sync RS449/RS422 V.36 150' max. cable

16. Connect the new SDL cable for the UN582 SDLC. See Table 41-7 to determine which cable applies for this hardware application and Table 41-5 to find the correct EQL for the UN582.

Table 41-7. Add New SDL Cable to UN582

ED,G	From		To
	Unit	EQL	Cabinet/Unit
ED3T076-20,G50	SDLC	Depends on port	Sync RS232C 50' max. cable
ED3T076-20,G61	SDLC	Depends on port	Sync RS449/RS422 V.36 50' max. cable
ED3T076-20,G65	SDLC	Depends on port	Sync RS449/RS422 V.36 150' max. cable

17. Install the UN582 SDLC circuit pack and replace the designation strip.
18. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

19. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 19.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 19.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 19.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

20. Update the SDLC *ucb* values.

UPDATE SDLC *ucb* VALUES PROCEDURE:

Table 41-8 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582. Table 41-9 indicates the equipage value that needs to be updated on the *ucb* form in the ECD to reflect the correct values for the UN582.

Table 41-8. SDLC *ucb* Form Field Values

Field/Name	TN1839 Value	UN582 Value
27. mv	0x2	0x1
62. packcode	t183	u582
63. issue	01	2
64. version	90	` (blank)
65. cvaddr	0x5517	0xffff0

Table 41-9. Port Equipage Values

UN582 Port	Equipage Value
No port	0x0
Port 2	0x10
Port 3	0x20
Using both ports	0x30

20.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

20.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

20.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

20.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

20.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

20.6. Enter **a**

Where: **a** = unit number of the SDLC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

20.7. Enter **c**

Response: The system displays **Change Field:**

20.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

20.9. Log the existing TN1839 equipage value for reference in the event that a backout is necessary.

TN1839 equipage: _____

20.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 41-9.

Response: The system displays **Change Field:**

20.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

20.12. Enter **0x2**

Response: The system displays **Change Field:**

20.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

20.14. Enter **u582**

Response: The system displays **Change Field:**

20.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

20.16. Enter **4**

Response: The system displays **Change Field:**

20.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

20.18. Enter **0**

Response: The system displays **Change Field:**

20.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

20.20. Enter **0xffff0**

Response: The system displays **Change Field:**

20.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

20.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

20.23. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

21. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

21.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

21.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

21.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

21.4. Enter <

Response: The ECD RC/V is completed.

22. At IOPPS TN1820, restore power to IOP a by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

23. At the MTTY, restore IOP a controller **only** to service by entering the appropriate input command.

- If MML, **RST:IOP=a,CONT;**
- If PDS, **RST:IOP a,CONT!**

Where: a = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**

24. At the MTTY, diagnose the SDLC by entering the appropriate input command.

- If MML, **DGN:SDLC=a,RAW,TLP;**
- If PDS, **DGN:SDLC a,RAW,TLP!**

Where: a = unit number of the SDLC.

Response: The system displays **DGN SDLC a ATP MESSAGE COMPLETE**



NOTE:

Do **not** continue until this request has successfully completed.

25. Did the SDLC pass diagnostics?

- If **yes**, go to Step 27.
- If **no**, continue to Step 25.1.

TROUBLESHOOTING PROCEDURE:

- 25.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP a is extinguished.
- If **yes**, continue to Step **25.2**.
 - If **no**, repeat Step **22**.
- 25.2. Determine if the cable connections are correct using Steps **15** and **16**.
- If **yes**, continue to Step **25.3**.
 - If **no**, make the necessary cable changes.
- 25.3. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **18** and reviewing Tables 41-8 and 41-9.
- If **yes**, continue to Step **25.4**.
 - If **no**, return to Step **18** and repeat the changes to the *incore* database.
- 25.4. Determine if a spare UN582 circuit pack is available.
- If **yes**, repeat Steps **10** through **24** to install the spare UN582 circuit pack.
 - If **no**, continue to Step **26**.
-
-

26. BACKOUT POINT 1: TN1839 TO UN582 SDLC CONVERSION**CAUTION:**

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN1839 to UN582 SDLC Conversion Backout Procedure" before the main conversion procedure.
 - If **no**, continue to Step **27**.
27. At IOPPS TN1820 (see the IOPPS EQL recorded in Step **8**), operate the **ROS/RST** switch to the **RST** position.

Response: The **OOS** LED at IOP a extinguishes.
The system displays **REPT POWER RESTORED IOP a** followed by **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.



NOTE 1:

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE 2:

DO NOT STOP DIAGNOSTICS ONCE THEY HAVE STARTED. If diagnostics are stopped before the MTTYC is diagnosed, the update for the conversion will not occur.



NOTE 3:

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

28. Did the SDLC and IOP restore successfully?

- If **yes**, go to Step 30.
- If **no**, continue to Step 28.1.

TROUBLESHOOTING PROCEDURE:

28.1. Determine if the cable connections are correct using Steps 15 and 16.

- If **yes**, continue to Step 28.2.
- If **no**, make the necessary cable changes.

28.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 18 and reviewing Tables 41-8 and 41-9.

- If **yes**, continue to Step 29.
 - If **no**, return to Step 18 and repeat the changes to the *incore* database.
-
-

29. **BACKOUT POINT 2: TN1839 TO UN582 SDLC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the "TN1839 to UN582 SDLC Conversion Backout Procedure" before the main conversion procedure.
 - If **no**, continue to Step 30.
30. Soak the changes for 15 minutes before performing the remaining steps.
31. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
32. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.
- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

33. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 33.1. At the RC/V terminal, enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to the **copy_inc_to_disk:YES** attribute.

- 33.2. Press the <CR> key.

Response: The system prompts for the action desired.

- 33.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 33.4. Enter **<**

Response: The ECD RC/V exits.

34. **SAFE STOP POINT 3**

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 40.

SAFE STOP POINT 2 PROCEDURE:

- 34.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 34.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 34.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 34.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 34.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-

35. At the RC/V terminal, update the ECD for *rootdmly* for the SDLC. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

36. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 36.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 36.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 36.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

37. Update the SDLC *ucb* values for *rootdmly*.

UPDATE SDLC *ucb* VALUES PROCEDURE:

- 37.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 37.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 37.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 37.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 37.5. Enter **SDLC**

Response: The cursor moves to the **k_unit_number:** attribute.

37.6. Enter **a**

Where: **a** = unit number of the SDLC.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

37.7. Enter **c**

Response: The system displays **Change Field:**

37.8. Enter **22**

Response: The cursor moves to the **equipage:** attribute.

37.9. Log the existing TN1839 equipage value for reference in the event that a backout is necessary.

TN1839 equipage: _____

37.10. Enter **a**

Where: **a** = appropriate port equipage value from Table 41-9.

Response: The system displays **Change Field:**

37.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

37.12. Enter **0x54**

Response: The system displays **Change Field:**

37.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

37.14. Enter **u582**

Response: The system displays **Change Field:**

37.15. Enter **63**

Response: The cursor moves to the **issue:** attribute.

37.16. Enter **2**

Response: The system displays **Change Field:**

37.17. Enter **64**

Response: The cursor moves to the **version:** attribute.

37.18. Enter **0**

Response: The system displays **Change Field:**

37.19. Enter **65**

Response: The cursor moves to the **cvaddr:** attribute.

37.20. Enter **0xffff0**

Response: The system displays **Change Field:**

37.21. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

37.22. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

37.23. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

38. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

38.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

38.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

38.3. Enter *****

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

38.4. Enter <

Response: The ECD RC/V is completed.

39. Copy backup partitions.



NOTE:

See Appendix A for the procedure to copy backup partitions.

40. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

41. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

42. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

UN33 to UN933 SCSDC Conversion

42

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UN33 to UN933 SCSDC Conversion

42

Introduction

This chapter describes the procedure needed to convert a single UN33 Scanner and Signal Distributor Controller (SCSDC) circuit pack to a UN933 SCSDC circuit pack in a 3B21D computer. The UN33 to UN933 conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor/Disk File Controller (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

⇒ NOTE:

If procedures are needed to convert all of the UN33s in an office to UN933s, contact 3B/RTR Global Customer Technical Support (CTS) for customized instructions.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire document before starting.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Tests (diagnostics and other tests as indicated in the “Preliminary Steps” section) should have been run on the IOPs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the “Required Tools and Equipment” section for specific information.

Required Data Collection

The SCSDC number and its Equipment Location (EQL) must be known before beginning this procedure. This information should be recorded in the spaces that follow. If only the EQL is known, the SCSDC number can be determined by locating its IOP controller and PC number from Table 42-1 (Step 6) and referencing the **121** Page (if available) or office records.

Once the SCSDC number is identified, all additional data collection can be retrieved from the database by performing Step 4 of the “UN33 to UN933 SCSDC Conversion Procedure” in this chapter.

⇒ NOTE:

There are multiple step numbers in this chapter; for example, Steps 4 and 6. Be sure you are not referencing the steps in the backout procedure.

SCSDC # _____ and SCSDC EQL # _____

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap (R4987) must be worn and connected when handling circuit packs.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R-4987	Antistatic wrist strap
R-5158, Det. 2	Static-free bags

The following equipment is required for this procedure.

Comcode Number	Qty	Description
107952558	1	UN933 + 1 spare (if site stocks spares)
ED3T079-10,G50	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion procedure was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after backup disk partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to backout hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of preliminary steps, a backout procedure, safe stop points, and the conversion procedure used in this chapter.

- Preliminary Steps
- Safe Stop Point 1
- UN33 to UN933 SCSDC Conversion Backout Procedure
- Inhibit automatic maintenance requests
- Identify IOP/PCID of SCSDC being replaced
- Safe Stop Point 2
- Remove and power down IOP
- Replace UN33 with UN933 in IOP
- Update SCSDC *ucb* values
- Power up and restore IOP controller
- Diagnose SCSDC
- Backout Point 1
- Restore IOP
- Backout Point 2
- Soak changes for 15 minutes
- Activate changes and exit RC
- Safe Stop Point 3
- Update SCSDC *ucb* values for *rootdmly*
- Update backup partitions and generate system backup tapes.

Preliminary Steps

The following preliminary steps must be performed before beginning the “UN33 to UN933 SCSDC Conversion Procedure” in this chapter. Begin by observing the status of all equipment. If trouble indicators are present, the problem should be resolved by craft personnel.

If a problem cannot be resolved, determine if the problem will impact the system or the conversion procedure. If there is no impact, log the problem and continue. If there is impact, **do not** attempt the conversion procedure until the problem is resolved.

1. Inhibit diagnostics.

INHIBIT DIAGNOSTICS PROCEDURE:

- 1.1. At the Maintenance Terminal (MTTY), inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 1.2. Inhibit the automatic diagnostics in all application office equipment during this procedure by entering the appropriate commands.
-
-

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that both switches on the port switch circuit pack UN377 (EQL 045-186) are in the **AUTO** position. If not, operate both switches to the **AUTO** position.
4. At the Common Processor Display Page (CPDP), verify that the MTTY and Receive-Only Printer (ROP) are connected to IOP 1 and that all IOPs are active.

5. At the MTTY, restore IOP 0 by entering the appropriate input command.

- If MML, **RST:IOP=0:RAW,TLP;**
- If PDS, **RST:IOP 0:RAW,TLP!**

Response: The system displays **RST IOP 0 COMPLETED**

6. Verify that IOP 0 and all units under IOP 0 diagnose **ATP** and restore to service successfully?

- If **yes**, continue to Step 7.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

7. At the MTTY, test the port switch by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

8. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.

9. At the MTTY, check the date and time by entering the appropriate input command.

- If MML, **OP:CLK;**
- If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

10. Verify that the response message is displayed on the MTTY and printed on the ROP.

11. At the MTTY, display the CPDP by entering the appropriate Poke command.

- If 5ESS® switch, access Page **111**.
- For all other applications, access Page **102**.

12. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 0.

13. At the MTTY, restore IOP 1 by entering the appropriate input command.

- If MML, **RST:IOP=1:RAW,TLP;**
- If PDS, **RST:IOP 1:RAW,TLP!**

Response: The system displays **RST IOP 1 COMPLETED**

14. Verify that IOP 1 and all units under IOP 1 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 15.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

15. At the MTTY, test the port switch by entering the appropriate input command.
 - If MML, **SW:PORTSW;**
 - If PDS, **SW:PORTSW!**
16. At the EAI page, observe that the MTTY status counter is cycling digits 0 through 9.
17. At the MTTY, check the date and time by entering the appropriate input command.
 - If MML, **OP:CLK;**
 - If PDS, **OP:CLK!**

Response: The system displays **OP CLK COMPLETED**

18. Verify that the response message is displayed on the MTTY and printed on the ROP.
19. At the MTTY, display the CPDP by entering the appropriate Poke command.
 - If 5ESS switch, access Page **111**.
 - For all other applications, access Page **102**.
20. At the CPDP, verify that the MTTY and ROP are active and connected to IOP 1.
21. Is IOP 2 equipped in the system?
 - If **yes**, continue to Step **22**.
 - If **no**, go to Step **24**.
22. If IOP 2 is equipped, restore IOP 2 by entering the appropriate input command.
 - **RST:IOP=2:RAW,TLP;**
 - **RST:IOP 2:RAW,TLP!**
23. Verify that IOP 2 and all units under IOP 2 diagnose **ATP** and restore to service successfully.
 - If **yes**, continue to Step **24**.
 - If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.
24. Is IOP 3 equipped in the system?
 - If **yes**, continue to Step **25**.
 - If **no**, go to Step **27**.
25. If IOP 3 is equipped, restore IOP 3 by entering the appropriate input command.
 - **RST:IOP=3:RAW,TLP;**
 - **RST:IOP 3:RAW,TLP!**

26. Verify that IOP 3 and all units under IOP 3 diagnose **ATP** and restore to service successfully.

- If **yes**, continue to Step 27.
- If **no**, refer to 254-303-102, *Trouble Clearing Tasks*, to clear the trouble.

27. **SAFE STOP POINT 1**

The conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue without stopping, review the backout procedure in the next section before beginning the "UN33 to UN933 SCSDC Conversion Procedure."

SAFE STOP POINT 1 PROCEDURE:

- 27.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 27.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 27.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 27.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

- 27.5. Inhibit automatic diagnostics on all application office equipment by entering the appropriate commands.
-
-

28. **STOP! YOU HAVE COMPLETED THE PRELIMINARY STEPS PROCEDURE.**

UN33 to UN933 SCSDC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the SCSDC in this chapter. Read and understand the backout procedure before beginning the "UN33 to UN933 SCSDC Conversion Procedure."

1. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTY and ROP of MTTYC not controlled by the IOP being removed in next step.
2. At the corresponding Input/Output Processor Power Switch (IOPPS) TN1820, remove IOP a from service by operating the **ROS/RST** switch to the **ROS** position.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** Light Emitting Diode (LED) lights.

Where: a = IOP of the SCSDC that is being backed out.

⇒ **NOTE 1:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

3. At IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

4. Replace the UN933 SCSDC circuit pack with the original UN33 SCSDC at IOP a.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

REPLACE SCSDC CIRCUIT PACK AT IOP a PROCEDURE:

- 4.1. Unseat and remove the UN933 SCSDC circuit pack using the EQL identified in Step 7 of the "UN33 to UN933 SCSDC Conversion Procedure."
 - 4.2. Install the UN33 SCSDC circuit pack.
-
-

5. At the RCV terminal, invoke the *incore* database low-level mode RCV by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

6. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 6.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 6.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

6.4. Enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

6.5. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

6.6. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

6.7. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

6.8. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

6.9. Enter **a**

Where: **a** = unit number of the SCSDC that is being backed
out.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

6.10. Enter **c**

Response: The system displays **Change Field:**

6.11. Enter **27**

Response: The cursor moves to the **mv:** attribute.

6.12. Enter **0x1**

Response: The system displays **Change Field:**

6.13. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

6.14. Enter ' (**blank**)

Response: The system displays **Change Field:**

6.15. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

6.16. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

6.17. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

6.18. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

6.19. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

6.20. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

6.21. Enter <

Response: The ECD RC/V is completed.

7. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

8. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by observing the MTTY or ROP output.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

9. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.
- If MML, **ALW:DMQ:SRC=ALL;**
 - If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

10. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
11. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

UN33 to UN933 SCSDC Conversion Procedure

Perform the following steps to convert a UN33 SCSDC circuit pack to a UN933 SCSDC circuit pack in a 3B21D computer.

⇒ **NOTE:**

If procedures are needed to convert all of the UN33s in an office to UN933s, contact 3B/RTR Global CTS for additional instructions.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.
 - If MML, **INH:DMQ:SRC=ALL;**
 - If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ **NOTE 1:**

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

⇒ **NOTE 2:**

The "UN33 to UN933 SCSDC Conversion Procedure" must be performed using an RC/V terminal not controlled by the IOP that is removed from service.

2. At the RC/V terminal, query for a list of all DMQ requests by entering the appropriate input command.
 - If MML, **OP:DMQ;**
 - If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding **OP DMQ COMPLETED**

⇒ **NOTE:**

Any diagnostics that are running or in the queue should be left to continue until completion.

