

**Lucent Technologies**  
Bell Labs Innovations



**DEFINITY<sup>®</sup>**  
**Enterprise Communications Server**  
Release 8.2  
Upgrades and Additions for R8r

555-233-115  
Comcode 108678335  
Issue 1  
April 2000

## **Notice**

Every effort was made to ensure that the information in this book was complete and accurate at the time of printing. However, information is subject to change.

## **Your Responsibility for Your System's Security**

Toll fraud is the unauthorized use of your telecommunications system by an unauthorized party, for example, persons other than your company's employees, agents, subcontractors, or persons working on your company's behalf. Note that there may be a risk of toll fraud associated with your telecommunications system and, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

You and your system manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The system manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. Lucent Technologies does not warrant that this product is immune from or will prevent unauthorized use of common-carrier telecommunication services or facilities accessed through or connected to it. Lucent Technologies will not be responsible for any charges that result from such unauthorized use.

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**Part 15: Class A Statement.** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**Part 68: Network Registration Number.** This equipment is registered with the FCC in accordance with Part 68 of the FCC Rules. It is identified by FCC registration number AS593M-13283-MF-E.

**Part 68: Answer-Supervision Signaling.** Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 Rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

## **Canadian Department of Communications (DOC) Interference Information**

This digital apparatus does not exceed the Class A limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le Présent Appareil Numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le reglement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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## **European Union Declaration of Conformity**

The "CE" mark affixed to the DEFINITY® equipment described in this book indicates that the equipment conforms to the following European Union (EU) Directives:

- Electromagnetic Compatibility (89/336/EEC)
- Low Voltage (73/23/EEC)
- Telecommunications Terminal Equipment (TTE) i-CTR3 BRI and i-CTR4 PRI

For more information on standards compliance, contact your local distributor.

## **Comments**

To comment on this document, return the comment card at the front of the document.

## **Acknowledgment**

This document was prepared by Product Documentation Development, Lucent Technologies, Denver, CO.

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# What's New in Release 8.2r

This is a short list of what changed from Release 7r. For more detailed information, refer to *DEFINITY ECS Release 8 What's New in Release 8*. The categories addressed are as follows:

- [Features](#)
- [Hardware](#)
- [Tools](#)
- [Commands, screens, and fields](#)
- [Procedures](#)
- [Upgrade tips](#)
- [Cautions and warnings](#)
- [Product names](#)

## Features

This list provides categorized features available with Release 8.2. For full descriptions, see *DEFINITY Enterprise Communications Server Release 8, Issue 1.0 Change Description*.

| Phone features                       | Networking — ISDN Public                                      |
|--------------------------------------|---------------------------------------------------------------|
| 64 bridged call appearances          | ATM circuit emulation service (CES)                           |
| Abort transfer                       | Feature plus — non-DID calling via UDP                        |
| Automatic exclusion                  | Restricted Presentation                                       |
| Circular station hunting             | Multiple pubnet calling/connect numbers/system                |
| Coverage of calls redirected off-net | Pass advice of charge to BRI (basic rate interface) endpoints |
| Group call pick-up                   | BellCore calling name ID                                      |
| Long hold recall - warning           | Networking — QSIG                                             |

|                                                        |                                                               |
|--------------------------------------------------------|---------------------------------------------------------------|
| Reset shift call                                       | Call-independent signaling connection (CISC) enhancements     |
| Station self display                                   | VALU distinctive alerting                                     |
| <b>Call Center</b>                                     | VALU call coverage                                            |
| Advocate related enhancements                          | Transfer to Audix                                             |
| ASAI/computer telephony integration (CTI) enhancements | Coverage interaction support                                  |
| Increased Call Center capacities (G3r)                 | CAS Attendant display of COR                                  |
| Site stats for ATM connected remote EPNs               | CAS Attendant return call                                     |
| CMS measurement of ATM trunks                          | CAS Display enhancements                                      |
| CALLMASTER V (CC 6416D+) native support                | CAS Priority queue                                            |
| PASTE update                                           | CAS RLT emulation via PRI                                     |
| CentreVu computer Telephony on MAPD                    | <b>Green to Standard</b>                                      |
| <b>DEFINITY Wireless Business Systems (DWBS)</b>       | 13-digit authorization codes (red to std)                     |
| X-station mobility                                     | <b>Networking — Other</b>                                     |
| <b>Hospitality</b>                                     | IP Solutions                                                  |
| Auto digit rotation for direct inward dial             | Interworking with bandwidth constricted ATM networks          |
| Crisis alert to pager                                  | ATM - Hybrid reliability                                      |
| Suite check-in via the hunt-to feature                 | <b>System availability/serviceability</b>                     |
| <b>International</b>                                   | Optical drive                                                 |
| Administrable loss plan                                | Restart notification                                          |
| Brazil and Hungary — E&M signaling                     | Reliability options                                           |
| China — special dial tone                              | C-LAN serviceability tools                                    |
| China — time supervision & forced release              | <b>Terminal support</b>                                       |
| Japan — Support for Japan National Private Networking  | IDS (6200) family of analog terminals native support          |
| Japan — Transfer Call Back                             | 6400 tip/ring module                                          |
| Brazil and Hungary — E&M signaling                     | Fast analog modem support                                     |
| <b>Security</b>                                        | <b>Platform</b>                                               |
| DADMIN login                                           | 24-port analog line (TN793/TN2793B) with Caller ID            |
|                                                        | Analog trunk & line board (TN797) without busy tone detection |

Hardware

Minimum required hardware

You need the following minimum required hardware to upgrade to Release 8.2r software.

| Equipment                | Code<br>Comcode | Notes                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic processor carrier  | J58890AP-<br>—  | Contains the following circuit packs: <ul style="list-style-type: none"><li>■ TN573B SNI</li><li>■ TN780 tone clock</li><li>■ TN1648B SYSAM</li><li>■ TN1650B memory</li><li>■ TN1655 packet interface</li><li>■ TN1657 disk drive</li><li>■ TN2211 optical drive</li><li>■ UN330B duplicate interface (opt.)</li><li>■ UN331B processor</li><li>■ UN332C MSSNet</li></ul> |
| Duplex processor carrier | J58890AP-<br>—  | Contains the following circuit packs: <ul style="list-style-type: none"><li>■ TN573B SNI</li><li>■ TN780 tone clock</li><li>■ TN1648B SYSAM</li><li>■ TN1650B memory</li><li>■ TN1655 packet interface</li><li>■ TN1657 disk drive</li><li>■ TN2211 optical drive</li><li>■ UN330B duplicate interface</li><li>■ UN331B processor</li><li>■ UN332C MSSNet</li></ul>        |
| Power unit               | WP-             |                                                                                                                                                                                                                                                                                                                                                                            |

R8.2r hardware

The following upgrade equipment is new to Release 8.2r.

| Equipment                                       | Code<br>Comcode     | Notes                               |
|-------------------------------------------------|---------------------|-------------------------------------|
| Optical drive                                   | TN2211<br>107849754 | If duplicated system,<br>you need 2 |
| MSSNet                                          | UN332C<br>108566381 | If duplicated system,<br>you need 2 |
| Formatted removable media<br>with R8.2 software | J58890TO-1          | If duplicated system,<br>you need 2 |

Additional hardware available

The following equipment is port slot hardware introduced with Release 8.2r.

| Equipment               | Code<br>Comcode     | Notes                                                                                                    |
|-------------------------|---------------------|----------------------------------------------------------------------------------------------------------|
| DS1 interface           | TN2313<br>108382607 | Cost reduction, no new features                                                                          |
| Analog line             | TN793<br>103557468  | 24-port analog line with CID                                                                             |
| Analog trunk/line combo | TN797<br>103557500  | Combines an analog trunk and line into one<br>circuit pack.                                              |
| Control-LAN (C-LAN)     | TN799B<br>108525528 | Updates TN799; enables trace route<br>command                                                            |
| IP interface assembly   | TN802B<br>108517996 | Updates TN802; expansion of IP trunk;<br>introduces two modes: Media Processor<br>Mode and IP Trunk Mode |

Discontinued hardware

The following equipment was discontinued with Release 8.2si.

| Equipment         | Notes                                        |
|-------------------|----------------------------------------------|
| TN1656 tape drive | Replaced with the TN2211 optical drive       |
| UN332/B MSSNet    | The TN2211 optical drive requires the UN332C |

## Tools

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No new tools became available with Release 8.2r.

## Commands, screens, and fields

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No new commands and screens became available or were affected by Release 8.2r.

## Procedures

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The following procedures and steps changed or were added because of problems identified in the laboratory or during early introduction.

Many of the upgrade procedures were reordered and the steps within the procedure better defined. Check the task tables at the beginning of each upgrade chapter for the current order.

Also, to reduce redundancy in the book, there is no longer a separate upgrade process for high or critical reliability. The procedures and steps that apply to high or critical reliability are noted where they occur in the upgrade process.

| Procedure                                 | Steps                                                                     | Notes                                                                                                                                                                                                   |
|-------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Check SPE</a>                 | 1. Type <b>status spe</b> and press Enter to check the health of the SPE. | Becomes first step of upgrade procedure                                                                                                                                                                 |
| <a href="#">Install the Circuit Packs</a> | 1. Insert the TN1650B memory circuit pack in memory slot 3.               | <p>Adding memory to the standby SPE causes an error because the memory number between the standby and active carriers does not match.</p> <p>This requires an additional power down of the carrier.</p> |

| Procedure                                        | Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Notes                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Verify Interchange (H/C only)</a>    | <p>After the circuit packs have been replaced in the first carrier:</p> <ol style="list-style-type: none"><li>1. Type <b>status spe</b> and press Enter:<ul style="list-style-type: none"><li>■ The Standby Refreshed field shows <b>no</b></li><li>■ The Standby Shadowing field shows <b>off</b></li><li>■ The Standby Handshake field shows <b>up</b></li></ul></li></ol> <p>After the circuit packs have been replaced in the second carrier:</p> <ol style="list-style-type: none"><li>1. Type <b>status spe</b> and press Enter to make sure the active side is ready for interchange. When it is ready,<ul style="list-style-type: none"><li>■ The Standby Refreshed field shows <b>yes</b></li><li>■ The Standby Shadowing field shows <b>on</b></li><li>■ The Standby Handshake field shows <b>up</b></li><li>■ Both SPEs show <b>functional</b></li></ul></li></ol> | <p>Because of the memory mismatch between the standby and active SPEs, typing the <b>status spe</b> command yields two different scenarios.</p> |
| <a href="#">Upgrade other carrier (H/C only)</a> | <p>To upgrade the other carrier, lock the SPE switches on the DUPINT to the other carrier.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>The new active carrier resets (cold 2 restart). Wait until the login prompt appears then log in.</p>                                         |
| <a href="#">Upgrade Software</a>                 | <p>This command copies the software from the removable media to the system disk and takes about 15 minutes to complete.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>All calls are dropped—this is a service interruption</p>                                                                                     |



## Upgrade tips

The following upgrade tips were generated from problems identified in the laboratory or during early introduction.

- Adding a third memory circuit pack and an optical drive requires a second non-call-preserving service interruption. See [Chapter 1, "Upgrading G3rV2, V3, V4 to R8r and Adding Memory"](#).
- When upgrading a DEFINITY ECS R8r to a duplicated system (B carrier) or adding a switch node carrier (D carrier), you may receive a carrier that looks different than the ones currently installed. The enhanced carriers come with 16 grounding straps that connect to the carrier connector panel. See ["Add a Control Carrier \(Add Duplication\)" on page 6-80](#), ["Add a Switch Node Carrier \(Standard Reliability\)" on page 6-94](#), and ["Add a Switch Node Carrier \(High or Critical Reliability\)" on page 6-108](#).



**NOTE:**

An enhanced carrier is used only in an R8r PPN cabinet that uses either AC power (U.S.) or Global power.

## Cautions and warnings

The following new cautions and warnings were generated from problems affecting possible data loss that were identified in the laboratory or during early introduction.

| Procedure                                        | Caution or Warning                                                                                                                                                                                         |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">Unlock the Active SPE (H/C only)</a> |  <b>CAUTION:</b><br><i>Allow 10 minutes after unlocking to make sure the standby SPE has fully returned to service.</i> |
| <a href="#">Upgrade Software</a>                 |  <b>CAUTION:</b><br><i>All calls are dropped—this is a service interruption</i>                                         |

Product names

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The following products have been renamed.

| Product name                   | Old name         | Note                                                                                                       |
|--------------------------------|------------------|------------------------------------------------------------------------------------------------------------|
| Removable media                | tape             | Optical drive does not use tapes. We chose a name that is generic to whatever media is used in the future. |
| IP interface assembly (TN802B) | IP trunk (TN802) | TN802B adds MedPro mode; not just IP trunk.                                                                |

# About This Book

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This book is intended for use by trained installation technicians and provides procedures for upgrading existing systems to a DEFINITY® Enterprise Communications Server Release 8.2. This book is intended to cover software and hardware upgrades and additions to existing systems only.

Other hardware installation procedures are in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*. To add adjuncts and peripheral devices, refer to *DEFINITY Enterprise Communications Server Release 7 Installation for Adjuncts and Peripherals*.

## Offer Categories

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Features are limited depending on the category purchased by the customer. Offer Category A allows access to all DEFINITY features. Offer Category B allows access to a subset of DEFINITY features. Contact your Lucent Technologies representative for more information.

## Security Issues

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To ensure the greatest security possible for customers, Lucent Technologies offers services that can reduce toll-fraud liabilities. Contact your Lucent Technologies representative for more security information.

Login security is an attribute of the DEFINITY ECS software. Existing passwords expire 24 hours after installation.

### Access Security Gateway Feature

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Login security for the System-Parameters Customer-Options forms use the access security gateway interface for the “init” login. This feature is active for dial-up access only. It is not active when accessing the DEFINITY via the SAT. Access security gateway is automatically imposed during the upgrade.

## Antistatic Protection

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### CAUTION:

*When handling circuit packs or any components of a DEFINITY System, always wear a wrist ground strap. Connect the strap to an approved ground such as the ground jack on the DEFINITY System.*

## Remove/Install Circuit Packs

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### CAUTION:

*The control circuit packs with white labels cannot be removed or installed when the power is on. The port circuit packs with gray labels (older version circuit packs had purple labels) can be removed or installed when the power is on.*

# Upgrade Paths

The upgrade paths described in this book assume the system being upgraded is at the level of at least a G3V4. To upgrade prior systems to this starting point, refer to *DEFINITY Communications System Generic 3r Upgrades and Additions*.

[Table 1](#) correlates each upgrade to an associated chapter number.

**Table 1. Software and Hardware Upgrade Chapters**

| Description                                                        | Chapter |
|--------------------------------------------------------------------|---------|
| <a href="#">Upgrading G3rV2, V3, V4 to R8r and Adding Memory</a>   | 1       |
| <a href="#">Upgrading R5r/R6r/R7r to R8r without Adding Memory</a> | 2       |
| <a href="#">Upgrading R5si/R6si to R8r EPN and Adding Memory</a>   | 3       |
| <a href="#">G3vs with Intel 386 or Risc Processor to R8r</a>       | 4       |
| <a href="#">Multicarrier G2 Universal Module to R8r EPN</a>        | 5       |

If upgrading from a pre-Release 5vs to a DEFINITY ECS Release 8si, refer to *DEFINITY Enterprise Communications Server Release 8 Upgrades and Additions for R8si*.

The following table indicates the processes and their corresponding time allotment. Not all processes are required for every upgrade; the table shows maximum times and includes high and critical reliability processes.

| Process                                                                 | Minutes |
|-------------------------------------------------------------------------|---------|
| Busyout multimedia interface circuit packs                              | 2       |
| Disable/enable TTI                                                      | 2       |
| Disable/enable scheduled maintenance                                    | 2       |
| Disable/enable alarm origination to INADS                               | 2       |
| Save announcements (TN750/B Only)                                       | 40      |
| Save translations                                                       | 10      |
| Backup disk                                                             | 25-50   |
| Verify software release                                                 | 5       |
| Replace disk drives and circuit packs                                   | 10      |
| Set tone, lock, power down, power up, and unlock active and standby SPE | 30      |
| Restore disk full (both)                                                | 30      |

| Process                                | Minutes |
|----------------------------------------|---------|
| Restore disk install (both)            | 12      |
| Upgrade software                       | 15      |
| Configure removable media              | 2       |
| Set vector f                           | 2       |
| Reset standby 4                        | 5       |
| Status spe                             | 10      |
| Shutdown/restart AUDIX and LAN Gateway | 20      |
| Miscellaneous                          | 5       |

## Conventions Used in This Book

- Information you type is shown as: **save announcements**. To submit the command you typed, press the Enter key in the numbers section of the keyboard, not the Enter/Return key in the letters section.
- Information displayed on the screen is shown as: login:
- Keyboard keys are shown as: Enter
- Circuit pack codes (for example, TN792 or TN754B) are shown with the *minimum acceptable* alphabetic suffix (like the “B” in the code “TN754B”).

Generally, an alphabetic suffix higher than the 1 shown is also acceptable. However, not every *vintage* of either the minimum suffix or a higher suffix code is necessarily acceptable.



**NOTE:**

Refer to *Technical Monthly: Reference Guide for Circuit-Pack Vintages and Change Notices*, for current information about the usable vintages of specific circuit pack codes (including the suffix) in a Release 8 system.

The following conventions describe the systems referred to in this book.

- The word *system*, is a general term encompassing Release 8 and includes references to the DEFINITY Enterprise Communications Server.
- DEFINITY Systems in this book are called: G3V2, G3v3, G3V4, Release 5, Release 5si + memory, Release 5r, Release 6, Release 6si, Release 6r, Release 8r, Release 8, and Release 8si.
- Information in this book is applicable for Release 5 through Release 8, unless otherwise specified.
- DEFINITY Enterprise Communications Server is abbreviated DEFINITY ECS.

## **Related Books**

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The following books are useful for system-related information:

- *DEFINITY Enterprise Communications Server Release 8 System Description Pocket Reference*
- *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
- *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8si*
- *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Single-Carrier Cabinets*
- *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*
- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 8 Upgrades and Additions for R8si*
- *DEFINITY Enterprise Communications Server Release 8 Installation for Adjuncts and Peripherals*
- *AT&T Network and Data Connectivity Reference*
- *BCS Products Security Handbook*
- *DEFINITY Wireless Business System Users Guide*
- *DEFINITY Wireless Business System Installation and Test Guide*
- *DEFINITY Wireless Business Systems System Interface*
- *Switch Administration for DEFINITY AUDIX*
- *DEFINITY Enterprise Communications Server Release 8 Administration for Network Connectivity*

## **How to Order Books**

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In addition to this book, other description, installation and test, maintenance, and administration books are available. A complete list of DEFINITY books can be found in the *Business Communications System Publications Catalog*.

This book and any other DEFINITY books can be ordered directly from the Lucent Technologies Business Communications System Publications Fulfillment Center at 1-317-322-6791 or toll free at 1-800-457-1235.

## How to Comment on This Book

Lucent Technologies welcomes your feedback. Please fill out the reader comment card found at the front of this manual and return it. Your comments are of great value and help improve our documentation.

If the reader comment card is missing, FAX your comments to 1-303-538-1741 or to your Lucent Technologies representative, and mention this book's name and number (in footer), *DEFINITY Enterprise Communication Server Release 8 Upgrades and Additions for R8r*.

## Where to Call for Technical Support

Refer to the table below for the telephone numbers for technical support.

|                                                                    | Telephone Number |
|--------------------------------------------------------------------|------------------|
| DEFINITY Helpline (feature administration and system applications) | 1-800-225-7585   |
| Lucent Technologies Toll Fraud Intervention                        | 1-800-643-2353   |
| Lucent Technologies National Customer Care Center                  | 1-800-242-2121   |
| Lucent Technologies Corporate Security                             | 1-800-822-9009   |
| Streamlined Implementation (for missing equipment)                 | 1-800-772-5409   |
| USA/Canada Technical Service Center                                | 1-800-248-1234   |
| ITAC                                                               | 1-303-804-3777   |
| Lucent Technologies Centers of Excellence                          |                  |
| Asia/Pacific Regional Support Center                               | 65-872-8686      |
| Western Europe/Middle East/South Africa                            | 44-1252-77-4800  |
| Central/Eastern Europe                                             | 361-345-4334     |
| Central/Latin America Caribbean                                    | 1-303-804-3778   |
| Australia                                                          | 61-2-9352-9090   |
| North America (INADS Database Administration)                      | 1-800-248-1111   |



## Trademarks

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This document contains references to the following Lucent Technologies trademarked products:

- ACCUNET<sup>®</sup>
- AUDIX<sup>®</sup>
- Callmaster<sup>®</sup>
- CallVisor<sup>®</sup>
- CONVERSANT<sup>®</sup>
- DEFINITY<sup>®</sup>
- FORUM<sup>™</sup>
- MEGACOM<sup>®</sup>
- SYSTIMAX<sup>®</sup>
- TRANSTALK<sup>™</sup>

The following products are trademarked by their appropriate vendor:

- Audichron<sup>®</sup> is a registered trademark of Audichron Company
- LINX<sup>™</sup> is a trademark of Illinois Tool Works, Inc.
- Music Mate<sup>®</sup> is a registered trademark of Harris Corporation
- PagePac<sup>®</sup> is a registered trademark of Harris Corporation, Dracon Division
- Shockwatch<sup>®</sup> is a registered trademark of Media Recovery, Incorporated
- Styrofoam<sup>®</sup> is a registered trademark of Styrofoam Corporation
- Tiltwatch<sup>®</sup> is a registered trademark of Media Recovery, Incorporated
- Zone Mate<sup>®</sup> is a registered trademark of Harris Corporation

## **Standards Compliance**

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The equipment presented in this book complies with the following standards (as appropriate):

- ITU-T (Formerly CCITT)
- ECMA
- ETSI
- IPNS
- DPNSS
- National ISDN-1
- National ISDN-2
- ISO-9000
- ANSI
- FCC Part 15 and Part 68
- EN55022
- EN50081
- EN50082
- CISPR22
- Australia AS3548 (AS/NZ3548)
- Australia AS3260
- IEC 825
- IEC 950
- UL 1459
- UL 1950
- CSA C222 Number 225
- TS001

## LASER Product

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The DEFINITY ECS may contain a Class 1 LASER device if single-mode fiber optic cable is connected to a remote Expansion Port Network (EPN). The LASER device operates within the following parameters:

Maximum Power Output: -5 dBm

Wavelength: 1310 nm

Mode Field Diameter: 8.8 mm

**CLASS 1 LASER PRODUCT**

**IEC 825 1993**



### **CAUTION:**

*Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.*

Contact your Lucent Technologies representative for more information.

## Electromagnetic Compatibility Standards

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This product complies with and conforms to the following EMC standards (as appropriate):

- Limits and Methods of Measurements of Radio Interference Characteristics of Information Technology Equipment, EN55022 (CISPR22), 1993
- EN50082-1, European Generic Immunity Standard
- FCC Part 15
- Australia AS3548



### **NOTE:**

The system conforms to Class A (industrial) equipment. Voice terminals meet Class B requirements.

- Electrostatic Discharge (ESD) IEC 1000-4-2
- Radiated radio frequency field IEC 1000-4-3
- Electrical Fast Transient IEC 1000-4-4
- Lightning effects IEC 1000-4-5
- Conducted radio frequency IEC 1000-4-6
- Mains frequency magnetic field IEC 1000-4-8
- Low frequency mains disturbance IEC 1000-4-11

## **European Union Standards**

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Lucent Technologies Business Communications Systems declares that the DEFINITY equipment specified in this book bearing the “CE” mark conforms to the European Union Electromagnetic Compatibility Directives.

The “CE” (Conformité Européenne) mark indicates conformance to the European Union Electromagnetic Compatibility Directive (89/336/EEC) Low Voltage Directive (73/23/EEC) and Telecommunication Terminal Equipment (TTE) Directive (91/263/EEC) and with i-CTR3 Basic Rate Interface (BRI) and i-CTR4 Primary Rate Interface (PRI) as applicable.

The “CE” mark is applied to the following Release 8 products:

- Global AC powered Multicarrier Cabinet (MCC)
- DC powered Multicarrier Cabinet (MCC) with 25 Hz ring generator
- AC powered Single-Carrier Cabinet (SCC) with 25 Hz ring generator
- AC powered Compact Single-Carrier Cabinet (CSCC) with 25 Hz ring generator
- Enhanced DC Power System
- Compact Modular Cabinet (CMC) with 25 Hz ring generator
- Compact Modular Cabinet (CMC) with 50 Hz ring generator for France

# Federal Communications Commission Statement

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## Part 68: Statement

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Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- Answered by the called station
- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Lucent Technologies attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

### NOTE:

REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following table.

| Manufacturer's Port Identifier | FIC Code    | SOC/REN/<br>A.S. Code | Network Jacks          |
|--------------------------------|-------------|-----------------------|------------------------|
| Off/On Premises Station        | OL13C       | 9.0F                  | RJ2GX, RJ21X,<br>RJ11C |
| DID Trunk                      | 02RV2-T     | 0.0B                  | RJ2GX, RJ21X           |
| CO Trunk                       | 02GS2       | 0.3A                  | RJ21X                  |
| CO Trunk                       | 02LS2       | 0.3A                  | RJ21X                  |
| Tie Trunk                      | TL31M       | 9.0F                  | RJ2GX                  |
| 1.544 Digital Interface        | 04DU9-B,C   | 6.0P                  | RJ48C, RJ48M           |
| 1.544 Digital Interface        | 04DU9-BN,KN | 6.0P                  | RJ48C, RJ48M           |
| 120A2 Channel Service Unit     | 04DU9-DN    | 6.0P                  | RJ48C                  |

If the terminal equipment (DEFINITY® System) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-248-1234. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

It is recommended that repairs be performed by Lucent Technologies certified technicians.

The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

This equipment, if it uses a telephone receiver, is hearing aid compatible.

# Upgrading G3rV2, V3, V4 to R8r and Adding Memory

# 1

This chapter provides the information necessary to upgrade the software from a DEFINITY G3rV2, V3, or V4 system to a Release 8r system. The chapter also provides information on replacing the following hardware:

- The TN1657 disk drive if drive is **not** Vintage 4 or later.
- The TN 1656 tape drive with the TN2211 optical drive
- The UN332/B MSSNET circuit pack with the UN332C circuit pack (required for the optical drive)
- A TN1650B memory circuit pack if the system does not contain 3 of these circuit packs



## NOTE:

Adding memory to the standby SPE causes an error because the memory number between the standby and active carriers does not match.

If the system already contains 3 TN1650B Memory circuit packs and a V4 or later TN1657 disk drive, skip to [Chapter 2, “Upgrading R5r/R6r/R7r to R8r without Adding Memory”](#).

The procedures step you through a software and hardware upgrade that can be done on either a standard reliability system or a high or critical reliability system.

For more help refer to the following books:

- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*

## Read This First

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### Service Interruption

The upgrade process requires 2 non-call-preserving service interruptions in a standard reliability system and must be closely coordinated with the customer and the local account team.

### Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade. This causes CMS data to be lost. This data loss can be minimized if the upgrade is performed just after the last CMS measurement interval.

All measurement data is lost during the upgrade (including BCMS). If needed, the reports may be printed before the upgrade begins.

CMS could abort the processing of a call if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

### Software Compatibility and Translation Errors

Before starting the upgrade, always check the *Software Release Letter* that accompanies the system removable media. Translation corruption will occur if incompatible software is loaded.

After loading the new software, check for translation errors. To do this, log off and then log back in. Check for a "Translation Corruption Detected" message before proceeding with the upgrade.

If the message indicates errors, refer to ["No Translations After Upgrade"](#) in [Appendix B, "Troubleshooting an Upgrade"](#). Do not continue with the upgrade until the errors are corrected.