3. At the MTTY, invoke the *incore* database low-level mode RC/V using the command mode by entering the appropriate input command.
 - If MML, **RCV:MENU:DATA,RCVECD,DB="incore";**
 - If PDS, **RCV:MENU:RCVECD,DB "incore"!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Identify the required SCSDC unit control block (*ucb*) values.

IDENTIFY REQUIRED SCSDC *ucb* VALUES PROCEDURE:

This section will identify the data to complete the procedure and verify the EQL that was recorded earlier in the “Required Data Collection” section.

- 4.1. At the RC/V terminal, enter **ucb**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 4.2. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 4.3. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 4.4. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 4.5. Enter *a*

Where: *a* = unit number of the SCSDC recorded in the “Required Data Collection” section.

Response:
The system completes the remainder of the form and displays **Enter Review, Validate, screen#, or Print:**

- 4.6. Enter **3**

Response: The system completes Screen 3 of the form and displays **Enter Review, Validate, screen#, or Print:**

- 4.7. Record the values for the following:

46.cntrl_0: **IOP** _____
58.pcid: **PCID** _____

- 4.8. Verify that the *pcid* value (PC number) corresponds with the EQL value, if noted, in the “Required Data Collection” section. See Table 42-1 for *pcid* to EQL conversions.

4.9. Press the <CR> key.

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

4.10. Enter <

Response: The cursor moves to the **Enter Form Name:** attribute.

4.11. Enter <

Response: The ECD RC/V is completed.

5. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 6.

SAFE STOP POINT 2 PROCEDURE:

5.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

5.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

5.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

5.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

6. Verify the appropriate data for the SCSDC being replaced using Table 42-1 and the **121** Page (if available).
 - Identify the pcid for the *ucb* record in the ECD.
 - Identify the PC number which can be used to determine the SCSDC number from the **121** Page (if available).
 - Identify the EQL.

Table 42-1. SCSDC PCID to EQL Conversions

UCB PCID	PC #	IOP 0	IOP 1	IOP 2	IOP 3	
0	00			11-040	62-040	
1	01	19-102	45-102	11-048	62-048	
2	02	19-110	45-110	11-056	62-056	
3	03	19-118	45-118	11-064	62-064	
4	10	19-130	45-130	11-072	62-072	
5	11	19-138	45-138	11-080	62-080	
6	12	19-146	45-146	11-088	62-088	
7	13	19-154	45-154	11-096	62-096	
8	20	28-094	53-094	11-108	62-108	
9	21	28-102	53-102	11-116	62-116	
10	22	28-110	53-110	11-124	62-124	
11	23	28-118	53-118	11-132	62-132	
12	30	28-130	53-130	11-140	62-140	
13	31	28-138	53-138	11-148	62-148	
14	32	28-146	53-146	11-156	62-156	
15	33			11-164	62-164	

7. Record the EQL of the SCSDC to be replaced in the space provided:

EQL of SCSDC to be replaced: _____



CAUTION:

The EQL recorded in Step 7 should be identical to the one recorded in the "Required Data Collection" section. If this is not the case, seek the next level of technical support before attempting to continue with this conversion procedure.

8. For the IOP identified in Step 4.7, determine the correct EQL of the IOPPS where power will be removed to the SCSDC being replaced by using Table 42-2.

Table 42-2. IOPPS EQLs

IOP	IOPPS	EQL
IOP 0	TN1820	19-080
IOP 1	TN1820	45-080
IOP 2	TN1820	11-026
IOP 3	TN1820	62-026

9. Record the EQL of the appropriate IOPPS in the space provided:
EQL of IOPPS: _____
10. Determine the correct IOP to remove from service by using the information acquired in Step 4.7.
- If **IOP 0** or **1**, continue to Step 11.
 - If **IOP 2** or **3**, go to Step 12.
11. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTY and ROP of MTTYC controlled by IOP *b* (the IOP opposite IOP *a*).
12. Verify the correct IOPPS for IOP *a* by using Table 42-2 in Step 8. At IOPPS TN1820, remove IOP *a* from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

Performing Step 12 prevents automatic restoral of the IOP when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before continuing to the next step.

Response: The system displays **RMV IOP a COMPLETED**
At IOPPS TN1820, the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

13. At IOPPS TN1820, remove power from IOP a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP a**
At IOPPS TN1820, the **OFF** LED lights.

14. Replace UN33 SCSDC circuit pack with UN933 SCSDC circuit pack at IOP a.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

REPLACE SCSDC a CIRCUIT PACK AT IOP a PROCEDURE:

- 14.1. Unseat and remove the UN33 SCSDC circuit pack using the EQL identified in Step 7.
- 14.2. Install the UN933 SCSDC circuit pack and replace the designation strip.
-
-

15. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

16. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 16.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 16.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 16.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

17. Update the SCSDC *a ucb* values.

UPDATE SCSDC *a ucb* VALUES PROCEDURE:

Table 42-3 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN933.

Table 42-3. SCSDC *ucb* Form Field Values

Field/Name	UN33 Value	UN933 Value
27. mv	0x1	0x2
62. packcode	(blank)	u933

- 17.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation
I=Insert R=Review U=Update D=Delete:**

- 17.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 17.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 17.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

- 17.5. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

- 17.6. Enter **a**

Where: **a** = unit number of the SCSDC recorded in the
"Required Data Collection" section.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, or Print:**

17.7. Enter **c**

Response: The system displays **Change Field:**

17.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

17.9. Enter **0x2**

Response: The system displays **Change Field:**

17.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

17.11. Enter **u933**

Response: The system displays **Change Field:**

17.12. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:.**

17.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

17.14. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

18. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

18.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

18.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

18.3. Enter *

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

18.4. Enter <

Response: The ECD RC/V is completed.

19. At IOPPS TN1820, restore power to IOP a by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position to power up IOP a.

Response: The system displays **REPT POWER RESTORED IOP a**
At IOPPS TN1820 in IOP a, the **OFF** LED extinguishes.

20. Restore IOP a controller only.

RESTORE IOP CONTROLLER ONLY PROCEDURE:

- 20.1. At the MTTY, restore IOP to service by entering the appropriate input commands.

- If MML, **RST:IOP=a,CONT;**
- If PDS, **RST:IOP a,CONT!**

Where: *a* = unit number of the IOP.

Response: The system displays **RST IOP a COMPLETED**

21. At the MTTY, diagnose the replaced SCSDC by entering the appropriate input command.

- If MML, **DGN:SCSDC=b,RAW,TLP;**
- If PDS, **DGN:SCSDC b,RAW,TLP!**

Where: *b* = unit number of the SCSDC.

Response: The system displays **DGN SCSDC b ATP MESSAGE COMPLETE**

⇒ NOTE:

Do **not** continue until this request has successfully completed.

22. Did the SCSDC pass diagnostics?

- If **yes**, go to Step 24.
- If **no**, continue to Step 22.1.

TROUBLESHOOTING PROCEDURE:

22.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP a is extinguished.

- If **yes**, continue to Step 22.2.
- If **no**, repeat Step 19.

22.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 15 and Table 42-3.

- If **yes**, continue to Step 22.3.
- If **no**, return to Step 15 and repeat the changes to the *incore* database.

22.3. Determine if a spare UN933 circuit pack is available.

- If **yes**, return to Step 12 and repeat the steps to install the spare UN933 circuit pack.
 - If **no**, continue to Step 23.
-
-

23. **BACKOUT POINT 1: UN33 TO UN933 SCSDC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “UN33 to UN933 SCSDC Conversion Backout Procedure” before the main conversion procedure.
- If **no**, continue to Step 24.

24. At IOPPS TN1820, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST IOP a COMPLETED** followed by **RST... COMPLETED** for each unit under IOP a.

⇒ **NOTE 1:**

IOP a and all units controlled by IOP a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the MTTY and ROP output.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN IOP a ATP MESSAGE COMPLETE**

25. Did the SCSDC and IOP restore successfully?

- If **yes**, go to Step 27.
- If **no**, continue to Step 25.1.

TROUBLESHOOTING PROCEDURE:

25.1. Determine if the **OFF** LED on the TN1820 circuit pack on IOP a is extinguished.

- If **yes**, continue to Step 25.2.
- If **no**, repeat Step 19.

25.2. Determine if a spare UN933 circuit pack is available.

- If **yes**, return to Step 12 and repeat the steps to install the spare UN933 circuit pack.
 - If **no**, continue to Step 26.
-
-

26. **BACKOUT POINT 2: UN33 TO UN933 SCSDC CONVERSION**



CAUTION:

A backout procedure should be implemented only as a last resort. If a backout is necessary, always escalate to the next level of support and be sure you are executing the correct procedure by checking the Backout Point number.

Determine if it is necessary to back out changes made to the system at this point.

- If **yes**, escalate to the next level of technical support and see the “UN33 to UN933 SCSDC Conversion Backout Procedure” before the main conversion procedure.
- If **no**, continue to Step 27.

27. Soak the changes for 15 minutes before performing the remaining steps.
28. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.
29. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command:
 - If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

30. Activate and exit Recent Change (RC).

ACTIVATE AND EXIT RC PROCEDURE:

- 30.1. Enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to **copy_inc_to_disk:YES** attribute.

- 30.2. Press the <CR> key.

Response: The system prompts for the action desired

- 30.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 30.4. Enter **<**

Response: The ECD RC/V exits.

31. SAFE STOP POINT 3

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 32.

SAFE STOP POINT 3 PROCEDURE:

- 31.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

- 31.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 31.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 31.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

32. At the RC/V terminal, update the ECD for *rootdmly* for SCSDC a. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

33. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 33.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 33.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 33.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

34. Update the SCSDC *a ucb* values for *rootdmly*.

UPDATE SCSDC *a ucb* VALUES FOR *rootdmly* PROCEDURE:

- 34.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

- 34.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

- 34.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 34.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

34.5. Enter **SCSDC**

Response: The cursor moves to the **k_unit_number:** attribute.

34.6. Enter **a**

Where: **a** = unit number of the SCSDC recorded in the
"Required Data Collection" section.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, or Print:**

34.7. Enter **c**

Response: The system displays **Change Field:**

34.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

34.9. Enter **0x2**

Response: The system displays **Change Field:**

34.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

34.11. Enter **u933**

Response: The system displays **Change Field:**

34.12. Press the <CR> key.

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,
Validate, or Print:**

34.13. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

34.14. Enter **<**

Response: The cursor moves to the **Enter Form Name:**
attribute.

35. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 35.1. At the RC/V terminal, enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 35.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 35.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 35.4. Enter <

Response: The ECD RC/V is completed.

36. Copy backup partitions.

 NOTE:

See Appendix A for the procedure to copy backup partitions.

37. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

38. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

39. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

**UN373/TN2116/410AA to UN580B
DFC Conversion**

43

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UN373/TN2116/410AA to UN580B DFC Conversion

43

Introduction

This chapter describes the procedure needed to convert a UN373/TN2116/410AA Disk File Controller (DFC) to a UN580B DFC circuit pack in a 3B21D computer. The UN373/TN2116/410AA to UN580B conversion, as part of the 3B21D/Real-Time Reliable (RTR) Mixed Input/Output Processor (IOP/DFC) Conversion and Testing feature, is supported in RTR Release 21.15 and later releases.

If problems are encountered during this procedure, contact the next level of technical support. Read through this entire procedure before starting.

Prerequisite Conditions

The following initial conditions must exist in the system before starting this procedure.

- All 3B21D computer hardware should be either active or standby.
- The system is currently running on the primary file systems.
- No software update activity, growth procedures, or other conversion procedures should be taking place while performing this procedure.
- Diagnostics and other tests should have been run on the DFCs within the last 48 hours with an All Tests Passed (ATP) result.
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, Peripheral Controller (PC) recoveries, or power problems.
- The root Equipment Configuration Database (ECD) must be consistent with the *incore* ECD.
- This procedure assumes that a Recent Change and Verify (RC/V) terminal is available at all times.
- Ensure that the required circuit packs (including spare packs) and cables are available for the conversion. See the "Required Tools and Equipment" section for specific information.

References

The following information products must be available for reference during this procedure.

- 254-303-101, *Routine Maintenance Tasks Manual*
- 254-303-104, *Recent Change and Verify Manual*
- 254-303-106, *System Maintenance Manual*.

ESD Precautions

Physical access to the backplane and associated connectors must be treated in the same manner as circuit pack handling. It is imperative that anyone handling system circuit packs be aware of, and follow, the guidelines for circuit pack handling. All precautions regarding Electrostatic Discharge (ESD) must be carefully followed.

When handling circuit packs from units, follow all ESD precautions and place the circuit packs in R-5158, Det. 2 static-free bags (RMAC-R1629741) or equivalent.



CAUTION:

In order to protect against ESD, a properly grounded antistatic wrist strap (R4987) must be worn and connected when handling circuit packs.

Required Tools and Equipment

The following installation tools are required for this procedure:

Order Number	Description
R4987	Antistatic wrist strap
R5158, Det. 2	Static-free bags

The following equipment is required for this procedure.

Comcode Number	Qty	Description
107831737	2	UN580B + 1 spare (if site stocks spares)
ED3T079-10,G63	2	Designation labels

Description of Safe Stop Points and Backout Procedures

Safe Stop Points should be used only when the system is fully functional. These points are provided at approximately 4-hour intervals for procedures that exceed 6 hours. Safe Stop Points provide an opportunity for craft personnel to safely pause a procedure for a few minutes or overnight if necessary. They also provide a reference point within the main procedure when backout procedures are necessary.

Backout procedures are the actions taken to return the processor to the original operating configuration before the conversion was attempted.



CAUTION:

Problems encountered while attempting to back out can be just as difficult to resolve as any problems encountered while executing the procedure. Therefore, implement backout procedures only as a last resort and escalate to the next level of technical support before beginning a backout procedure.

Backout procedures should not be executed after the backup partitions have been copied per Appendix A, "Copying to Backup Partitions." Normal troubleshooting techniques should be used after the procedure in Appendix A has been performed. Therefore, craft personnel must be certain that new circuit packs are not causing any system degradation prior to updating the backup disk copy of the ECD.

After each soak period, the completed *incore* database changes are activated to disk. This ensures that the associated disk copy of the database will match the current successfully soaked hardware configuration. Procedures to back out the *incore* database changes are provided before the main conversion procedure. Additional instructions required to back out hardware changes are also provided. These procedures should be read and understood before beginning the conversion procedure.



CAUTION:

*For emergency backout of the disk copy of the database, the system must be booted with Emergency Action Interface (EAI) Poke 30, **Backup Root**, followed by EAI Poke 53 (**Boot+ECD**).*

Procedure Overview

The following is an overview of preliminary steps, a backout procedure, safe stop points, and the conversion procedure used in this chapter.

- UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure
- Inhibit DMQ requests
- Check DFC 0 and 1 for autonomous 200 errors
- Remove and test DFC 1 community with CU 0 active
- Remove and test DFC 1 community with CU 1 active
- Remove DFC 1 with ROS switch
- Power down DFC 1
- Update DFC 1 *ucb* values
- Remove old TN2116, UN373, and 410AA DFC circuit packs
- Install new UN580B DFC circuit pack
- Power up DFC 1
- Restore and test new UN580B DFC 1 with CU 1 active
- Backout Point 1
- Test new UN580B DFC 1 with CU 0 active
- Restore DFC 1 using RST switch
- Soak the changes for 30 minutes
- Activate DFC 1 changes and exit Recent Change and Verify (RCV)
- Safe Stop Point 1
- Remove DFC 0 with ROS switch
- Power down DFC 0
- Update DFC 0 *ucb* values
- Remove old TN2116, UN373, and 410AA DFC circuit packs
- Install new UN580B DFC circuit pack
- Power up DFC 0

- Restore and test new UN580B DFC 0 with CU 1 active
- Backout Point 2
- Test new UN580B DFC 0 with CU 0 active
- Restore DFC 0 using RST switch
- Soak the changes for 30 minutes
- Activate DFC 0 changes and exit RC
- Safe Stop Point 2
- Update DFC 0 and 1 *ucb* values for *rootdmly*
- Allow DMQ requests
- Update backup partitions and generate system backup tapes.

UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure

The backout procedure returns the processor to the original operating configuration before the conversion is attempted. This procedure is required to back out the changes made to the SCSDC in this chapter. Read and understand the backout procedure before beginning the "UN373/TN2116/410AA to UN580B Conversion Procedure."

⇒ NOTE 1:

It is **very important** to review and understand this section before attempting to perform the DFC conversion procedure.

⇒ NOTE 2:

See Table 43-1 (Step **19**) of the conversion procedure for the correct DFC power switch Equipment Locations (EQLs).

1. At the UN580B circuit pack, remove DFC a from service by operating the **ROS/RST** switch to the **ROS** position.

Where: a = unit number of the DFC being removed (DFC 0 or 1).

Response: The system displays **RMV DFC a COMPLETED**
At the UN580B circuit pack, the **OOS** Light-Emitting Diode (LED) lights.

⇒ NOTE:

Do **not** continue until this request has successfully completed.