### Usable Circuit Packs

Every circuit pack used in the Release 8 system must conform to the minimum usable vintage requirements for that system. At a presale site inspection, the remediation process checks the vintages of existing circuit packs to be reused in the Release 8 system. Replace all unusable vintage circuit packs with current vintages.

Refer to *Technical Quarterly, Reference Guide for Circuit Pack Vintages, Change Notices*, and to the *Software Release Letter* for information about usable circuit pack vintages. For information about usable vintages of non-U.S. circuit packs, refer to the ITAC Tech Alert from your regional distributor.



Software Upgrade

Release 8 software and translations are saved to removable media. Although the translations automatically update to Release 8, several features require special attention because of screen changes or potential naming conflicts in the process.

Between customer confirmation and the actual update or upgrade, check the screens to ensure the translations meet the customer's needs. After rebooting the system, enter the translations either locally or remotely. If done remotely, Contact Field Support Administration Center (FSAC) for the remote entry. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

Required Hardware

The equipment in [Table 1-1](#) must be on site before the upgrade begins. To place a claim for missing equipment, as part of the Streamlined Implementation process, call 1-800-772-5409 or the number provided by your Lucent Technologies representative.

Table 1-1. Required Hardware

| Equipment     | Description                                            | Quantity       |               |
|---------------|--------------------------------------------------------|----------------|---------------|
|               |                                                        | Standard       | High/Critical |
| 106495120     | TN1650B Memory circuit pack                            | 1              | 2             |
| 105533780     | V4 or later TN1657 Disk Drive circuit pack (if needed) | 1              | 2             |
| 108566381     | UN332C MSSNET circuit pack                             | 1              | 2             |
| 107849754     | TN2211 optical drive                                   | 1              | 2             |
| 106590953     | Z100A1 Apparatus Blank Faceplate                       | 1              | 2             |
| J58890TO-1 L1 | Formatted removable media w/Release 8 software         | 2 <sup>1</sup> | 4             |
| 848445086     | Carrier A strip label                                  | 1              | NA            |
| 848445094     | Carrier B strip label                                  | NA             | 1             |

1. For a maintenance update, acquired from the Technical Service Center. For an upgrade, shipped from the factory.

# Task Tables

[Table 1-2](#) lists the high-level tasks to perform the upgrades. Refer to the appropriate page for instructions for each step.

The upgrade procedure is similar for both the standard and high or critical reliability system with a few exceptions. These exceptions are noted as you go through the steps.

**Table 1-2. Tasks to upgrade the software and hardware**

| √ | Task Description                                                             | Page                 |
|---|------------------------------------------------------------------------------|----------------------|
|   | <a href="#">Check SPE</a>                                                    | <a href="#">1-6</a>  |
|   | <a href="#">Save Translations</a>                                            | <a href="#">1-6</a>  |
|   | <a href="#">Save Announcements (if necessary)</a>                            | <a href="#">1-6</a>  |
|   | <a href="#">Back Up Disk</a>                                                 | <a href="#">1-6</a>  |
|   | <a href="#">Disable Scheduled Maintenance and Alarm Origination to INADS</a> | <a href="#">1-7</a>  |
|   | <a href="#">Reconfigure the Tape (G3rV2, V3 R31.0 and Earlier)</a>           | <a href="#">1-6</a>  |
|   | <a href="#">Check Link Status</a>                                            | <a href="#">1-8</a>  |
|   | <a href="#">Disable TTI</a>                                                  | <a href="#">1-8</a>  |
|   | <a href="#">Check Disk Drive</a>                                             | <a href="#">1-8</a>  |
|   | <a href="#">Install Disk Drive (if not TN1657 V4 or earlier)</a>             | <a href="#">1-9</a>  |
|   | <a href="#">Restore Disk</a>                                                 | <a href="#">1-9</a>  |
|   | <a href="#">Check TTI Status</a>                                             | <a href="#">1-10</a> |
|   | <a href="#">Busyout MMI Circuit Packs (H/C only)</a>                         | <a href="#">1-10</a> |
|   | <a href="#">Lock the active SPE (H/C only)</a>                               | <a href="#">1-10</a> |
|   | <a href="#">Check the active tone-clock (H/C only)</a>                       | <a href="#">1-11</a> |
|   | <a href="#">Power Down the Processor Carrier</a>                             | <a href="#">1-11</a> |
|   | <a href="#">Remove the Circuit Packs</a>                                     | <a href="#">1-11</a> |
|   | <a href="#">Install the Circuit Packs</a>                                    | <a href="#">1-12</a> |
|   | <a href="#">Power Up the Processor Carrier</a>                               | <a href="#">1-14</a> |
|   | <a href="#">Unlock the Active SPE (H/C only)</a>                             | <a href="#">1-14</a> |

*Continued on next page*

Table 1-2. Tasks to upgrade the software and hardware — *Continued*

| √ | Task Description                                                       | Page                 |
|---|------------------------------------------------------------------------|----------------------|
|   | <a href="#">Verify Interchange (H/C only)</a>                          | <a href="#">1-15</a> |
|   | <a href="#">Upgrade other carrier (H/C only)</a>                       | <a href="#">1-15</a> |
|   | <a href="#">Affix position label(s)</a>                                | <a href="#">1-15</a> |
|   | <a href="#">Verify software version</a>                                | <a href="#">1-16</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">1-16</a> |
|   | <a href="#">Save Announcements (if necessary)</a>                      | <a href="#">1-16</a> |
|   | <a href="#">Restore Disk</a>                                           | <a href="#">1-16</a> |
|   | <a href="#">Upgrade Software</a>                                       | <a href="#">1-17</a> |
|   | <a href="#">Reset SPE status (H/C only)</a>                            | <a href="#">1-17</a> |
|   | <a href="#">List Configuration Control</a>                             | <a href="#">1-17</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                             | <a href="#">1-18</a> |
|   | <a href="#">Set Date and Time</a>                                      | <a href="#">1-19</a> |
|   | <a href="#">Set Core Dump Vector</a>                                   | <a href="#">1-20</a> |
|   | <a href="#">Enable TTI</a>                                             | <a href="#">1-20</a> |
|   | <a href="#">Release MMI (H/C only)</a>                                 | <a href="#">1-21</a> |
|   | <a href="#">Resolve Alarms</a>                                         | <a href="#">1-21</a> |
|   | <a href="#">Check Link Status</a>                                      | <a href="#">1-21</a> |
|   | <a href="#">Enable Scheduled Maintenance</a>                           | <a href="#">1-21</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a> | <a href="#">1-21</a> |
|   | <a href="#">Check SPE status (H/C only)</a>                            | <a href="#">1-22</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">1-22</a> |
|   | <a href="#">Save Announcements (if necessary)</a>                      | <a href="#">1-22</a> |
|   | <a href="#">Back Up Disk</a>                                           | <a href="#">1-23</a> |
|   | <a href="#">Return Replaced Equipment</a>                              | <a href="#">1-23</a> |

*Continued on next page*

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
*Upgrade the software and hardware*

1-6

## Upgrade the software and hardware

---

### Check SPE

---

1. Type **status spe** and press **Enter** to check the health of the SPE.

For high or critical reliability systems:

- The Standby Refreshed field shows **yes**
- The Standby Shadowing field shows **on**
- The Standby Handshake field shows **up**

### Save Translations

---

1. Type **save translation** and press **Enter** to write all translation information from memory to the disk, which takes about 2 minutes.

### Save Announcements (if necessary)

---

#### NOTE:

The TN750C Announcement circuit pack stores announcements in nonvolatile memory; saving the announcements is optional.

1. If the PPN contains a TN750/B Announcement circuit pack, type **display announcements** and press **Enter**.
2. If administered recorded announcements are listed, type **save announcements cabinet carrier slot** and press **Enter**. For example, **01D03**. This takes about 30 minutes.

#### NOTE:

For some software loads, type **save announcements from cabinet carrier slot**. Type **help** and press **Enter** for complete command usage.

### Back Up Disk

---

1. Type **backup disk** and press **Enter** to write all information from the disk to the backup tape. This takes 30 to 40 minutes.

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
*Upgrade the software and hardware*

1-7

## Disable Scheduled Maintenance and Alarm Origination to INADS

---

1. To prevent scheduled daily maintenance from interfering with the update or upgrade, type **change system-parameters maintenance** and press Enter.
2. If scheduled maintenance has begun, set the Stop Time field to 1 minute after the current time.

or

If scheduled maintenance has **not** begun, set the Start Time field to a time after the upgrade is completed. For example, if you start the upgrade at 8:00 p.m. and the upgrade takes 90 minutes, set the Start Time field to 21:30.



### CAUTION:

*If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.*

3. Type **neither** in the Alarm Origination to OSS Numbers field and press Enter.



### NOTE:

For some software loads, set the Alarm Origination Activated field to **n** and set the Cleared Alarm Notification and Restart Notification fields to **disable** or **n** before pressing Enter.

## Reconfigure the Tape (G3rV2, V3 R31.0 and Earlier)

---



### NOTE:

Do not issue the **list configuration software** command before reconfiguring the removable media.

For some software loads, use **3-mem** instead of **large**

If standard reliability:

1. Type **configure tape large** and press Enter to reconfigure the backup removable media for the 2 TN1650B Memory circuit packs. This command takes about 1 minute to complete.

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
*Upgrade the software and hardware*

1-8

If high or critical reliability:

1. Type **configure tape spe-a large** and press Enter to reconfigure the removable media in control carrier "A" for 2 TN1650B Memory circuit packs. This command takes about 1 minute to complete.
2. Type **configure tape spe-b large** and press Enter to reconfigure the removable media in control carrier "B" for 2 TN1650B Memory circuit packs. This command takes about 1 minute to complete.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Write down all enabled links.
2. Type **status link *number*** and press Enter. Repeat this step for all links.
3. Write down which links are in service.

## Disable TTI

---



### NOTE:

Do this step only if the Terminal Translation Initialization (TTI) is enabled.



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

Make sure the ISDN is in service. If not, try to busy out and release the ISDN D-channel/link to bring the ISDN trunks back into service.

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the TTI Enabled? field to **n** to de-activate the TTI feature.

## Check Disk Drive

---

1. Type **list configuration control** and press Enter to check the vintage of the disk drive. If the drive is V4 or later, go to [Check TTI Status](#).  
  
or  
  
If the drive is *not* V4 or later, go to [Install Disk Drive \(if not TN1657 V4 or earlier\)](#).

## Install Disk Drive (if not TN1657 V4 or earlier)



### CAUTION:

*When replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.*



### CAUTION:

*If a high or critical reliability system, replace and restore the disk drives one at a time starting with the standby SPE. Never replace the active and standby disk drives at the same time.*

1. Type **busyout host-adapter [a | b]** and press **Enter** to prevent other applications from accessing the disk or removable media.
2. Remove the existing TN1657 Disk Drive circuit pack and place it in antistatic material.
3. Insert a new TN1657 circuit pack into the DISK DRIVE slot.
4. To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.
5. Type **release host-adapter [a | b]** and press **Enter** to release the disk from the maintenance-busyout condition and put it back into service.
6. Type **reset host-adapter [a | b]** and press **Enter** to allow the disk to spin up.
7. Type **status spe** and press **Enter** to verify that the disk is now in service.



### NOTE:

If the disk fails to return to service, repeat Steps 1, 3, 4, and 5.

For high or critical reliability, repeat steps 1 through 7 on the active carrier.

## Restore Disk



### NOTE:

Until this command finishes, the system provides no user feedback on the management terminal screen. Do not press **Enter** while the command executes. Doing so causes the terminal screen to clear as the command finishes; erasing any success or failure messages the system may provide.

If standard reliability:

1. Type **restore disk full** and press **Enter** to copy the information on the removable media to disk, which takes about 30 minutes.

If high or critical reliability:

1. Type **restore disk full both** and press **Enter**.

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## Check TTI Status

---

1. Type **status TTI** and press Enter. Wait until the Percent Complete field shows **100%**.

## Busyout MMI Circuit Packs (H/C only)

---

### CAUTION:

*Multimedia-to-voice station calls are not preserved on an upgrade. Failure to busy-out the TN787 Multimedia Interface (MMI) circuit packs results in unusable TN787 and TN788 Multimedia Voice Conditioner ports.*

1. Type **display system-parameters customer-options** and press Enter. On screen 2 under the Multimedia Call Handling (MMCH) options, check the Basic and Enhanced fields.
2. If either the Basic or Enhanced field is **y**, type **list configuration all** and press Enter to locate all MMI (TN787) circuit packs.
3. If there are MMI circuit packs, type **busyout board cabinet carrier slot** and press Enter to remove the circuit packs from service.

## Lock the active SPE (H/C only)

---

1. Type **status spe** and press Enter to determine which control carrier is active or observe the control carrier LEDs.



### NOTE:

For high or critical reliability systems, we recommend that you replace the circuit packs in the standby carrier first.



### CAUTION:

*When replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.*

2. Move the SPE-SELECT switches on both Duplication Interface (DUPINT) circuit packs, *one at a time*, to the active carrier.



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*Upgrade the software and hardware*

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## Check the active tone-clock (H/C only)

1. Type **status port-network 1** and verify that the Tone-Clock is in the same carrier as the active SPE and that the Service State field shows **in**.



### NOTE:

This takes 1 minute to complete. If the service state is incorrect, repeat the command until this condition is met.

If the active Tone-Clock has not migrated to the active carrier after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r* book to resolve any problems.

## Power Down the Processor Carrier



### CAUTION:

*Do not power down the whole cabinet; it is not necessary.*

For standard reliability, power down the processor carrier. This causes a service interruption.

For high or critical reliability, power down the standby carrier.

1. To power down the processor carrier, remove the power plug from the *left side* of the carrier then remove the power plug from the *right side* of the carrier.

## Remove the Circuit Packs



### NOTE:

More detailed information on removing and adding circuit packs is in [Chapter 6, "Adding or Removing Cabinet Hardware"](#).

1. Remove the blank faceplate next to the MSSNET slot in the carrier.
2. Remove the UN332B circuit pack from the carrier and place it in antistatic packing material.
3. Remove the tape from the tape drive.
4. Remove the TN1656 tape drive and place it in antistatic packing material.

## Install the Circuit Packs

---



### NOTE:

To properly seat a circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

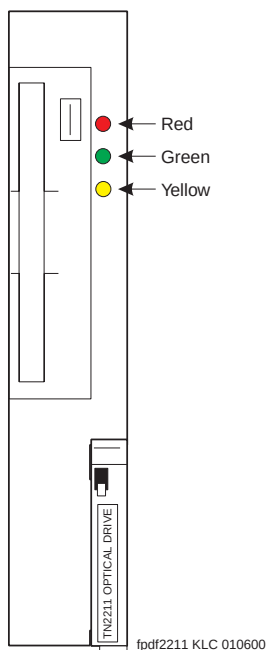
1. Insert the TN1650B memory circuit pack in memory slot 3.



### NOTE:

If a high or critical reliability system, install the TN1650B at the same time as the optical drive. Note that adding memory to the standby SPE causes an error because the memory number between the standby and active carriers does not match.

2. Insert the UN332C circuit pack into the MSSNET slot.
3. Replace the blank faceplate next to the MSSNET circuit pack.
4. Insert the TN2211 optical drive ([Figure 1-1](#)) into the right most TAPE DRIVE slot. It only takes up 2 slots.
5. Place a blank faceplate over the left most TAPE DRIVE slot.

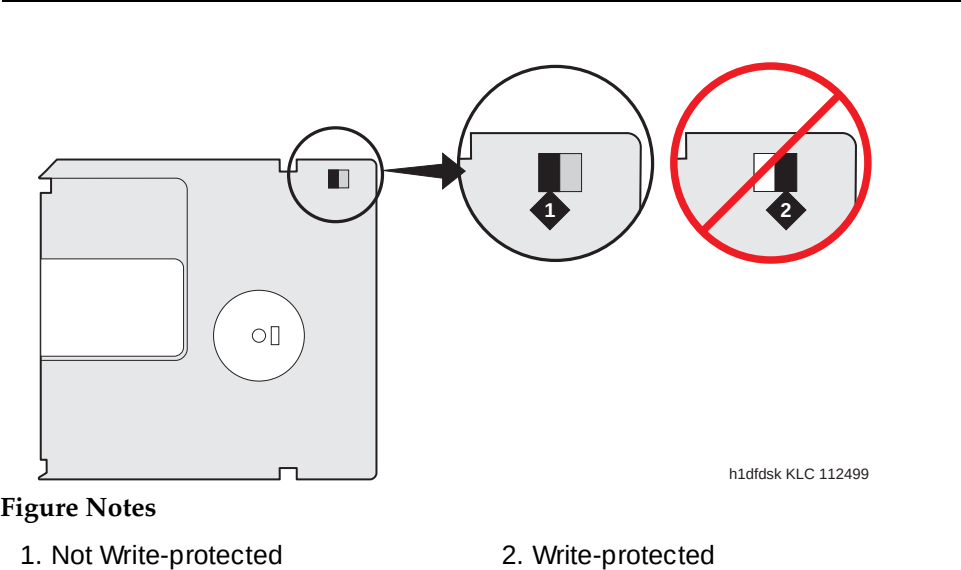


---

Figure 1-1. TN2211 Optical Drive

6. Place the formatted removable media, label facing left, into the optical drive.

**NOTE:**  
Make sure the formatted removable media is not write-protected before placing it into the optical drive (see [Figure 1-2](#)).



**Figure 1-2.** Make sure the disk is not write-protected.

**CAUTION:**  
The removable media has a sliding, metal cover to protect the surface of the disk. DO NOT TOUCH THE DISK ([Figure 1-3](#)).

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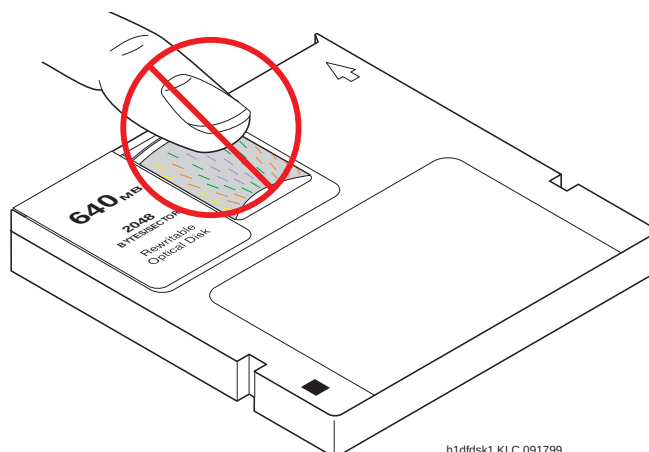


Figure 1-3. Do not touch the disk inside the cartridge.

## Power Up the Processor Carrier

1. To restore power to the processor carrier, insert the power plug on the *right side* of the carrier then insert the power plug on the *left side* of the carrier.

If high or critical reliability:

2. Monitor the SPE as it reboots by observing the LEDs and the terminal. It is powered up when the YELLOW LED on the Processor circuit pack blinks in a steady state, which takes about 10 minutes.

## Unlock the Active SPE (H/C only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.
2. Wait 10 minutes.



### CAUTION:

*Allow 10 minutes after unlocking to make sure the standby SPE has fully returned to service.*

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*Upgrade the software and hardware*

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## Verify Interchange (H/C only)

This step is performed twice, once for each carrier but not at the same time.



### NOTE:

Because of the memory mismatch between the standby and active SPEs, typing the **status spe** command yields two different scenarios.

After the circuit packs have been replaced in the first carrier:

1. Type **status spe** and press Enter:
  - The Standby Refreshed field shows **no**
  - The Standby Shadowing field shows **off**
  - The Standby Handshake field shows **up**
2. Go to [Upgrade other carrier \(H/C only\)](#)

After the circuit packs have been replaced in the second carrier:

1. Type **status spe** and press Enter to make sure the active side is ready for interchange. When it is ready,
  - The Standby Refreshed field shows **yes**
  - The Standby Shadowing field shows **on**
  - The Standby Handshake field shows **up**
2. Go to [Affix position label\(s\)](#)

## Upgrade other carrier (H/C only)

To upgrade the other carrier, lock the SPE switches on the DUPINT to the other carrier.



### NOTE:

The new active carrier resets (cold 2 restart). Wait until the login prompt appears then log in.

Repeat the steps from [Check the active tone-clock \(H/C only\)](#) through [Verify Interchange \(H/C only\)](#).

## Affix position label(s)

1. Place the new strip label(s) over the old carrier label(s).

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
*Upgrade the software and hardware*

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## Verify software version

---



### NOTE:

The Tape Resident field shows the software load number. Write it down for use later.

If standard reliability:

1. Type **list configuration software-version** and press **Enter** to verify that the removable media contains the Release 8 software. This takes about 2 minutes.

If high or critical reliability:

1. Type **list configuration software-version long** and press **Enter** to verify that the removable media contains the Release 8 software.

## Save Translations

---

1. Type **save translations tape** and press **Enter** to save translations to the new removable media, which takes about 2 minutes.

## Save Announcements (if necessary)

---

1. Type **save announce tape** and press **Enter** to save announcements to the new removable media.

## Restore Disk

---

If standard reliability:

1. Type **restore disk full** and press **Enter** to write the new software to disk. Release 8 system software is now resident on the disk.

If high or critical reliability:

2. Type **restore disk full both** and press **Enter** to write the new software to disk.



### NOTE:

This command may take up to 25 minutes to complete. Until this command finishes, the system provides no user feedback on the system access screen. Do not press **Enter** while the command executes. Doing so clears the terminal screen as the command finishes, erasing any success or failure messages the system may provide.

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*Upgrade the software and hardware*

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## Upgrade Software

---

This command copies the software from the removable media to the system disk and takes about 15 minutes to complete.

For standard reliability:



**CAUTION:**

*All calls are dropped—this is a service interruption.*

1. Type **upgrade software G3V8r.xx.x.xxx.x** (entire alphanumeric string of new software version) and press Enter. At the prompt, press Enter to save translations.

For high or critical reliability:

1. Type **upgrade software G3V8r.xx.x.xxx.x no-calls** (entire alphanumeric string of new software version) and press Enter. At the prompt, press Enter to save translations and attempt to preserve calls across the interchange.

For all reliabilities:

2. After the system resets, log in as **craft**.
3. Check for the Translation Corruption Detected message before proceeding with the upgrade. If corruption is detected, refer to [No Translations After Upgrade](#) in [Appendix B, "Troubleshooting an Upgrade"](#) to correct the problem.



**CAUTION:**

*Do not continue with the upgrade until the translations errors are corrected.*

## Reset SPE status (H/C only)

---

1. Type **status SPE** and press Enter. Wait until the Standby Handshake field displays **up**, which takes about 3 minutes.
2. Type **reset spe-standby 4** and press Enter.



**NOTE:**

You can continue the process while the SPE is resetting.

## List Configuration Control

---

1. Type **list configuration control** and press Enter to verify the system recognizes the third TN1650B Memory circuit pack.

## Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have cabinets in several different time zones, you can set up rules for each on a location basis. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

 **NOTE:**  
The default daylight savings rule is 0, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

DAYLIGHT SAVINGS RULES

| Rule | Change Day          | Month       | Date    | Time       | Increment |
|------|---------------------|-------------|---------|------------|-----------|
| 0:   | No Daylight Savings |             |         |            |           |
| 1:   | Start: first Sunday | on or after | April   | 1 at 2:00  | 01:00     |
|      | Stop: first Sunday  | on or after | October | 25 at 2:00 |           |
| 2:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 3:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 4:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 5:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 6:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 7:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. (for example, 1:00 equals one hour)

 **NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. When done, press Enter.



## Set Date and Time

1. Type **set time** and press **Enter** to bring up the Date and Time screen.

DATE AND TIME

DATE

Day of the Week: Tuesday      Month: February  
Day of the Month: 8                      Year: 2000

TIME

Hour: 20    Minute: 30    Second: XX      Type: standard  
Daylight Savings Rule: 0

2. Type the day in English (Sunday through Saturday) in the **Day of the Week :** field. See [Table 1-3](#) for English day names When done, press **Tab** to move to next field.

Table 1-3. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

3. Type the current month in English (January through December) in the **Month :** field. See [Table 1-4](#) for English month names. When done, press **Tab** to move to next field.

Table 1-4. English Month Names

| Number | Name     | Number | Name      |
|--------|----------|--------|-----------|
| 1      | January  | 7      | July      |
| 2      | February | 8      | August    |
| 3      | March    | 9      | September |
| 4      | April    | 10     | October   |
| 5      | May      | 11     | November  |
| 6      | June     | 12     | December  |

- 4. Type the day of month (1 through 31) in the Day of the Month: field and press Tab to move to the next field.
- 5. Type the current year in the Year : field and press TAB to move to the next field.
- 6. Type the current hour for a 24-hour clock in the Hour : field and press Tab to move to the next field.
- 7. Type the current minute (0 through 59) in the Minute: field (seconds cannot be set). When done, press Tab to move to next field
- 8. Type **standard** or **daylight savings** in the Type field, according to the current time in the local time zone. For example, if currently on standard time, type **standard**.
- 9. Type the rule number in the Daylight Savings Rule field.
- 10. When all the information is correct, press Enter.
- 11. Type **display time** and press Enter to verify date and time data.

Set Core Dump Vector

- 1. Type **set vector f spe-maint** and press Enter to set the core dump vector to perform a core dump on any system restart.

Enable TTI

 **NOTE:**  
Do this step only if the TTI is disabled and you want it enabled.

- 1. Type **change system-parameters features** and press Enter to change the TTI field back to its value before the upgrade.

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
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## Release MMI (H/C only)

---

1. Type **release board cabinet carrier slot** and press Enter to release the circuit packs, which were busied out earlier.

## Resolve Alarms

---

1. Type **display alarms** and press Enter to examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link number** and press Enter. Repeat this step for each link.

## Enable Scheduled Maintenance

---

1. Type **change system-parameters maintenance** and press Enter.
2. Type the appropriate time in the Start field to enable scheduled daily maintenance. Make sure the Save Translation field is set to **daily**.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.

2. When administration is completed, log in as **craft** at the Login: prompt.

- 1 Upgrading G3rV2, V3, V4 to R8r and Adding Memory  
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### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press **Enter** to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the **Basic Call Setup** field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press **Enter**.
5. If the **Activate Offer** field is **n**, set it to **y** and press **Tab**. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press **Enter** to effect the changes or **Cancel** if there were no changes.
7. Contact the requester when done.

### Check SPE status (H/C only)

1. Type **status SPE** and press **Enter**. Wait until
  - The **Standby Refreshed** field shows **yes**
  - The **Standby Shadowing** field shows **on**
  - The **Standby Handshake** field shows **up**

### Save Translations

1. Type **save translation** and press **Enter** to copy upgraded translations to the system disk, which takes about 2 minutes.

### Save Announcements (if necessary)

1. Type **save announcements** and press **Enter** to copy announcements to the system disk.

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## Back Up Disk

1. Type **backup disk** and press Enter to back up all changed files to the removable media. This takes about 15 minutes.
2. Type **test stored-data** and press Enter to verify the consistency of the MSS files on the disk and removable media.

If standard reliability:

3. Type **list configuration software-version** and press Enter to verify all the files one last time.

If high or critical reliability:

3. Type **list configuration software-version long** and press Enter to verify all the files one last time.

## Return Replaced Equipment

1. Return replaced equipment to Lucent Technologies according to the requirements outlined in the following books:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

|   |                                                  |
|---|--------------------------------------------------|
| 1 | Upgrading G3rV2, V3, V4 to R8r and Adding Memory |
|   | <i>Upgrade the software and hardware</i>         |

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# Upgrading R5r/R6r/R7r to R8r without Adding Memory

# 2

This chapter provides the information necessary to upgrade the software from a DEFINITY ECS Release 5r, Release 6r, or Release 7r to a Release 8r system without adding memory. The chapter also provides information on replacing the tape drive with the optical drive and replacing the UN332B MSSNET circuit pack with the UN332C circuit pack, which is required for the optical drive.

The procedures step through a software and hardware upgrade that can be done on either a standard reliability or a high or critical reliability system.

There are many configurations of DEFINITY ECS Release 5r/6r/7r in the field, and each system can have a unique configuration. This book addresses the most common configurations. Also refer to the following books:

- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*



## NOTE:

If the cabinet is older than Release 5, refer to *DEFINITY Communications System Generic 3r (G3r) Upgrades and Additions*.

## Read This First

---

### Service Interruption

The upgrade process requires 2 non-call-preserving service interruptions in a standard reliability system and must be closely coordinated with the customer and the local account team.

### Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade. This causes CMS data to be lost. This data loss can be minimized if the upgrade is performed just after the last CMS measurement interval.

All measurement data is lost during the upgrade (including BCMS). If needed, the reports may be printed before the upgrade begins.

CMS could abort the processing of a call if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4a or higher.

### Software Compatibility and Translation Errors

Before starting the upgrade, always check the *Software Release Letter* that accompanies the system removable media. Translation corruption will occur if incompatible software is loaded.

After loading the new software, check for translation errors. To do this, log in and check for a "Translation Corruption Detected" message before continuing with the upgrade process.

If errors are detected, refer to ["No Translations After Upgrade"](#) in [Appendix B, "Troubleshooting an Upgrade"](#). Do not continue with the upgrade until the errors are corrected.

### Usable Circuit Packs

Every circuit pack used in the Release 8 system must conform to the minimum usable vintage requirements for that system. At a presale site inspection, the remediation process checks the vintages of existing circuit packs to be reused in the Release 8 system. Replace all unusable vintage circuit packs with current vintages.

Refer to *Technical Quarterly, Reference Guide for Circuit Pack Vintages, Change Notices*, and to the *Software Release Letter* for information about usable circuit pack vintages. For information about usable vintages of non-U.S. circuit packs, refer to the ITAC Tech Alert from your regional distributor.



## Software Upgrade

Release 8 software and translations are saved to removable media. Although the translations automatically update to Release 8, several features require special attention because of screen changes or potential naming conflicts in the process.

Between customer confirmation and the actual update or upgrade, check the screens to ensure the translations meet the customer's needs. After rebooting the system, enter these translations either locally or remotely. If done remotely, Contact Field Support Administration Center (FSAC) for the remote entry. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Required Tools

This upgrade may require the following tools and other items:

- Wrist ground strap
- Static-proof or original circuit pack packaging for transporting circuit packs
- One copy of each of the following books:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Antistatic Protection



### CAUTION:

*When handling circuit packs or any components of a DEFINITY ECS system, always wear an antistatic wrist ground strap. Connect the strap to an approved ground such as ground jack on the DEFINITY ECS system.*

Required Hardware

The equipment in [Table 2-1](#) must be on-site before the upgrade begins. To place a claim for missing equipment, as part of the Streamlined Implementation process, call 1-800-772-5409 or the number provided by your Lucent Technologies representative.

Table 2-1. Required Hardware

| Equipment                            | Description                                          | Quantity |               |
|--------------------------------------|------------------------------------------------------|----------|---------------|
|                                      |                                                      | Standard | High/Critical |
| 108566381                            | UN332C MSSNET circuit pack                           | 1        | 2             |
| 107849754                            | TN2211 optical drive                                 | 1        | 2             |
| 106590953                            | Z100A1 apparatus blank                               | 1        | 2             |
| J58890TO-1 L1<br>or<br>J58890TF-1 L1 | Formatted removable media with<br>Release 8 software | 2        | 4             |
| 848445086<br>848445094               | Carrier A strip label<br>Carrier B strip label       | 1<br>NA  | NA<br>1       |

## Task Tables

[Table 2-2](#) lists the high-level tasks to perform the upgrades. Refer to the appropriate page for instructions for each step.

The upgrade procedure is similar for both the standard and high or critical reliability system with a few exceptions. These exceptions are noted as you go through the steps.

Table 2-2. Upgrade tasks

| √ | Task Description                                                             | Page                 |
|---|------------------------------------------------------------------------------|----------------------|
|   | <a href="#">Check SPE</a>                                                    | <a href="#">2-7</a>  |
|   | <a href="#">Save Translations</a>                                            | <a href="#">2-7</a>  |
|   | <a href="#">Save Announcements (if necessary)</a>                            | <a href="#">2-7</a>  |
|   | <a href="#">Back Up Disk</a>                                                 | <a href="#">2-7</a>  |
|   | <a href="#">Disable Scheduled Maintenance and Alarm Origination to INADS</a> | <a href="#">2-8</a>  |
|   | <a href="#">Check Link Status</a>                                            | <a href="#">2-8</a>  |
|   | <a href="#">Disable TTI</a>                                                  | <a href="#">2-9</a>  |
|   | <a href="#">Check TTI Status</a>                                             | <a href="#">2-9</a>  |
|   | <a href="#">Busyout MMI Circuit Packs (H/C only)</a>                         | <a href="#">2-9</a>  |
|   | <a href="#">Lock the active SPE (H/C only)</a>                               | <a href="#">2-10</a> |
|   | <a href="#">Check the Active Tone-Clock (H/C only)</a>                       | <a href="#">2-10</a> |
|   | <a href="#">Power Down the Processor Carrier</a>                             | <a href="#">2-10</a> |
|   | <a href="#">Remove the Circuit Packs</a>                                     | <a href="#">2-11</a> |
|   | <a href="#">Install the Circuit Packs</a>                                    | <a href="#">2-11</a> |
|   | <a href="#">Power Up the Processor Carrier</a>                               | <a href="#">2-13</a> |
|   | <a href="#">Unlock the Active SPE (H/C only)</a>                             | <a href="#">2-13</a> |
|   | <a href="#">Verify Interchange (H/C only)</a>                                | <a href="#">2-14</a> |
|   | <a href="#">Upgrade Other Carrier (H/C only)</a>                             | <a href="#">2-14</a> |
|   | <a href="#">Affix position label(s)</a>                                      | <a href="#">2-14</a> |
|   | <a href="#">Verify software version</a>                                      | <a href="#">2-14</a> |

Continued on next page

Table 2-2. Upgrade tasks — Continued

| √ | Task Description                                                       | Page                 |
|---|------------------------------------------------------------------------|----------------------|
|   | <a href="#">Save Translations</a>                                      | <a href="#">2-15</a> |
|   | <a href="#">Save Announcements (if necessary)</a>                      | <a href="#">2-15</a> |
|   | <a href="#">Restore Disk</a>                                           | <a href="#">2-15</a> |
|   | <a href="#">Upgrade Software</a>                                       | <a href="#">2-15</a> |
|   | <a href="#">Reset SPE status (H/C only)</a>                            | <a href="#">2-16</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                             | <a href="#">2-16</a> |
|   | <a href="#">Set Date and Time</a>                                      | <a href="#">2-17</a> |
|   | <a href="#">Set Core Dump Vector</a>                                   | <a href="#">2-19</a> |
|   | <a href="#">Enable TTI</a>                                             | <a href="#">2-19</a> |
|   | <a href="#">Release MMI (H/C only)</a>                                 | <a href="#">2-19</a> |
|   | <a href="#">Resolve Alarms</a>                                         | <a href="#">2-19</a> |
|   | <a href="#">Check Link Status</a>                                      | <a href="#">2-19</a> |
|   | <a href="#">Enable Scheduled Maintenance</a>                           | <a href="#">2-19</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a> | <a href="#">2-20</a> |
|   | <a href="#">Check SPE status (H/C only)</a>                            | <a href="#">2-20</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">2-20</a> |
|   | <a href="#">Save Announcements (if necessary)</a>                      | <a href="#">2-21</a> |
|   | <a href="#">Back Up Disk</a>                                           | <a href="#">2-21</a> |
|   | <a href="#">Return Replaced Equipment</a>                              | <a href="#">2-21</a> |

## Upgrade the software and hardware

---

### Check SPE

---

1. Type **status spe** and press **Enter** to check the health of the SPE.

For high or critical reliability systems:

- The Standby Refreshed field shows **yes**
- The Standby Shadowing field shows **on**
- The Standby Handshake field shows **up**

### Save Translations

---

1. Type **save translation** and press **Enter** to write all translation information from memory to the disk, which takes about 2 minutes.

### Save Announcements (if necessary)

---

#### NOTE:

The TN750C Announcement circuit pack stores announcements in nonvolatile memory; saving the announcements is optional.

1. If the PPN contains a TN750B Announcement circuit pack, type **display announcements** and press **Enter**.
2. If administered recorded announcements are listed, type **save announcements cabinet carrier slot** and press **Enter**. For example, 01D03. This takes about 30 minutes.

#### NOTE:

For some software loads, type **save announcements from cabinet carrier slot**. Type **help** and press **Enter** for complete command usage.

### Back Up Disk

---

1. Type **backup disk** and press **Enter** to write all information from the disk to the backup tape. This takes 30 to 40 minutes.
2. Remove the tape(s) from the tape drive(s).

## Disable Scheduled Maintenance and Alarm Origination to INADS

---



### NOTE:

Make sure scheduled daily maintenance does not interfere with the upgrade.

1. Type **change system-parameters maintenance** and press **Enter**.
2. If scheduled maintenance has begun, set the **Stop Time** field to 1 minute after the current time.

or

If scheduled maintenance has **not** begun, set the **Start Time** field to a time after the upgrade is completed. For example, if you start the upgrade at 8:00 p.m. and the upgrade takes 90 minutes, set the **Start Time** field to 21:30.



### CAUTION:

*If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.*

3. Type **n** in the **Alarm Origination** field and press **Enter** if the field is not set to **neither**.



### NOTE:

For some software loads, set the **Cleared Alarm Notification** and **Restart Notification** fields to **n** before pressing **Enter**.

## Check Link Status

---

1. Type **display communication-interface links** and press **Enter**. Write down all enabled links.
2. Type **status link *number*** and press **Enter**. Repeat this step for all links.
3. Write down which links are in service.

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## Disable TTI

---

### NOTE:

Do this step only if the Terminal Translation Initialization (TTI) is enabled.

### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the TTI Enabled? field to **n** to de-activate the TTI feature.

## Check TTI Status

---

1. Type **status tti** and press Enter. Wait until the Percent Complete field shows **100%**.

## Busyout MMI Circuit Packs (H/C only)

---

### CAUTION:

*Multimedia-to-voice station calls are not preserved on an upgrade. Failure to busy-out the TN787 Multimedia Interface (MMI) circuit packs results in unusable TN787 and TN788 Multimedia Voice Conditioner ports.*

1. Type **display system-parameters customer-options** and press Enter. On screen 2 under the Multimedia Call Handling (MMCH) options, check the Basic and Enhanced fields.
2. If either the Basic or Enhanced field is **y**, type **list configuration all** and press Enter to locate all MMI (TN787) circuit packs.
3. If there are MMI circuit packs, type **busyout board cabinet carrier slot** and press Enter to remove the circuit packs from service.

## Lock the active SPE (H/C only)

---

1. Type `status spe` and press `Enter` to determine which control carrier is active or observe the control carrier LEDs.



### NOTE:

For high or critical reliability systems, we recommend that you replace the circuit packs in the standby carrier first.



### CAUTION:

*When replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.*

2. Move the SPE-SELECT switches on both Duplication Interface (DUPINT) circuit packs, *one at a time*, to the active carrier.

## Check the Active Tone-Clock (H/C only)

---

1. Type **`status port-network 1`** and verify that the Tone-Clock is in the same carrier as the active SPE and that the Service State field shows **in**.



### NOTE:

This takes 1 minute to complete. If the service state is incorrect, repeat the command until this condition is met.

If the active Tone-Clock has not migrated to the active carrier after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r* book to resolve any problems.

## Power Down the Processor Carrier

---



### CAUTION:

*Do not power down the whole cabinet; it is not necessary.*

For standard reliability, power down the processor carrier. This causes a service interruption.

For high or critical reliability, power down the standby carrier.

1. To power down the processor carrier, remove the power plug from the *left side* of the carrier, then remove the power plug from the *right side* of the carrier.



## Remove the Circuit Packs

---

### ⇒ NOTE:

More detailed information on removing and adding circuit packs is in [Chapter 6, "Adding or Removing Cabinet Hardware"](#).

1. Remove the blank faceplate next to the MSSNET slot in the carrier.
2. Remove the UN332B circuit pack from the carrier and place it in antistatic packing material.
3. Remove the TN1656 tape drive and place it in antistatic packing material.

## Install the Circuit Packs

---

### ⇒ NOTE:

To properly seat a circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1. Insert the UN332C circuit pack into the MSSNET slot.
  2. Replace the blank faceplate next to the MSSNET circuit pack.
  3. Insert the TN2211 optical drive ([Figure 2-1](#)) into the right most TAPE DRIVE slot. It only takes up 2 slots.
  4. Place a blank faceplate over the left most TAPE DRIVE slot.
- 

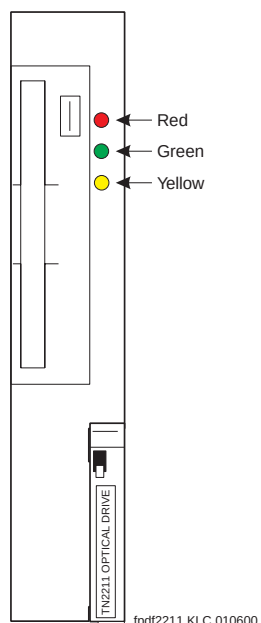


Figure 2-1. TN2211 Optical Drive

5. Place the formatted removable media, label facing left, into the optical drive.

**NOTE:**  
Make sure the formatted removable media is not write-protected before placing it into the optical drive (see [Figure 2-2](#)).

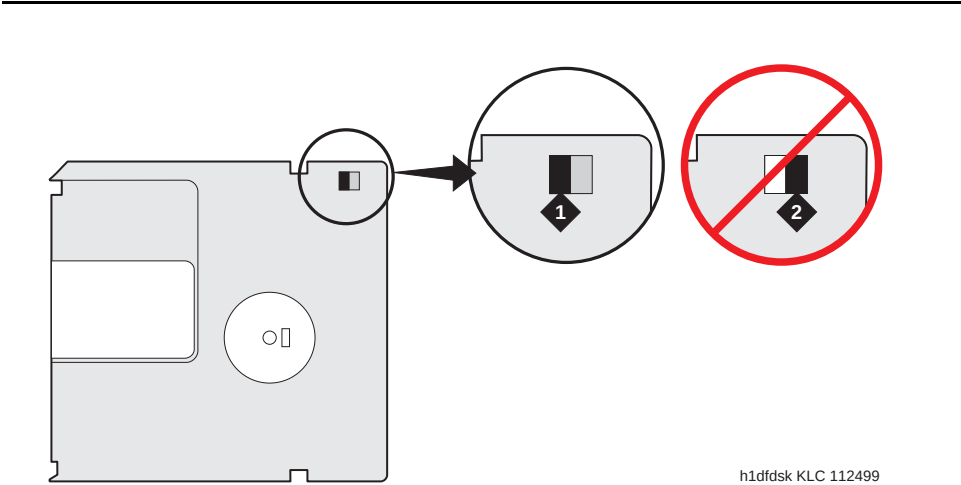


Figure Notes

1. Not write-protected
2. Write-protected

Figure 2-2. Make sure the disk is not write-protected.

**CAUTION:**  
The removable media has a sliding, metal cover to protect the surface of the disk. DO NOT TOUCH THE DISK (see [Figure 2-3](#)).

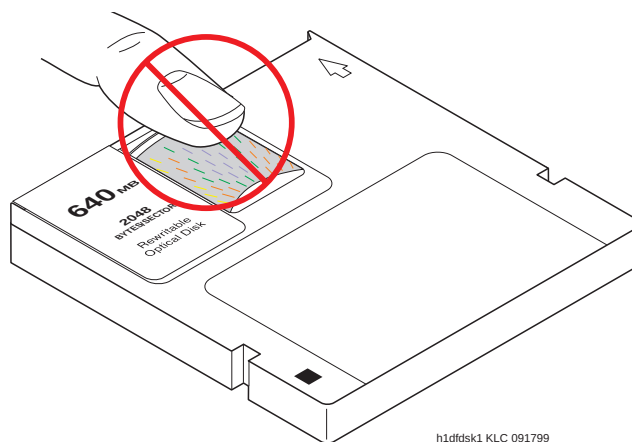


Figure 2-3. Do not touch the disk inside the cartridge.

## Power Up the Processor Carrier

1. To restore power to the processor carrier, insert the power plug on the *right side* of the carrier then insert the power plug on the *left side* of the carrier.

If high or critical reliability:

2. Monitor the SPE as it reboots by observing the LEDs and the terminal. It is powered up when the YELLOW LED on the Processor circuit pack blinks in a steady state, which takes about 10 minutes.

## Unlock the Active SPE (H/C only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.
2. Wait 10 minutes.



### **CAUTION:**

*Allow 10 minutes after unlocking to make sure the standby SPE has fully returned to service.*

## Verify Interchange (H/C only)

---

1. Type **status spe** and press **Enter** to make sure the standby side is ready for interchange:
  - The Standby Refreshed field shows **yes**
  - The Standby Shadowing field shows **on**
  - The Standby Handshake field shows **up**

If the standby SPE does not fully return to service, refer to the STBY-SPE Maintenance Object section in the *Maintenance* book.

## Upgrade Other Carrier (H/C only)

---

To upgrade the other carrier, lock the SPE switches on the DUPINT to the other carrier.



### NOTE:

The new active carrier resets (reset 1). Wait until the login prompt appears, then log in.

Repeat the steps from [Check the Active Tone-Clock \(H/C only\)](#) through [Verify Interchange \(H/C only\)](#).

## Affix position label(s)

---

1. Place the new strip label(s) over the old carrier label(s).

## Verify software version

---



### NOTE:

The Tape Resident field shows the software load number. Write it down for use later.

If standard reliability:

1. Type **list configuration software-version** and press **Enter** to verify that the removable media contains the Release 8 software.

If high or critical reliability:

1. Type **list configuration software-version long** and press **Enter** to verify that the removable media contains the Release 8 software.

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## Save Translations

---

1. Type **save translations tape** and press **Enter** to save translations to the new removable media, which takes about 2 minutes.

## Save Announcements (if necessary)

---

1. Type **save announce tape** and press **Enter** to save announcements to the new removable media.

## Restore Disk

---

If standard reliability:

1. Type **restore disk full** and press **Enter** to write the new software to disk. Release 8 system software is now resident on the disk.

If high or critical reliability:

2. Type **restore disk full both** and press **Enter** to write the new software to disk.



### NOTE:

This command may take up to 25 minutes to complete. Until this command finishes, the system provides no user feedback on the system access screen. Do not press **Enter** while the command executes. Doing so clears the terminal screen as the command finishes, erasing any success or failure messages the system may provide.

## Upgrade Software

---

This command copies the software from the removable media to the system disk and takes about 15 minutes to complete.

For standard reliability:



### CAUTION:

*All calls are dropped—this is a service interruption.*

1. Type **upgrade software G3V8r.xx.x.xxx.x** (entire alphanumeric string of new software version) and press **Enter**. At the prompt, press **Enter** to save translations.

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For high or critical reliability:

1. Type **upgrade software G3V8r.xx.x.xxx.x no-calls** (entire alphanumeric string of new software version) and press Enter. At the prompt, press Enter to save translations and attempt to preserve calls across the interchange.

For all reliabilities:

2. After the system resets, log in as **craft**.
3. Check for the Translation Corruption Detected message before proceeding with the upgrade. If corruption is detected, refer to [No Translations After Upgrade](#) in [Appendix B, "Troubleshooting an Upgrade"](#) to correct the problem.



**CAUTION:**

*Do not continue with the upgrade until the translations errors are corrected.*

## **Reset SPE status (H/C only)**

---

1. Type **status SPE** and press Enter. Wait until the Standby Handshake field displays **up**, which takes about 3 minutes.
2. Type **reset spe-standby 4** and press Enter.



**NOTE:**

You can continue the process while the SPE is resetting.

## **Set Daylight Savings Rules**

---

You can set up to 15 customized daylight savings time rules. If you have cabinets in several different time zones, you can set up rules for each on a location basis. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.



**NOTE:**

The default daylight savings rule is **0**, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

DAYLIGHT SAVINGS RULES

| Rule | Change Day          | Month       | Date    | Time       | Increment |
|------|---------------------|-------------|---------|------------|-----------|
| 0:   | No Daylight Savings |             |         |            |           |
| 1:   | Start: first Sunday | on or after | April   | 1 at 2:00  | 01:00     |
|      | Stop: first Sunday  | on or after | October | 25 at 2:00 |           |
| 2:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 3:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 4:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 5:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 6:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |
| 7:   | Start: first        | on or after |         | at ::      |           |
|      | Stop: first         | on or after |         | at ::      |           |

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. (for example, 1:00 equals one hour)



**NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. When done, press Enter.

Set Date and Time

1. Type **set time** and press Enter to bring up the Date and Time screen.

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

2. Type the day in English (Sunday through Saturday) in the Day of the Week : field. See [Table 2-3](#) for English day names When done, press Tab to move to next field.

Table 2-3. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

3. Type the current month in English (January through December) in the Month : field. See [Table 2-4](#) for English month names. When done, press Tab to move to next field.

Table 2-4. English Month Names

| Number | Name     | Number | Name      |
|--------|----------|--------|-----------|
| 1      | January  | 7      | July      |
| 2      | February | 8      | August    |
| 3      | March    | 9      | September |
| 4      | April    | 10     | October   |
| 5      | May      | 11     | November  |
| 6      | June     | 12     | December  |

4. Type the day of month (1 through 31) in the Day of the Month : field and press Tab to move to the next field.
5. Type the current year in the Year : field and press TAB to move to the next field.
6. Type the current hour for a 24-hour clock in the Hour : field and press Tab to move to the next field.
7. Type the current minute (0 through 59) in the Minute : field (seconds cannot be set). When done, press Tab to move to next field



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8. Type **standard** or **daylight savings** in the Type field, according to the current time in the local time zone. For example, if currently on standard time, type **standard**.
9. Type the rule number in the Daylight Savings Rule field.
10. When all the information is correct, press Enter.
11. Type **display time** and press Enter to verify date and time data.

## Set Core Dump Vector

---

1. Type **set vector f spe-maint** and press Enter to set the core dump vector to perform a core dump on any system restart.

## Enable TTI

---

### NOTE:

Do this step only if the TTI is disabled and you want it enabled.

1. Type **change system-parameters features** and press Enter to change the TTI field back to its value before the upgrade.

## Release MMI (H/C only)

---

1. Type **release board cabinet carrier slot** and press Enter to release the circuit packs, which were busied out earlier.

## Resolve Alarms

---

1. Type **display alarms** and press Enter to examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link number** and press Enter. Repeat this step for each link.

## Enable Scheduled Maintenance

---

1. Type **change system-parameters maintenance** and press Enter.
2. Type the appropriate time in the Start field to enable scheduled daily maintenance. Make sure the Save Translation field is set to **daily**.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft**.

### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. If the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.

## Check SPE status (H/C only)

---

1. Type **status SPE** and press Enter. Wait until
  - The Standby Refreshed field shows **yes**
  - The Standby Shadowing field shows **on**
  - The Standby Handshake field shows **up**

## Save Translations

---

1. Type **save translation** and press Enter to copy upgraded translations to the system disk, which takes about 2 minutes.

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## **Save Announcements (if necessary)**

---

1. Type **save announcements** and press **Enter** to copy announcements to the system disk.

## **Back Up Disk**

---

1. Type **backup disk** and press **Enter** to back up all changed files to the removable media. This takes about 15 minutes.
2. Type **test stored-data** and press **Enter** to verify the consistency of the MSS files on the disk and removable media.

If standard reliability:

3. Type **list configuration software-version** and press **Enter** to verify all the files one last time.

If high or critical reliability:

3. Type **list configuration software-version long** and press **Enter** to verify all the files one last time.

## **Return Replaced Equipment**

---

1. Return replaced equipment to Lucent Technologies according to the requirements outlined in the following books:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

|   |                                                                                                |      |
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|---|------------------------------------------------------------------------------------------------|------|

## Upgrading R5si/R6si to R8r EPN and Adding Memory

# 3

---

This chapter provides the information necessary to upgrade a Single-Carrier Cabinet (SCC) Release 5si/Release 5si + memory/Release 6si system with a TN790 RISC processor to a Release 8 EPN.

The existing SCC PPN is always upgraded to an EPN. The new multicarrier cabinet always serves as the PPN. Upgrading to an EPN for a Release 8r requires changing, and often restructuring, the expansion interface circuit packs. Hardware changes (including carrier replacement in the SCC cabinet) is required.

This upgrade assumes that the Release 8r cabinet has already been installed. If not, refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets* to install the Release 8r system. Return to this chapter when finished.

In this chapter, all occurrences of Release 5si and Release 5si + memory are called Release 5si unless a specific configuration is required to differentiate between product offerings.

*DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* lists Release 8 features and functions and provides the commands, procedures, and forms to initialize and administer the Release 8r.

## Read This First

---

### Service Interruption

The upgrade process requires a service interruption of about 2 hours and must be closely coordinated with the customer and the local account team.

### Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade. This causes CMS data to be lost. This data loss can be minimized if the upgrade is performed just after the last CMS measurement interval.

All measurement data is lost during the upgrade (including BCMS). If needed, the reports may be printed before the upgrade begins.

CMS could abort the processing of a call if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

### Preventing Translation Errors

When instructed in this chapter, perform the **save translation** command. Afterward, check for translation errors before proceeding with the upgrade.

#### NOTE:

Be sure that the translations get saved without errors before continuing with any upgrade.

If errors are detected, refer to [“No Translations After Upgrade”](#) in [Appendix B, “Troubleshooting an Upgrade”](#) to correct the problem. Do not continue with the upgrade until the errors are corrected.

### Communication Between Equipment Rooms

For an upgrade where some of the equipment resides at a remote location, the upgrade activity will be much easier if temporary communications are established between the equipment rooms.

### Contact Network Technicians

The technician for each public and private network accessed by the switch must be contacted before the upgrade begins. Otherwise, if these technicians are not aware of the service interruption caused by the upgrade, it is possible that network-access trunk facilities will be busied out at the far end.

## Relocation of Port Circuit Packs

With the possible exception of a port circuit pack in slot "01" of carrier "A" that must be moved for a TN570 Expansion Interface, an upgrade to Release 8 *does not* cause port circuit packs from the Release 5/6si control cabinet to be moved and manually retranslated. This is because a Release 5/6si PPN is always upgraded to an EPN. So, during the PPN upgrade to a Release 8r EPN, a Release 8r expansion control cabinet (with 14 to 16 available port slots) always replaces the Release 5/6si control cabinet (with 10 available port slots), providing a net gain of from 4 to 6 port slots.

If a port circuit pack does reside in slot "01" of control cabinet "A," the STS software upgrade retranslates this circuit pack to reside in an empty port slot in the new expansion control cabinet.

For an upgrade to a critical reliability Release 8r, if a port circuit pack resides in slot "02" of port cabinet "B," the STS software upgrade retranslates this circuit pack to occupy another empty port slot in the new expansion control cabinet.

To provide maximum holdover for a TN750/B Announcement circuit pack that did not reside in the control carrier, the STS software upgrade relocates this circuit pack to occupy another empty port slot in the new expansion control cabinet.

To ensure reliable DS1 timing in the upgraded Release 8r system, the STS software upgrade relocates the DS1 circuit packs serving as the primary and secondary timing sources to occupy 2 empty port slots in the new Release 8r PPN.