2. At the corresponding UN580B circuit pack, remove power from DFC a by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED DFC a**
At the corresponding UN580B circuit pack, the **OFF** LED lights.

3. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

■ If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**

■ If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

4. Prepare a transaction block.

PREPARE A TRANSACTION BLOCK PROCEDURE:

4.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

4.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

4.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

5. Update the DFC a unit control block (*ucb*) values.

⇒ NOTE:

See Tables 43-2 through 43-5 to review the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the original UN373/TN2116/410AA DFC a and subunits.

UPDATE DFC a *ucb* VALUES PROCEDURE:

5.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

5.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

5.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

5.6. Enter **a**

Where: **a** = unit number of the DFC being removed (DFC 0 or 1).

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

5.7. Enter **c**

Response: The system displays **Change Field:**

5.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

5.9. Enter **0x2**

Response: The system displays **Change Field:**

5.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

5.11. Enter **u373**

Response: The system displays **Change Field:**

5.12. Enter **64**

Response: The cursor moves to the **version:** attribute.

5.13. Enter **8**

Response: The system displays **Change Field:**

5.14. Enter **66**

Response: The cursor moves to the **u_model:** attribute.

5.15. Enter **8**

Response: The system displays **Change Field:**

5.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

5.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

5.18. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.19. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.20. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

5.21. Enter **a**

Where: **a** is one of the Small Computer System Interface (SCSI) Buses (SBUSs) controlled by DFC **a**.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

5.22. Enter **c**

Response: The system displays **Change Field:**

5.23. Enter **27**

Response: The cursor moves to the **mv:** attribute.

5.24. Enter **0x2**

Response: The system displays **Change Field:**

5.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

5.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

5.27. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.28. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.29. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

5.30. Enter *b*

Where: *b* is the other SBUS controlled by DFC *a*.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

5.31. Enter **c**

Response: The system displays **Change Field:**

5.32. Enter **27**

Response: The cursor moves to the **mv:** attribute.

5.33. Enter **0x2**

Response: The system displays **Change Field:**

5.34. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

5.35. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

5.36. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

5.37. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

5.38. Enter **MHD**

Response: The cursor moves to the **k_unit_number:** attribute.

5.39. Enter **a**

Where: *a* represents each Moving Head Disk (MHD) under SBUS *a* and *b* controlled by DFC *a* that needs the *ucb* form *mv* value backed out and replaced by the original value. This will be done on a per MHD unit basis.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

5.40. Enter **c**

Response: The system displays **Change Field:**

5.41. Enter **27**

Response: The cursor moves to the **mv:** attribute.



NOTE:

See Tables 43-4 and 43-5 (Step **24**) of the main conversion procedure for the original MHD *ucb* form *mv* value verification.

5.42. Enter **0x2** or **0x12**

Response: The system displays **Change Field:**

5.43. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

5.44. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

5.45. Repeat Steps **5.36** through **5.45** until **all** MHDs under DFC *a* have the *mv* value backed out and replaced with the original *mv* value. Once you have changed **all** MHDs under DFC *a*, continue to Step **5.46**.

5.46. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

6. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 6.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 6.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 6.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 6.4. Enter <

Response: The ECD RC/V is completed.

7. Replace the UN580B DFC circuit pack with TN2116, UN373, and 410AA DFC circuit packs.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

REPLACE DFC a CIRCUIT PACKS PROCEDURE:

- 7.1. Unseat and remove the corresponding UN580B DFC circuit pack.

- 7.2. Install the old DFC packs: TN2116, UN373, and 410AA in their corresponding EQLs.
-
-

8. At the corresponding UN373 circuit pack, restore power to DFC 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED DFC a**
The **OFF** LED extinguishes at DFC a.

9. At the corresponding UN373 for DFC a, operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST DFC a COMPLETED** followed by **RST... COMPLETED** for each subunit under DFC a.

⇒ **NOTE 1:**

DFC a and all subunits controlled by DFC a will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE 2:**

Do **not** continue until this request has successfully completed.

Response: The system displays **DGN DFC a ATP MESSAGE COMPLETE**

10. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

11. **STOP! YOU HAVE COMPLETED THIS BACKOUT PROCEDURE.**

UN373/TN2116/410AA to UN580B DFC Conversion Procedure

Perform the following steps to convert a UN373/TN2116/410AA DFC circuit pack to a UN580B DFC circuit pack in a 3B21D computer.

1. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**

⇒ NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ
INHIBIT ALL ACTIVE**

2. At the RC/V terminal, query for a list of all Deferred Maintenance Queue (DMQ) requests by entering the appropriate input command.

- If MML, **OP:DMQ;**
- If PDS, **OP:DMQ!**

Response: **INHIBIT SOURCES** will be marked **ALL** preceding
OP DMQ COMPLETED

⇒ NOTE:

Any diagnostics that are running or in the queue should be left to continue until completion.

3. Verify that CU 0 is active and CU 1 is in standby.

VERIFY CU 0 IS ACTIVE AND CU 1 IS IN STANDBY PROCEDURE:

- 3.1. At the MTTY Common Processor Display Page (CPDP) **102** (Page **111** for 5ESS® switch), verify that CU 0 is active and CU 1 is in standby.
 - If **yes**, go to Step **4**.
 - If **no**, continue to Step **3.2**.

3.2. At the MTTY, enter the appropriate command.

- If MML, **400** Poke command or **SW:CU**;
- If PDS, **400** Poke command or **SW:CU**!

Response: The system displays **SW CU 0 COMPLETED**

4. At the MTTY, check for AUTONOMOUS H'0000200 errors on all the equipped Moving Head Disks (MHDs) by entering the appropriate input command at the bottom of the screen:

- If MML, **EXC:ENVIR:UPROC, FN="/bin/sh", args="-c"- " grep AUTONOMOUS /log/log/DKD*"**;
- If PDS, **EXC:ENVIR:UPROC, FN "/bin/sh", args "-c"- " grep AUTONOMOUS /log/log/DKD*"**!

Response: The system displays **EXC ENVIR UPROC /bin/sh COMPLETED** followed by any output that results from an AUTONOMOUS error.

⇒ **NOTE:**

The following example shows MHD 4 with an AUTONOMOUS error:
**/log/log/DKDRVLOG0:\$ 0010241531 , 000081 ,DKDRVLOG,, ,b,,241,0,\$
REPT MHD 4 AUTONOMOUS RESPONSE H'00000200**

5. Identify any AUTONOMOUS H'00000200 errors on any of the equipped MHDs by observing the output on the MTTY or ROP.

- If **yes**, STOP! Seek the next level of technical support to resolve the AUTONOMOUS errors before continuing with this procedure.
- If **no**, continue to Step 6.

6. At the MTTY, remove DFC 1 from service by entering the appropriate input command.

- If MML, **RMV:DFC=1**;
- If PDS, **RMV:DFC 1**!

Response: The system displays **RMV DFC 1 COMPLETED**

7. At the MTTY, diagnose and restore DFC 1 controller to service by entering the appropriate input command.

- If MML, **RST:DFC=1,RAW,TLP,CONT;**
- If PDS, **RST:DFC 1,RAW,TLP,CONT!**

Response: The system displays **RST DFC 1 COMPLETED**.

8. Check to see if DFC 1 controller failed diagnostics by observing the output on the MTTY or ROP.

- If **yes**, STOP! Resolve the DFC diagnostic failure by standard troubleshooting procedures or contact the next level of technical support before restarting this conversion procedure from Step 1.
- If **no**, continue to Step 9.

9. At the MTTY, restore the SBUS 1 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=1,CONT;**
- If PDS, **RST:SBUS 1,CONT!**

Response: The system displays **RST SBUS 1 COMPLETED**.

10. Diagnose all the equipped MHD and Magnetic Tape (MT) drives [which can consist of Digital Audio Tapes (DATs) and/or 9-track tape units] under SBUS 1 by entering the appropriate input command.

⇒ NOTE:

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 1.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 1:

DGN a b ATP MESSAGE COMPLETE

Where: *a* = unit name (MHD or MT).
b = unit number.

11. Verify that all the units under SBUS 1 have passed diagnostics by observing the output on the MTTY or ROP.
 - If **yes**, continue to Step **12**.
 - If **no**, [output indicates **STF** (Some Tests Failed)] STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures, or contact the next level of technical support before continuing with this procedure.
12. At the MTTY, restore the SBUS 3 controller to service by entering the appropriate input command.
 - If MML, **RST:SBUS=3,CONT;**
 - If PDS, **RST:SBUS 3,CONT!**

Response: The system displays **RST SBUS 3 COMPLETED**

13. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 3 by entering the appropriate input command.

⇒ **NOTE:**

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 3.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 3:

DGN a b ATP MESSAGE COMPLETE

Where: *a* = unit name (MHD or MT).
b = unit number.

14. Verify that all the units under SBUS 3 have passed diagnostics by observing the output on the MTTY or ROP.
 - If **yes**, continue to Step **15**.
 - If **no**, (output resulting in **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures or contacting the next level of technical support before continuing with this procedure.

15. Switch CU 1 to active and CU 0 to standby.

SWITCH CU 1 TO ACTIVE AND CU 0 TO STANDBY PROCEDURE:

- 15.1. At the MTTY on CPDP **102** (Page **111** for *5ESS* switch), enter the appropriate input command.

- If MML, **400** Poke command or **SW:CU;**
- If PDS, **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

16. At the MTTY, remove DFC 1 from service by entering the appropriate input command.

- If MML, **RMV:DFC=1;**
- If PDS, **RMV:DFC 1!**

Response: The system displays **RMV DFC 1 COMPLETED.**

17. At the MTTY, diagnose DFC 1 controller from CU 1 by entering the appropriate input command.

- If MML, **DGN:DFC=1,RAW,TLP,CONT;**
- If PDS, **DGN:DFC 1,RAW,TLP,CONT!**

Response: The system displays **DGN DFC 1 ATP MESSAGE COMPLETE**

 NOTE:

Do **not** continue until this request has successfully completed.

18. Check to see if DFC 1 controller failed diagnostics by observing the output on the MTTY or ROP.

- If **yes**, **STOP!** Resolve the DFC diagnostic failure by standard troubleshooting procedures or contact the next level of technical support before restarting this conversion procedure from Step **1**.
- If **no**, continue to Step **19**.

19. See Table 43-1 for the correct DFC power switch EQLs.

Table 43-1. DFC EQLs

EQLs by DFC		
DFC	DFCPS	EQL
DFC 0	UN373	28-178
DFC 1	UN373	53-178

20. At the UN373 circuit pack (EQL 53-178), remove DFC 1 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

Performing Step **22** prevents automatic restoral of DFC 1 when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before proceeding with the next step.

Response: The system displays **RMV DFC 1 COMPLETED**
At the UN373 circuit pack (EQL 53-178), the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

21. At the UN373 circuit pack (EQL 53-178), remove power from DFC 1 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED DFC 1**
At the UN373 circuit pack (EQL 53-178), the **OFF** LED lights.

22. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

23. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

- 23.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

- 23.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

- 23.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

24. Update the DFC 1 *ucb* values.

UPDATE DFC 1 *ucb* VALUES PROCEDURE:

Table 43-2 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN580B.

Table 43-2. DFC *ucb* Form Field Values

Field/Name	UN373 Value	UN580B Value
27. mv	0x2	0x4
62. packcode	u373	u580
64. version	8	9
66. u_model	8	9

Table 43-3 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the correct *mv* value for the SBUS 1 and 3 under DFC 1.

Table 43-3. *mv* Field Value for SBUS 1 and 3 on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x2	0x3

Table 43-4 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the correct *mv* values for each MHD under DFC 1 with a 1GB (Gigabyte) Volume Table of Contents (VTOC).

Table 43-4. *mv* Field Value for MHD with 1GB VTOC on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x2	0x3

Table 43-5 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the correct *mv* value for each MHD under DFC 1 with a 2GB VTOC.

Table 43-5. *mv* Field Value for MHD with 2GB VTOC on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x12	0x13

24.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

24.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:**
attribute.

24.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

24.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

24.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

24.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

24.7. Enter **c**

Response: The system displays **Change Field:**

24.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

24.9. Enter **0x4**

Response: The system displays **Change Field:**

24.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

24.11. Enter **u580**

Response: The system displays **Change Field:**

24.12. Enter **64**

Response: The cursor moves to the **version:** attribute.

24.13. Enter **9**

Response: The system displays **Change Field:**

24.14. Enter **66**

Response: The cursor moves to the **u_model:** attribute.

24.15. Enter **9**

Response: The system displays **Change Field:**

24.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

24.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

24.18. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

24.19. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

24.20. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

24.21. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

24.22. Enter **c**

Response: The system displays **Change Field:**

24.23. Enter **27**

Response: The cursor moves to the **mv:** attribute.

24.24. Enter **0x3**

Response: The system displays **Change Field:**

24.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

24.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

24.27. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

24.28. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

24.29. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

24.30. Enter **3**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

24.31. Enter **c**

Response: The system displays **Change Field:**

24.32. Enter **27**

Response: The cursor moves to the **mv:** attribute.

24.33. Enter **0x3**

Response: The system displays **Change Field:**

24.34. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

24.35. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

24.36. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

24.37. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

24.38. Enter **MHD**

Response: The cursor moves to the **k_unit_number:** attribute.

24.39. Enter **a**

Where: **a** represents each MHD under SBUS 1 and 3 controlled by DFC 1 that needs the corresponding *ucb* form *mv* value. This will be done on a per MHD unit basis.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

24.40. Enter **c**

Response: The system displays **Change Field:**

24.41. Enter **27**

Response: The cursor moves to the **mv:** attribute.



NOTE:

See Tables 43-4 and 43-5 for the appropriate MHD *ucb* form *mv* value depending on whether each MHD has a 1GB or 2GB VTOC.

24.42. Enter **0x3** or **0x13**

Response: The system displays **Change Field:**

24.43. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

24.44. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

24.45. Repeat Steps **24.36** through **24.45** until **all** MHDs under DFC 1 have been updated with the appropriate UN580B *mv* values from Tables 43-4 or 43-5. Once you have changed **all** MHDs under DFC 1, continue to Step **24.46**.

24.46. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

25. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 25.1. Enter **trend**

Response: The system displays the **Transaction End** form
The cursor moves to the **tr_name:** attribute.

- 25.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 25.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 25.4. Enter <

Response: The ECD RC/V is completed.

26. Replace TN2116, UN373, and 410AA DFC circuit packs with UN580B DFC circuit pack.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

REPLACE DFC 1 CIRCUIT PACKS PROCEDURE:

- 26.1. Unseat and remove the old DFC packs: TN2116 (EQL 53-170), UN373 (EQL 53-178), and 410AA (EQL 53-188).

- 26.2. Install the UN580B DFC circuit pack (EQL 53-178), and replace the designation strip.
-
-

27. At the UN580B circuit pack (EQL 53-178), restore power to DFC 1 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED DFC 1**
At the UN580B circuit pack in DFC 1, the **OFF** LED extinguishes.

28. At the MTTY, diagnose and restore DFC 1 controller from CU 1 by entering the appropriate input command.

- If MML, **RST:DFC=1,RAW,TLP,CONT;**
- If PDS, **RST:DFC 1,RAW,TLP,CONT!**

Response: The system displays **RST DFC 1 COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

29. If the DFC 1 fails diagnostics, try the following troubleshooting tasks. Otherwise, go to Step 30.

- If **yes**, go to Step 30.
- If **no**, continue to Step 29.1.

TROUBLESHOOTING PROCEDURE:

- 29.1. Determine if the **OFF** LED on the UN580B DFC pack is extinguished.

- If **yes**, continue to Step 29.2.
- If **no**, return to Step 27.

- 29.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step 22.

- If **yes**, continue to Step 29.3.
- If **no**, return to Step 22 and repeat the changes to the *incore* database.

- 29.3. Determine if a spare UN580B circuit pack is available.

- If **yes**, repeat Step 21 first, then repeat Steps 26 through 29 to install and test the spare UN580B circuit pack.
 - If **no**, determine if a backout is needed. If so, escalate to the next level of technical support and see the "UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure" before the beginning of this conversion procedure.
-
-

30. At the MTTY, restore the SBUS 1 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=1,CONT;**
- If PDS, **RST:SBUS 1,CONT!**

Response: The system displays **RST SBUS 1 COMPLETED**

31. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 1 by entering the appropriate input command.

⇒ NOTE:

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 1.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 1:

DGN a b ATP MESSAGE COMPLETE

32. Verify that all the units under SBUS 1 have passed diagnostics by observing the output on the MTTY or ROP.

- If **yes**, continue to Step **33**.
- If **no**, (output resulting in **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures or contact the next level of technical support before continuing with this procedure.

33. At the MTTY, restore the SBUS 3 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=3,CONT;**
- If PDS, **RST:SBUS 3,CONT!**

Response: The system displays **RST SBUS 3 COMPLETED**

34. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 3 by entering the appropriate input command.

⇒ **NOTE:**

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 3.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 3:

DGN a b ATP MESSAGE COMPLETE

Where: *a* = unit name (MHD or MT).
b = unit number.