When connecting adjuncts to an upgraded Release 8r, STS locates any new interface circuit packs (including TN577 Packet Gateway, TN553 Packet Data Line, and TN726B Data Line) in the first available slots of the first PPN port carrier.

### NOTE:

To find out where STS relocated these circuit packs, refer to the annotated "list configuration all" that STS provides with the new Release 8r removable media.

## Usable Circuit Packs

Every circuit pack used in the upgraded Release 8r system must conform to the minimum usable vintage requirements for Release 8r. Those circuit packs shipped in the new Release 8r PPN or shipped loose with the new EPN equipment must meet the usable vintage specifications. In addition, at a presale site inspection, the remediation process must check the vintages of every Release 5/6si circuit pack that will be reused with the Release 8r and replace those circuit packs with unusable vintages. Refer to *Technical Quarterly*, Reference Guide for Circuit Pack Vintages and Change Notices, for current information about usable vintages in a Release 8r system.

## **Site Inspections**

For the purposes of a Release 8r upgrade, most Release 5/6si systems are already equipped with the correct lightwave transceivers. Any older versions of these components must be replaced. The earlier versions of lightwave transceivers included the 4-series transceivers (4A through 4F). These transceivers supported fiber connections up to 7,000 feet (2133 m). Order the correct transceivers according to a separate PEC.

## **Power and Ground**

The new multicarrier PPN cabinet or any EPN cabinet added for the upgrade can be either AC or DC powered. If an added cabinet is powered differently from the existing cabinets, the existing cabinets do not have to be converted since mixed power configurations are allowed. However, the system's power and ground must be modified so the AC powered cabinets are grounded to the same single-point ground bar as the DC powered cabinets.

## **DC Isolator**

Each management terminal connected to a DC-powered cabinet, by the asynchronous EIA RS-232 interface, requires a 116A isolator. The isolator is inserted at the RS-232 interface between the terminal and the interface connector to isolate ground between the system and external adjuncts.

## **Emergency Transfer Stations**

During routine operation, the ground for the emergency transfer stations is derived from the system's auxiliary cable. Disconnect this ground during the upgrade to disable the stations. A ground strap is run to the emergency transfer panel. Connect this strap shortly after removing power and disconnect it just before restoring power to the upgraded system.

## **Converting the Translations**

The translations in the Release 5/6si system must be copied to a spare translation card and sent to Software Technical Support (STS) to be converted and written to a Release 8r removable media. This process takes 2 weeks. The Release 8r media (including 1 with translations) must be on-site before the upgrade begins. For each Release 8r processor, 2 media (1 system disk and 1 backup removable media) must always be retained on site with the system.



Software Upgrades

After a software upgrade, several features require special attention because of screen changes or potential naming conflicts in the upgrade process. Most of these changes and conflicts relate either to a software upgrade from standard ACD to Call Vectoring or to changes in the ARS/AAR features to compensate for increasing uncertainty in the North American numbering plan. Also, if ARS is enabled (when upgrading from IR1 Release 8 to GD-91 software), it may be necessary to modify the Call Type field on the ARS Analysis screen to “unk” for all call types except “iop” or “int.”

After the upgrade, the Software Associate should check these forms to ensure the upgraded translations are appropriate for the customer's needs. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for information to make any required changes.

ISDN Gateway

When upgrading to a Release 8r, upgrade the ISDN Gateway (if installed) to the correct software release. Call progress messages to the ISDN Gateway may be intermittently lost, therefore, this upgrade must occur at the same time as the system upgrade.

Contact your Lucent Technologies representative for the correct software release.

Single-Mode Fiber Attenuators

Attenuators may be required when using single-mode fiber. See the table below.

|           |                  |                             |
|-----------|------------------|-----------------------------|
| 106060718 | 5 dB attenuator  | 2 for each fiber connection |
| 106060734 | 10 dB attenuator | 2 for each fiber connection |
| 106061021 | 15 dB attenuator | 2 for each fiber connection |

A different value attenuator may be required even though the fiber span is between the same 2 cabinets (local and remote cabinet). Refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets* for detailed fiber attenuator information.

## Task Tables

[Table 3-1](#) provides the high-level tasks to perform the upgrades in this chapter.

**Table 3-1. Tasks to Upgrade to Release 8r System**

| ✓ | Task Description                                                                                      | Page                 |
|---|-------------------------------------------------------------------------------------------------------|----------------------|
|   | <a href="#">Make Spare Translation Card and Mail to STS for Upgrade</a>                               | <a href="#">3-8</a>  |
|   | <a href="#">Busayout Multimedia Interface Circuit Packs</a>                                           | <a href="#">3-9</a>  |
|   | <a href="#">Save Translations and Announcements</a>                                                   | <a href="#">3-9</a>  |
|   | <a href="#">Follow Routine Preventive Maintenance</a>                                                 | <a href="#">3-12</a> |
|   | <a href="#">Label Cables</a>                                                                          | <a href="#">3-12</a> |
|   | <a href="#">Check Link Status</a>                                                                     | <a href="#">3-12</a> |
|   | <a href="#">Disable TTI</a>                                                                           | <a href="#">3-12</a> |
|   | <a href="#">Shut Down DEFINITY LAN Gateway System</a>                                                 | <a href="#">3-13</a> |
|   | <a href="#">Shut Down DEFINITY AUDIX System</a>                                                       | <a href="#">3-13</a> |
|   | <a href="#">Power Down Existing System</a>                                                            | <a href="#">3-13</a> |
|   | <a href="#">Disconnect Power and Ground</a>                                                           | <a href="#">3-14</a> |
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|   | <a href="#">Remove the Existing Control Cabinet</a>                                                   | <a href="#">3-15</a> |
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|   | <a href="#">Install Port Cabinets</a>                                                                 | <a href="#">3-15</a> |
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|   | <a href="#">Connect TDM/LAN Cables and ICC Cables</a>                                                 | <a href="#">3-20</a> |
|   | <a href="#">Interconnect Port Networks with Fiber Optic Cabling — Standard Reliability Release 8r</a> | <a href="#">3-22</a> |
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*Continued on next page*

Table 3-1. Tasks to Upgrade to Release 8r System — Continued

| ✓ | Task Description                                                                                | Page                 |
|---|-------------------------------------------------------------------------------------------------|----------------------|
|   | <a href="#">Interconnect Port Networks with Fiber Cabling — Critical Reliability Release 8r</a> | <a href="#">3-33</a> |
|   | <a href="#">Connect Power and Ground</a>                                                        | <a href="#">3-46</a> |
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|   | <a href="#">Install System Access Ports</a>                                                     | <a href="#">3-47</a> |
|   | <a href="#">Reseat DEFINITY LAN Gateway System</a>                                              | <a href="#">3-47</a> |
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|   | <a href="#">Install Cable Clamps</a>                                                            | <a href="#">3-52</a> |
|   | <a href="#">Retranslate Port Circuits</a>                                                       | <a href="#">3-52</a> |
|   | <a href="#">Re-record Announcements (TN750/B Only)</a>                                          | <a href="#">3-53</a> |
|   | <a href="#">Administer Fiber Links</a>                                                          | <a href="#">3-53</a> |
|   | <a href="#">Enable TTI</a>                                                                      | <a href="#">3-53</a> |
|   | <a href="#">Check Link Status</a>                                                               | <a href="#">3-53</a> |
|   | <a href="#">Resolve Alarms</a>                                                                  | <a href="#">3-53</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a>                          | <a href="#">3-54</a> |
|   | <a href="#">Save Translations</a>                                                               | <a href="#">3-55</a> |
|   | <a href="#">Return Replaced Equipment</a>                                                       | <a href="#">3-55</a> |

## Preliminary Procedures

---

During an upgrade, STS must convert the Release 5/6si translations and write them to a Release 7r or later tape. The tape is sent to STS for conversion. During this time, the customer should put a freeze on any new translations while the spare tape is being converted. If not, be sure the customer's switch administrator keeps detailed records of any translation changes made during that interval. These records will facilitate the reassignment of any changes after the upgrade. The new Release 8r removable media (1 with the converted translations, 2 if duplicated) must be on-site before the upgrade begins.

Since a new Release 8r PPN is installed during the upgrade, STS changes the PN number of the Release 5/6si PPN to be converted to a Release 8r EPN. To minimize the renumbering of PNs and to minimize the rewiring and relabeling of the MDF, the tape conversion assigns the next PN number (after the highest numbered PN in the system) to the Release 5/6si PPN to become a Release 8r EPN. For example, if a Release 5/6si system with 2 PNs (a PPN and an EPN) were upgraded to a Release 8r, the tape conversion software assigns PN "1" to the new PPN and PN "3" to the additional EPN derived from the old Release 5/6si PPN.

## Make Spare Translation Card and Mail to STS for Upgrade

---

A spare translation card must be acquired from the remediation before upgrading the system. For each processor, there must always be 2 translation cards on site with the system. Do not send a system or backup translation card to STS.

1. Install the spare translation card into the TN777B on the existing system.
2. Type **save translation** and press **Enter**. This instructs the system to write all translation information from memory to the translation card.



### NOTE:

The off-site STS translation upgrade does not preserve the content of recorded announcements. Therefore, during the upgrade, any announcements stored on a TN750/B circuit pack must be re-recorded.

3. Remove the spare translation card and insert the system translation card.
4. Mail the spare translation card to STS (with next-day delivery).

## Check Software Release Letter

---

1. Check the *Software Release Letter* that accompanies the Release 8 removable media. This letter contains the recommended upgrade procedures. Always use the *Software Release Letter* when upgrading a system.
2. If the letter is not included with the Release 8 removable media, perform the following procedures.

## Busyout Multimedia Interface Circuit Packs

---

Perform this step only if the system is high or critical reliability and contains MMCH circuit packs. Multimedia-to-voice station calls are *not* preserved on an upgrade. Failure to busy-out the TN787 Multimedia Interface circuit packs will result in unusable TN787 and TN788 Multimedia Voice Conditioner ports.

1. Type **display system-parameters customer-options** and press Enter. If the MMCH option is set to **y**, continue to step 2. If not, skip to ["Save Translations and Announcements"](#).
2. Type **list configuration all** and press Enter. Locate all of the TN787 Multimedia Interface circuit packs.
3. Type **busyout board <location>** and press Enter for each TN787. This prevents any further multimedia-to-voice connections and drops all active connections.

## Save Translations and Announcements

---

1. Log in at the management terminal on the Release 5/6 system.
2. If the system is duplex, type **status system** and press Enter to verify the system is in the "active/standby" mode.
3. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation cards.
4. Check for translation errors before proceeding with the upgrade. If errors are detected, refer to ["No Translations After Upgrade"](#) in [Appendix B, "Troubleshooting an Upgrade"](#) to correct the problem. Do not continue until the errors are corrected.
5. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter.
6. If administered recorded announcements are listed, type **save announcements** and press Enter.
7. Remove the translation card and install the backup removable media or card.

## **Release 5/6si to Release 8r**

---

During the wiring of the PPN installation, label the MDF with the new PN number of the Release 5/6si PPN. The STS software upgrade assigns the next PN number (after the highest numbered PN in the Release 5/6si system) to the upgraded Release 8r EPN.

### **Required Tools**

The following tools and items may be required during the upgrade:

- 1/4-inch flat blade screwdriver
- 1/4-inch socket with ratchet (optional)
- Long-nose pliers to straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

Required Hardware

The equipment in [Table 3-2](#) must be on-site before the upgrade begins.

Table 3-2. Required Hardware

| Equipment                           | Description                                                                                | Quantity                                                             |
|-------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| J58890N                             | Expansion Control Cabinet                                                                  | 1                                                                    |
| 106647985                           | TN775B Maintenance circuit pack                                                            | 1                                                                    |
| 103281788                           | TN570 Expansion Interface circuit pack                                                     | Depends on reliability type and number of PNs                        |
| 103281812                           | TN573B Switched Node Interface circuit pack                                                | Depends on reliability type and number of PNs                        |
| 407439975 or 407598325              | 20-Foot Multi-Mode Fiber Optic Cable<br>20-Foot Single-Mode Fiber Optic Cable              | 1 to 12                                                              |
| 106455348 or 106455363 or 107731853 | 9823-A Lightwave Transceiver<br>9823-B Lightwave Transceiver<br>300A Lightwave Transceiver | 2 to 12 <sup>1</sup><br>2 to 12 <sup>1</sup><br>2 to 12 <sup>2</sup> |
| J58890to-O L1                       | Release 8 Removable Media                                                                  | 2 or 4 <sup>3</sup>                                                  |
| 106689516                           | TN771D Maintenance Test circuit pack                                                       | 1 or 2 <sup>4</sup>                                                  |
| 846307817                           | Lower Rear Cover                                                                           | 1 <sup>5</sup>                                                       |
| 846307809                           | Ground Plate                                                                               | 1                                                                    |
| H600-248 G1                         | ICC Cables                                                                                 | 2 <sup>6</sup>                                                       |
| 846408268                           | Earthquake Front Panel (earthquake protection only)                                        | 1                                                                    |
| 846408386                           | Earthquake Ground Plate (earthquake protection only)                                       | 1                                                                    |
| 846408250                           | Stiffener (earthquake protection only)                                                     | 1                                                                    |
| 846408243                           | Earthquake Front Mounting Angle (earthquake protection only)                               | 1                                                                    |
| 106060718                           | 5 dB attenuator (single-mode fiber only)                                                   | 2 for each fiber connection <sup>2</sup>                             |
| 106060734                           | 10 dB attenuator (single-mode fiber only)                                                  | 2 for each fiber connection <sup>2</sup>                             |
| 106061021                           | 15 dB attenuator (single-mode fiber only)                                                  | 2 for each fiber connection <sup>2</sup>                             |

1. For each fiber connection, 1 lightwave transceiver is installed in 1 port network, and a like transceiver in the adjacent port network. 4E transceivers cannot be reused. Additional transceivers, ordered separately, ship loose with the EPN equipment.
2. The 300A is connected using 2 fiber optic cables. 5, 10, or 15 dB attenuators may be required.
3. Depending on the reliability type of the Release 8r system. Two removable media are required for a standard reliability system; 4 for a high or critical reliability system.
4. Depending on the number of EPNs in a critical reliability Release 8r system.
5. Required for the "B" port cabinet of a critical reliability Release 8r EPN.
6. Required for a critical reliability Release 8r EPN.

## Follow Routine Preventive Maintenance

---

1. During the upgrade, follow routine preventive maintenance procedures on the system to be upgraded. For more information, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Label Cables

---

1. To make reconnecting the cables simpler and more reliable, label every connector cable associated with the system.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter.
2. Make note of all enabled links.
3. Type **status link <number>** and press Enter.
4. Check the following items and note which links are in-service. You will need this information after the upgrade.
  - PPP links
  - Audix links
  - ISDN
  - BX25
  - Ethernet
5. Repeat steps 3 and 4 for each enabled link.

## Disable TTI

---



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter.
3. On the second screen, set the Enabled? field to **n** to de-activate the TTI feature.



## Shut Down DEFINITY LAN Gateway System



**WARNING:**

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet can damage the LAN Gateway disk.*

1. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway* for the procedure to log on.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Shutdown* from the *Reset System* menu.
5. Unseat the LAN Gateway assembly from its backplane connectors.

## Shut Down DEFINITY AUDIX System

1. If a DEFINITY AUDIX System resides in the system to be upgraded, shut down the AUDIX assembly and allow the disk to completely spin down. Refer to the [“DEFINITY AUDIX Power Procedures”](#) at the end of this chapter.



**WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

2. Unseat the AUDIX assembly from its backplane connectors.

## Power Down Existing System

1. At each PPN cabinet power supply, set the main circuit breaker to OFF.



**CAUTION:**

*Powering down the PPN will cause important system data, such as BCMS data, records of queued ACD calls, Automatic Wakeup requests, and Do Not Disturb requests to be lost. Refer to DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r, for information about preparing the system for a power down.*

2. At each EPN cabinet power supply, set the main circuit breaker to OFF.

## Disconnect Power and Ground

1. Disconnect the cabinet power cords from the rear of each cabinet.
2. Disconnect the 10 AWG (#25) (2.6 mm<sup>2</sup>) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm<sup>2</sup>) cabinet ground wire from the ground bar in the cabinet.

## Install Emergency Transfer Ground Wire



### **CAUTION:**

*To avoid contaminating single-point ground, do not connect the ground strap while the system is powered up.*

1. Connect a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire either to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) associated with the emergency transfer panel.
2. Route the other end of the wire to an approved ground and connect.

## Disconnect Equipment and Cables

1. Disconnect all of the connector cables attaching to the PPN.
2. Disconnect the PC from the TERM connector.
3. Remove the ground plate(s) from between all of the PPN cabinets.
4. Remove the top and bottom rear covers from all of the PPN cabinets.

## Remove Circuit Packs

1. Label each port circuit pack in the control cabinet with its slot number.
2. Remove all circuit packs and power units from the control cabinet. Store the circuit packs in the static-proof packaging.



### **NOTE:**

If a TN756 tone-detector/generator was removed from the Release 5/6si, a new Release 8r tone clock (TN2182B) replaces this circuit pack. The TN2182B Tone-Clock replaces the tone detector circuits on the TN756. A TN2182B eliminates the need for a TN748B.

## Disconnect TDM/LAN Cables and ICC Cables

1. Remove and retain all of the TDM/LAN cables.
2. If the Release 5/6si system is standard reliability, remove and retain the ICC cables.
3. If the Release 5/6si system is duplicated, remove the ICC cables. They are replaced with new ICC cables (H600-248 G1).

## Remove the Existing Control Cabinet

Since the control cabinet is at the bottom of the port network, dismantle the cabinet stack. Disconnect all the power, ground, TDM, ICC, and connector cables.

1. Remove the cabinet clip between each cabinet or front earthquake plate as provided.
2. Remove the rear ground plate.
3. Remove the port cabinets from the stack.



### **CAUTION:**

*A port cabinet may weigh as much as 125 pounds. Use lifting precautions.*

4. If the system is duplicated, remove the control cabinet in position "B." It is not reused.
5. If the basic control cabinet in position "A" is earthquake mounted, remove and retain the hardware securing the cabinet to the floor.
6. Remove the basic control cabinet. It is not reused.

## Unpack and Install Expansion Control Cabinet

1. Unpack and inspect the J58890N Expansion Control Cabinet.
2. Position the expansion control cabinet at the desired location.
3. Reinstall the earthquake mounting hardware, if required.

## Install Port Cabinets

1. Replace the port cabinets into their proper positions.



### **NOTE:**

For a duplicated Release 5/6si, the J58890M Control Cabinet can be replaced by a J58890H Port Cabinet in position "B."

### Install Circuit Packs

1. Replace the circuit packs and power supplies in port cabinets “C” and “D” if they were previously removed.
2. Using the label on the front of the carrier and the annotated “list configuration all” (provided with the Release 8r removable media), install the control circuit packs into the new expansion control cabinet.
3. Install the port circuit packs into the “A” cabinet using the label on the front of the carrier and the annotated “list configuration all” as a guide.



**NOTE:**

Since the new Release 8r expansion control carrier has 6 more port slots than the removed control carrier, there should be no need to retranslate these circuit packs.

4. For an EPN in a critical reliability system, install a TN2182B Tone-Clock and a TN570 EI in slots “1” and “2” of port cabinet “B.” See [Table 3-3](#).

**Table 3-3. TN570 Expansion Interface Requirements**

| Cabinet | 2 PNs w/o Critical Reliability | 2 PNs w/Critical Reliability | 3 PNs w/o Critical Reliability | 3 PNs w/Critical Reliability |
|---------|--------------------------------|------------------------------|--------------------------------|------------------------------|
| PPN     | 1                              | 2                            | 2                              | 4                            |
| EPN 1   | 1                              | 2                            | 2                              | 4                            |
| EPN 2   | N/A                            | N/A                          | 2                              | 4                            |

### Change Cabinet Address Plugs

If a duplicated control cabinet was removed from position “B” and was not replaced with a new port cabinet, the upgraded EPN’s port cabinets occupy different positions in the cabinet stack.

1. Behind each port cabinet, find the address plug attached to 2 of the 6 backplane pins to the right of the pin-field block for slot “00.”
2. Change the location of each port cabinet address plug to reflect the cabinet’s current position. See [Figure 3-1](#).

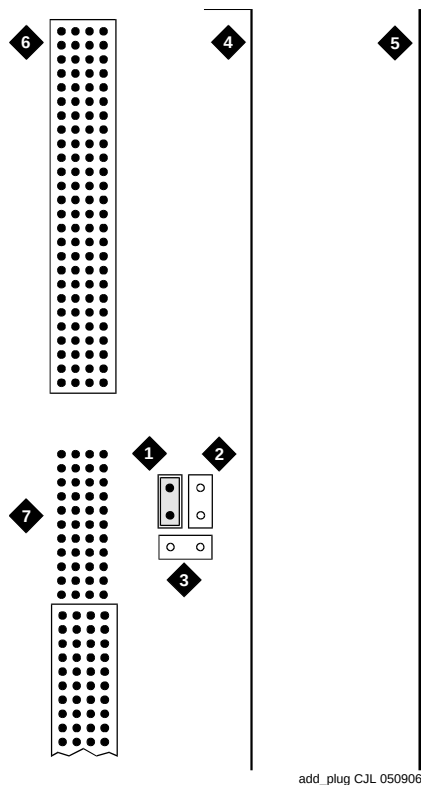


Figure Notes

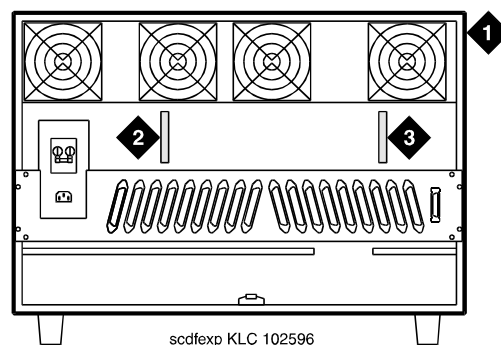
- |                                          |                          |
|------------------------------------------|--------------------------|
| 1. Address Plug (Shown Set to Carrier D) | 5. Right Edge of Cabinet |
| 2. Carrier B Jumper Location (Default)   | 6. Backplane Slot 00     |
| 3. Carrier C Jumper Location             | 7. To Connector Panel    |
| 4. Right Edge of Backplane               |                          |

Figure 3-1. Cabinet Address Plug Location

## Install TDM/LAN Bus Terminators

---

1. If the Release 5/6si PPN has only 1 cabinet, install the 2 AHF110 TDM/LAN bus terminators per [Figure 3-2](#).
- 



### Figure Notes

- |                                            |                                            |
|--------------------------------------------|--------------------------------------------|
| 1. Control Cabinet ("A" Position)          | 3. AHF110 TDM LAN/Bus Terminator (Slot 01) |
| 2. AHF110 TDM LAN/Bus Terminator (Slot 18) |                                            |

---

**Figure 3-2. TDM/LAN Bus Terminators for Single-Carrier Cabinet EPN**

2. If the Release 5/6si PPN has more than 1 cabinet:
  - a. Install the AHF110 TDM/LAN bus terminator in Slot 03 on the right side of the expansion control cabinet as shown in [Figure 3-3](#).
  - b. Install the AHF110 TDM/LAN bus terminator on the top port cabinet, at the end of the daisy chain of the bus.

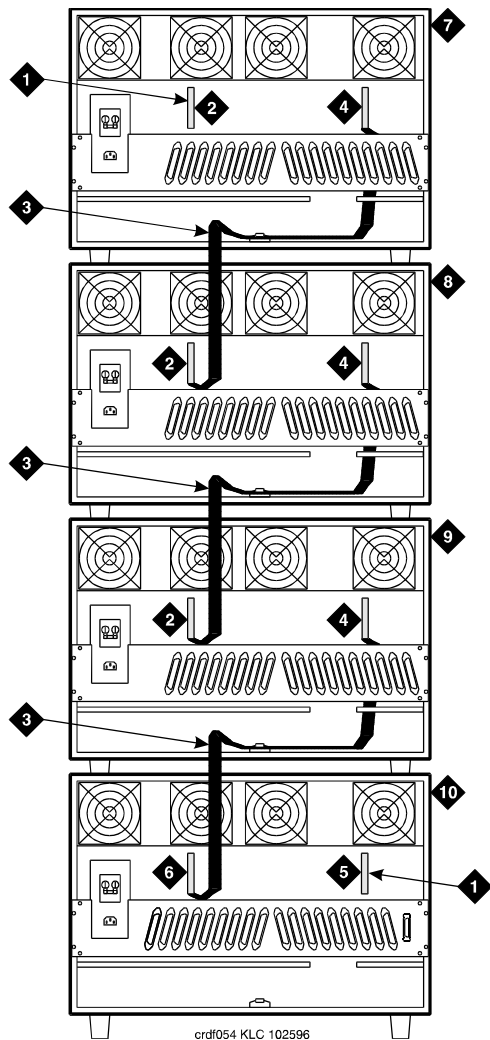


Figure Notes

- |                                  |                                                      |
|----------------------------------|------------------------------------------------------|
| 1. AHF110 TDM LAN/Bus Terminator | 6. Slot 18                                           |
| 2. Slot 17                       | 7. J58890H Port Cabinet ("D" Position)               |
| 3. TDM/LAN Cable (WP91716 L3)    | 8. J58890H Port Cabinet ("C" Position)               |
| 4. Slot 00                       | 9. J58890H Port Cabinet ("B" Position)               |
| 5. Slot 03                       | 10. J58890N Expansion Control Cabinet ("A" Position) |

Figure 3-3. TDM/LAN Connections for Release 5/6si EPN

Connect TDM/LAN Cables and ICC Cables

1. Route and connect the TDM/LAN cables. If any of the Release 5/6si port cabinets (being upgraded to Release 8r cabinets) were originally R1V3 port cabinets, use the following steps to route a cable between an R1V3 upper cabinet and cabinet beneath it. Do not run a new cable through the existing slot in the rear shelf of the upper cabinet.
- a. Loosen the 2 left connector panel screws, then remove the other 2 connector panel screws.

b. Attach the TDM/LAN cable to the backplane and slide the cable between the connector panel and the rear shelf (not through the existing slot in the shelf). Route the cable along the bottom of the cabinet.

c. Replace and tighten the connector panel screws.
2. For a critical reliability system, connect the ICC cables as shown in [Table 3-4](#), [Figure 3-4](#), and [Figure 3-5](#).



**NOTE:**  
For a duplicated cabinet, do not use the ICC cables (H600-259 G1) removed from the duplicated Release 5/6si PPN. Use the new ICC cables (H600-248 G1) supplied with the upgrade.

Table 3-4. Intercabinet Cable Connections

| Connect ICC Cables |         |                 |         |                 |
|--------------------|---------|-----------------|---------|-----------------|
|                    | From    |                 | To      |                 |
|                    | Carrier | Pin-Field Block | Carrier | Pin-Field Block |
| EPN                | J58890N | ICCA            | J58890H | ICCA            |
|                    |         | ICCB            |         | ICCB            |

3. On the “A” carrier, verify the CFY1 current limiter (CURL) connects to pinfield block “00” (see [Figure 3-4](#)).



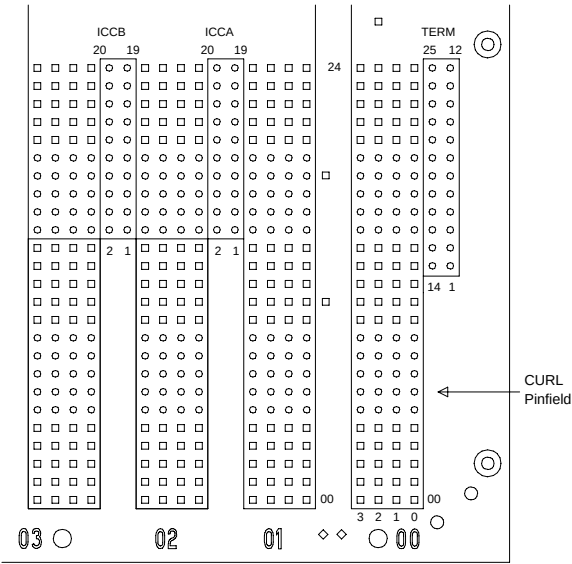


Figure 3-4. ICC Pinfield Blocks on J58890N Expansion Control Cabinet

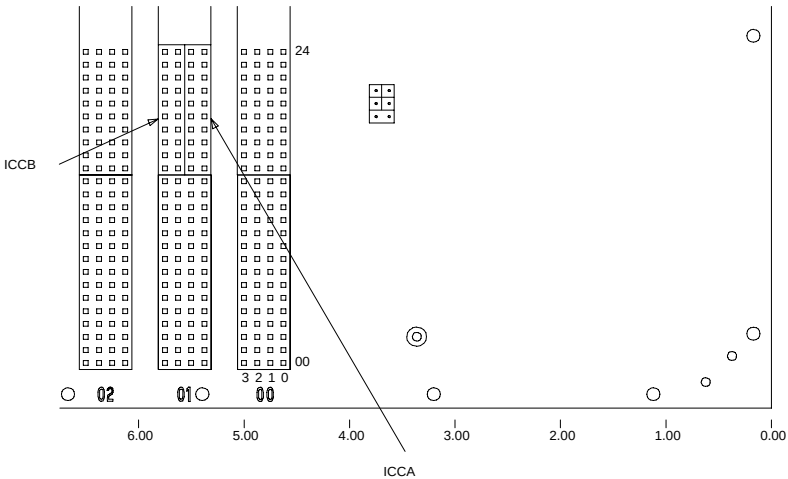


Figure 3-5. ICC Pinfield Blocks on J58890H Port Cabinet

## Interconnect Port Networks with Fiber Optic Cabling — Standard Reliability Release 8r

---

After all fiber optic equipment is installed, refer to [Chapter A, “Fiber Link Administration”](#).

1. Keep track of which fiber attaches to which connector on each lightwave transceiver. Label every cable installed. This section provides figures showing typical examples of these connections.

The connectors on the lightwave transceivers are labeled “TX” (transmit) or “RX” (receive), while the fibers attaching to each connector are numbered either “1” or “2.” See [Figure 3-7](#).

### Collocated Port Networks

For a standard reliability system with 1 collocated EPN, use 1 fiber optic cable and 2 lightwave transceivers to directly connect the networks.

For a standard reliability system with 2 collocated EPNs, use 3 fiber optic cables and 6 lightwave transceivers to directly connect the networks.

#### NOTE:

Based on floor plan considerations, the length of these cables may vary. 20-foot (6.1 m) cables are normally adequate for a Release 8r with 2 PN.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 8r PPN cabinet is collocated with a Single-Carrier Cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

### Fiber Remoted Port Networks

For a standard reliability system with 1 fiber-remoted EPN, use 2 fiber optic cables, 2 lightwave transceivers, and 2 lightguide interface units (provided by the PSC).

For a standard reliability system with 2 fiber-remoted EPNs, use 6 fiber optic cables, 6 lightwave transceivers, and 6 lightguide interface units (provided by the PSC).

DS1 CONV-Remoted Port Networks

For a standard reliability system with 1 DS1 CONV-remoted EPN, use 2 DS1 CONV circuit packs (TN1654), 2 DS1 Conv-to-EI cables (846448637 and/or 846448645), two H-600-348 cables, from 1 to 4 pairs of Channel Service Units (CSUs), and from 1 to 4 pairs of MDF cables (provided with the CSUs).

 **NOTE:**  
The TN1654 requires the use of a TN573B Switched Node Interface circuit pack

For a standard reliability system with 2 DS1 CONV-remoted EPNs, this arrangement requires:

- 6 DS1 CONV circuit packs (TN1654)
- 6 DS1 CONV-to-EI cables (846448637 and/or 846448645)
- 6 H-600-348 cables
- 3, 6, 9, or 12 pairs of CSUs
- 3, 6, 9, or 12 pairs of wall-field cables (provided with CSUs)
- 5, 10, or 15 dB attenuators (single-mode fiber only)

|                 |           |
|-----------------|-----------|
| 5dB Attenuator  | 106060718 |
| 10dB Attenuator | 106060734 |
| 15dB Attenuator | 106061021 |

For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier B of the multicarrier PPN. See [Figure 3-6](#) and [Figure 3-7](#):
  - a. Install a lightwave transceiver on the connector at slot 1B02.

 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1B02.
    - c. Route the fiber optic cable from the lightwave transceiver to the cabinet's cable tray and down out of the cabinet to the EPN stack.
    - d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control cabinet A of EPN stack 2:
- a. Install a lightwave transceiver on the connector at slot 2A01.

b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 2A01.

c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.

d. Coil up the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

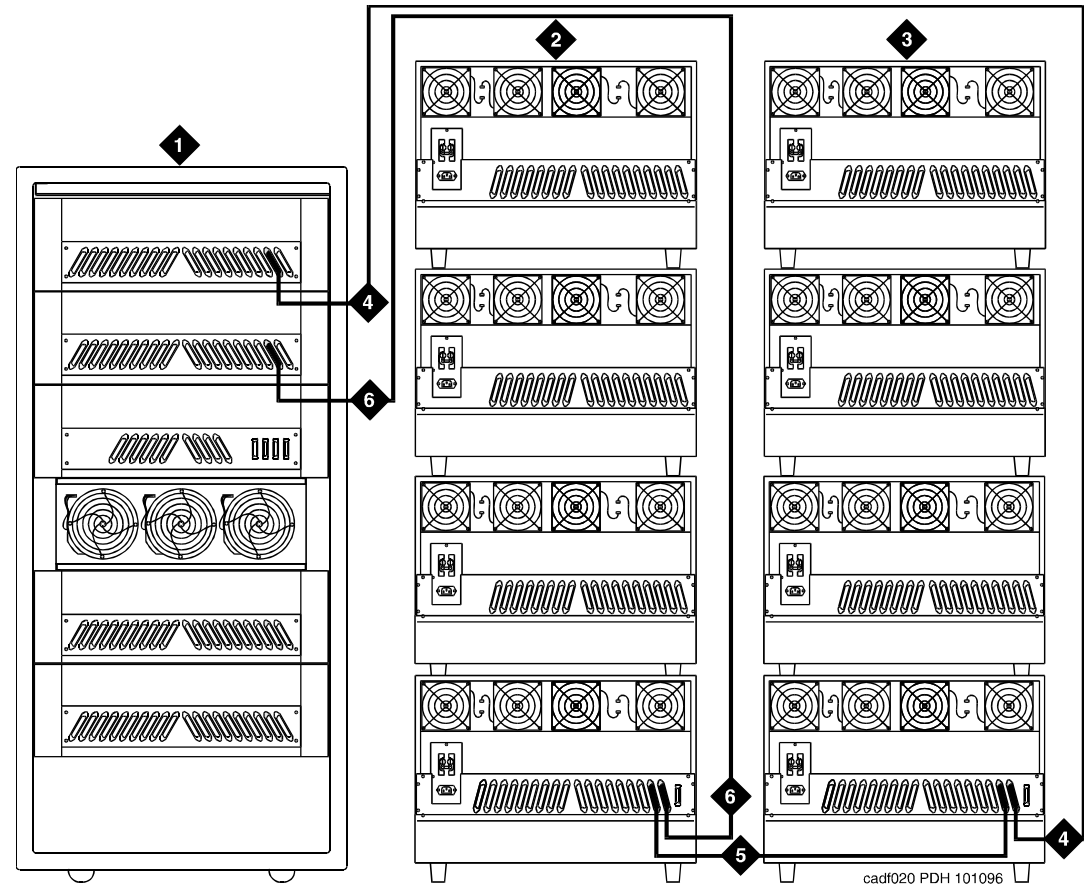


Figure Notes

1. Cabinet 1 PPN

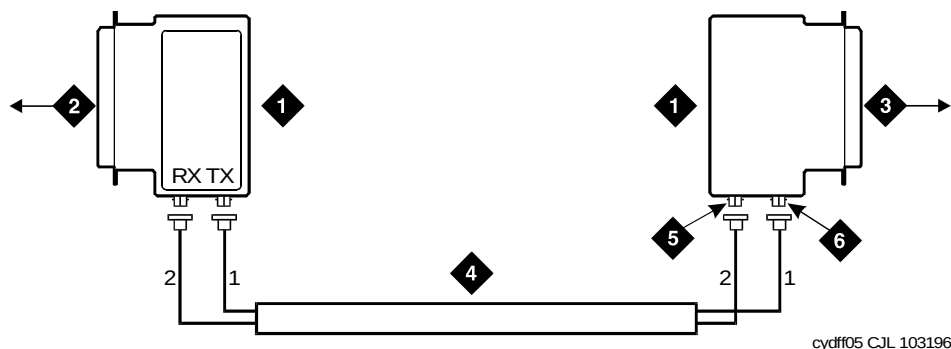
2. Cabinet Stack 2 EPN 1

3. Cabinet Stack 3 EPN 2
4. From Cabinet 3 A1 to Cabinet 1 C2

5. From Cabinet 2 A2 to Cabinet 3 A2

6. From Cabinet 1 B2 to Cabinet 2 A1

Figure 3-6. Standard Reliability Release 8r with 2 or 3 Port Networks



### Figure Notes

- |                                                      |                      |
|------------------------------------------------------|----------------------|
| 1. Lightwave Transceiver                             | 4. Fiber Optic Cable |
| 2. To PPN Carrier B Slot 1B02                        | 5. TX Connector      |
| 3. To EPN 1 Carrier A Slot 2A01<br>(Cabinet Stack 2) | 6. RX Connector      |

Figure 3-7. Typical Fiber Optic Connections

## For 1 or 2 Fiber-Remoted Expansion Port Networks

1. Behind port carrier B of the multicarrier PPN. See [Figure 3-6](#) and [Figure 3-8](#):

- a. Install a lightwave transceiver on the connector at slot 1B02.

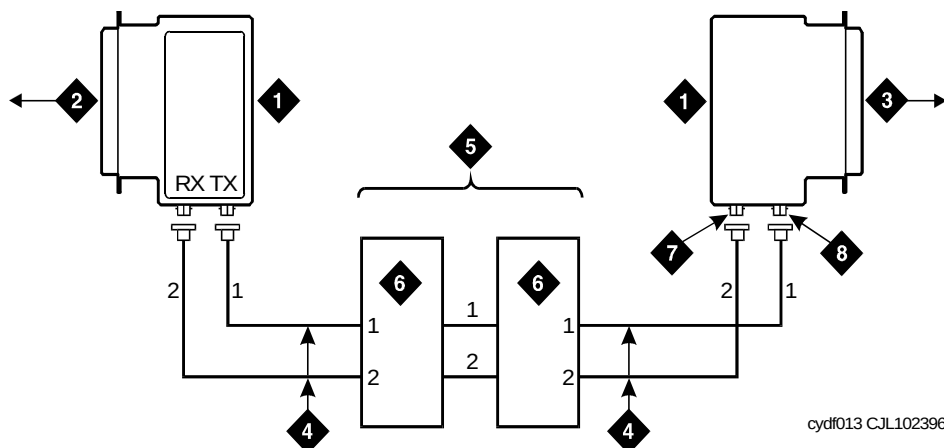


#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect a fiber optic cable to the transceiver just installed.
- c. Route the cable to the cabinet cable tray and out of the cabinet through the cable manager to the PDS cross-connect facility.
- d. Connect the fiber cable to the lightguide interface unit provided.
- e. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control cabinet A of EPN stack 2:
  - a. Install a lightwave transceiver on the connector at slot 2A01.
  - b. Connect a fiber optic cable to the transceiver just installed.
  - c. Route the cable down the outside of the rear covers and through the cable manager to the PDS cross-connect facility.
  - d. Connect the fiber optic cable to the lightguide interface unit.
  - e. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - f. Coil up the surplus fiber optic cable and place the coil in the cable manager.



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### Figure Notes

- |                                                |                                       |
|------------------------------------------------|---------------------------------------|
| 1. Lightwave Transceiver                       | 5. Fiber Optic Cross-Connect Facility |
| 2. PPN Carrier B Slot 1B02                     | 6. Lightguide Interface Unit (LIU)    |
| 3. EPN 1 Carrier A Slot 2A01 (Cabinet Stack 2) | 7. TX Connector                       |
| 4. Fiber Optic Cable                           | 8. RX Connector                       |

Figure 3-8. Fiber Optic Connections PPN to EPN1

## Interconnect Port Networks with Fiber Optic Cabling — High Reliability Release 8r

---

1. Keep track of which fiber attaches to which connector on each lightwave transceiver.

This section provides figures showing typical ways of making these connections. The connectors on the lightwave transceivers are labeled "TX" (transmit) or "RX" (receive), while the fibers attaching to each connector are numbered "1" or "2." See [Figure 3-10](#).

### Collocated Port Networks

For a high reliability system with 1 collocated EPN, use 1 fiber optic cable and 2 lightwave transceivers, or 1 single-mode fiber optic cable and 2 single-mode lightwave transceivers to directly connect the networks.

For a high reliability system with 2 collocated EPN, use 3 fiber optic cables and 6 lightwave transceivers, or 3 single-mode fiber optic cables and 6 single-mode lightwave transceivers to directly connect the networks.

#### NOTE:

Based on floor plan considerations, the length of these cables may vary. 20-foot (6.1 m) cables are normally adequate for a Release 8r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 8r PPN cabinet is collocated with a Single-Carrier Cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier.

### Fiber-Remoted Port Networks

For a high reliability system with 1 fiber-remoted EPN, use 2 fiber optic cables, 2 lightwave transceivers, and 2 lightguide interface units (provided by the PSC).

For a high reliability system with 2 fiber-remoted EPNs, use 6 fiber optic cables, 6 lightwave transceivers, and 6 lightwave-interface units (provided by the PSC).

### DS1 CONV-Remoted Port Networks

For a high reliability system with 1 DS1 CONV-remoted expansion port network, use 2 DS1 CONV circuit packs (TN1654), 2 DS1 CONV-to-EI cables (846448637 and/or 846448645), 2 H-600-348 cables, from 1 to 4 pairs of channel service units (CSUs), and from 1 to 4 pairs of wall-field cables (provided with the CSUs).

#### NOTE:

The TN1654 requires a TN573B Switch Node Interface circuit pack

For a high reliability system with 2 DS1 Conv-remoted expansion port networks, this arrangement requires:

- 6 DS1 Converter circuit packs (TN1654)
- 6 DS1 Converter-to-EI cables (846448637 and/or 846448645)
- 6 H-600-348 cables
- 3, 6, 9, or 12 pairs of CSUs
- 3, 6, 9, or 12 pairs of wall-field cables (provided with CSUs)

### For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-9](#) and [Figure 3-10](#):
  - a. Install a lightwave transceiver on the connector at slot 1C02.  
  
 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
  - b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1C02.
  - c. Route the fiber optic cable from the lightwave transceiver to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
  - d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control cabinet A EPN stack 2:
  - a. Install a lightwave transceiver on the connector at slot 2A01.  
  
 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
  - b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 2A01.
  - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - d. Coil up the surplus fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.



## For 2 Collocated Expansion Port Networks

### 1. Behind port carrier D of the multicarrier PPN:

- a. Install a lightwave transceiver on the connector at slot 1D02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1D02.
- c. Route the cable to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
- d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

### 2. Behind control cabinet A of EPN stack 3:

- a. Install a lightwave transceiver on the connector at slot 3A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 3A01.
- c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
- d. Coil the surplus fiber optic cable and place it either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

### 3. Behind control cabinet A of EPN stack 2:

- a. Install a lightwave transceiver on the connector at slot 2A02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect a fiber optic cable to the transceiver just installed.
- c. Route the cable down the outside of the rear covers to the other EPN stack.
- d. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.

4. Behind control cabinet A of EPN stack 3:
- a. Install a lightwave transceiver on the connector at slot 3A02.

➡ NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 3A02.

c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.

d. Coil the surplus fiber optic cable and attach it (with a cable tie) to a leg of an EPN cable clamp.

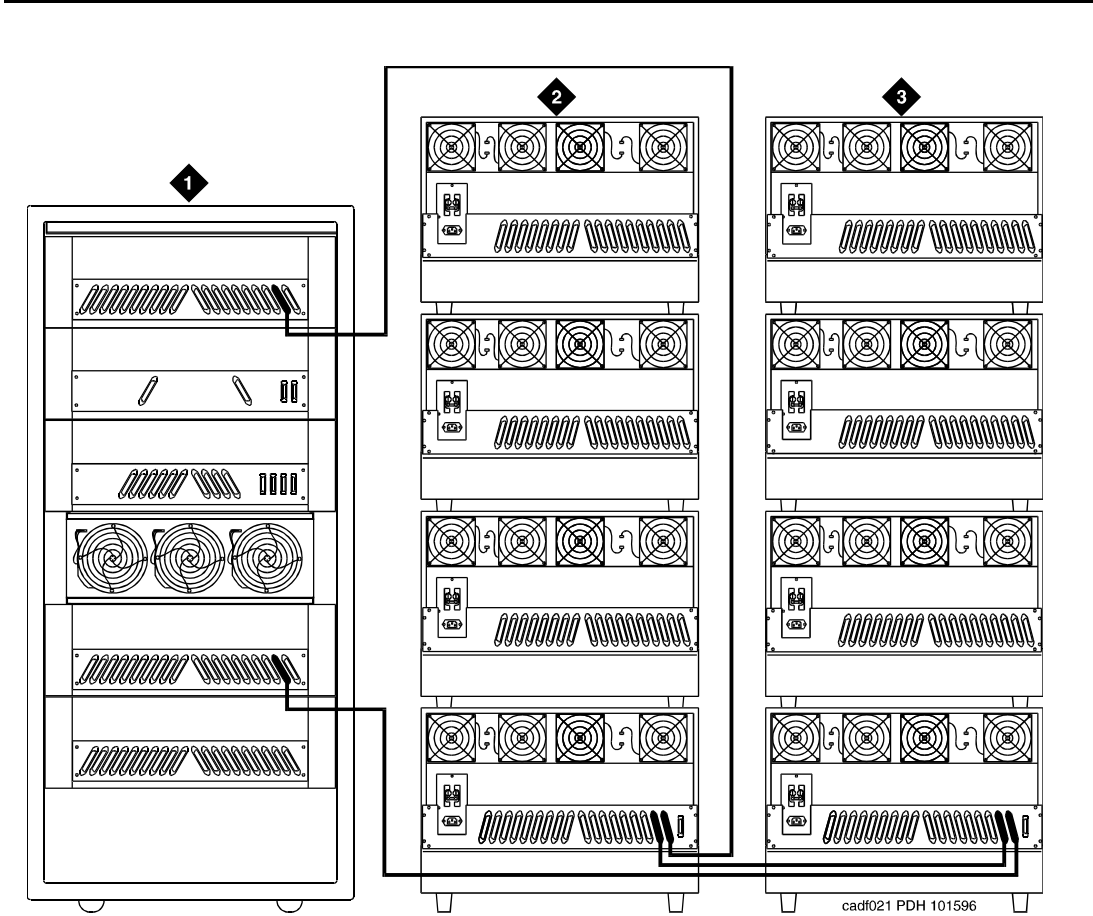
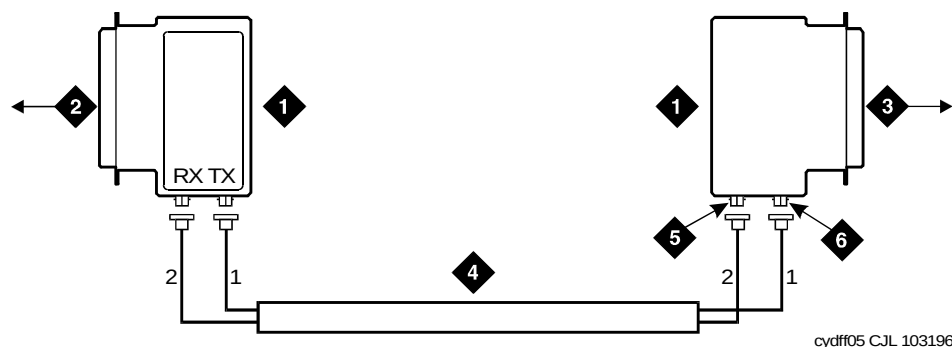


Figure Notes

1. Cabinet 1 PPN
2. Cabinet Stack 2 EPN 1
3. Cabinet Stack 3 EPN 2

Figure 3-9. High Reliability Release 8r with 2 or 3 Port Networks



### Figure Notes

- |                                                      |                      |
|------------------------------------------------------|----------------------|
| 1. Lightwave Transceiver                             | 4. Fiber Optic Cable |
| 2. To PPN Carrier C Slot 1C02                        | 5. TX Connector      |
| 3. To EPN 1 Carrier A Slot 2A01<br>(Cabinet Stack 2) | 6. RX Connector      |

Figure 3-10. Fiber Optic Connections PPN to EPN1

### For 1 or 2 Fiber-Remoted Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-9](#) and [Figure 3-11](#):
    - a. Install a lightwave transceiver on the connector at slot 1C02.
- NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
- b. Connect a fiber optic cable to the transceiver just installed.
  - c. Route the fiber cable to the cabinet cable tray and out of the cabinet through the cable manager to the PDS cross-connect facility.
  - d. Connect the fiber cable to the lightguide interface unit provided.
  - e. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control cabinet A of EPN stack 2:
- a. Install a lightwave transceiver on the connector at slot 2A01.

⇒ NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

b. Connect a fiber cable to the transceiver just installed.

c. Route the fiber cable down the outside of the rear covers and through the cable manager to the PDS cross-connect facility.

d. Connect the fiber cable to the lightguide interface unit provided.

e. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.

f. Coil the surplus fiber optic cable and place it in the cable manager.

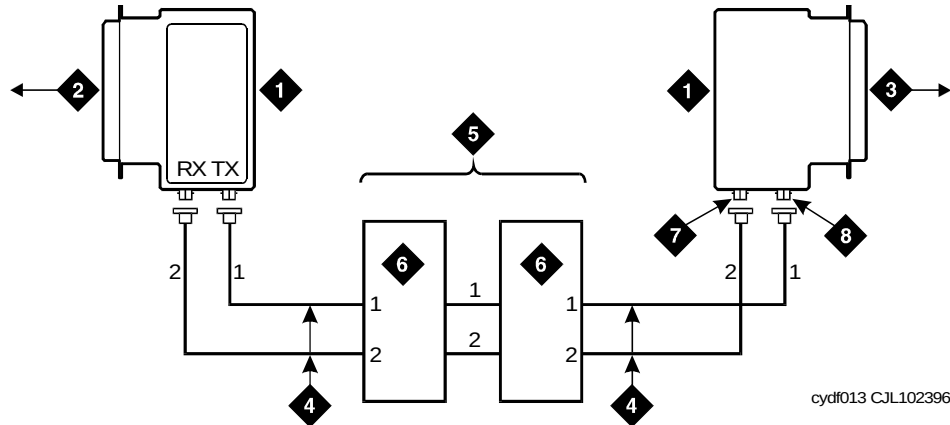


Figure Notes

1. Lightwave Transceiver

2. To PPN Carrier B Slot 1C02

3. To EPN 1 Carrier A Slot 2A01  
(Cabinet Stack 2)

4. Fiber Optic Cable

5. Fiber Optic Cross-Connect Facility

6. Lightguide Interface Unit (LIU)

7. TX Connector

8. RX Connector

Figure 3-11. Fiber Optic Connections PPN to EPN1

## Interconnect Port Networks with Fiber Cabling — Critical Reliability Release 8r

---

1. Keep track of which fiber attaches to which connector on each lightwave transceiver. This section provides figures showing typical ways of making these connections.

The connectors on the lightwave transceivers are labeled “TX” (transmit) or “RX” (receive), while the fibers attaching to each connector are numbered “1” or “2.” See [Figure 3-13](#).

### Collocated Port Networks

For a critical reliability system with 1 collocated expansion port network, use 2 fiber optic cables and 4 lightwave transceivers to directly connect the networks.

For a critical reliability system with 2 collocated expansion port networks, use 6 fiber optic cables and 12 lightwave transceivers to directly connect the networks.

#### NOTE:

Based on floor plan considerations, the length of these cables may vary. 20-foot (6.1 m) cables are normally adequate for a Release 8r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 8r PPN cabinet is collocated with a Single-Carrier Cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

### Fiber-Remoted Port Networks

For a critical reliability system with 1 fiber-remoted EPN, use 4 fiber optic cables, 4 lightwave transceivers, and 4 lightguide interface units (provided by the PSC).

For a critical reliability system with 2 fiber-remoted EPN, use 12 fiber optic cables, 12 lightwave transceivers, and 12 lightguide interface units (provided by the PSC).