35. Verify that all the units under SBUS 3 have passed diagnostics by observing the output on the MTTY or ROP.
- If **yes**, continue to Step **36**.
 - If **no**, (output resulting in **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures or contacting the next level of technical support before continuing with this procedure.
36. Switch CU 0 to active and CU 1 to standby.

SWITCH CU 0 TO ACTIVE AND CU 1 TO STANDBY PROCEDURE:

- 36.1. At the MTTY CPDP **102** (Page **111** for 5ESS switch), enter the appropriate command.

- If MML, **400 Poke command or SW:CU;**
- If PDS, **400 Poke command or SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

37. At the MTTY, remove DFC 1 from service by entering the appropriate input command.

- If MML, **RMV:DFC=1;**
- If PDS, **RMV:DFC 1!**

Response: The system displays **RMV DFC 1 COMPLETED**

38. At the MTTY, diagnose DFC 1 controller from CU 0 by entering the appropriate input command.

- If MML, **DGN:DFC=1,RAW,TLP,CONT;**
- If PDS, **DGN:DFC 1,RAW,TLP,CONT!**

Response: The system displays **DGN DFC 1 ATP MESSAGE COMPLETE**

⇒ NOTE:

Do **not** continue until this request has successfully completed.

39. Did DFC 1 pass diagnostics?

- If **yes**, go to Step **40**.
- If **no**, continue to Step **39.1**.

TROUBLESHOOTING PROCEDURE:

- 39.1. Determine if a spare UN580B circuit pack is available.

- If **yes**, repeat Step **21**. Then, repeat Steps **26** through **28** to install and test the spare UN580B circuit pack.
 - If **no**, determine if a backout is needed. If so, escalate to the next level of technical support and see the "UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure" before the beginning of this conversion procedure.
-
-

40. At the UN580B (EQL 53-178), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST DFC 1 COMPLETED** followed by **RST... COMPLETED** for each subunit under DFC 1.

⇒ NOTE 1:

DFC 1 and all subunits controlled by DFC 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE 2:**

Allow all MHDs and MTs to restore before continuing with this procedure. This may take several hours.

Response: The system displays **DGN DFC 1 ATP MESSAGE COMPLETE**

41. Soak the changes for 30 minutes before performing the remaining steps.
42. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.
 - If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
 - If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

43. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 43.1. Enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to **copy_inc_to_disk:YES** attribute.

- 43.2. Press the <CR> key.

Response: The system prompts for the action desired

- 43.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 43.4. Enter **<**

Response: The ECD RC/V exits.

44. **SAFE STOP POINT 1**

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step 45.

SAFE STOP POINT 1 PROCEDURE:

- 44.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

- 44.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 44.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 44.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays the **INH DMQ COMPLETED**

45. Switch CU 1 to active and CU 0 to standby.

SWITCH CU 1 TO ACTIVE AND CU 0 TO STANDBY PROCEDURE:

- 45.1. At the MTTY on CPDP **102** (Page **111** for *5ESS* switch), enter the appropriate input command.

- If MML, **400** Poke command or **SW:CU;**
- If PDS, **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

46. At the MTTY, remove DFC 0 from service by entering the appropriate input command.

- If MML, **RMV:DFC=0;**
- If PDS, **RMV:DFC 0!**

Response: The system displays **RMV DFC 0 COMPLETED**

47. At the MTTY, diagnose and restore the DFC 0 controller to service by entering the appropriate input command.

- If MML, **RST:DFC=0,RAW,TLP,CONT;**
- If PDS, **RST:DFC 0,RAW,TLP,CONT!**

Response: The system displays **RST DFC 0 COMPLETED**

48. Check to see if DFC 0 controller failed diagnostics by observing the output on the MTTY or ROP.

- If **yes**, STOP! Resolve the DFC diagnostic failure by standard troubleshooting procedures or contact the next level of technical support before restarting this conversion procedure from Step 45.
- If **no**, continue to Step 49.

49. At the MTTY, restore the SBUS 0 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=0,CONT;**
- If PDS, **RST:SBUS 0,CONT!**

Response: The system displays **RST SBUS 0 COMPLETED**

50. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 0 by entering the appropriate input command.

⇒ NOTE:

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 0.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 0:

DGN a b ATP MESSAGE COMPLETE

51. Verify that all the units under SBUS 0 have passed diagnostics by observing the output on the MTTY or ROP.
 - If **yes**, continue to Step 52.
 - If **no**, (output resulting in **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures or contact the next level of technical support before continuing with this procedure.
52. At the MTTY, restore the SBUS 2 controller to service by entering the appropriate input command.
 - If MML, **RST:SBUS=2,CONT;**
 - If PDS, **RST:SBUS 2,CONT!**

Response: The system displays **RST SBUS 2 COMPLETED**

53. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 2 by entering the appropriate input command:

⇒ NOTE:

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 2.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 2:

DGN a b ATP MESSAGE COMPLETE

54. Verify that all the units under SBUS 2 have passed diagnostics by observing the output on the MTTY or ROP.
- If **yes**, continue to Step 55.
 - If **no**, (output resulting in **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures or contacting the next level of technical support before continuing with this procedure.
55. Switch CU 0 to active and CU 1 to standby.

SWITCH CU 0 TO ACTIVE AND CU 1 TO STANDBY PROCEDURE:

- 55.1. At the MTTY on CPDP **102** (Page **111** for *5ESS* switch), enter the appropriate command.

- If MML, **400** Poke command or **SW:CU;**
- If PDS, **400** Poke command or **SW:CU!**

Response: The system displays **SW CU 0 COMPLETED**

56. At the MTTY, remove DFC 0 from service by entering the appropriate input command.

- If MML, **RMV:DFC=0;**
- If PDS, **RMV:DFC 0!**

Response: The system displays **RMV DFC 0 COMPLETED**

57. At the MTTY, diagnose DFC 0 controller from CU 0 by entering the appropriate input command.

- If MML, **DGN:DFC=0,RAW,TLP,CONT;**
- If PDS, **DGN:DFC 0,RAW,TLP,CONT!**

Response: The system displays **DGN DFC 0 ATP MESSAGE COMPLETE**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

58. Check to see if the DFC 0 controller failed diagnostics by observing the output on the MTTY or ROP.
- If **yes**, STOP! Resolve the DFC diagnostic failure by standard troubleshooting procedures or contact the next level of technical support before restarting this conversion procedure section from Step 45.
 - If **no**, continue to Step 59.
59. At the UN373 circuit pack (EQL 28-178), remove DFC 0 from service by operating the **ROS/RST** switch to the **ROS** position.

⇒ **NOTE 1:**

Performing Step 59 prevents automatic restoral of DFC 0 when the unit is powered up later in this procedure.

⇒ **NOTE 2:**

Wait for the **RQIP** light to extinguish before proceeding with the next step.

Response: **RMV DFC 0 COMPLETED**

At the UN373 circuit pack (EQL 28-178), the **OOS** LED lights.

⇒ **NOTE 3:**

Do **not** continue until this request has successfully completed.

60. At the UN373 circuit pack (EQL 28-178), remove power from DFC 0 by operating the **ST/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED DFC 0**

At the UN373 circuit pack (EQL 53-178), the **OFF** LED lights.

61. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

62. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

62.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

62.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

62.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

63. Update the DFC 0 *ucb* values.

UPDATE DFC 0 *ucb* VALUES PROCEDURE:

Table 43-6 indicates the fields that need to be updated on the *ucb* form in the ECD to reflect the correct values for the UN580B.

Table 43-6. DFC *ucb* Form Field Values

Field/Name	UN373 Value	UN580B Value
27. mv	0x2	0x4
62. packcode	u373	u580
64. version	8	9
66. u_model	8	9

Table 43-7 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the correct *mv* value for the SBUS 0 and 2 under DFC 0.

Table 43-7. *mv* Field Value for SBUS 0 and 2 on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x2	0x3

Table 43-8 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the *mv* correct value for each MHD under DFC 0 with a 1GB VTOC.

Table 43-8. *mv* Field Value for MHD with 1GB VTOC on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x2	0x3

Table 43-9 indicates the field that needs to be updated on the *ucb* form in the ECD to reflect the correct *mv* value for each MHD under DFC 0 with a 2GB VTOC.

Table 43-9. *mv* Field Value for MHD with 2GB VTOC on *ucb* Form

Field/Name	Value with UN373	Value with UN580B
27. mv	0x12	0x13

63.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation**
I=Insert R=Review U=Update D=Delete:

63.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

63.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

63.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

63.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

63.6. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

63.7. Enter **c**

Response: The system displays **Change Field:**

63.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

63.9. Enter **0x4**

Response: The system displays **Change Field:**

63.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

63.11. Enter **u580**

Response: The system displays **Change Field:**

63.12. Enter **64**

Response: The cursor moves to the **version:** attribute.

63.13. Enter **9**

Response: The system displays **Change Field:**

63.14. Enter **66**

Response: The cursor moves to the **u_model:** attribute.

63.15. Enter **9**

Response: The system displays **Change Field:**

63.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

63.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

63.18. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

63.19. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

63.20. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

63.21. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

63.22. Enter **c**

Response: The system displays **Change Field:**

63.23. Enter **27**

Response: The cursor moves to the **mv:** attribute.

63.24. Enter **0x3**

Response: The system displays **Change Field:**

63.25. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

63.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

63.27. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

63.28. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

63.29. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

63.30. Enter **2**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

63.31. Enter **c**

Response: The system displays **Change Field:**

63.32. Enter **27**

Response: The cursor moves to the **mv:** attribute.

63.33. Enter **0x3**

Response: The system displays **Change Field:**

63.34. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

63.35. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

63.36. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

63.37. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

63.38. Enter **MHD**

Response: The cursor moves to the **k_unit_number:** attribute.

63.39. Enter **a**

Where: **a** represents each MHD under SBUS 0 and 2 controlled by DFC 0 that needs the corresponding *ucb* form *mv* value. This will be done on a per MHD unit basis.

Response:

The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

63.40. Enter **c**

Response: The system displays **Change Field:**

63.41. Enter **27**

Response: The cursor moves to the **mv:** attribute.



NOTE:

See Tables 43-8 and 43-9 for the appropriate MHD *ucb* form *mv* value depending on whether each MHD has a 1GB or 2GB VTOC.

63.42. Enter **0x3** or **0x13**

Response: The system displays **Change Field:**

63.43. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

63.44. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

63.45. Repeat Steps **63.36** through **63.45** until **all** MHDs under DFC 0 have been updated with the appropriate UN580B *mv* values from Tables 43-8 and 43-9. Once you have changed **all** MHDs under DFC 0, continue to Step **63.46**.

63.46. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

64. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

- 64.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

- 64.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

- 64.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

- 64.4. Enter <

Response: The ECD RC/V is completed.

65. Replace the TN2116, UN373, and 410AA DFC circuit packs with the UN580B DFC circuit pack.



CAUTION:

Wear an antistatic wrist strap while handling circuit packs to prevent damage to components.

REPLACE DFC 0 CIRCUIT PACKS PROCEDURE:

- 65.1. Unseat and remove the old DFC packs: TN2116 (EQL 28-170), UN373 (EQL 28-178), and 410AA (EQL 28-188).
- 65.2. Install the UN580B DFC circuit pack (EQL 28-178), and replace the designation strip.
-
-

66. At the UN580B circuit pack (EQL 28-178), restore power to DFC 0 by operating the **ST/ON/OFF** switch to the **ST** position and releasing to the **ON** position.

Response: The system displays **REPT POWER RESTORED DFC 0**
At the UN580B circuit pack in DFC 0, the **OFF** LED extinguishes.

67. At the MTTY, diagnose and restore the DFC 0 controller from CU 0 by entering the appropriate input command.

- If MML, **RST:DFC=0,RAW,TLP,CONT;**
- If PDS, **RST:DFC 0,RAW,TLP,CONT!**

Response: The system displays **RST DFC 0 COMPLETED**.

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

68. Did DFC 0 pass diagnostics?

- If **yes**, go to Step **69**.
- If **no**, continue to Step **68.1**.

TROUBLESHOOTING PROCEDURE:

- 68.1. Determine if the **OFF** LED on the UN580B DFC circuit pack is extinguished.

- If **yes**, continue to Step **68.2**.
- If **no**, return to Step **66**.

- 68.2. Determine if the ECD changes are correct by accessing the *incore* database as indicated in Step **61**.

- If **yes**, continue to Step **68.3**.
- If **no**, return to Step **61** and repeat the changes to the *incore* database.

- 68.3. Determine if a spare UN580B circuit pack is available.

- If **yes**, repeat Step **60** first, then repeat Steps **65** through **67** to install and test the spare UN580B circuit pack.
 - If **no**, determine if a backout is needed. If so, escalate to the next level of technical support and see the "UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure" before the beginning of this conversion procedure.
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-

69. At the MTTY, restore the SBUS 0 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=0,CONT;**
- If PDS, **RST:SBUS 0,CONT!**

Response: The system displays **RST SBUS 0 COMPLETED**

70. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 0 by entering the appropriate command.

⇒ **NOTE:**

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 0.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 0:

DGN a b ATP MESSAGE COMPLETE

71. Verify that all the units under SBUS 0 have passed diagnostics by observing the output on the MTTY or ROP.

- If **yes**, continue to Step **72**.
- If **no**, (output indicates **STF**) **STOP!** Resolve the DFC diagnostic failures by standard troubleshooting procedures or contact the next level of technical support before continuing with this procedure.

72. At the MTTY, restore the SBUS 2 controller to service by entering the appropriate input command.

- If MML, **RST:SBUS=2,CONT;**
- If PDS, **RST:SBUS 2,CONT!**

Response: The system displays **RST SBUS 2 COMPLETED**

73. Diagnose all the equipped MHD and MT drives (which can consist of DATs and/or 9-track tape units) under SBUS 2 by entering the appropriate command:

⇒ **NOTE:**

See DFC Status Page **120** (Page **123** for 5ESS switch) to review the units equipped under SBUS 2.

- If MML, **DGN:a=b,RAW,TLP;**
- If PDS, **DGN:a b,RAW,TLP!**

Where: *a* = unit name (MHD or MT).
b = unit number.

Response: The following message is sent to the ROP and MTTY for every unit diagnosed under SBUS 2:

DGN a b ATP MESSAGE COMPLETE

74. Verify that all the units under SBUS 2 have passed diagnostics by observing the output on the MTTY or ROP.
- If **yes**, continue to Step 75.
 - If **no**, (output indicates **STF**) STOP! Resolve the DFC diagnostic failures by standard troubleshooting procedures, or contact the next level of technical support before continuing with this procedure.
75. Switch CU 1 to active and CU 0 to standby.

SWITCH CU 1 TO ACTIVE AND CU 0 TO STANDBY PROCEDURE:

- 75.1. At the MTTY on CPDP **102** (Page **111** for 5ESS switch), enter the appropriate command.

- If MML, **400 Poke command or SW:CU;**
- If PDS, **400 Poke command or SW:CU!**

Response: The system displays **SW CU 1 COMPLETED**

76. At the MTTY, remove DFC 0 from service by entering the appropriate input command.
- If MML, **RMV:DFC=0;**
 - If PDS, **RMV:DFC 0!**

Response: The system displays **RMV DFC 1 COMPLETED**

77. At the MTTY, diagnose the DFC 0 controller from CU 1 by entering the appropriate input command.

- If MML, **DGN:DFC=0,RAW,TLP,CONT;**
- If PDS, **DGN:DFC 0,RAW,TLP,CONT!**

Response: The system displays **RST DFC 0 COMPLETED**

⇒ **NOTE:**

Do **not** continue until this request has successfully completed.

78. Did DFC 0 pass diagnostics?

- If **yes**, go to Step **79**.
- If **no**, continue to Step **78.1**.

TROUBLESHOOTING PROCEDURE:

- 78.1. Determine if a spare UN580B circuit pack is available.

- If **yes**, repeat Step **60**. Then, repeat Steps **65** through **67** to install and test the spare UN580B circuit pack.
 - If **no**, determine if a backout is needed. If so, escalate to the next level of technical support and see the "UN373/TN2116/410AA to UN580B DFC Conversion Backout Procedure" before the beginning of this conversion procedure.
-
-

79. At the UN580B (EQL 28-178), operate the **ROS/RST** switch to the **RST** position.

Response: The system displays **RST DFC 0 COMPLETED** followed by **RST... COMPLETED** for each subunit under DFC 0.

⇒ **NOTE 1:**

DFC 0 and all subunits controlled by DFC 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ **NOTE 2:**

Allow all MHDs and MTs to restore before continuing with this procedure. This may take several hours.

Response: The system displays **DGN DFC 0 ATP MESSAGE COMPLETE**

80. Soak the changes for 30 minutes before performing the remaining steps.
81. At the RC/V terminal, invoke the *incore* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="incore",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "incore",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

82. Activate and exit RC.

ACTIVATE AND EXIT RC PROCEDURE:

- 82.1. Enter **activate**

Response: The system displays the **Copy Incore ECD to Root ECD** form.
The cursor moves to **copy_inc_to_disk:YES** attribute.