**DS1 CONV-Remoted Port Networks**

For a critical reliability system with 1 DS1 CONV-remoted EPN, this arrangement requires:

- Four DS1 CONV circuit packs (TN1654)
- Four DS1 CONV-to-EI cables (847245750 and/or 847245768)
- Four H-600-348 cables
- Two, 4, 6, or 8 pairs of channel service units (CSUs)
- Two, 4, 6, or 8 pairs of wall-field cables (provided with the CSUs)
- 5, 10, or 15 dB attenuators (single-mode fiber only).

|                 |           |
|-----------------|-----------|
| 5dB Attenuator  | 106060718 |
| 10dB Attenuator | 106060734 |
| 15dB Attenuator | 106061021 |

For a critical reliability system with 2 DS1 CONV-remoted EPNs, this arrangement requires:

- 12 DS1 CONV circuit packs (TN1654)
- 12 DS1 CONV-to-EI cables (847245750 and/or 847245768)
- 12 H-600-348 cables
- 6, 12, 18, or 24 pairs of CSUs
- 6, 12, 18, or 24 pairs of wall-field cables (provided with CSUs)
- 5, 10, or 15 dB attenuators (single-mode fiber only).

|                 |           |
|-----------------|-----------|
| 5dB Attenuator  | 106060718 |
| 10dB Attenuator | 106060734 |
| 15dB Attenuator | 106061021 |

## For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-12](#) and [Figure 3-13](#):

- a. Install a lightwave transceiver on the connector at slot 1C02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver just installed.
  - c. Route the fiber optic cable from the lightwave transceiver to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
  - d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind port cabinet B of EPN stack 2:

- a. Install a lightwave transceiver on the connector at slot 2B02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect the other end of the fiber optic cable coming from the PPN to the lightwave transceiver just installed.
  - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - d. Coil the surplus fiber cable and place it either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.
3. Behind port carrier D of the multicarrier PPN:

- a. Install a lightwave transceiver on the connector at slot 1D02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect a fiber optic cable to the transceiver just installed.
- c. Route the fiber cable to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
- d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

4. Behind control cabinet A of EPN stack 2:
- a. Install a lightwave transceiver on the connector at slot 2A01.

➡ NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

b. Connect the other end of the fiber optic cable coming from the PPN to the lightwave transceiver at slot 2A01.

c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.

d. Coil the surplus fiber cable and place it in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

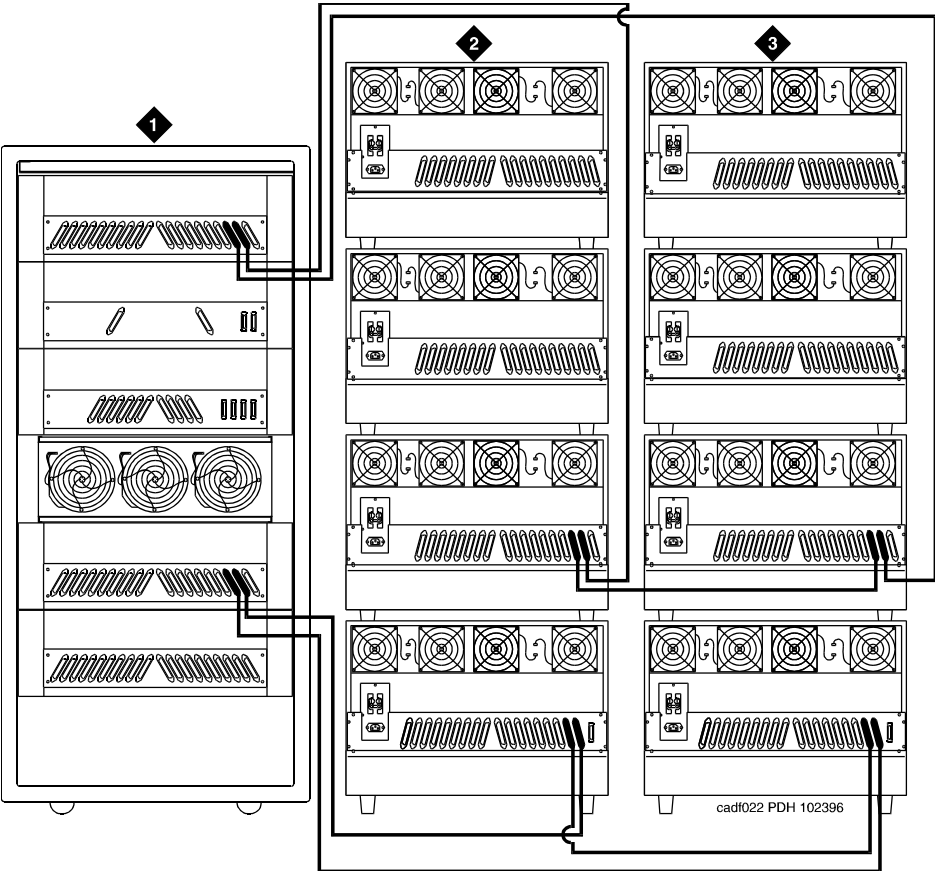


Figure Notes

1. Cabinet 1 PPN
2. Cabinet Stack 2 EPN 1
3. Cabinet Stack 3 EPN 2

Figure 3-12. Critical Reliability Release 8r with 2 or 3 Port Networks



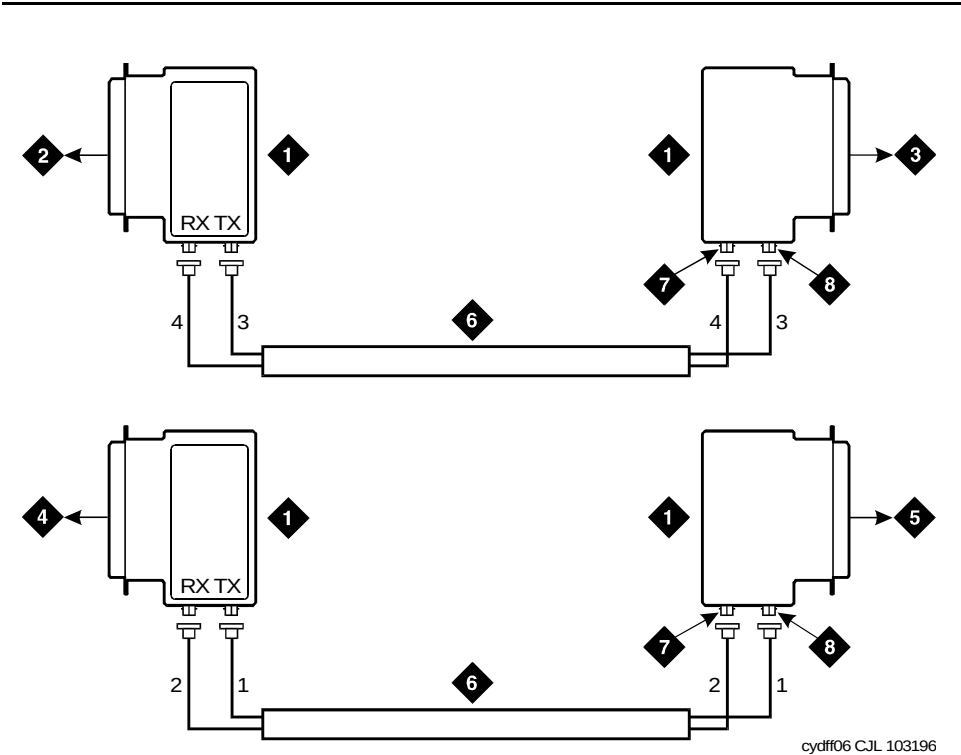


Figure Notes

- |                                                  |                             |
|--------------------------------------------------|-----------------------------|
| 1. Lightwave Transceiver                         | 5. EPN1 Cabinet B Slot 2B02 |
| 2. To PPN Carrier D Slot 1D02                    | 6. Fiber Optic Cable        |
| 3. To EPN1 Carrier A Slot 2A01 (Cabinet Stack 2) | 7. TX Connector             |
| 4. PPN Carrier C Slot 1C02                       | 8. RX Connector             |

Figure 3-13. Fiber Optic Connections PPN to EPN1

## Switch-Connected Port Networks

### For 1 to 15 Standard Reliability EPNs.

1. Behind the PPN cabinet. See [Figure 3-14](#):
  - a. Install a lightwave transceiver on cable connector at slot 1E02.
  - b. Install a lightwave transceiver on cable connector at slot 1B02.
  - c. Connect 1 end of the metallic intercarrier cable to the lightwave transceiver at slot 1E02.
  - d. Route the intercarrier cable from the lightwave transceiver to the cabinet cable tray and upward to carrier "B."
  - e. Connect the other end of the intercarrier cable to the lightwave transceiver at slot 1B02.
  - f. Attach the intercarrier cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind switch node carrier E of PPN cabinet 1. See [Figure 3-14](#):
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
3. Behind control cabinet A of each single-carrier EPN:
  - a. Install a lightwave transceiver on cable connector at slot A01.
  - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot A01.
  - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - d. Coil up the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

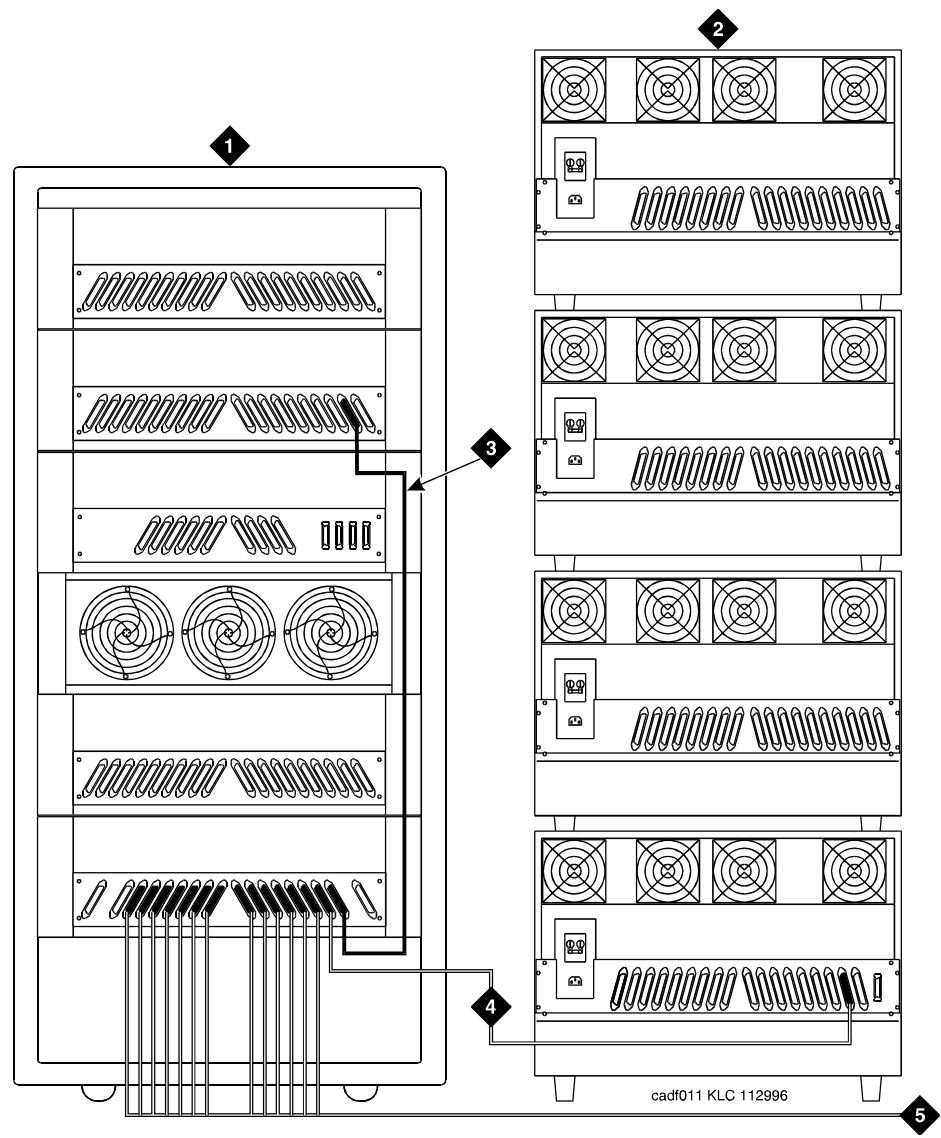


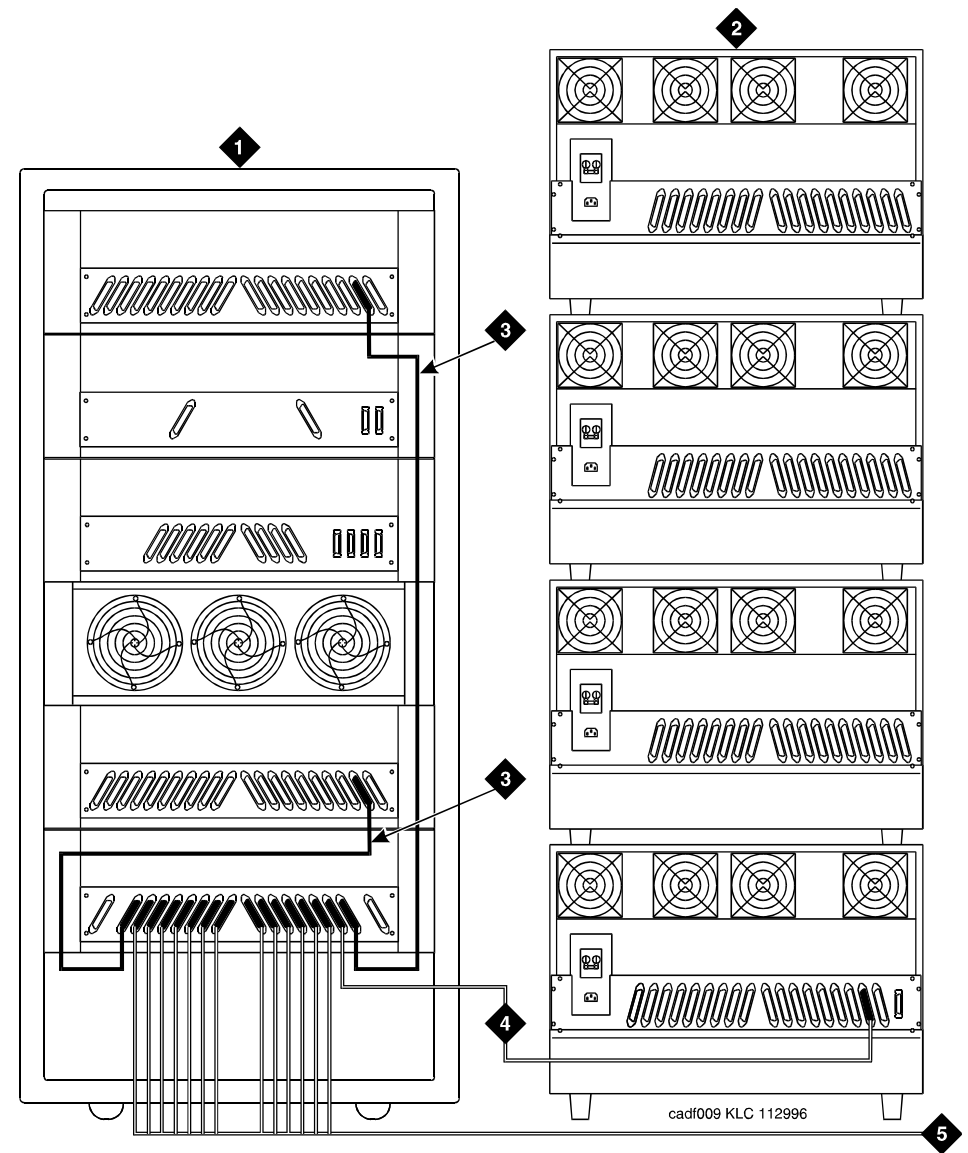
Figure Notes

- |                                     |                                                                               |
|-------------------------------------|-------------------------------------------------------------------------------|
| 1. Cabinet 1 PPN with 1 Switch Node | 4. Add Links to EPNs in Alternating Order (20, 3, 19, 4, 18, 5, and so forth) |
| 2. Cabinet Stack 2-16 EPN           |                                                                               |
| 3. Metallic Cable (H600-278)        | 5. To additional EPNs                                                         |

Figure 3-14. Fiber Optic Connections Through Center Stage Switch

**For 1 to 15 High Reliability EPNs.**

1. Behind the PPN cabinet. See [Figure 3-15](#):
  - a. Install a lightwave transceiver on cable connector at slot 1E02.
  - b. Install a lightwave transceiver on cable connector at slot 1C02.
  - c. Connect 1 end of the metallic intercarrier cable to the lightwave transceiver at slot 1E02.
  - d. Route the intercarrier cable from the lightwave transceiver to the cabinet's cable tray and upward to carrier "C."
  - e. Connect the other end of the intercarrier cable to the lightwave transceiver at slot 1C02.
  - f. Install a lightwave transceiver on cable connector at slot 1E20.
  - g. Install a lightwave transceiver on cable connector at slot 1D02.
  - h. Connect 1 end of the metallic intercarrier cable to the lightwave transceiver at slot 1E20.
  - i. Route the intercarrier cable from the lightwave transceiver to the cabinet's cable tray and upward to carrier "D."
  - j. Connect the other end of the intercarrier cable to the lightwave transceiver at slot 1D02.
  - k. Attach the intercarrier cables (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind switch node carrier E of PPN cabinet 1. See [Figure 3-15](#):
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E03, 1E19, 1E04, 1E18, 1E05, 1E17, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
  - d. Behind control cabinet A of each single-carrier EPN:
    - e. Install the same kind of lightwave transceiver on cable connector at slot A01.
    - f. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot A01.
  - g. Coil the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.



**Figure Notes**

1. Cabinet 1 PPN with 1 Switch Node

2. Cabinet Stack 2-16 EPN

3. H600-278 Metallic Cable

4. Add Links to EPNs in Alternating Order (3, 19, 4, 18, 5, 17, and so forth)

5. To Additional EPNs

**Figure 3-15. Fiber Optic Connections Through Center Stage Switch**

### For 1 to 15 Critical Reliability EPNs.

1. Behind the PPN cabinet. See [Figure 3-16](#):
  - a. Install a lightwave transceiver on cable connector at slot 1E01.
  - b. Install a lightwave transceiver on cable connector at slot 1E02.
  - c. Connect the metallic intracarrier cable to the lightwave transceivers at slots 1E01 and 1E02.
  - d. Install a lightwave transceiver on cable connector at slot 1D01.
  - e. Install a lightwave transceiver on cable connector at slot 1D02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceivers

- f. Connect the metallic intracarrier cable to the lightwave transceivers at slots 1D01 and 1D02.
2. Behind switch node carrier E of PPN cabinet 1:
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
3. Behind control cabinet A of each single-carrier EPN:

- a. Install a lightwave transceiver on cable connector at slot A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot A01.
  - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - d. Coil the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

4. Behind switch node carrier D of PPN cabinet 1:
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
5. Behind port cabinet B of each single-carrier EPN:
  - a. Install a lightwave transceiver on cable connector at slot B02.

 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

  - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot B02.
  - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
  - d. Coil up the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

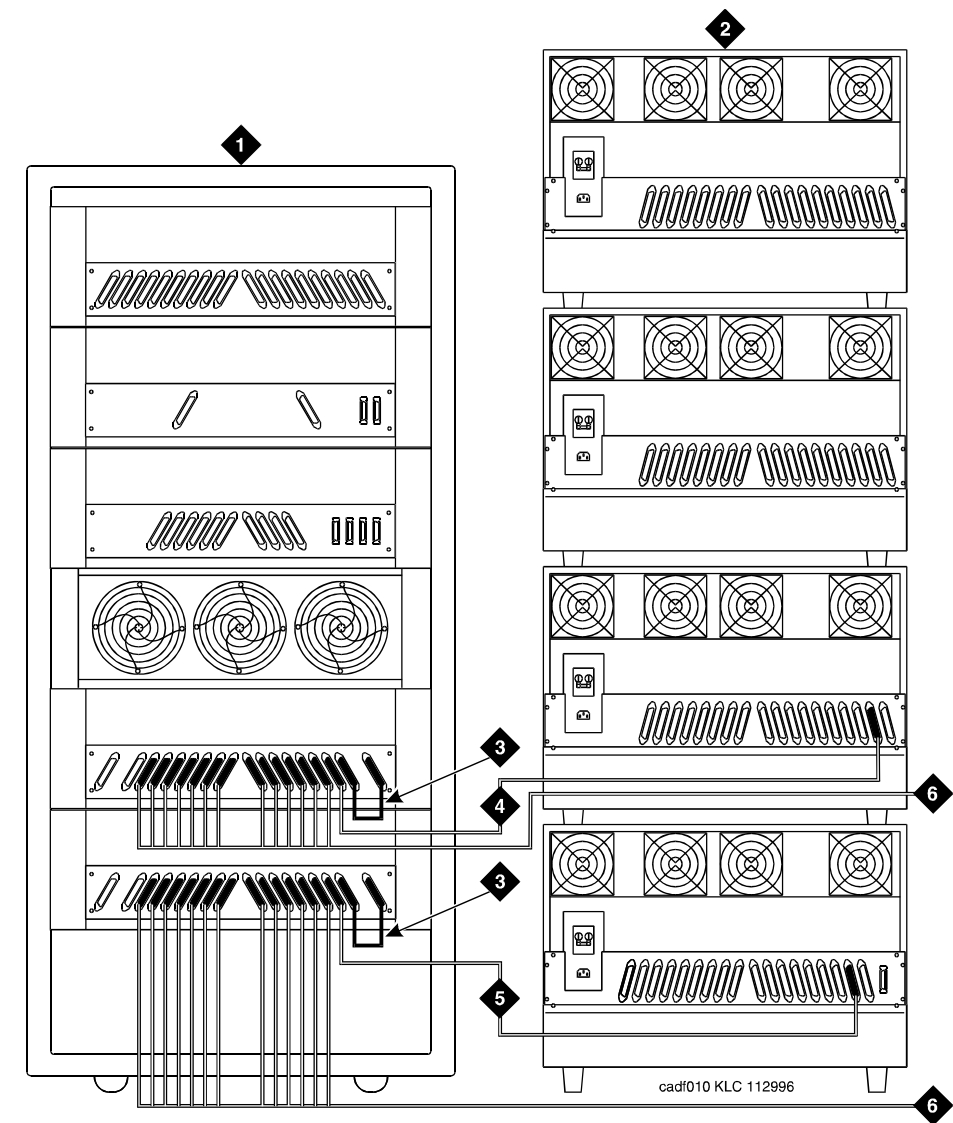


Figure Notes

1. Cabinet 1 with 1 Duplex Switch Node
2. Cabinet Stack 2-16 EPN
3. H600-278 Metallic Cable
4. Add Links to EPNs in Alternating Order (20, 3, 19, 4, 18, 5, and so forth)
5. Add Links to EPNs in Alternating Order (20, 3, 19, 4, 18, 5, and so forth)
6. To additional EPNs

Figure 3-16. Fiber Optic Connections Through Center Stage Switch



## DS1 CONV-Remoted Cabinets

The distance between the DS1 facilities and associated equipment room hardware and cabling is a maximum of approximately 200 circuit miles (322 km) for analog voice and 500 circuit miles (805 km) for digital (no analog voice stations).

### NOTE:

These limits for DS1 remoting is the maximum distance between *any* 2 port networks in a Release 8r system with either direct or switched port network connections with a TN1654 DS1 Converter Circuit pack.

Digital public network tie trunk facilities provide the end-to-end connectivity between the port networks. For either type of port network (PPN or EPN), a TN1654 DS1 Converter circuit pack serves as the port network interface to the DS1 facilities. As a PPN interface, a TN1654 DS1-CONV can reside in either:

- A port carrier (in any port slot)
- A switch-node carrier (in port slot “1” or “21”)

As an EPN interface, a TN1654 DS1 CONV can reside in an expansion control carrier (in any port slot).

**DS1 Cabling within the Local Port Networks.** Use the running list that accompanies the upgrade equipment to determine which cable connects where. The following paragraphs only provide conceptual information about wiring a DS1 Converter interface either to an expansion interface or to a switch node interface, not step-by-step procedures for wiring a specific Release 8r system.

### NOTE:

It is important to label every cable installed.

A cable connects each DS1 CONV either to the appropriate TN570 expansion interface (for a direct connection to another port network) or to the appropriate TN573B SN Interface (for a switched connection to another port network).

### NOTE:

These cables usually connect to TN570 expansion interfaces (already installed) for direct connections between the new PPN and either 1 or 2 EPNs.

On the DS1 CONV side, a 4C retainer binds this shielded cable to the DS1 CONV port connector. On the EI/SNI side, a 4B retainer binds the cable to the EI/SNI port connector. The DS1 CONV-to-EI/SNI cable also provides a piggy-back connector enabling subsequent access to the public network.

[Table 3-5](#) lists the cable numbers and lengths for the possible connections.

**Table 3-5. Numbers and Lengths of DS1 CONV-to-EI/SNI Cables**

| Connection Type                         | Comcode Number                       | Length                                                                           |
|-----------------------------------------|--------------------------------------|----------------------------------------------------------------------------------|
| Within same carrier                     | 847245750                            | 1 foot (0.305 m)                                                                 |
| Between 2 carriers in same port network | 846448768                            | 5.5 feet (1.677 m)                                                               |
| Between 2 carriers in adjacent networks | 846448776, and one 846885259 bracket | 1 foot (0.3.5 m) (used with two 9823As, & one 20-foot (6.1 m) fiber optic cable) |

**DS1 CONV Cabling to the Public Network.** Use the running list that accompanies the upgrade equipment to determine which cable connects where. The following paragraphs only provide conceptual information about wiring a DS1 CONV interface to a wall-field block, not step-by-step procedures for wiring a specific Release 8r system.

If already connected to either an expansion or switch node interface, a DS1 CONV circuit pack already resides either in an EPN expansion control carrier or in a PPN port carrier or switch node carrier.

Depending on the traffic requirements between the 2 port networks, a 25-foot (7.625 m) H600-348 cable extends from the piggy-back connector (on each DS1 CONV-to-EI/SNI cable) to from 1 to 4 CSUs. This cable branches to four 15-pin subminiature D-type connectors (labeled “01” to “04”) to make the CSU connections. Then, in turn, the CSUs connect to the wall-field block (corresponding to the equipment location of the DS1 CONV) at port connections “8,” “7,” “6,” and “5” (in descending order).

Neglecting overhead, this wiring arrangement can provide PN-to-PN communication at the bandwidth of up to 4 DS1 CONV spans (1.544 Mbps each). Between each port network’s wall field, the port networks communicate across leased lines in the public network.

**Connect Power and Ground**

1. Reconnect the 6 AWG (#40) (4.1 mm<sup>2</sup>) cabinet ground wire to the single-point ground bar on the cabinet.
2. Reconnect the 10 AWG (#25) (2.6 mm<sup>2</sup>) coupled bonding conductor wire.
3. Reconnect the cabinet power cords at the rear of each cabinet.

## **Verify Usable Circuit Pack Vintages**

---

1. Verify every circuit pack reused in the upgrade conforms to the usable vintage requirements for a Release 8r system (see *Reference Guide for Circuit Pack Vintages and Change Notices*).

## **Install System Access Ports**

---

1. Before connecting various endpoints that use EIA interfaces to the system, install up to 8 loop-around connections for Mode 2-to-Mode 3 (and vice versa) data conversion.

From the *outgoing* perspective of the system communicating with an EIA endpoint, these loop-around connections convert Mode 3 data (circuit-switched packet data, with undefined bit rates and packet specifications) to Mode 2 data (low-speed, usually asynchronous, data at rates of 300 to 19,200 bps) by:

- Accepting Mode 3 data off the LAN bus (from the SPE) at a TN553 Packet Data Line circuit pack, where Mode 3-to-Mode 2 conversion is done
- Routing the converted data through the cross-connect field and back to a TN726B Data Line where the equivalent Mode 2 data can access the TDM bus, for subsequent routing to an EIA endpoint

The endpoints that use these EIA interfaces and, therefore, require the Mode 2-to-Mode 3 conversion include:

- Generic 3 Management Applications (G3-MA)
- Remote Management Terminal
- Basic Call Management System (BCMS) terminal
- Call Detail Recording Unit (CDRU)/Centralized Attendant Service Plus (CAS+)
- Property Management System (PMS)
- Printers

## **Reseat DEFINITY LAN Gateway System**

---

1. Reseat the DEFINITY LAN Gateway assembly into the backplane.

## **Reseat DEFINITY AUDIX System**

---

1. Reseat the AUDIX assembly to its backplane connectors.

## **Remove Emergency Transfer Ground Wire**

---

1. Remove the ground wire from the emergency transfer unit.

## Reboot the System

---

1. Connect the management terminal to the TERMINAL connector on the rear of PPN control carrier "A," or install the G3-MA according to *DEFINITY Communications System Generic 3 Management Applications — Operations*, 585-229-202.
2. Insert the new Release 8r system removable media in the optical drive.
3. Behind each EPN cabinet, set the circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs a reset level 4 rebooting process, loading blank translations from the disk. Rebooting takes 5 to 11 minutes.
6. Type **reset system 4** and press Enter. This instructs the system to perform a reset level 4 rebooting process, loading the upgraded STS translations from the new removable media. Rebooting takes 5 to 11 minutes.
7. Log in as **craft** at the login: prompt on the terminal and set the time to ensure the system is booted properly.
8. After about 2 minutes, type **status spe** and press Enter. The standby handshake field must be up before continuing with the upgrade.
9. Type **reset spe standby 4** and press Enter. This changes the standby SPE to active and vice versa. This takes about 10 minutes.
10. If the system is high or critical reliability, type **status spe** and press Enter. The handshake, refresh, and shadowing fields must be up before continuing with the upgrade. Also, the standby side must be in-service. The heartbeat on the standby SPE flashes yellow.
11. Type **restore disk [spe-a or both] full** and press Enter. This instructs the system to write the upgraded STS translation information from memory to the disk(s).

## Restart DEFINITY LAN Gateway System

---

1. Log onto the DEFINITY LAN Gateway.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Restart System* from the *Reset System* menu.

## Label Main Distribution Frame

---

1. Label the MDF with the new PN number of the Release 8r EPN. The STS software upgrade assigns the next PN number, after the highest numbered PN in the Release 5/6si system, to the upgraded EPN.

## Reconnect Cables

---

1. Behind each EPN cabinet power supply, set the circuit breaker to OFF.



**NOTE:**

Powering down an EPN cabinet without powering down the PPN will set off alarms. However, these alarms should clear after power is restored to the EPN.