- 82.2. Press the <CR> key.

Response: The system prompts for the action desired

- 82.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

- 82.4. Enter **<**

Response: The ECD RC/V exits.

83. SAFE STOP POINT 2

If the system is fully functional, the conversion procedure may be suspended temporarily or overnight at this point without causing any degradation to the system operation. To postpone the rest of the procedure, execute the following subprocedure. To continue the procedure without stopping, go to Step **84**.

SAFE STOP POINT 2 PROCEDURE:

- 83.1. At the MTTY, allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL**

- 83.2. Allow automatic diagnostics on all application office equipment by entering the appropriate commands.

- 83.3. **STOP! YOU MAY SUSPEND THE CONVERSION PROCEDURE NOW AND RETURN TO IT LATER.**

- 83.4. **RESUME THE CONVERSION PROCEDURE** at the MTTY by inhibiting automatic maintenance requests using the appropriate command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays the **INH DMQ COMPLETED**

84. At the RC/V terminal, update the ECD for *rootdmly* for DFC 0 and 1. Invoke the *rootdmly* database low-level mode RC/V by entering the appropriate input command.

- If MML, **RCV:MENU:DATA,RCVECD,DB="rootdmly",NREVIEW;**
- If PDS, **RCV:MENU:RCVECD,DB "rootdmly",NREVIEW!**

Response: The cursor moves to the **Enter Form Name:** attribute.

85. Prepare a transaction block.

PREPARE TRANSACTION BLOCK PROCEDURE:

85.1. Enter **trbegin**

Response: The **Transaction Begin** form is displayed.
The cursor moves to the **tr_name:** attribute.

85.2. Press the <CR> key.

Response: The system displays **Enter Execute, Change, Substitute, Validate, or Print:**

85.3. Enter **e**

Response: The system displays **executing... FORM EXECUTED**
The cursor moves to the **Enter Form Name:** attribute.

86. Update the DFC 0 and 1 *ucb* values for *rootdmly*.

UPDATE DFC 0 AND 1 *ucb* VALUES FOR ROOTDMLY PROCEDURE:

86.1. At the RC/V terminal, enter **ucb**

Response: The system displays **Enter Database Operation I=Insert R=Review U=Update D=Delete:**

86.2. Enter **u**

Response: The system displays a blank *ucb* form.
The cursor moves to the **k_complex_name:** attribute.

86.3. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

86.4. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

86.5. Enter **DFC**

Response: The cursor moves to the **k_unit_number:** attribute.

86.6. Enter **1**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

86.7. Enter **c**

Response: The system displays **Change Field:**

86.8. Enter **27**

Response: The cursor moves to the **mv:** attribute.

86.9. Enter **0x4**

Response: The system displays **Change Field:**

86.10. Enter **62**

Response: The cursor moves to the **packcode:** attribute.

86.11. Enter **u580**

Response: The system displays **Change Field:**

86.12. Enter **64**

Response: The cursor moves to the **version:** attribute.

86.13. Enter **9**

Response: The system displays **Change Field:**

86.14. Enter **66**

Response: The cursor moves to the **u_model:** attribute.

86.15. Enter **9**

Response: The system displays **Change Field:**

86.16. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.17. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.18. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

86.19. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

86.20. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

86.21. Enter **1**

Response: The system completes the remainder of the form and
displays **Enter Update, Change, Substitute,**
Validate, or Print:

86.22. Enter **c**

Response: The system displays **Change Field:**

86.23. Enter **27**

Response: The cursor moves to the **mv:** attribute.

86.24. Enter **0x3**

Response: The system displays **Change Field:**

86.25. Press the <CR> key.

Response: The system displays **Enter Update, Change,**
Substitute, Validate, or Print:

86.26. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.27. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:**
attribute.

- 86.28. Press the <CR> key.
Response: The cursor moves to the **k_unit_name:** attribute.
- 86.29. Enter **SBUS**
Response: The cursor moves to the **k_unit_number:** attribute.
- 86.30. Enter **3**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**
- 86.31. Enter **c**
Response: The system displays **Change Field:**
- 86.32. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 86.33. Enter **0x3**
Response: The system displays **Change Field:**
- 86.34. Press the <CR> key.
Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**
- 86.35. Enter **u**
Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.
- 86.36. Press the <CR> key.
Response: The cursor moves to the **k_complex_number:** attribute.
- 86.37. Press the <CR> key.
Response: The cursor moves to the **k_unit_name:** attribute.
- 86.38. Enter **MHD**
Response: The cursor moves to the **k_unit_number:** attribute.

86.39. Enter **a**

Where: **a** represents each MHD under SBUS 1 and 3 controlled by DFC 1 that needs the corresponding *ucb* form *mv* value. This will be done on a per MHD unit basis.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

86.40. Enter **c**

Response: The system displays **Change Field:**

86.41. Enter **27**

Response: The cursor moves to the **mv:** attribute.



NOTE:

See Tables 43-4 and 43-5 for the appropriate MHD *ucb* form *mv* value depending on whether each MHD has a 1GB or 2GB VTOC.

86.42. Enter **0x3** or **0x13**

Response: The system displays **Change Field:**

86.43. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.44. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.45. Repeat Steps **86.36** through **86.45** until **all** MHDs under DFC 1 have been updated with the appropriate UN580B *mv* values from Tables 43-4 and 43-5. Once you have changed **all** MHDs under DFC 1, continue to Step **86.46**.

86.46. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.47. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

- 86.48. Press the <CR> key.
Response: The cursor moves to the **k_unit_name:** attribute.
- 86.49. Enter **DFC**
Response: The cursor moves to the **k_unit_number:** attribute.
- 86.50. Enter **0**
Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**
- 86.51. Enter **c**
Response: The system displays **Change Field:**
- 86.52. Enter **27**
Response: The cursor moves to the **mv:** attribute.
- 86.53. Enter **0x4**
Response: The system displays **Change Field:**
- 86.54. Enter **62**
Response: The cursor moves to the **packcode:** attribute.
- 86.55. Enter **u580**
Response: The system displays **Change Field:**
- 86.56. Enter **64**
Response: The cursor moves to the **version:** attribute.
- 86.57. Enter **9**
Response: The system displays **Change Field:**
- 86.58. Enter **66**
Response: The cursor moves to the **u_model:** attribute.
- 86.59. Enter **9**
Response: The system displays **Change Field:**

86.60. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.61. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.62. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

86.63. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

86.64. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

86.65. Enter **0**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

86.66. Enter **c**

Response: The system displays **Change Field:**

86.67. Enter **27**

Response: The cursor moves to the **mv:** attribute.

86.68. Enter **0x3**

Response: The system displays **Change Field:**

86.69. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.70. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.71. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

86.72. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

86.73. Enter **SBUS**

Response: The cursor moves to the **k_unit_number:** attribute.

86.74. Enter **2**

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

86.75. Enter **c**

Response: The system displays **Change Field:**

86.76. Enter **27**

Response: The cursor moves to the **mv:** attribute.

86.77. Enter **0x3**

Response: The system displays **Change Field:**

86.78. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.79. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.80. Press the <CR> key.

Response: The cursor moves to the **k_complex_number:** attribute.

86.81. Press the <CR> key.

Response: The cursor moves to the **k_unit_name:** attribute.

86.82. Enter **MHD**

Response: The cursor moves to the **k_unit_number:** attribute.

86.83. Enter **a**

Where: **a** represents each MHD under SBUS 0 and 2 controlled by DFC 0 that needs the corresponding *ucb* form *mv* value. This will be done on a per MHD unit basis.

Response: The system completes the remainder of the form and displays **Enter Update, Change, Substitute, Validate, or Print:**

86.84. Enter **c**

Response: The system displays **Change Field:**

86.85. Enter **27**

Response: The cursor moves to the **mv:** attribute.



NOTE:

See Tables 43-8 and 43-9 for the appropriate MHD *ucb* form *mv* value depending on whether each MHD has a 1GB or 2GB VTOC.

86.86. Enter **0x3** or **0x13**

Response: The system displays **Change Field:**

86.87. Press the <CR> key.

Response: The system displays **Enter Update, Change, Substitute, Validate, or Print:**

86.88. Enter **u**

Response: The system displays **updating... FORM UPDATED**
The cursor moves to the **k_complex_name** attribute.

86.89. Repeat Steps **86.80** through **86.89** until **all** MHDs under DFC 0 been updated with the appropriate UN580B *mv* value from Tables 43-8 and 43-9. Once you have changed **all** MHDs under DFC 0, proceed to Step **86.90**.

86.90. Enter **<**

Response: The cursor moves to the **Enter Form Name:** attribute.

87. Complete the transaction.

COMPLETE TRANSACTION PROCEDURE:

87.1. Enter **trend**

Response: The system displays the **Transaction End** form.
The cursor moves to the **tr_name:** attribute.

87.2. Press the <CR> key.

Response: The cursor moves to the **dis_cf_checks:** attribute.

87.3. Enter *

Response: The system displays **executing... FORM
EXECUTED**
The cursor moves to the **Enter Form Name:**
attribute.

87.4. Enter <

Response: The ECD RC/V is completed.

88. Copy backup partitions.

 NOTE:

See Appendix A for the procedure to copy backup partitions.

89. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

Response: The system displays **ALW DMQ ENABLED ALL.**

90. Create a full set of office backup tapes at this time. Use existing local procedures for making new backup tape copies. For additional information, refer to the applications-specific instructions or to 254-303-106, *System Maintenance Manual*.

91. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

Internet Protocol-Data Service Unit Conversion

44

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Internet Protocol-Data Service Unit Conversion

44

Introduction

This chapter describes the procedure to add an Internet Protocol-Data Service Unit (IP-DSU) between the Switching Control Center (SCC) channel on the 3B21D computer and the local 10BaseT Local Area Network (LAN) hub or router.

If problems are encountered during this procedure, escalate to the next level of technical support. Read through this entire procedure before starting.

**CAUTION:**

IOP units may be equipped with simplex Peripheral Controllers (PCs). Before removing any IOP, notify the users of the simplex PCs.

Prerequisite Conditions

The following initial conditions must exist before installing a new IP-DSU:

- The IP-DSUs and 255-100-238, *IP-DSU User's Manual*, are on site.
- The IP-DSU is factory configured for 115 V AC usage.
- The IP-DSU will be installed using 48 V DC.
- The 3B21D computer will be equipped with UN597 as Maintenance Terminal Controllers (MTTYCs).
- The baud rate between the SCC connection on the 3B and the IP-DSU is 9600 baud.
- The ED3T076-20,G51 SCC cable is used for the connection from the 3B21D computer MTTYC to the IP-DSU.
- Currently, the maximum length of the SCC cable for the IP-DSU application is 50 feet. If the existing SCC cable exceeds 50 feet, replace the cable with a new ED3T076-20, G51 cable (50 feet or less). The IP-DSU must be located within the reach of the SCC cable.
- If a new ED3T076-20,G51 cable was purchased, the cable should be installed, tested, and functioning in the current configuration before starting this procedure.
- The customer supplies a 10 Base-T Ethernet connection to the Private IP network from a category 5, RJ45 terminated, twisted pair, data cable for each connection between the IP-DSU and the local 10BaseT LAN hub or router.
- The customer supplies a specially wired RJ45 terminated, twisted pair data (RS232-C) cable for each connection between the IP-DSU console port and the asynchronous device (for example, a terminal). Refer to 255-100-238, *IP-DSU User's Manual*, for details on other types of connections.
- The customer supplies an asynchronous device (for example, a terminal) with AC or DC power used to configure and manage the IP-DSU.
- The customer provides two -48 V supplies with return, one for each IP-DSU, each supply from a different bus. The DC power terminal block unit accepts 10 AWG to 14 AWG wire.
- The customer provides two ground wires. (one for each unit). Ground is the frame ground of the footprint in which the Emergency Interface Action (EIA) cable is connected.
- The customer will perform an inventory for all equipment and tools.
- The owner of the far-end equipment (for example, EMM/NFM) has IP-DSUs associated with this switch installed and connected to the IP network.
- Power is available for the asynchronous device (for example, a terminal) to be used to configure and manage the IP-DSU.

The following initial conditions must exist in the system before starting this procedure:

- All 3B21D computer hardware should be either active or standby.
- No system update activity should be taking place when performing this procedure.
- On all equipped units, diagnostics should have been run within the last 48 hours and should have yielded an All Tests Passed (ATP) result on the Control Units (CUs), and the Input/Output Processors (IOPs).
- Ensure that, within the past 24 hours, the 3B21D computer has not experienced any terminal suspends, bootstraps, diagnostic failures, overloads, or other problems; for example, PC recoveries, power problems, etc.
- The IP Data form should be filled out by the customer. See Table 44-10 at the end of this chapter for details.
- If converting from an existing SCC link, that configuration must be working properly.
- Diagnostics on IOP 0 and IOP 1 should be run and the functions of the port switch should be tested.
- An inventory should be performed for all equipment and tools before starting the installation.

References

The following must be available for reference during this procedure:

- 254-303-106, *System Maintenance Manual*
- 255-100-238, *Internet Protocol-Data Service Unit (IP-DSU) User's Manual*
- Completed IP Data Form as shown in Table 44-10.
- Rack-Mount Configuration for 5ESS® Switch Miscellaneous Cabinet ordered per J5D005C-1, List 101.

Required Tools and Equipment

The following installation tools are required for this procedure:

- R-4987 Antistatic wrist strap
- #2 Phillips head screwdriver
- Medium-sized flathead screwdriver.

Stand-Alone Configuration

The following equipment is required for this procedure:

- Two IP-DSUs (comcode 408180057)
- An asynchronous device (for example, a terminal) configured for 9600 baud, 8 bits, and no parity, which is used for configuring and managing the IP-DSU that is provided by the customer.
- Two RJ45 terminated, twisted pair, data (RS232-C) specially wired cables for connections between the IP-DSU console port and the asynchronous device (for example, terminal) that are ordered by the customer separately. Refer to 255-100-238, *IP-DSU User's Manual*, for ordering information and details on other types of connections.
- Two category 5, RJ45 terminated, twisted pair, data cables for connections between the IP-DSUs and the local 10BaseT LAN hub or router that are provided by the customer.
- Two -48 V DC feeds with return and ground (one for each unit).
- A strain relief clamp for each IP-DSU for wire stabilization that is ordered by the customer separately (comcode 408180149.)
- If the SCC cable is longer than 50 feet, two new ED3T076-20,G51 cables (50 feet or less) must be ordered.

Rack-Mount Configuration for Non-5ESS® IP-DSUs

- Two IP-DSUs (comcode 408180057).
- An asynchronous device (for example, a terminal) configured for 9600 baud, 8 bits, and no parity, which is used for configuring and managing the IP-DSU (provided by the customer).
- Two RJ45 terminated, twisted pair, data (RS232-C) specially wired cables for connections between the IP-DSU console port and the asynchronous device (for example, a terminal). This equipment is ordered by the customer separately. Refer to 255-100-238, *IP-DSU User's Manual*, for ordering information and details on other types of connections.
- Two category 5, RJ45 terminated twisted pair, data cables for connections between the IP-DSUs and the local 10BaseT LAN hub or router that are provided by the customer.
- Two -48 V DC feeds with return and ground (one for every six IP-DSUs in the rack) .
- If the SCC cable is longer than 50 feet, two new ED3T076-20,G51 cables (50 feet or less) must be ordered.

- A height of 10.5 inches of available space in an EIA standard 19-inch or 23-inch equipment rack with internal, vertical mounting rails. Hole spacing on the vertical mounting rail may be 1 inch, 1.75 inch, or 2-inch.
- For 23-inch or 25-inch racks, adapter brackets for the rack-mount panel to be mounted.
- One rack-mount panel that holds up to twelve IP-DSUs that are ordered by the customer separately (comcode 408180107).
- Two pair of mounting ears, one pair for each IP-DSU that are all ordered by the customer separately (comcode 408180123).
- One power Distribution module that is ordered by the customer separately (comcode 408180131).
- Two strain relief clamps for wire stabilization for each rack-mount panel (comcode 498180149).

Procedure Overview

The following is an overview of this procedure:

- Configure each IP-DSU for 48 V DC Operation (refer to 255-100-238, *IP-DSU User's Manual*)
- Install DC Stand-Alone or Rack-Mount IP-DSUs (refer to 255-100-238, *IP-DSU User's Manual*)
- Install IP-DSU console and configure IP-DSUs (refer to 255-100-238, *IP-DSU User's Manual*)
- Verify configuration of IP-DSU and restore to service
- Run IOP diagnostics and port switch testing
- Verify MTTY and ROP are on MTTYC 0
- Remove from service and power down IOP 1
- Move MTTYC 1, SCC cable at data set end to IP-DSU 2 unit
- Power up and restore service to IOP 1
- Test new SCC 1 connection.
- Port switch to MTTYC 1
- Remove from service and power down IOP 0
- Move MTTYC 0, SCC cable at data set end to IP-DSU 1
- Power up and restore service to IOP 0
- Test new SCC 0 connection.

IP-DSU Conversion Procedure

Perform the following steps to add an IP-DSU between a 3B21D computer and a local 10Base T LAN hub or router:

1. Power configuration steps for 48 V DC operation.

POWER CONFIGURATION STEPS FOR 48 V DC OPERATION PROCEDURE:

- 1.1. No power connections should be connected to the IP-DSU at this time. If any power connectors are connected, disconnect any power connectors to the IP-DSU before continuing.
 - 1.2. Remove the IP-DSU cover exposing the top portion of the system board within the IP-DSU.
 - 1.3. Locate the jumper connection and move the jumper to the 48 V setting. Refer to 255-100-238, *IP-DSU User's Manual*.
 - 1.4. Replace the IP-DSU cover.
-
-

2. DC only - IP-DSU installation.

Refer to 255-100-238, *IP-DSU User's Manual*, for stand-alone or rack-mount installation.

What type of installation is this?

- If Stand-Alone, continue with Step **3**.
- If Rack-Mount, continue to Step **4**.

3. Stand-alone installation steps.

STAND-ALONE INSTALLATION STEPS PROCEDURE:

- 3.1. Attach the provided feet to the bottom of each unit.
 - 3.2. Fasten the strain relief bracket to the side of each IP-DSU.
 - 3.3. Place each IP-DSU in its desired location such as a shelf in a data equipment rack.
 - 3.4. For each IP-DSU, plug one end of the RJ45 terminated, category 5 twisted pair, data cable into the IP-DSU 10BaseT LAN interface and the other end into a 10BaseT LAN hub or router.
 - 3.5. For each IP-DSU, plug one end of the RJ45 terminated, twisted pair, data cable into the IP-DSU console interface and the other into the port of the asynchronous device that will be used to configure or manage the IP-DSU.
 - 3.6. For each IP-DSU, run the 48 V DC (return, minus, and ground) wires from a central source through the strain relief clamp for DC wire stabilization. On each IP-DSU faceplate, attach the return, minus and ground wires to the return, minus and ground connections respectively of the terminal block labeled 48 V DC.
-
-

4. Rack-mount installation steps for non-5ESS switch.

RACK-MOUNT INSTALLATION STEPS FOR NON-5ESS SWITCH PROCEDURE:

- 4.1. Prepare each IP-DSU for rack mounting by attaching the mounting ears to each side of the IP-DSU.
- 4.2. Attach the power distribution module to the rack-mount plate.
- 4.3. Make sure the rack-mount panel rocker switches are set to the **OFF** position.
- 4.4. For the rack-mount panel faceplate, fasten the strain relief clamps.
- 4.5. Fasten the twelve-slot rack-mount panel to a 19-inch equipment rack or use extension ears for a 23- or 25-inch rack. Slide each IP-DSU with mounting ears into one of the twelve rack-mount panel slots. Secure the IP-DSU to the rack-mount panel with screws.
- 4.6. For each IP-DSU, plug one end of the RJ45 terminated, category 5, twisted pair, data cable into the IP-DSU 10BaseT LAN interface and the other end into a 10BaseT LAN hub or router.
- 4.7. For each IP-DSU, plug one end of the RJ45 terminated, twisted pair, data cable into the IP-DSU console interface and the other into the port of the asynchronous device that will be used to configure or manage the IP-DSU.

- 4.8. Run the 48 V DC (return, minus, and ground) wires from a central source through the strain relief clamp used for DC wire stabilization. On the rack-mount panel, attach the return, minus, and ground wires to the return, minus, and ground connections to one of the main terminal blocks labeled 48 Vin. Power is distributed to six terminal blocks, vertically below the main terminal block and labeled 48 Vout. Each individual, 48 Vout terminal block below the main, 48 Vin terminal block powers a single IP-DSU. This is accomplished by jumping short, return, minus and ground wires between the panel terminal block and the IP-DSU terminal block. All terminal block connectors accommodate 10 to 14 AWG wire.
 - 4.9. Be sure the rack-mount panel rocker switches are set to the **ON** position.
-
5. Power on the asynchronous device (for example, a terminal) to be used to configure and manage the IP-DSU.
 6. Configure each IP-DSU for the Local Area Network (LAN) by executing the following commands from the asynchronous device (for example, a terminal).

CONFIGURE EACH IP-DSU FOR THE LAN/ PROCEDURE:

- 6.1. Enter **login passwd=initial**

Response: The system displays
M Login
USER IS LOGGED IN IP-DSU
<IP-DSU>

- 6.2. Enter **lo ipaddr=*this_unit's_IP_address* submask=*this_unit's_subnet_mask***

Where: *this_unit's_IP_address* is the switch side local IP address for IP-DSU, provided by the customer.

Where: *this_unit's_subnet_mask* is the switch side local subnet mask for IP-DSU IP address, provided by the customer.

Response: The system displays **<IP-DSU>**

- 6.3. Enter **gateway ipaddr= *gateway's_IP_address***

Where: *gateway's_IP_address* is the IP address of the switch side gateway router, provided by the customer.

Response: The system displays **<IP-DSU>**

6.4. Enter **dest trans=udp ipaddr= remote_unit's_IP_address**

Where: *remote_unit's_IP_address* is the EMM side local IP address for IP-DSU, provided by the customer.

Response: The system displays **<IP-DSU>**

6.5. Enter **port type=HDLC phy=232 speed=9600 enc=NRZ**

Response: The system displays **<IP-DSU>**

6.6. Enter **restore**

Response: The system displays **M RESTORE
IP-DSU RESTORED TO SERVICE** followed by the display of the current configuration of the unit.

Table 44-1 represents the content of the screen display after the IP-DSU is restored.

Table 44-1. Screen Content After IP-DSU Is Restored

Configuration	Current
Service State	In service
Actual Service State	Not connected
Port Interface	RS232 DCE
Port Type	Generic HDLC interface
Port Speed	9600
Port Physical Encoding	NRZ
Local MAC Address	Preset in IP-DSU
Local IP Address	Provided by customer
Subnet Mask	Provided by customer
Destination IP Address	Provided by customer
Gateway IP Address	Provided by customer
SNMP Trap Manager	Not defined
Acquired Nhop MAC Address	Obtained from system
Loopback Status	Not enabled
Data Encryption Status	Disabled
Data Transport Protocol	Peer to peer from UDP

- 6.7. Configuration listing is followed by two report alarms on the asynchronous device.
- Gateway Connectivity Established
 - Peer Connectivity Established (will not be established if far-end is not complete).



NOTE:

When restored to service, the IP-DSU is put back into its logged-out mode.

7. Verify that the "Actual Service State" field in the configuration list indicates "PEER CONNECTIVITY ESTABLISHED."

VERIFY ACTUAL SERVICE DATE PROCEDURE:

- 7.1. Enter **login passwd=initial**

Response: The system displays **M Login
USER IS LOGGED IN IP-DSU
<IP-DSU>**



NOTE:

This test will determine if your IP-DSU is communicating with the far-end equipment. Do not proceed unless the "ACTUAL SERVICE STATE" in the configuration list indicates "PEER CONNECTIVITY ESTABLISHED."

- 7.2. Enter **vcfg**

Output will be displayed for the current configuration of the unit. Table 44-2 represents the content of the screen display after the **vcfg** command is entered.

Table 44-2. Screen Content After vcfg Is Entered

Configuration	Current
Service State	In service
Actual Service State	Peer connectivity established
Port Interface	RS232 DCE
Port Type	Generic HDLC interface
Port Speed	9600
Port Physical Encoding	NRZ
Local MAC Address	Preset in IP-DSU
Local IP Address	Provided by customer
Subnet Mask	Provided by customer
Destination IP Address	Provided by customer
Gateway IP Address	Provided by customer
SNMP Trap Manager	Not defined
Acquired Nhop MAC Address	Obtained from system
Loopback Status	Not enabled
Data Encryption Status	Disabled
Data Transport Protocol	Peer-to-peer from UDP

-
-
8. Does the “Actual Service State” field in the configuration list indicate “PEER CONNECTIVITY ESTABLISHED?”
 - If **yes**, go to Step 9.
 - If **no**, determine why before continuing. Refer to the troubleshooting section in 255-100-238, Version 2, *IP-DSU User’s Manual*, or escalate to the next level of support.

 9. Run diagnostics on IOP 1 and IOP 0, and test port switch.

**RUN DIAGNOSTICS ON IOP 1 AND IOP 0, AND TEST PORT SWITCH
PROCEDURE:**

Requirement 1: The Maintenance Terminal (MTTY) and Receive-Only Printer (ROP) must be connected to IOP 0. Both switches must be set to the **AUTO** position on the port switch at Equipment Location (EQL) 45-186 prior to beginning this procedure. If necessary, configure the port switches by setting the switches to **AUTO** and entering the appropriate input command.

If MML,

- **SW:PORTSW;**
- **SW:PORTSW,MTTY;**
- **SW:PORTSW,ROP;**

If PDS,

- **SW:PORTSW!**
- **SW:PORTSW,MTTY!**
- **SW:PORTSW,ROP!**

Requirement 2: All IOPs must be active prior to beginning this procedure.

- 9.1. At the MTTY, enter the first (or next) command from Table 44-3 one at a time, starting with Item No. 1 and ending with the last Item No. After entering commands for items 1 and 8, continue to Step **9.2**.

Table 44-3. IOP 1 and IOP 0 Diagnostics and Port Switch Testing (MML)

Item No.	Unit	Frequency	Command/Observation	GoTo	Notes	Check Box
1	IOP 1	Monthly	RST:IOP=1:RAW,TLP;	Step 9.2	1,2,4,5	
2	Port switch	Monthly	SW:PORTSW;	Item 3		
3	MTTY		Observe that the MTTY status counter is cycling digits 0 through 9 on the EAI page.	Item 4		
4	MTTY	Monthly	OP:CLK;	Item 5	3	
5	MTTY/ROP		Verify that the response message is displayed on the MTTY and printed on the ROP.	Item 6		
6	MTTY	Monthly	POKE 102	Item 7		
7	MTTY		The CPDP displays on the MTTY. Verify that both the MTTY and ROP status are active and connected to IOP 1.	Item 8		
8	IOP 0	Monthly	RST:IOP=0:RAW,TLP;	Step 9.2	1,2,4,5	
9	Port switch	Monthly	SW:PORTSW;	Item 10		
10	MTTY		Observe that the MTTY status counter is cycling digits 0 through 9 on the EAI page.	Item 11		
11	MTTY	Monthly	OP:CLK;	Item 12	3	
12	MTTY/ROP		Verify the response message is displayed on the MTTY and printed on the ROP.	Item 13		
13	MTTY		POKE 102	Item 14		
14	MTTY		The CPDP displays on the MTTY. Verify that both the MTTY and ROP status are active and connected to IOP 0.	Step 9.4		
Notes: 1. IOP basic units 0 and 1 will always be equipped. 2. IOP diagnostic Phase 1 is no longer supported because it does not add any significant fault detection capability to the current set of IOP diagnostics. Therefore, IOP diagnostic Phase 1 should not be attempted. 3. After entering commands, observe the MESSAGE COMPLETED output message. 4. Refer to 254-303-106, <i>System Maintenance Manual</i> , for additional information on running diagnostics. 5. Be sure the MTTY and ROP are connected to the other IOP before running the restore command.						

- 9.2. Verify that this IOP and all units under this IOP diagnose ATP and restore to service successfully?



NOTE:

The **RST:IOP** command may take 10 to 25 minutes depending on the equipment of this IOP.

- If **yes**, continue to Step **9.3**.
- If **no**, refer to 254-303-102, *3B21D Computer Trouble Clearing Tasks*, to clear trouble.

- 9.3. Have all the scheduled tests (all Item Numbers in Table 44-3) been completed for both IOPs?

- If **yes**, continue to Step **9.4**.
- If **no**, return to Step **9.1**.

- 9.4. **STOP! YOU HAVE COMPLETED IOP DEMAND DIAGNOSTICS.**
-

10. At the MTTY, inhibit automatic maintenance requests by entering the appropriate input command.

- If MML, **INH:DMQ:SRC=ALL;**
- If PDS, **INH:DMQ:SRC ALL!**

Response: The system displays **INH DMQ COMPLETED**



NOTE:

At the ROP, the following response will periodically appear: **REPT DMQ INHIBIT ALL ACTIVE**

11. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTYC 0.



CAUTION:

IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

12. Remove IOP 1.

REMOVE IOP 1 PROCEDURE:

12.1. At the MTTY, remove IOP 1 from service by entering the appropriate input command.

- If MML, **RMV:IOP=1;**
- If PDS, **RMV:IOP 1!**

Response: The system displays **RMV IOP 1 COMPLETED** followed by **RMV COMPLETED** for each unit under IOP 1.
At the Input/Output Processor Power Switch (IOPPS), the **OOS** Light-Emitting Diode (LED) at IOP 1 lights.



NOTE:

Do **not** continue until this request has successfully completed.

13. At IOPPS TN1820 (EQL 45-080), remove power from IOP 1 by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 1**
At IOPPS TN1820 (EQL 45-080), the **OFF** LED lights.

14. Disconnect the SCC cable for MTTYC 1 from the data set.



NOTE:

Qualified personnel should perform all cable changes.

DISCONNECT SCC CABLE FOR MTTYC 1 FROM DATA SET PROCEDURE:

14.1. Coordinate the steps to disconnect the SCC cable with the far-end customer.

14.2. Locate both ends of the MTTYC 1 SCC cable in the 3B21D computer and data set as shown in Table 44-4.

Table 44-4. Original MTTYC 1 SCC Cable to Data Set

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 1	045-094-500	2X12	DATA SET		25 PIN

- 14.3. Disconnect the ED3T076-20,G51 SCC cable for MTTYC 1 at the data set end, and reconnect to the device port on the front panel of the IP-DSU. See Table 44-5.

Table 44-5. Disconnect MTTYC 1 SCC Cable at Data Set

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 1	045-094-500	2X12			

- 14.4. The far-end customer must disconnect their cable from their data set and reconnect to the new far-end equipment (IP-DSU). See Table 44-6.

Table 44-6. Reconnect MTTYC 1 SCC Cable at IP-DSU

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 1	045-094-500	2X12	IP-DSU 2		DEVICE PORT

15. Restore power to IOP 1.

RESTORE POWER TO IOP 1 PROCEDURE:

- 15.1. At IOPPS TN1820 (EQL 45-080), restore power to IOP 1 by operating the **START/ON/OFF** switch to the **START** position and releasing to the **ON** position to power up IOP 1.

Response: The system displays **REPT POWER RESTORED IOP 1** followed by **RST IOP 1 COMPLETED** followed by **RST... COMPLETED** for each unit under IOP 1.
At IOPPS TN1820 in IOP 1, the **OFF** LED extinguishes.
At CUPS in CU 0, the **OOS** LED extinguishes.

⇒ NOTE:

IOP 1 and all units controlled by IOP 1 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.

⇒ NOTE:

Do **not** continue until this request has successfully completed.

16. Is the SCC 1 box on the CPDP of the MTTY in standby?
- a. If **yes**, go to Step 17.
 - b. If **no**, determine why before continuing.

17. Remove SCC 0 and wait a few minutes.

18. Does the SCC 1 box on the CPDP of the MTTY go active?
- a. If **yes**, go to Step 19.
 - b. If **no**, determine why before continuing.

⇒ NOTE:

You can go back to SCC 0 by restoring SCC 0.

19. At the MTTY, restore SCC 0 to standby by entering the appropriate input command.

- If MML, **RST:SCC=0;**
- If PDS, **RST:SCC 0!**

Response: The system displays **RST SCC 0 COMPLETED**

20. Far-end customer test of circuit.

FAR-END CUSTOMER TEST CIRCUIT PROCEDURE:

20.1. Is this SCC 1 link functioning properly?

- If **yes**, continue to Step **21**.
- If **no**, determine why before continuing.



NOTE:

Do **not** continue unless SCC 1 link is functioning properly.

21. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.

22. At the MTTY, switch the ROP and MTTY to MTTYC 1 by entering the appropriate input command.

- If MML, **SW:PORTSW;**
- If PDS, **SW:PORTSW!**

Response: The system displays **SW PORTSW COMPLETED FOR ROP**
followed by **SW PORTSW COMPLETED FOR MTTY**



NOTE:

When using MTTYC 0, the IP-DSU Conversion Procedure must be performed using an RC/V terminal that is controlled by IOP 1.



CAUTION:

IOP units may be equipped with simplex PCs. Before removing any IOP, notify the users of the simplex PCs.

23. Remove IOP 0.

REMOVE IOP 0 PROCEDURE:

23.1. At the MTTY, remove IOP 0 from service by entering the appropriate input command.

- If MML, **RMV:IOP=0;**
- If PDS, **RMV:IOP 0!**

Response: The system displays **RMV IOP 0 COMPLETED** followed by **RMV COMPLETED** for each unit under IOP 0.
At IOPPS TN1820 (EQL 19-080), the **OOS** LED lights.

⇒ NOTE:

Do **not** continue until this request has successfully completed.

24. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to MTTYC 1.

25. At IOPPS TN1820 (EQL 19-080), remove power from IOP 0 by operating the **START/ON/OFF** switch to the **OFF** position.

Response: The system displays **REPT POWER REMOVED IOP 0**
At IOPPS TN1820 (EQL 19-080), the **OFF** LED at IOP 0 lights.

⇒ NOTE:

This step must be coordinated with the far-end customer.

26. Disconnect the SCC cable for MTTYC 0 from the data set.

⇒ **NOTE:**

Qualified personnel should perform all cable changes.

DISCONNECT SCC CABLE FOR MTTYC 0 FROM DATA SET PROCEDURE:

- 26.1. Coordinate the steps to disconnect the SCC cable with the far-end customer.
- 26.2. Locate both ends of the MTTYC 1 SCC cable in the 3B21D computer and the data set as shown in Table 44-7.

Table 44-7. Original MTTYC 0 SCC Cable to Data Set

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 0	019-094-500	2X12	DATA SET		25 PIN

- 26.3. Disconnect the ED3T076-20,G51 SCC cable for MTTYC 0 at the data set end, and reconnect to the device port on the front panel of the IP-DSU. See Table 44-8.

Table 44-8. Disconnect MTTYC 0 SCC Cable at Data Set

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 0	019-094-500	2X12			

- 26.4. The far-end customer must disconnect their cable from their data set and reconnect to the new far-end equipment (IP-DSU). See Table 44-9.

Table 44-9. Reconnect MTTYC 0 SCC Cable at IP-DSU

ED,G	FROM			TO		
	UNIT	EQL	CONN SIZE	UNIT	EQL	CONN SIZE
ED3T076-20,G51	MTTYC 0	019-094-500	2X12	IP-DSU 1		DEVICE PORT

27. Restore power to IOP 0.

RESTORE POWER TO IOP 0 PROCEDURE:

- 27.1. At IOPPS TN1820 for IOP 0 (EQL 19-080), restore power to IOP 0 by operating the **START/ON/OFF** switch to the **ST** position and releasing to the **ON** position to power up IOP 0.

Response: The system displays **REPT POWER RESTORED IOP 0** followed by **RST IOP 0 COMPLETED** followed by **RST... COMPLETED** for each unit under IOP 0.
At IOPPS TN1820 for IOP 0 (EQL 19-080), the **OFF** LED extinguishes.



NOTE 2:

IOP 0 and all units controlled by IOP 0 will be restored automatically because the **ROS/RST** switch is in the **RST** position. Monitor the progress by watching the CPDP.



NOTE:

Do **not** continue until this request has successfully completed.

28. Is the SCC 0 box on the CPDP of the MTTY in standby?

- If **yes**, continue to Step 29.
- If **no**, determine why before continuing.

29. Remove SCC 1 and wait a few minutes.

30. Does the SCC 0 box on the CPDP of the MTTY go active?

- If **yes**, continue to Step 31.
- If **no**, determine why before continuing.



NOTE:

You can return to SCC 1 by restoring SCC 1.

31. At the MTTY, after SCC 0 goes active, restore SCC 1 to standby by entering the appropriate input command.

- If MML, **RST:SCC=1;**
- If PDS, **RST:SCC 1!**

Response: The system displays **RST SCC 1 COMPLETED**

32. Contact the far-end customer to test the SCC 0 circuit to ensure that SCC 0 is functioning properly.

33. Is this SCC link functioning properly?

- If **yes**, continue to Step **34**.
- If **no**, determine why before continuing.

⇒ **NOTE:**

Do **not** continue unless SCC 0 link is functioning properly.

34. Set both switches on the port switch circuit pack UN377 (EQL 45-186) to the **AUTO** position.

35. Verify that the SCC links are in active/standby.

VERIFY SCC LINKS PROCEDURE:

- 35.1. This step must be coordinated with the far-end customer.

- 35.2. At the MTTY, display the CPDP by entering Poke command **102**

Response: The system displays the CPDP.

- 35.3. At the CPDP, verify that SCC 0 is active and SCC 1 is standby.

- If **yes**, continue to Step **34.4**.
- If **no**, determine why before continuing.

- 35.4. At the MTTY, switch to SCC 1 by entering the appropriate input command.

- If MML, **RMV:SCC=0;**
- If PDS, **RMV:SCC 0!**

Response: The system displays **RMV SCC 0 COMPLETED**

- 35.5. At the CPDP, verify that the SCC 1 is active and SCC 0 is out of service.

35.6. At the MTTY, restore SCC 0 to standby by entering the appropriate input command.

- If MML, **RST:SCC=0;**
- If PDS, **RST:SCC 0!**

Response: The system displays **RST SCC 0 COMPLETED**

35.7. At the CPDP, verify that the SCC 1 is active and SCC 0 is standby.

- If **yes**, continue with Step **35**.
 - If **no**, determine why before continuing.
-

36. Allow automatic maintenance requests by entering the appropriate input command.

- If MML, **ALW:DMQ:SRC=ALL;**
- If PDS, **ALW:DMQ:SRC ALL!**

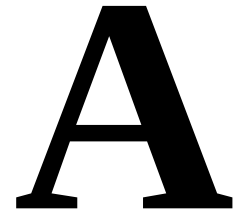
Response: The system displays **ALW DMQ ENABLED ALL**

37. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

Table 44-10. IP Data Form

IP Data for IP-DSUs		
Switch Side	SCC 0	SCC 1
Switch side local IP address for IP-DSU. This is the destination IP address for the EMM side.	____.____.____.____	____.____.____.____
Switch side local subnet mask for IP-DSU IP address	____.____.____.____	____.____.____.____
The IP address of the switch side gateway router. The gateway is the first hop the data travels through to reach the EMM side.	____.____.____.____	____.____.____.____
EMM Side	SCC 0	SCC 1
EMM side local IP address for IP-DSU. This is the destination IP address for the switch side.	____.____.____.____	____.____.____.____
EMM side local subnet mask for IP-DSU IP address	____.____.____.____	____.____.____.____
The IP address of the EMM side gateway router. The gateway is the first hop the data travels through to reach the switch side.	____.____.____.____	____.____.____.____

Copying to Backup Partitions



Contents

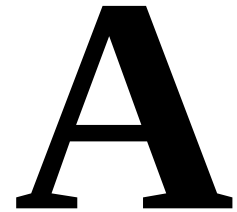
Introduction

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Copying to Backup Partitions



Introduction

The following partitions on the disk have backups (applications may have other partition backups):

Primary Partition	Backup Partition
<i>/dev/boot</i>	<i>/dev/bboot</i>
<i>/dev/root</i>	<i>/dev/broot</i>
<i>/dev/etc</i>	<i>/dev/betc</i>
<i>/dev/db</i>	<i>/dev/bdb</i>

⇒ NOTE:

The partitions */dev/boot* and */dev/bboot* do not have a file system structure. They are files used during the bootstrap sequence only. They can be copied with the **COPY:PTN** command but cannot be mounted.

A copy can be made from the primary partitions to the backup partitions or from the backup partitions to the primary partitions depending on which is active on the system.

Procedure

The following steps describe the copying to backup partitions procedure:

1. Verify Moving Head Disk (MHD) 0 and MHD 1 are in duplex by entering the appropriate input command.
 - If MML, **OP:OOS;**
 - If PDS, **OP:OOS!**

If MHD 0 or MHD 1 is listed in the output message, restore the listed MHD to service (**RST:MHD**).

2. Determine if the system is currently running on the primary or backup file systems by entering the appropriate input command.
 - If MML, **OP:STATUS:DATA,FILESYS;**
 - If PDS, **OP:STATUS:FILESYS!**

The output message indicates the currently mounted file systems.

If */dev/root* and */dev/db* are listed, the primary partitions are active.

If */dev/broot* and */dev/bdb* are listed, the backup partitions are active.

The partitions are copied from the active (or mounted) partitions to the inactive (or unmounted) partitions.

3. Check the integrity of the disks (verifying each disk) by entering the appropriate input command.
 - If MML, **VFY:MHD=0;**
 - If PDS, **VFY:MHD 0!**

Wait for a completion message and then enter the appropriate input command.

- If MML, **VFY:MHD=1;**
- If PDS, **VFY:MHD 1!**

Wait for another completion message.

⇒ NOTE:

If the disk drive is a Small Computer System Interface (SCSI) type, there is no need to wait before requesting the second verify.

If one MHD fails, remove it from service (**RMV:MHD**), initialize it (**INIT:MHD**), and then restore it to service (**RST:MHD**). If both fail, contact your technical assistance organization. If both MHDs pass, continue to Step 4.

4. Check the integrity of the active partitions by inhibiting routine audits and then running the FSBLK and FSLINK audits on each active partition using Step 4.1 or 4.2. The active and inactive partitions were determined in Step 2.

CHECK INTEGRITY OF PRIMARY PARTITIONS (IF ACTIVE) PROCEDURE:

- 4.1. If the primary partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/root":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/root";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/root":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/root";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/etc":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/etc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/etc":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/etc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/db":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/db";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/db":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/db";NCG!**

Wait for a completion message. Go to Step 5.

4.2. If the backup partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/broot":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/broot";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/broot":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/broot";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/betc":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/betc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/betc":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/betc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/bdb":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/bdb";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/bdb":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/bdb";NCG!**

Wait for a completion message. Continue to Step 5.

5. Create and verify a file named */tmp/primary* and a file named */tmp/backup* which will be used as the source (SRC) and destination (DEST) filenames in the **COPY:PTN** command using either the *UNIX** system editor (Step 5.1) or a series of MML or PDS input commands (Step 5.2).

CREATE FILES */tmp/primary* AND */tmp/backup* PROCEDURE:

- 5.1. If you have the *UNIX* system available on your machine and are familiar with the **ed** editor, you may create and verify the files with the **ed** editor.

CREATE FILES USING *UNIX* SYSTEM EDITOR PROCEDURE:

- 5.1.1. Create a file named */tmp/primary* that contains the following lines:

```
/dev/boot  
/dev/root  
/dev/etc  
/dev/db
```

- 5.1.2. Create a file named */tmp/backup* that contains the following lines:

```
/dev/bboot  
/dev/broot  
/dev/betc  
/dev/bdb
```



NOTE:

Remember that applications may need additional partitions (one partition name per line) added to */tmp/primary* and */tmp/backup*.

- 5.1.3. After using the *UNIX* system to create */tmp/primary* and */tmp/backup*, go to Step 6.
-
-

* *UNIX* is a registered trademark of The Open Group in the United States and other countries.

- 5.2. If you do not have the *UNIX* system available on your machine or are not familiar with the **ed** editor, you may create and verify the files using MML or PDS input commands.

CREATE FILES USING MML OR PDS COMMANDS PROCEDURE:

- 5.2.1. Verify if the file */tmp/primary* exists by entering the appropriate input command.

- If MML, **DUMP:FILE:DATA,ALL,FN="/tmp/primary";**
- If PDS, **DUMP:FILE:ALL,FN "/tmp/primary"!**

If the file */tmp/primary* exists, go to Step 5.2.3 to verify the contents; otherwise, continue to Step 5.2.2.

- 5.2.2. Create the */tmp/primary* file by entering the appropriate input command.

- If MML, **IN:FILE:DATA,APND,FN="/tmp/primary",LINE=0!**

Press the <CR> key. At the : prompt, enter:

"/dev/boot";

IN:FILE:DATA,APND,FN="/tmp/primary",LINE=1!

Press the <CR> key. At the : prompt, enter:

"/dev/root";

IN:FILE:DATA,APND,FN="/tmp/primary",LINE=2!

Press the <CR> key. At the : prompt, enter:

"/dev/etc";

IN:FILE:DATA,APND,FN="/tmp/primary",LINE=3!

Press the <CR> key. At the : prompt, enter:

"/dev/db";

- If PDS, **IN:FILE:APND,FN "/tmp/primary",LINE 0/**

Press the <CR> key. At the : prompt, enter:

"/dev/boot"!

IN:FILE:APND,FN "/tmp/primary",LINE 1/

Press the <CR> key. At the : prompt, enter:

"/dev/root"!

IN:FILE:APND,FN "/tmp/primary",LINE 2/

Press the <CR> key. At the : prompt, enter:

"/dev/etc"!

IN:FILE:APND,FN "/tmp/primary",LINE 3/

Press the <CR> key. At the : prompt, enter:
`"/dev/db"`!

5.2.3. Verify the contents of the */tmp/primary* file by entering the appropriate input command.

- If MML, **`DUMP:FILE:DATA,ALL,FN="/tmp/primary";`**
- If PDS, **`DUMP:FILE:ALL,FN "/tmp/primary"!`**

The file */tmp/primary* will be output. Verify that the file has an entry for each primary partition in the order listed as follows:

/dev/boot
/dev/root
/dev/etc
/dev/db

5.2.4. Verify if the file */tmp/backup* already exists by entering the appropriate input command.

- If MML, **`DUMP:FILE:DATA,ALL,FN="/tmp/backup";`**
- If PDS, **`DUMP:FILE:ALL,FN "/tmp/backup"!`**

If the file */tmp/backup* already exists, go to Step 5.2.6 to verify the contents; otherwise, continue to Step 5.2.5.

5.2.5. Create the */tmp/backup* file by entering the appropriate input command.

- If MML, **`IN:FILE:DATA,APND,FN="/tmp/backup",LINE=0!`**

Press the <CR> key. At the : prompt, enter:
`"/dev/bboot";`

`IN:FILE:DATA,APND,FN="/tmp/backup",LINE=1!`

Press the <CR> key. At the : prompt, enter:
`"/dev/broot";`

`IN:FILE:DATA,APND,FN="/tmp/backup",LINE=2!`

Press the <CR> key. At the : prompt, enter:
`"/dev/betc";`

`IN:FILE:DATA,APND,FN="/tmp/backup",LINE=3!`

Press the <CR> key. At the prompt, enter:
`"/dev/bdb";`

- If PDS, **IN:FILE:APND,FN "/tmp/backup",LINE 0/**

Press the <CR> key. At the : prompt, enter:
"/dev/bboot"!

IN:FILE:APND,FN "/tmp/backup",LINE 1/

Press the <CR> key. At the : prompt, enter:
"/dev/broot"!

IN:FILE:APND,FN "/tmp/backup",LINE 2/

Press the <CR> key. At the : prompt, enter:
"/dev/betc"!

IN:FILE:APND,FN "/tmp/backup",LINE 3/

Press the <CR> key. At the : prompt, enter:
"/dev/bdb"!

5.2.6. Verify the contents of the */tmp/backup* file by entering the appropriate input command.

- If MML, **DUMP:FILE:DATA,ALL,FN="/tmp/backup";**
- If PDS, **DUMP:FILE:ALL,FN "/tmp/backup"!**

The file */tmp/backup* will be output. Verify that the file has an entry for each primary partition in the order listed as follows:

/dev/bboot
/dev/broot
/dev/betc
/dev/bdb

6. Copy the active partitions to the inactive partitions by using either Step **6.1** or **6.2**.

⇒ NOTE:

Instead of specifying the partition names, two ordinary files containing the partition names will be specified (one partition name per line) in the command line.

One MHD is automatically removed from service and acts as the source disk for the copy. After the copy completes, the Out-of-Service (OOS) MHD is restored to service.

COPY ACTIVE PARTITIONS TO INACTIVE PARTITIONS PROCEDURE:

- 6.1. If the primary partitions are active, enter the appropriate input command.

If MML,

COPY:PTN:DATA,ALL,SRC="/tmp/primary",DEST="/tmp/backup";

If PDS,

COPY:PTN:ALL,SRC "/tmp/primary",DEST "/tmp/backup"!

Wait for a completion message and then go to Step 7.

Where *"/tmp/primary"* is the file created in Step 5 that contains the desired active partitions to be copied and *"/tmp/backup"* is a file also created in Step 5 that contains the inactive backup partitions.

- 6.2. If the backup partitions are active, enter the appropriate input command.

If MML,

COPY:PTN:DATA,ALL,SRC="/tmp/backup",DEST="/tmp/primary";

If PDS,

COPY:PTN:ALL,SRC "/tmp/backup",DEST "/tmp/primary"!

Wait for a completion message.

Where *"/tmp/primary"* is the file created in Step 5 that contains the desired active partitions to be copied and *"/tmp/backup"* is a file also created in Step 5 that contains the inactive backup partitions.

-
-
7. Check the integrity of the new inactive partition copies by inhibiting routine audits and then running the FSBLK and FSLINK audits on each new partition. If the primary partitions are active, continue to Step 7.1. If the backup partitions are active, go to Step 7.5.

CHECK INTEGRITY OF NEW INACTIVE PARTITIONS PROCEDURE:

- 7.1. If the primary partitions are active, enter the appropriate input command.

■ If MML, **INH:AUD:DATA,ALL;**

■ If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

■ If MML, **AUD:FSBLK=1,INS="/dev/broot":NCG;**

■ If PDS, **AUD:FSBLK 1,INS "/dev/broot";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/broot":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/broot";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/betc":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/betc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/betc":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/betc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/bdb":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/bdb";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/bdb":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/bdb";NCG!**

Wait for a completion message.

- 7.2. If the file system audits report errors on any partitions, then go to Step 8 to copy and verify only the specific partition that failed.
- 7.3. If no file system audit errors are reported, the copy to backup partitions was successful. Resume the scheduling of routine audits by entering the appropriate input command.
 - If MML, **ALW:AUD:DATA,ALL;**
 - If PDS, **ALW:AUD:ALL!**
- 7.4. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

7.5. If the backup partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/root":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/root";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/root":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/root";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/etc":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/etc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/etc":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/etc";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/db":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/db";NCG!**

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/db":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/db";NCG!**

Wait for a completion message.

7.6. If the file system audits report errors on any partitions, go to Step **8** to copy and verify only the specific partition that failed.

7.7. If no file system audit errors are reported, the copy to backup partitions was successful. Resume the scheduling of routine audits by entering the appropriate input command.

- If MML, **ALW:AUD:DATA,ALL;**
- If PDS, **ALW:AUD:ALL!**

7.8. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

8. Verify that audits reported a failure in Step 7. This step is only performed if the audits reported a failure. Perform Step 8.1 to verify the active partition, Step 8.2 to copy it, and Step 8.3 to reverify the new backup individual partition.

⇒ NOTE:

If the errors occur again while performing Step 8, contact your technical assistance organization for advice on how to correct the problem.

VERIFY PARTITION, COPY PARTITION TO BACKUP, AND REVERIFY NEW BACKUP PARTITION PROCEDURE:

8.1. Use Step 8.1.1 or 8.1.2 to check the integrity of the active partition by inhibiting routine audits and then running the FSBLK and FSLINK audits on each active partition.

CHECK INTEGRITY OF ACTIVE PARTITION PROCEDURE:

8.1.1. If the primary partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/a_ptn_name":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/a_ptn_name";NCG!**

Where "a_ptn_name" is the active_partition_name.

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/a_ptn_name":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/a_ptn_name";NCG!**

Wait for a completion message.

- 8.1.2. If the backup partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/b_ptn_name":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/b_ptn_name";NCG!**

Where "*b_ptn_name*" is the backup_partition_name.

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/b_ptn_name":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/b_ptn_name";NCG!**

Wait for a completion message.

-
-
- 8.2. Copy the partition by entering the appropriate input command.

If MML,

COPY:PTN:DATA,ALL,SRC="/dev/a_ptn_name",
DEST="/dev/b_ptn_name";

If PDS,

COPY:PTN:ALL,SRC "/dev/a_ptn_name",
DEST "/dev/b_ptn_name"!

Wait for a completion message.

Where "*a_ptn_name*" is the active_partition_name and "*b_ptn_name*" is the backup_partition_name.

- 8.3. Check the integrity of the new partition copies by inhibiting routine audits and then running the FSBLK and FSLINK audits on each new partition. If the primary partitions are active, continue to Step **8.3.1**. If the backup partitions are active, go to Step **8.3.5**.

REVERIFY NEW BACKUP PARTITION PROCEDURE:

- 8.3.1. If the primary partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/b_ptn_name":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/b_ptn_name";NCG!**

Where "b_ptn_name" is the backup_partition_name.

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/b_ptn_name":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/b_ptn_name";NCG!**

Wait for a completion message.

- 8.3.2. If the file system audits report errors on any partitions, contact your technical assistance organization for advice on how to correct the problem.
- 8.3.3. If no file system audit errors are reported, the copy to active partitions was successful. Resume the scheduling of routine audits by entering the appropriate input command.
- If MML, **ALW:AUD:DATA,ALL;**
 - If PDS, **ALW:AUD:ALL!**
- 8.3.4. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

8.3.5. If the backup partitions are active, enter the appropriate input command.

- If MML, **INH:AUD:DATA,ALL;**
- If PDS, **INH:AUD:ALL!**

Wait for an acknowledgment. Enter the appropriate input command.

- If MML, **AUD:FSBLK=1,INS="/dev/a_ptn_name":NCG;**
- If PDS, **AUD:FSBLK 1,INS "/dev/a_ptn_name";NCG!**

Where "a_ptn_name" is the active_partition_name.

Wait for a completion message. Enter the appropriate input command.

- If MML, **AUD:FSLINK=1,INS="/dev/a_ptn_name":NCG;**
- If PDS, **AUD:FSLINK 1,INS "/dev/a_ptn_name";NCG!**

Wait for a completion message.

8.3.6. If the file system audits report errors on any partitions, contact your technical assistance organization for advice on how to correct the problem.

8.3.7. If no file system audit errors are reported, the copy to backup partitions was successful. Resume the scheduling of routine audits by entering the appropriate input command.

- If MML, **ALW:AUD:DATA,ALL;**
- If PDS, **ALW:AUD:ALL!**

8.3.8. **STOP! YOU HAVE COMPLETED THIS PROCEDURE.**

Glossary

A

ABD

Alternate Boot Disk

ACT

Active. A unit that is currently in service.

AM

Automatic Maintenance

AM

Administrative Module

Asynchronous

A communications method in which time intervals between transmitted characters may be of unequal length and no clock is included with the transmission. Transmission is controlled by start and stop bits at the beginning and end of each character.

ATP

All Tests Passed

Audit

Validity checks that are performed to assure the proper operation of diagnostic control structure and the accuracy of message and data.

B

Backplane

A large Printed Wiring Assembly (PWA) that distributes Direct Current (DC) power and logic signals between hardware modules. Most circuit pack modules plug into the backplane.

Baud Rate

A measure of the speed of data transfer from a computer to a peripheral device (such as a terminal) or from one device to another. Common baud rates are 300, 1200, 4800, and 9600. As a general guide, divide a baud rate by 10 to get the approximate number of English characters transmitted each second.

bdj Driver

Block Device "j" Driver

BOM

Beginning of Media

BOP

Beginning of Partition

BOT

Beginning of Tape

btparm

boot time parameter

BTR

Bus Terminating Resistor

Bus

One or more conductors that transmit control signals, data, or power. A bus usually acts as a common connection between several locations.

C

C/D

Control/Display

CATP

Conditional All Tests Passed

CC

Central Control. The control circuitry arithmetic logic unit, rotate and mask unit, general and special registers, maintenance channel, store address translator circuit, and optional cache memory unit that compose the CC.

CH

Channel

chopt

channel option

Command

An instruction to the *UNIX** system shell program ended by a carriage return. A command is entered to instruct the computer system to perform one or more tasks.

classdef

class definition

CPDP

Common Processor Display Page

* *UNIX* is a registered trademark of The Open Group in the United States and other countries.

CPU

Central Processing Unit. A 32-bit *MIPS** R2000A Reduced Instruction Set Controller (RISC) microprocessor clocked at 16.67 MHz. The term CPU also refers to the logical processor consisting of the three CPU modules.

CR

Carriage Return

CTS

Customer Technical Support

CU

Control Unit. That portion of the computer which is switched in and out of service as a unit. A CU includes a CC, a Main Store (MAS), a Direct Memory Access (DMA) unit (when equipped), the Input/Output (I/O) channels, and the power control unit.

CUPS

Control Unit Power Switch

D

DAP

Display Administration Process. A process that controls the graphic displays on the user Maintenance Cathode-Ray Tube (MCRT) terminal. It accepts requests from other processes via messages, changes its internal representation of the displayed page, and then displays it on the terminal.

DAT

Digital Audio Tape

DC

Direct Current

DCI

Dual Serial Channel Computer Interconnect

dciadd

addition of dual serial channel computer interconnect

dcidel

deletion of dual serial channel computer interconnect

DCIDIP

DCI Display Process

dciopt

dual serial channel computer interconnect option

* *MIPS* is a registered trademark of MIPS Technologies Inc.

DCN

Device Control Number

Demand Phase

A phase that has a very long execution time and/or requires manual action to complete successfully. To execute a demand phase, the phase number must be specified or included in a range of phases, and the Routine Exercise (REX) or Demand Exercise (DEX) options must *not* be specified.

DEX

Demand Exercise

DFC

Disk File Controller. A unit that controls the operation of a portion of the disk storage facility of the *UNIX* Real-Time Reliable (RTR) operating system. This unit interfaces to an Input/Output (I/O) channel and to a Moving Head Disk (MHD) drive.

DFSA

Disk File System Access

DGN

Diagnostic

Differential SCSI

A receiver/driver design for the Small Computer System Interface (SCSI) Bus (SBUS) that provides for a maximum bus length of 25 meters (versus 6 meters for the single-ended SBUS). The differential SBUS is used with the optional 9-track tape drive.

DMA

Direct Memory Access. A method used to perform high-speed data transfers between memory locations without CPU involvement.

DMAC

Direct Memory Access Controller. The system unit that provides Main Store (MAS) access control for Input/Output (I/O) devices without requiring direct control from the CC.

DMQ

Deferred Maintenance Queue

DSCH

Dual Serial Channel. A system component that provides serial interfaces for up to 16 devices.

DST

Destination

E

EAI

Emergency Action Interface. The EAI provides an interface between a CU and a serial data link for effecting various manual override functions such as "force on-line," "stop and switch," and so forth. The EAI is part of the maintenance interface.

ECD

Equipment Configuration Database. A database that describes the physical and logical configurations of the 3B21D computer and the peripheral hardware. It also contains configuration and control information for the audit and operator interface software systems.

EIA

Electronic Industries Association

EIA-232-D

An Electronics Industries Association standard for serial binary communications. The January 1987 revision of this standard replaces the EIA recommended standard RS-232-C.

EQL

Equipment Location

errthld

error threshold

F

FOFL

Force Off-Line

FONL

Force On-Line

G

GB

Gigabyte. One billion bytes.

Generic

A release of hardware or software.

Grow

The state of a unit while it is being added to the system (grown).

H

HA

Host Adapter

HA-OMP

High Availability - Operations and Maintenance Platform

Host

A computer system that is configured to share resources, such as disks and printers, in a networked environment.

HSD

High-Speed Synchronous Data Link

HSDC

High-Speed Synchronous Data Link Controller

I

ID

Identification

Incore Database

A database read from a disk that is resident (*incore*) in the machine.

Initialization

An action taken to provide the system with an operating configuration.

Initialization Level

A value of initialization level counter. The severity of the action taken to recover the system integrity is dependent on the counter value. The higher the value, the more drastic the action taken to recover the system.

Interrupt

A signal, caused by a break or an interrupt character, that normally terminates a process. It is also a signal generated by a hardware condition or a peripheral device.

I/O

Input/Output

IOP

Input/Output Processor. A front-end processor that permits the connection of a variety of data terminals utilizing a variety of line protocols. The IOP contains a peripheral interface controller, IOP interface, and two microprocessor communities. Each microprocessor community connects to a number of data terminals.

iopadd

addition of input/output processor

IOPPS

Input/Output Processor Power Switch

IP-DSU

Internet Protocol-Data Service Unit

L

LED

Light-Emitting Diode. A semiconductor that emits visible light.

Link

An entry for an existing file to a directory.

logdev

logical device

M

Maintenance Terminal

The terminal that is used for exchange of maintenance information/commands between the maintenance person and the computer. It is also referred to as Maintenance Cathode-Ray Tube (MCRT), Maintenance Terminal (MTTY), or in the 5ESS® switch documentation the Master Control Center (MCC).

Manual Input Commands

The Man-Machine Language (MML) and Program Documentation Standard (PDS) format input commands that allow the user to query and request system services.

MAS

Main Store. The system unit that provides storage for program instructions and data. It is composed of solid-state memory devices and provides up to 4 megabytes of storage.

MASC

Main Store Controller. The circuit that provides control interface between the main store bus and the memory devices.

Mb

Megabit.

MB

Megabyte. When referring to disk drives, a megabyte is 1 million bytes. When referring to main store memory, a megabyte is 2^{20} bytes (1,048,576 bytes).

MC

Microcontrol or Microcontroller. The portion of the CC that controls the sequencing of microstore and decoding of microinstructions. MC provides control signals for the CC circuitry. The CC component that provides a serial access between CUs.

MCC

Master Control Center

MCRT

Maintenance Cathode-Ray Tube

MDCT or mdct

Minor Device Chain Table

Message

The mechanism that transfers data from one process to another.

MHD

Moving Head Disk

MHDC

Moving Head Disk Controller

MML

Man-Machine Language

MSG File

An ordered list of executable commands used to install changes to the system using field update.

MT

Magnetic Tape

MTTY

Maintenance Terminal

MTTYC

Maintenance Terminal Controller

N

Network

The hardware and software that connect computer systems, permitting electronic communications between the systems and associated peripherals.

NLU

Next Logical Unit

NR

Not Required

O

ODIN

On-line Data INtegrity system

OFL

Off-Line. The unit that is not in active control of the system configuration and execution but is actively performing off-line functions; for example, executing diagnostics.

On-Line

The unit that is in active control of the system configuration and execution. Its mate, the off-line CU, may be active (executing diagnostics) but is not in control.

Operating System

A set of programs (or software) that controls the computer system. The nucleus of the *UNIX* RTR operating system is the kernel, which manages the resources of the computer. The operating system takes care of such things as I/O procedures, process scheduling, and the file system, which relieves user programs of these tasks.

OOS

Out of Service

P

Page

A fixed length, 4-Kb block that has a virtual address and can be transferred between main and secondary storage.

Paging

The process by which programs are divided into pages and transferred between main and secondary.

PC

Peripheral Controller

PDS

Program Documentation Standard

PLU

Previous Logical Unit

Process

An executing program with its own input, output, and “parent” program that initiated it.

PU

Peripheral Unit

PWA

Printed Wiring Assembly



Q

Queue

A waiting list usually consisting of processes or tasks waiting for processor time to execute.



R

RC

Recent Change

RC/V

Recent Change and Verify. A procedure used for creating or modifying records in the ECD.

Real-Time

Pertains to computation performed while the related physical process is taking place. Results of the computation can be used in guiding the physical process.

REX

Routine Exercise

RISC

Reduced Instruction Set Controller

Root

The directory that constitutes the origin of the directory hierarchy in a file system. Specifically, the origin for the file system with the pathname.

ROP

Receive-Only Printer. An output device printer.

ROS

Request Out-of-Service

Routine Exercise Phase

The diagnostic phase which is run automatically when the requesting process is REX, when specified in the command line, or when REX or DEX options are used.

ROS/RST

Request Out-of-Service/Restore. A two-position rocker switch that sends a request via scan points to remove the associated unit from service or to restore the associated unit to service.

RQIP

Request In Progress

RST

Restore

RTR

Real-Time Reliable

S

SBUS

Small Computer System Interface Bus

SC

Scan Point

SCSD

Scanner and Signal Distributor

scsdbody

scanner and signal distributor option block body

SCSDC

Scanner and Signal Distributor Controller

SCSDC16

Scanner and Signal Distributor Controller 16

SCSDOPT

An ECD record that gives the option name for the SCSD PC in the IOP.

scsdopt

scanner and signal distributor option block head

SCSI

Small Computer System Interface. An interface standard (ANSI* X3.131-1986) for an I/O bus used to connect peripheral devices and processors (SCSI devices). A SCSI device requests access to (and gains control of) the SBUS in order to perform data transfers with other SCSI devices using a well-defined set of commands.

scsiadd

addition of small computer system interface

SD

Signal Distributor

SDC

Store Data Control

SDL

Synchronous Data Link

sdladd

addition of synchronous data link

sdlidel

deletion of synchronous data link

SDLC

Synchronous Data Link Controller

sdlcadd

addition of synchronous data link controller

sdlcidel

deletion of synchronous data link controller

Serial Channel

A system component that provides a 16- or 32-bit serial data interface to I/O devices.

sgen

system generation

SIMM

Single In-line Memory Module

* ANSI is a registered trademark of National Standards Institute Inc.

Single-Ended SCSI

Receiver/driver design for the SBUS that allows extremely fast data transfer rates over the SBUS. The total bus length is limited to 6 meters, including PWA wiring and cables. This is the standard SBUS used to control disk and cartridge tape modules.

SMD

Storage Module Drive

SPU

SCSI Peripheral Unit

SRC

Source (bus)

STBY

Standby. The state of a unit that is operational and available for immediate service. It is either not communicating or is not the active half of a duplex pair of devices.

STK

Storage Tek

STLWS

Supplementary Trunk and Line Work Station

ST/ON/OFF

Start/On/Off. A three-position rocker switch.

Synchronous

A communications method in which there is a constant time between successive bits, characters, or events. The timing is achieved by the sharing of a clock signal between the transmitter and receiver.

System Memory

The combination of MAS memory and all other memory for the system.

System Update

The procedure used to introduce an entire new generic, as opposed to selected fixes, on the 3B21D computer.

T

TTY

Terminal

ttyadd

addition of teletypewriter

ttydel

deletion of teletypewriter

TTYC

Terminal Controller. The control circuit that interfaces to an IOP and provides communication to two TTYs.

ttycadd

addition of teletypewriter controller

ttycdel

deletion of teletypewriter controller

TTYPC

TTY Peripheral Controller

U

U

UC

Utility Circuit. The optional system unit that provides address and data matchers and transfer trace capability. This unit is used for software debugging.

UCB or ucb

Unit Control Block

UCL

Unconditional

ularp

user level automatic restart process

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