2. Replace all cables that were labeled and removed.
3. Install the top and bottom rear covers. Be sure the correct rear covers are installed on the new J58890N Expansion Control Cabinet. Do not use these rear covers on the port cabinets.



**NOTE:**

The rear covers for Release 8r control carriers may need 2 detents (1 for the TDM/LAN cable and another for the ICC cables). If the Release 5/6si was upgraded to a critical reliability Release 8r and the EPN was originally an R1V3, replace the lower rear cover of port cabinet "B" with a new cover (846307817) so the ICC cables and the new ground plate can be installed between cabinets "A" and "B."

## Power Up the EPN Cabinet

---

1. Behind each EPN cabinet power supply, set the circuit breaker to ON. After about 40 seconds, EPN power and PPN/EPN communications return.
2. After power returns to the EPN and all trouble is cleared, verify the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

## Install Rear Ground Plates (Systems with Earthquake Protection)

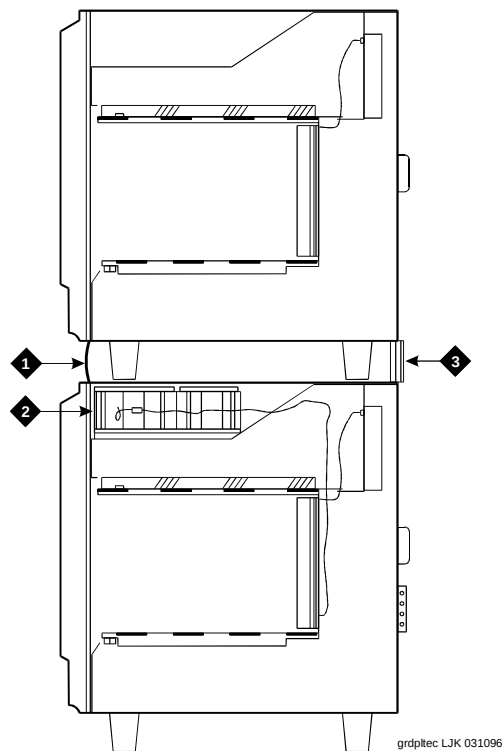
---

1. Loosen the 4 screws at the bottom of the top cabinet and at the top of the cabinet underneath the top cabinet. See [Figure 3-17](#).
2. Align the mounting holes in the rear ground plate over the bottom screws in the top cabinet. See [Figure 3-17](#).
3. Align the mounting holes in the ground plate with the 4 holes at the top of the cabinet below the top cabinet. Slide the mounting plate down to seat on the screws.
4. Check all TDM bus cables and the ICC to be sure they are not pinched by the plates.
5. Repeat Steps 1-3 until the rear ground plates are installed between all stacked cabinets.
6. Do not tighten the screws yet.

## Install Front Ground Plates (Systems with Earthquake Protection)

Use 1 front ground plate between 2 *stacked* cabinets.

1. At the front of the cabinets, align the holes in the top of the front ground plate with the holes at the bottom of the upper cabinet, and insert the 4 screws. Do not tighten the screws yet. See [Figure 3-17](#).
2. At the front of the cabinets, align the holes in the bottom of the front ground plate with the holes at the top of the lower cabinet. Insert the 4 supplied #12-24 x 1/2-inch (1.27 cm) thread-forming screws. Do not tighten the screws yet.
3. Repeat Steps 1 and 2 until all stacked cabinets are fastened together.
4. Tighten all screws securely.



### Figure Notes

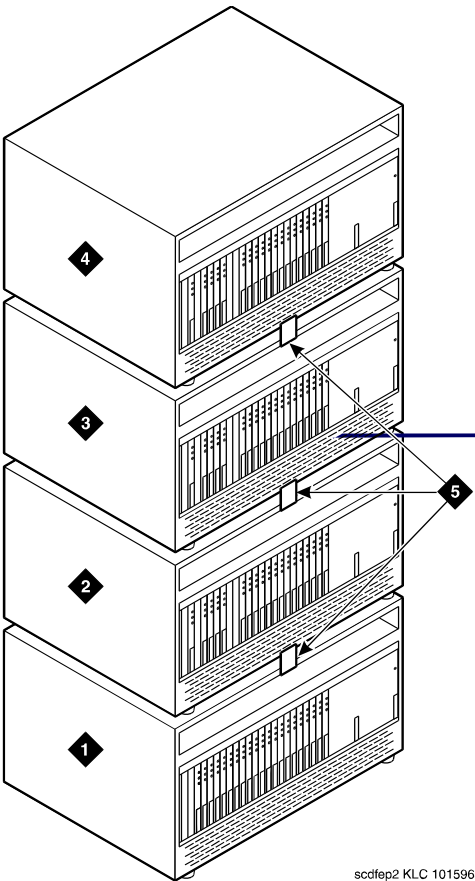
- |                                       |                      |
|---------------------------------------|----------------------|
| 1. Front Ground Plate or Cabinet Clip | 3. Rear Ground Plate |
| 2. Battery                            |                      |

Figure 3-17. Rear Ground Plate and Front Plate or Cabinet Clip — Side View

### Install Cabinet Clips (Systems without Earthquake Protection)

A cabinet clip is required between each pair of stacked cabinets.

1. At the front of the cabinets, install a cabinet clip between each pair of cabinets by hooking the clip into the slot of the upper cabinet and snapping the straight leg of the clip into the slot on the lower cabinet. See [Figure 3-18](#).



sccfep2 KLC 101596

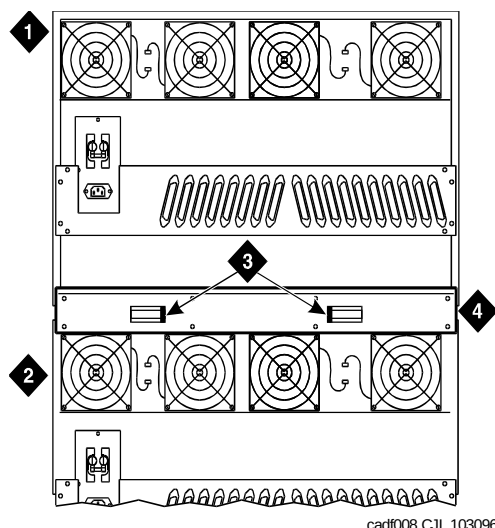
#### Figure Notes

- |                                              |                  |
|----------------------------------------------|------------------|
| 1. Control Cabinet                           | 4. Port Cabinet  |
| 2. Port Cabinet or Expansion Control Cabinet | 5. Cabinet Clips |
| 3. Port Cabinet                              |                  |

Figure 3-18. Location of Cabinet Clips

## Install Cable Clamps

1. Behind the cabinets, using screws provided, install 2 cable clamps on each ground plate. See [Figure 3-19](#). These clamps hold the port cables.



### Figure Notes

- |                    |                 |
|--------------------|-----------------|
| 1. Port Cabinet    | 3. Cable Clamps |
| 2. Control Cabinet | 4. Ground Plate |

Figure 3-19. Location of Ground Plate and Cable Clamps

## Retranslate Port Circuits

If port circuit packs in the Release 5/6si control cabinet were relocated in order to:

- Use a TN748B to replace the tone detector circuits on a TN756
  - Put a critical port circuit pack, requiring longer nominal battery holdover (a DS1 or an Announcement circuit pack), in a port slot
  - Put a TN570 EI circuit pack in port slot 1 or port slot 2 (for a second EPN)
  - Put a TN755B power supply in port slots 16 and 17
1. Verify the port circuit packs were retranslated during the off-site software upgrade. If not, retranslate them now. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*.



## Re-record Announcements (TN750/B Only)

---

1. The off-site STS translation upgrade does not preserve the contents of recorded announcements. Therefore, if a TN750/B Announcement circuit pack resides in the system, re-record the announcements that were stored on the circuit pack.



### NOTE:

If a TN750C resides in the system, re-recording of announcements is not necessary.

## Administer Fiber Links

---

1. After all fiber optic equipment is installed, refer to [Chapter A, "Fiber Link Administration"](#).

## Enable TTI

---

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the Enabled? field to **y** to activate the TTI feature.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter.
2. Make note of all enabled links.
3. Type **status link <number>** and press Enter.
4. Check the following items and note which links are in-service.
  - PPP links
  - Audix links
  - CMS links at both ends (Also, check the recovery time.)
  - ASAI links at the DEFINITY ECS end
5. Check that DS1 trunks and BRI phones are functioning normally.
6. Repeat steps 3 - 5 for each enabled link.

## Resolve Alarms

---

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft** at the Login : prompt.

### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. If the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.

## Save Translations

---

1. Type **save translation** and press **Enter** to get upgraded translations onto disk. If the translations were corrupted during the upgrade, the following error message displays when logging in:



**WARNING:**

*Translation corruption detected; call Lucent Technologies distributor immediately.*



**NOTE:**

The **save translation** command cannot function if the translation corruption message appears.

## Return Replaced Equipment

---

1. Return replaced equipment to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

## DEFINITY AUDIX Power Procedures

---

### Power Down the AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

1. Log into the AUDIX System as **craft**.
2. Type **reset system shutdown** and press Enter. Press Enter *once*.



#### NOTE:

Do not press Enter again. This will force the AUDIX to shutdown immediately, dropping all active calls on the AUDIX.

3. The "SHUTDOWN Completed" message appears when the AUDIX is successfully shutdown. This takes about 2 minutes.
4. The AUDIX System can now be removed for service.

### Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
  1. Re-install the AUDIX and allow it to boot up automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but power was removed from the cabinet:
  1. Power up the cabinet. The AUDIX reboots automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
  1. At the AUDIX console, hold the `ctrl` key and type **cc**.
  2. Type **5** at the prompt. In about 2 minutes, the AUDIX boots up.
  3. When the system initialization is complete, log in as **craft**.
  4. Check for AUDIX System errors.

## G3vs with Intel 386 or Risc Processor to R8r

# 4

---

This chapter provides the information necessary to perform an upgrade from either a Release 5/6 system with a RISC Processor, or from a Generic 3 (G3) vs system with an Intel® 386 processor, to a Release 8r system.

The upgrade to a Release 8r system requires a major change of hardware and software. The port circuit packs from the present system may be reused only if a site inspection determines that the port circuit pack vintages are usable in the Release 8r.

Some of the I/O cables from the existing system may be too short to reach from the Release 8r cabinet to the Main Distribution Frame (MDF). If so, the cables must be replaced as part of the upgrade process.

## Read This First

---

### Service Interruption

This upgrade process requires a service interruption that depends on whether the Release 8r cabinet can be installed while the present system is in service. In this case, the service interruption may only be about 2 hours. If, however, the present system must be removed to allow room for the Release 8r cabinet, then the service interruption may be 8 hours, or more.

This upgrade must be closely coordinated with the customer and the local account team.

### Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade. This causes CMS data to be lost. This data loss can be minimized if the upgrade is performed just after the last CMS measurement interval.

All measurement data is lost during the upgrade (including BCMS). If needed, the reports may be printed before the upgrade begins.

CMS could abort the processing of a call if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

### Preventing Translation Errors

When instructed in this chapter, perform the **save translation** command. Afterward, check for translation errors before proceeding with the upgrade.

#### NOTE:

Be sure that the translations get saved without errors before continuing with any upgrade.

If errors are detected, refer to [“No Translations After Upgrade”](#) in [Appendix B, “Troubleshooting an Upgrade”](#) to correct the problem. Do not continue with the upgrade until the errors are corrected.

### Communication Between Equipment Rooms

For an upgrade where some of the equipment resides at a remote location, the upgrade activity is much easier if temporary communication is established between the equipment rooms.

## Usable Circuit Packs

Every circuit pack used in the Release 8 system must conform to the minimum usable vintage requirements for that system. At a presale site inspection, the remediation process checks the vintages of existing circuit packs to be reused in the Release 8 system. Circuit packs with unusable vintages must be replaced.

Refer to *Technical Quarterly, Reference Guide for Circuit Pack Vintages, Change Notices*, and to the *Software Release Letter*, for information about usable circuit pack vintages. For information about usable vintages of non-United States circuit packs, refer to the ITAC's Tech Alert from your regional distributor.

## Contact Network Technicians

Contact the technician for each public and private network accessed by the system before the upgrade begins. Otherwise, it is possible that network-access trunk facilities will be busied out at the far end.

## Required Tools

The following tools and items may be required during the upgrade:

- 1/4-inch flat blade screwdriver
- 1/4-inch socket with ratchet (optional)
- Long-nose pliers to straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- One dozen #8 self-tapping screws
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Task Tables

[Table 4-1](#) provides the high-level tasks to perform the upgrade in this chapter.

**Table 4-1. Tasks to Upgrade to Release 8r**

| √ | Task Description                                                     | Page                 |
|---|----------------------------------------------------------------------|----------------------|
|   | <a href="#">Software Upgrade</a>                                     | <a href="#">4-6</a>  |
|   | <a href="#">Save Translations and Announcements</a>                  | <a href="#">4-7</a>  |
|   | <a href="#">Check Link Status</a>                                    | <a href="#">4-7</a>  |
|   | <a href="#">Disable TTI</a>                                          | <a href="#">4-8</a>  |
|   | <a href="#">Disable Alarm Origination to INADS</a>                   | <a href="#">4-8</a>  |
|   | <a href="#">Shut Down DEFINITY LAN Gateway System</a>                | <a href="#">4-8</a>  |
|   | <a href="#">Shut Down DEFINITY AUDIX System</a>                      | <a href="#">4-9</a>  |
|   | <a href="#">Power Down Present System</a>                            | <a href="#">4-9</a>  |
|   | <a href="#">Install Emergency Transfer Ground Wire</a>               | <a href="#">4-9</a>  |
|   | <a href="#">Remove the Present System</a>                            | <a href="#">4-10</a> |
|   | <a href="#">Unpack and Install the Release 8r Cabinet</a>            | <a href="#">4-11</a> |
|   | <a href="#">Remove Emergency Transfer Ground Wire</a>                | <a href="#">4-11</a> |
|   | <a href="#">Power-Up the Release 8r</a>                              | <a href="#">4-11</a> |
|   | <a href="#">List Configuration Software Long</a>                     | <a href="#">4-11</a> |
|   | <a href="#">Restore Disk Full</a>                                    | <a href="#">4-12</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                           | <a href="#">4-12</a> |
|   | <a href="#">Set Date and Time</a>                                    | <a href="#">4-13</a> |
|   | <a href="#">Re-Record Announcements (TN750/B)</a>                    | <a href="#">4-15</a> |
|   | <a href="#">Copy Announcements (TN750/B)</a>                         | <a href="#">4-15</a> |
|   | <a href="#">Install Remaining Hardware and Administer the System</a> | <a href="#">4-16</a> |
|   | <a href="#">Enable TTI</a>                                           | <a href="#">4-16</a> |
|   | <a href="#">Check Link Status</a>                                    | <a href="#">4-16</a> |
|   | <a href="#">Enable Scheduled Maintenance</a>                         | <a href="#">4-16</a> |

*Continued on next page*



Table 4-1. Tasks to Upgrade to Release 8r — Continued

| √ | Task Description                                                       | Page                 |
|---|------------------------------------------------------------------------|----------------------|
|   | <a href="#">Resolve Alarms</a>                                         | <a href="#">4-16</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a> | <a href="#">4-17</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">4-18</a> |
|   | <a href="#">Back Up Disk</a>                                           | <a href="#">4-18</a> |
|   | <a href="#">Return Replaced Equipment</a>                              | <a href="#">4-18</a> |

## Preliminary Procedures

---

### Software Upgrade

---

For this upgrade, a Translation Upgrade Tool (TUT) is required. The translations on the translation card must be copied to tape. This procedure must be performed before the upgrade begins.

1. Copy the translations in the present system to a spare translation card. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation card.



#### NOTE:

The off-site STS translation upgrade does not preserve the content of recorded announcements. Therefore, during the upgrade, any announcements stored on a TN750/B circuit pack must be re-recorded. The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is not needed.

2. Mail the translation card to Software Technical Support (STS) (with next-day delivery) to be converted and written to a Release 8r removable media. This process takes several days. The new Release 8r software removable media (including 1 with translations) must be on-site before the upgrade begins. For each Release 8r processor, 2 removable media (1 system and 1 backup) must always be retained on site with the system.
3. Insert the original translation card back into the present system.
4. If possible, the customer should put a freeze on any new translations while the spare tape is being converted. If not, be sure the customer's switch administrator keeps detailed records of any translation changes made during that interval. These records will facilitate the reassignment of any changes on the Release 8r removable media after the upgrade.

### Follow Routine Preventive Maintenance

During the upgrade, follow routine preventive maintenance procedures on the system to be upgraded. For information about the procedures and necessary equipment, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Remove the Present System

---

- If the equipment room is large enough to allow the Release 8r cabinet to be installed while the present system is in service, skip to ["Install the Release 8r Cabinets" on page 4-11](#). Return to this section when finished.
- If the present system must be removed to make room for the Release 8r cabinet, perform the following.

### Save Translations and Announcements

---

1. Log in at the management terminal on the present system.
2. Type **save translation** and press Enter. This command instructs the system to write all translation information from memory to the translation card.
3. Check for translation errors before proceeding with the upgrade. If errors are detected, refer to ["No Translations After Upgrade"](#) in [Appendix B, "Troubleshooting an Upgrade"](#) to correct the problem. Do not continue with the upgrade until the errors are corrected.
4. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter.



#### NOTE:

The TN750C Announcement circuit pack contains non-volatile memory and does not require backup.

5. If administered recorded announcements are listed, type **save announcements** and press Enter.
6. Remove the translation card and install the backup translation card.

### Check Link Status

---

1. Type **display communication-interface links** and press Enter. Write down all enabled links.
2. Type **status link number** and press Enter. Repeat this step for all links.
3. Write down which links are in service.

## Disable TTI

---



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter.
3. On the second screen, set the Enabled? field to **n** to de-activate the TTI feature.

## Disable Alarm Origination to INADS

---

1. Type **change system-parameters maintenance** and press Enter.
2. Type **neither** in the Alarm Origination to OSS Numbers field.
3. For some releases of software, disable Cleared Alarm Notification and Restart Notification field before submitting the form.



### CAUTION:

*If Alarm Origination is not disabled, the system may generate alarms, resulting in unnecessary trouble tickets.*

## Shut Down DEFINITY LAN Gateway System

---



### WARNING:

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet can damage the LAN Gateway disk.*

1. Log onto the DEFINITY LAN Gateway. See *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway* for the procedure to log on.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Shutdown* from the *Reset System* menu.
5. Unseat the LAN Gateway assembly from its backplane connectors.

## Shut Down DEFINITY AUDIX System



### **WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

1. If a DEFINITY AUDIX System resides in the system to be upgraded, shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 4-19](#).
2. Unseat the AUDIX assembly from its backplane connectors.

## Power Down Present System



### **CAUTION:**

*Powering down the PPN will cause important system data, such as BCMS data, records of queued ACD calls, Automatic Wakeup requests, and Do Not Disturb requests to be lost. Refer to DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r, for information about preparing the system for a power down.*

1. At the PPN cabinet power supply, set the main circuit breaker to OFF.

## Install Emergency Transfer Ground Wire



### **CAUTION:**

*To avoid contaminating single-point ground, do not connect the ground strap while the system is powered up.*

1. Connect a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire either to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) associated with the emergency transfer panel.
2. Route the other end of the wire to an approved ground and connect.

- 4** G3vs with Intel 386 or Risc Processor to R8r  
*Remove the Present System*

4-10

## **Disconnect Power and Ground**

1. Disconnect the cabinet power cords from the rear of the cabinet.
2. Disconnect the 10 AWG (#25) (2.6 mm<sup>2</sup>) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm<sup>2</sup>) CABINET GROUND wire from the ground bar in the cabinet.

## **Remove the Present System**

1. Disconnect the management terminal from the TERM connector.
2. Remove all of the 25-pair cables from the rear of the system. Retain any cables that can be reused with the Release 8r cabinet.
3. Remove the AC power cord from the system.
4. Remove the ground wires from the system. If the wires can reach the Release 8r cabinet, retain them for connection to the Release 8r system.

- 4 G3vs with Intel 386 or Risc Processor to R8r  
*Install the Release 8r Cabinets*

4-11

## **Install the Release 8r Cabinets**

---

### **Unpack and Install the Release 8r Cabinet**

---

1. Refer to the installation instructions in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.



#### **CAUTION:**

*Do not power up the Release 8r system.*

2. Return to this section when the installation of the Release 8r is completed.

### **Remove Emergency Transfer Ground Wire**

---

1. If the Release 8r is being installed while the present system is in service:
  - a. Connect a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire either to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) associated with the emergency transfer panel.
  - b. Route the other end of the wire to an approved ground and connect.
2. If the present system was removed to make room for the Release 8r cabinet:
  - a. Disconnect the 10 AWG (#25) (2.6 mm<sup>2</sup>) wire (installed earlier) from the connecting block or pin 49 of the CAP (cable access panel).

### **Power-Up the Release 8r**

---

1. Insert the new Release 8r removable media into the optical drive.
2. Power up the Release 8r cabinet and allow the system to boot up completely.

### **List Configuration Software Long**

---

1. Type **list configuration software long** and press Enter to verify the removable media contains the required Release 8 software.
2. Make note of the entire alphanumeric string of the software version. This information is used later.

### Restore Disk Full

1. Type **restore disk full** and press Enter. This instructs the system to copy the entire removable media to disk and takes about 30 minutes to complete. Release 8 system software with translations are now resident on the disk.  
  
 **NOTE:**  
Until this command finishes, the system provides no user feedback on the management terminal. Do not press Enter while the command executes. Doing so causes the terminal screen to clear as the command finishes, erasing any success/failure messages the system may provide.
2. Type **upgrade software G3V8r.xx.x.xxx.x** <entire alphanumeric string of target software version> and press Enter. This takes about 15 minutes to complete. For Release 5, this is call preserving.
3. Login as **craft** at the login: prompt.

### Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

-  **NOTE:**
- The default daylight savings rule is **0**, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

DAYLIGHT SAVINGS RULES

| Rule | Change              | Day   |               | Month       | Date           | Time                     | Increment    |
|------|---------------------|-------|---------------|-------------|----------------|--------------------------|--------------|
| 0:   | No Daylight Savings |       |               |             |                |                          |              |
| 1:   | Start:              | first | <u>Sunday</u> | on or after | <u>April</u>   | <u>1</u> at <u>2:00</u>  | <u>01:00</u> |
|      | Stop:               | first | <u>Sunday</u> | on or after | <u>October</u> | <u>25</u> at <u>2:00</u> |              |
| 2:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |
| 3:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |
| 4:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |
| 5:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |
| 6:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |
| 7:   | Start:              | first |               | on or after |                | at ::                    |              |
|      | Stop:               | first |               | on or after |                | at ::                    |              |



2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment (for example, **1:00** equals one hour) fields for each rule.

 **NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. Press Enter.

Set Date and Time

1. Type **set time** and press Enter.
2. Verify the screen displays the Date and Time screen. See [Screen 4-1](#). The cursor is positioned on the Day of the Week: field.

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

Screen 4-1. Typical Date and Time Screen

3. Type the day of the week in English (Sunday through Saturday). See [Table 4-2](#) for English day of the week names.

Table 4-2. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

4. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 4-3](#) for English month names. After the month is entered, press Tab to move to next field.

Table 4-3. English Month Names

| Month Number | Month Name |
|--------------|------------|
| 1            | January    |
| 2            | February   |
| 3            | March      |
| 4            | April      |
| 5            | May        |
| 6            | June       |
| 7            | July       |
| 8            | August     |
| 9            | September  |
| 10           | October    |
| 11           | November   |
| 12           | December   |

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*Install the Release 8r Cabinets*

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5. The cursor is positioned on the Day of the Month: field. Type the day of month (1 through 31) and press **Tab** to move to the next field.
6. The cursor is positioned on the Year: field. Type the current year and press **TAB** to move to the next field.
7. The cursor is positioned on the Hour: field. Type the current hour for a 24-hour clock. Press **Tab** to move to the next field.
8. The cursor is positioned on the Minute: field. Type current minute (0 through 59). Seconds cannot be set.
9. Type **standard** or **daylight savings** in the Type field.
10. Type the rule (number) in the Daylight Savings Rule field.
11. Press **Enter** when the information is correct.
12. Type **display time** and press **Enter** to verify date/time data.

### Re-Record Announcements (TN750/B)

1. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* to record announcements.



**NOTE:**

The TN750C Announcement circuit pack stores announcements in non-volatile memory; re-recording the announcements is not needed.

### Copy Announcements (TN750/B)

1. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press **Enter**.
2. If administered recorded announcements are listed, type **copy announce** and press **Enter**.



**NOTE:**

The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is not needed.

## Upgrade Completion

---

### Install Remaining Hardware and Administer the System

---

1. If the present system was removed to make room for the Release 8r cabinet, skip to Step 3.
2. If the Release 8r cabinet was installed while the present system is in service, return to ["Remove the Present System" on page 4-7](#). Return to this section when finished.
3. Connect all new and reusable I/O cables to the Release 8r cabinet. Cross-connect at the MDF as required.
4. Remove all reusable circuit packs from the present system and install into the Release 8r cabinet. Install any new circuit packs into the Release 8r cabinet.
5. Install fiber optic cables and administer the fiber links as needed. Refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.
6. Administer any new translations, as required.

### Enable TTI

---

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the Enabled? field to **y** to activate the TTI feature.

### Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link number** and press Enter. Repeat this step for each link.

### Enable Scheduled Maintenance

---

1. Type **change system-parameters maintenance** and press Enter. Use this screen to enable scheduled daily maintenance.

### Resolve Alarms

---

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft** at the Login: prompt.

### Administration:

1. Log in as **init** at the Login: prompt.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. Set the Activate Offer field to **y** and press Tab. A warning message lets you know the offer category along with the model to determine the system capacities (limits) and allowable hardware.
6. Press Enter to effect the changes.
7. When done, contact the field technician.
8. Contact the requester when done.

## Save Translations

---

1. Type **save translation** and press Enter to get upgraded translations onto disk. If the translations were corrupted during the upgrade, the following error message displays when logging in:



**WARNING:**

*Translation corruption detected; call Lucent Technologies distributor immediately.*



**NOTE:**

The **save translation** command cannot function if the translation corruption message appears.

## Back Up Disk

---

1. Type **backup disk** and press Enter to backup all changed files.
2. Type **test stored-data long** and press Enter. This instructs the system to verify the consistency of the MSS files (on the disk and removable media).

## Return Replaced Equipment

---

1. Return replaced equipment to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

## DEFINITY AUDIX Power Procedures

---

### Power Down the AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

1. Log into the AUDIX System as **craft**.
2. Type **reset system shutdown**. Press Enter *once*.



#### NOTE:

Do not press Enter again. This will force the AUDIX to shutdown immediately, dropping all active calls on the AUDIX.

3. The "SHUTDOWN Completed" message appears when the AUDIX is successfully shutdown. This takes about 2 minutes.
4. The AUDIX System can now be removed for service.

### Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
  1. Re-install the AUDIX and allow it to boot up automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but power was removed from the cabinet:
  1. Power up the cabinet. The AUDIX reboots automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
  1. At the AUDIX console, hold the `ctrl` key and type **cc**.
  2. Type **5** at the prompt. In about 2 minutes, the AUDIX boots up.
  3. When the system initialization is complete, log in as **craft**.
  4. Check for AUDIX System errors.

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*DEFINITY AUDIX Power Procedures*

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Multicarrier G2 Universal Module  
to R8r EPN

5

This chapter provides the information necessary to upgrade a DEFINITY G2 universal module to a multicarrier EPN of a R8r system.

*DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* lists Release 8 features and functions, and provides the commands, procedures, and forms to initialize and administer the system.

Single-Mode Fiber Attenuators

Attenuators may be required when using single-mode fiber. See the table below.

|           |                  |                             |
|-----------|------------------|-----------------------------|
| 106060718 | 5 dB attenuator  | 2 for each fiber connection |
| 106060734 | 10 dB attenuator | 2 for each fiber connection |
| 106061021 | 15 dB attenuator | 2 for each fiber connection |

A different value attenuator may be required even though the fiber span is between the same 2 cabinets (local and remote cabinet). Refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets* for detailed fiber attenuator information.

## Read This First

---

### Service Interruption

The upgrade process requires a service interruption of about 40 minutes. Coordinate this service interruption with the customer and the local account team.

### Call Management System (CMS)

The CMS link is dropped and restarted during the upgrade. This causes CMS data to be lost. This data loss can be minimized if the upgrade is performed just after the last CMS measurement interval.

All measurement data is lost during the upgrade (including BCMS). If needed, the reports may be printed before the upgrade begins.

CMS could abort the processing of a call if a measured trunk that was part of the conference dropped off the call before the end of the call. Customers experiencing this symptom and who are running R3V4 CMS should update to r3v4ao.e or higher.

### Preventing Translation Errors

When instructed in this chapter, perform the **save translation** command. Afterward, check for translation errors before proceeding with the upgrade.

#### NOTE:

Be sure that the translations get saved without errors before continuing with any upgrade.

If errors are detected, refer to [“No Translations After Upgrade”](#) in [Appendix B, “Troubleshooting an Upgrade”](#) to correct the problem. Do not continue with the upgrade until the errors are corrected.

### Contact Network Technicians

Contact the technician for each public and private network accessed by the system before the upgrade begins. Otherwise, if these technicians are not aware of the service interruption caused by the upgrade, it is possible that network-access trunk facilities will be busied out at the far end.

### Communication Between Equipment Rooms

For an upgrade where some of the equipment resides at a remote location, the upgrade activity is much easier if temporary communication is established between the equipment rooms.

## Relocation of Port Circuit Packs

An upgrade to Release 8 *does not* cause G2 port circuit packs to be moved and manually retranslated. This is because a G2 universal module is always upgraded to an EPN. So, during the upgrade, a Release 8 expansion control carrier (with 18 available port slots) always replaces the G2 module control carrier (with no port slots), providing a net gain of 18 port slots.

## Usable Circuit Packs

Each circuit pack used in the upgraded Release 8 system must conform to the minimum usable vintage requirements for Release 8. Those circuit packs shipped in the new Release 8 PPN or shipped loose with the new EPN equipment should always meet the usable vintage specifications. In addition, at a presale site inspection, the remediation process must check the vintages of every G2 circuit pack (including any CFY1 current limiters) that will be reused in the upgraded Release 8 and replace those circuit packs that have unusable vintages. Refer to *Technical Monthly*, "Reference Guide for Circuit Pack Vintages and Change Notices," for current information about usable vintages in a Release 8 system.

In most configurations, the 2- or 3-circuit pack combination of a tone generator pack, tone detector pack, and/or call classifier pack can be replaced with the TN2182 circuit pack, freeing up 1 or 2 port slots.

Since Release 8 supports non-United States call-processing applications, a wide variety of non-United States circuit packs can be used. Contact your Lucent Technologies representative for more information.

## Site Inspections

For the purposes of a Release 8 upgrade, most G2 systems are already equipped with the correct TDM/LAN cables (WP-91716 L6 and L7) and the correct lightwave transceivers (9823A or 9823B). However, some G2 systems contain earlier versions of these components, and (based on a site inspection) these older components must be replaced.

The 2 earlier versions of the TDM/LAN cable included the WP-91112 (L1 and L2) and the WP-91716 (L1 and L2). Both of these versions had white labels. In contrast, the correct cables (WP-91716 L6 and L7) have blue labels. If a remediation site inspection reveals that the older cables reside in the system, replace the older cables under the remediation process.

Earlier versions of lightwave transceivers include the 4-series transceivers (4A through 4F). These transceivers support fiber connections up to 7,000 feet (2134 m) apart; whereas the 9823A supports connections up to 5,000 feet (1524 m), and the 9823B supports connections up to 25,000 feet (7620 m). A single mode fiber transceiver (300A) supports distances of up to 115,000 feet (21.7 miles, 35 km). If the site inspection reveals that the older 4-series transceivers reside in the system, Order the correct transceivers according to a separate PEC.

 **NOTE:**

Using the 300A may require 5 or 10 dB attenuators. Contact your Lucent Technologies representative for more information.

 **NOTE:**

The 9823A transceiver is *not* a direct replacement for the 4-series transceiver (since a pair of 9823A transceivers *cannot* replace a pair of 4-series transceivers supporting a connection of between 5,000 feet (1524 m) and 7,000 feet (2134 m)).

## Power and Ground

The new multicarrier PPN cabinet or any EPN cabinet added for the upgrade can be either AC- or DC-powered. If an added cabinet is powered differently from the existing cabinets, the existing cabinets do not have to be converted since mixed power configurations are allowed. However, the system's power and grounding must be modified so that the AC-powered cabinets are grounded to the same single-point ground point as the DC-powered cabinets.

If a new AC-powered cabinet is to be added, provide a separate AC receptacle to support the new cabinet. This AC receptacle must not be shared with any other equipment and must not be controlled by a wall switch. For the convenience and safety of equipment-room personnel, the receptacle should not be located under the MDF.

 **NOTE:**

The new AC-powered PPN for a Release 8 upgrade has different power requirements than the G2 system. Refer to the *DEFINITY Enterprise Communications Server Release 8 System Description Pocket Reference* for information.

## DC Isolator

Each device connected to a DC-powered cabinet, from the asynchronous EIA RS-232 interface, requires a 116A isolator. Insert the isolator at the RS-232 interface between the device and the interface connector to isolate ground between the system and external adjuncts.

## Power-Failure Stations

During routine system operation, the ground for the power-failure stations is derived from the system's auxiliary cable. This ground is disconnected during the upgrade, thus disabling the power-failure stations. Therefore, a ground strap must be run to the power-failure transfer panel. Connect this strap shortly after removing power and disconnect it just before restoring power to the system.

To minimize downtime, power-failure transfer equipment should be tested and, if need be, repaired before the hardware upgrade begins.

## Software

If the customer plans to emulate existing G2 translations in the upgraded Release 8, then these translations must be copied to a spare tape and sent to Software Technical Support (STS) so that reports of the current G2 translations and a G3-MA diskette with basic station translations can be generated. This process may take several days. STS must return the G2 reports and the diskette to the Project Manager before the upgrade can begin. For each G2 processor, retain 2 tapes (1 system tape and 1 backup tape) on site with the G2 system.

After the reports arrive, many features require special attention because of feature differences, screen changes, and potential naming conflicts in the upgrade process.

During the upgrade, the Software Specialist should implement DEFINITY ECS Release 8 translations that are appropriate for the customer's needs. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Alarm Connection

The D6 connector on G2 systems had 31 alarm-monitor appearances (Unit 1 to Unit 31) for external equipment. The AUXILIARY connector on an R8 PPN only has appearances for 1M (major alarm) and 1m (minor alarm). If the G2 system being upgraded used more than 1 major or more than 1 minor alarm-monitor appearance, these extra appearances, they can either be distributed to the AUXILIARY connector on a DEFINITY ECS Release 8 EPN, or “ganged” so that several external devices share the same appearance. The alarms can also be accommodated by paralleling them to the above connections.

### NOTE:

When several external devices are ganged to the same appearance, each device loses its individual identity. An alarm on a shared appearance only denotes that 1 of several devices reported a problem. Subsequent maintenance effort is needed to determine which device reported the problem and the nature of the problem.

The control circuit pack behind the AUXILIARY connector detects external alarms with a ground-detector chip. Therefore, to gang several external devices, every device must be able to return a true relay ground closure to the AUXILIARY connector. Alternatives, such as a TTL low driver, are inadequate.

The following tables correlate wall-field terminal numbers, connector pin numbers, lead colors, and lead designations for the G2 D6 and DEFINITY ECS Release 8 AUXILIARY connectors.

Table 5-1. Pinouts for D6 Connector on G2 System

| Terminal Number | Pin # | Color | Designation | Terminal # | Pin # | Color | Designation |
|-----------------|-------|-------|-------------|------------|-------|-------|-------------|
| 1               | 26    | W-BL  | UNIT20      | 2          | 01    | BL-W  | UNIT19      |
| 3               | 27    | W-O   | UNIT22      | 4          | 02    | O-W   | UNIT21      |
| 5               | 28    | W-G   | UNIT24      | 6          | 03    | G-W   | UNIT23      |
| 7               | 29    | W-BR  |             | 8          | 04    | BR-W  | UNIT25      |
| 9               | 30    | W-S   | UNIT27      | 10         | 05    | S-W   | UNIT26      |
| 11              | 31    | R-BL  | UNIT29      | 12         | 06    | BL-R  | UNIT28      |
| 13              | 32    | R-O   | UNIT31      | 14         | 07    | O-R   | UNIT30      |
| 15              | 33    | R-G   | AUXCTMP     | 16         | 08    | G-R   | UNIT32      |
| 17              | 34    | R-BR  | EXTEQMN     | 18         | 09    | BR-R  | EXTEQMJ     |
| 19              | 35    | R-S   | AUXCRCT     | 20         | 10    | S-R   | AUXCHO      |
| 21              | 36    | BK-BL | AUXCCB      | 22         | 11    | BL-BK | AUXCFRQ     |
| 23              | 37    | BK-O  | AUXCFAN     | 24         | 12    | O-BK  |             |
| 25              | 38    | BK-G  | EXTPRMJ     | 26         | 13    | G-BK  | EXTPRMN     |
| 27              | 39    | BK-BR | UNIT2       | 28         | 14    | BR-BK | UNIT1       |
| 29              | 40    | BK-S  | UNIT4       | 30         | 15    | S-BK  | UNIT3       |
| 31              | 41    | Y-BL  | UNIT6       | 32         | 16    | BL-Y  | UNIT5       |
| 33              | 42    | Y-O   | UNIT8       | 34         | 17    | O-Y   | UNIT7       |
| 35              | 43    | Y-G   | UNIT10      | 36         | 18    | G-Y   | UNIT9       |
| 37              | 44    | Y-BR  |             | 38         | 19    | BR-Y  | UNIT11      |
| 39              | 45    | Y-S   | UNIT13      | 40         | 20    | S-Y   | UNIT12      |
| 41              | 46    | V-BL  | UNIT15      | 42         | 21    | BL-V  | UNIT14      |
| 43              | 47    | V-O   | UNIT17      | 44         | 22    | O-V   | UNIT16      |
| 45              | 48    | V-G   |             | 46         | 23    | G-V   | UNIT18      |
| 47              | 49    | V-BR  | RING0       | 48         | 24    | BR-V  | TIP0        |
| 49              | 50    | V-S   | RING1       | 50         | 25    | S-V   | TIP1        |

Table 5-2. Pinouts for Auxiliary Connector on Release 8 Systems

| Terminal Number | Pin # | Color | Designation | Terminal Number | Pin # | Color | Designation |
|-----------------|-------|-------|-------------|-----------------|-------|-------|-------------|
| 1               | 26    | W-BL  | AUXMJ       | 2               | 01    | BL-W  | GRD         |
| 3               | 27    | W-O   | AUXMN       | 4               | 02    | O-W   | GRD         |
| 5               | 28    | W-G   |             | 6               | 03    | G-W   | GRD         |
| 7               | 29    | W-BR  |             | 8               | 04    | BR-W  | GRD         |
| 9               | 30    | W-S   |             | 10              | 05    | S-W   | GRD         |
| 11              | 31    | R-BL  |             | 12              | 06    | BL-R  | GRD         |
| 13              | 32    | R-O   |             | 14              | 07    | O-R   | GRD         |
| 15              | 33    | R-G   |             | 16              | 08    | G-R   |             |
| 17              | 34    | R-BR  |             | 18              | 09    | BR-R  |             |
| 19              | 35    | R-S   |             | 20              | 10    | S-R   |             |
| 21              | 36    | BK-BL | XFER48      | 22              | 11    | BL-BK | GRD         |
| 23              | 37    | BK-O  | XFER48      | 24              | 12    | O-BK  | GRD         |
| 25              | 38    | BK-G  | XFER48      | 26              | 13    | G-BK  | GRD         |
| 27              | 39    | BK-BR | XFER48      | 28              | 14    | BR-BK | GRD         |
| 29              | 40    | BK-S  | XFER48      | 30              | 15    | S-BK  | GRD         |
| 31              | 41    | Y-BL  | XFER48      | 32              | 16    | BL-Y  | GRD         |
| 33              | 42    | Y-O   | XFER48      | 34              | 17    | O-Y   | GRD         |
| 35              | 43    | Y-G   |             | 36              | 18    | G-Y   |             |
| 37              | 44    | Y-BR  | GRD         | 38              | 19    | BR-Y  | ACC48A      |
| 39              | 45    | Y-S   | GRD         | 40              | 20    | S-Y   | ACC48B      |
| 41              | 46    | V-BL  | GRD         | 42              | 21    | BL-V  | ACC48C      |
| 43              | 47    | V-O   |             | 44              | 22    | O-V   |             |
| 45              | 48    | V-G   | EXT_ALM     | 46              | 23    | G-V   | EXT_ALM_RT  |
| 47              | 49    | V-BR  |             | 48              | 24    | BR-V  |             |
| 49              | 50    | V-S   | INADS TIP   | 50              | 25    | S-V   | INADS RING  |



## Save Translations

---

1. Log in at the Manager II on the G2.
2. Type **rtx** (run tape, execute) and press **Enter**. This instructs the system to write all translation information from memory to the tape.
3. Remove the system tape and install the backup tape.
4. Type **rtx** and press **Enter**.

## Make Source Tape for TRACS Report

---

A spare G2 tape must be acquired from the remediation before performing the following steps. For each processor, there must always be 2 tapes on site with the G2 system. Do not send a system or backup tape to STS. After performing the previous procedures, copy the G2 translations to the spare tape used to make the TRACS report.

1. Remove the backup tape and install the spare tape.
2. Type **rtx** and press **Enter**. This command instructs the system to write all translation information from memory to the tape.
3. Remove the source tape.
4. Insert the system tape.
5. Mail the source tape (next-day delivery) to STS for use in making the G2 TRACS report.

## System Upgrades

There are many configurations of DEFINITY G2 in the field. Each system can have a unique configuration. However, to simplify Release 8 upgrades:

- The existing common control is always replaced by a multicarrier PPN
- Existing traditional modules are replaced by EPNs
- Existing universal modules are upgraded to EPNs

A new multicarrier cabinet would then always serve as the PPN. If a G2 universal module is upgraded to a DEFINITY ECS Release 8 EPN, hardware changes (including carrier replacement) are required.

## Task Tables

[Table 5-3](#), [Table 5-4](#), and [Table 5-5](#) provide the high-level tasks to perform the upgrades detailed in this chapter. Refer to the appropriate page for detailed instructions for each step.

**Table 5-3. Tasks to Upgrade to Release 8r — Standard Reliability**

| ✓ | Task Description                                                   | Page                 |
|---|--------------------------------------------------------------------|----------------------|
|   | <a href="#">Save Translations</a>                                  | <a href="#">5-9</a>  |
|   | <a href="#">Make Source Tape for TRACS Report</a>                  | <a href="#">5-9</a>  |
|   | <a href="#">Required Hardware</a>                                  | <a href="#">5-15</a> |
|   | <a href="#">Follow Routine Preventive Maintenance</a>              | <a href="#">5-16</a> |
|   | <a href="#">Label Cables</a>                                       | <a href="#">5-16</a> |
|   | <a href="#">Check Link Status</a>                                  | <a href="#">5-17</a> |
|   | <a href="#">Disable TTI</a>                                        | <a href="#">5-17</a> |
|   | <a href="#">Power Down G2 System</a>                               | <a href="#">5-17</a> |
|   | <a href="#">Install Power-Failure Transfer Ground Wire</a>         | <a href="#">5-17</a> |
|   | <a href="#">Disconnect Cables</a>                                  | <a href="#">5-18</a> |
|   | <a href="#">Remove Circuit Packs from Module Control Carrier A</a> | <a href="#">5-18</a> |
|   | <a href="#">Remove CURL from Module Control Carrier A</a>          | <a href="#">5-18</a> |
|   | <a href="#">Remove Module Control Carrier A</a>                    | <a href="#">5-19</a> |
|   | <a href="#">Unpack and Inspect Expansion Control Carrier</a>       | <a href="#">5-23</a> |
|   | <a href="#">Install New Expansion Control Carrier A</a>            | <a href="#">5-23</a> |
|   | <a href="#">Install Circuit Packs</a>                              | <a href="#">5-26</a> |
|   | <a href="#">Interconnect Port Networks</a>                         | <a href="#">5-26</a> |
|   | <a href="#">Verify Usable Circuit Pack Vintages</a>                | <a href="#">5-35</a> |
|   | <a href="#">Remove Power-Failure Ground Wire</a>                   | <a href="#">5-35</a> |
|   | <a href="#">Boot the Release 8 System</a>                          | <a href="#">5-36</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                         | <a href="#">5-37</a> |
|   | <a href="#">Set Date and Time</a>                                  | <a href="#">5-38</a> |
|   | <a href="#">Set Additional Administration</a>                      | <a href="#">5-40</a> |
|   | <a href="#">Reconnect Cables to Upgraded EPN Cabinet</a>           | <a href="#">5-40</a> |

*Continued on next page*

Table 5-3. Tasks to Upgrade to Release 8r — Standard Reliability — *Continued*

| ✓ | Task Description                                                       | Page                 |
|---|------------------------------------------------------------------------|----------------------|
|   | <a href="#">Power Up the EPN Cabinets</a>                              | <a href="#">5-41</a> |
|   | <a href="#">Retranslate Port Circuits</a>                              | <a href="#">5-41</a> |
|   | <a href="#">Enable TTI</a>                                             | <a href="#">5-41</a> |
|   | <a href="#">Check Link Status</a>                                      | <a href="#">5-41</a> |
|   | <a href="#">Enable Scheduled Maintenance</a>                           | <a href="#">5-41</a> |
|   | <a href="#">Resolve Alarms</a>                                         | <a href="#">5-41</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a> | <a href="#">5-42</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">5-42</a> |
|   | <a href="#">Back Up Disk</a>                                           | <a href="#">5-43</a> |
|   | <a href="#">Return Replaced Equipment</a>                              | <a href="#">5-43</a> |

Table 5-4. Tasks to Upgrade to Release 8r — High Reliability

| ✓ | Task Description                                                       | Page                 |
|---|------------------------------------------------------------------------|----------------------|
|   | <a href="#">Follow Routine Preventive Maintenance</a>                  | <a href="#">5-45</a> |
|   | <a href="#">Label Cables</a>                                           | <a href="#">5-45</a> |
|   | <a href="#">Check Link Status</a>                                      | <a href="#">5-46</a> |
|   | <a href="#">Disable TTI</a>                                            | <a href="#">5-46</a> |
|   | <a href="#">Power Down G2 System</a>                                   | <a href="#">5-46</a> |
|   | <a href="#">Install Power-Failure Transfer Ground Wire</a>             | <a href="#">5-46</a> |
|   | <a href="#">Disconnect Cables</a>                                      | <a href="#">5-47</a> |
|   | <a href="#">Remove Circuit Packs from Module Control Carrier A</a>     | <a href="#">5-47</a> |
|   | <a href="#">Remove CURL from Module Control Carrier A</a>              | <a href="#">5-47</a> |
|   | <a href="#">Remove Module Control Carrier A</a>                        | <a href="#">5-47</a> |
|   | <a href="#">Unpack and Inspect Expansion Control Carrier</a>           | <a href="#">5-51</a> |
|   | <a href="#">Install New Expansion Control Carrier A</a>                | <a href="#">5-51</a> |
|   | <a href="#">Install Circuit Packs</a>                                  | <a href="#">5-55</a> |
|   | <a href="#">Interconnect Port Networks — High Reliability</a>          | <a href="#">5-55</a> |
|   | <a href="#">Verify Usable Circuit Pack Vintages</a>                    | <a href="#">5-66</a> |
|   | <a href="#">Remove Power-Failure Ground Wire</a>                       | <a href="#">5-66</a> |
|   | <a href="#">Boot the Release 8 System</a>                              | <a href="#">5-67</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                             | <a href="#">5-67</a> |
|   | <a href="#">Set Date and Time</a>                                      | <a href="#">5-69</a> |
|   | <a href="#">Set Additional Administration</a>                          | <a href="#">5-71</a> |
|   | <a href="#">Reconnect Cables</a>                                       | <a href="#">5-71</a> |
|   | <a href="#">Power Up the EPN Cabinets</a>                              | <a href="#">5-72</a> |
|   | <a href="#">Retranslate Port Circuits</a>                              | <a href="#">5-72</a> |
|   | <a href="#">Enable TTI</a>                                             | <a href="#">5-72</a> |
|   | <a href="#">Check Link Status</a>                                      | <a href="#">5-72</a> |
|   | <a href="#">Enable TTI</a>                                             | <a href="#">5-72</a> |
|   | <a href="#">Resolve Alarms</a>                                         | <a href="#">5-73</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination to INADS</a> | <a href="#">5-73</a> |
|   | <a href="#">Save Translations</a>                                      | <a href="#">5-74</a> |
|   | <a href="#">Back Up Disk</a>                                           | <a href="#">5-74</a> |

Table 5-5. Tasks to Upgrade to Release 8r — Critical Reliability

| ✓ | Task Description                                                          | Page                  |
|---|---------------------------------------------------------------------------|-----------------------|
|   | <a href="#">Upgrade Cabinets</a>                                          | <a href="#">5-75</a>  |
|   | <a href="#">Follow Routine Preventive Maintenance</a>                     | <a href="#">5-76</a>  |
|   | <a href="#">Label Cables</a>                                              | <a href="#">5-76</a>  |
|   | <a href="#">Check Link Status</a>                                         | <a href="#">5-77</a>  |
|   | <a href="#">Disable TTI</a>                                               | <a href="#">5-77</a>  |
|   | <a href="#">Power Down G2 System</a>                                      | <a href="#">5-77</a>  |
|   | <a href="#">Install Power-Failure Transfer Ground Wire</a>                | <a href="#">5-77</a>  |
|   | <a href="#">Disconnect Cables</a>                                         | <a href="#">5-78</a>  |
|   | <a href="#">Remove Circuit Packs from Module Control Carriers A and B</a> | <a href="#">5-78</a>  |
|   | <a href="#">Remove CURL from Module Control Carrier A</a>                 | <a href="#">5-78</a>  |
|   | <a href="#">Remove Module Control Carriers A and B</a>                    | <a href="#">5-79</a>  |
|   | <a href="#">Prepare the New A and B Position Carriers</a>                 | <a href="#">5-83</a>  |
|   | <a href="#">Install the New A and B Position Carriers</a>                 | <a href="#">5-84</a>  |
|   | <a href="#">Test the CURL</a>                                             | <a href="#">5-90</a>  |
|   | <a href="#">Install Circuit Packs</a>                                     | <a href="#">5-90</a>  |
|   | <a href="#">Interconnect Port Networks — Critical Reliability</a>         | <a href="#">5-91</a>  |
|   | <a href="#">Verify Usable Circuit Pack Vintages</a>                       | <a href="#">5-105</a> |
|   | <a href="#">Remove Power-Failure Ground Strap</a>                         | <a href="#">5-106</a> |
|   | <a href="#">Boot the Release 8 System</a>                                 | <a href="#">5-106</a> |
|   | <a href="#">Set Daylight Savings Rules</a>                                | <a href="#">5-107</a> |
|   | <a href="#">Set Date and Time</a>                                         | <a href="#">5-108</a> |
|   | <a href="#">Set Additional Administration</a>                             | <a href="#">5-110</a> |
|   | <a href="#">Close Upgraded EPN Cabinet and Reconnect Cables</a>           | <a href="#">5-110</a> |
|   | <a href="#">Power Up the EPN Cabinets</a>                                 | <a href="#">5-111</a> |
|   | <a href="#">Retranslate Port Circuits</a>                                 | <a href="#">5-111</a> |
|   | <a href="#">Enable TTI</a>                                                | <a href="#">5-111</a> |
|   | <a href="#">Check Link Status</a>                                         | <a href="#">5-111</a> |
|   | <a href="#">Enable Scheduled Maintenance</a>                              | <a href="#">5-111</a> |

Continued on next page

Table 5-5. Tasks to Upgrade to Release 8r — Critical Reliability  
— Continued

| ✓ | Task Description                                              | Page                  |
|---|---------------------------------------------------------------|-----------------------|
|   | <a href="#">Resolve Alarms</a>                                | <a href="#">5-112</a> |
|   | <a href="#">Enable Customer Options and Alarm Origination</a> | <a href="#">5-112</a> |
|   | <a href="#">Save Translations</a>                             | <a href="#">5-113</a> |
|   | <a href="#">Back Up Disk</a>                                  | <a href="#">5-113</a> |
|   | <a href="#">Return Replaced Equipment</a>                     | <a href="#">5-113</a> |

# Standard Reliability

## Required Hardware

The equipment in [Table 5-6](#) must be on-site before the upgrade begins. To place a claim for missing equipment, as part of the Streamlined Implementation process, call 1-800-772-5409, or the number provided by your Lucent Technologies representative.

Table 5-6. Required Hardware

| Equipment                    | Description                                                    | Quantity                                         |
|------------------------------|----------------------------------------------------------------|--------------------------------------------------|
| PEC 6300-05X                 | Processor Port Network                                         | 1                                                |
| J58890AF-1                   | Expansion Control Carrier                                      | 1                                                |
| 106647985                    | TN775B Maintenance                                             | 1                                                |
| 103557294<br>or<br>103281788 | TN776 Expansion Interface<br><br>TN570 Expansion Interface     | 2 or 6 <sup>1</sup><br><br>2 or 6 <sup>1,2</sup> |
| 407439975                    | 20-Foot Multi-mode Fiber Optic Cable                           | 1 or 3 <sup>3</sup>                              |
| 106455348<br>or<br>106455363 | 9823A Lightwave Transceiver<br><br>9823B Lightwave Transceiver | 2 or 6 <sup>4</sup><br><br>2 or 6 <sup>5</sup>   |

1. Depending on the number of Release 8 EPNs. Two are required for a standard reliability system with 2 port networks; 6 with 3 port networks. Either 1 or 4 Expansion Interfaces (EIs) are shipped loose with the EPN equipment. The factory has installed either 1 or 2 EIs in the new PPN.
2. Required port network interfaces in a Release 8 system with the optional packet bus.
3. Depending on the number of DEFINITY ECS Release 8 EPNs. Two or 6 are required if the PPN and EPN(s) are remotely located. Assuming acceptable lengths, the fiber that previously connected an upgraded G2 universal module (not a traditional module) to the G2 TMS has the correct transceiver connectors and can be reused.
4. One pair for each fiber connection. For each connection, either 1 lightwave transceiver is installed in an EPN and 1 in the PPN. A transceiver can be reused from each upgraded G2 universal module. Additional transceivers, ordered separately, are also shipped loose with the EPN equipment.

## Required Tools

The following tools and items may be required during the upgrade:

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect ground straps and straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve spare #12 and #10 self-tapping screws
- Four spare carrier ground straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8si or DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Follow Routine Preventive Maintenance

During the upgrade, follow routine preventive maintenance procedures on the system to be upgraded. For information about the procedures and necessary equipment, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Label Cables

To make reconnecting the cables simpler and more reliable, label both ends of the connector cables associated with the carrier to be removed.



## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Write down all enabled links.
2. Type **status link *number*** and press Enter. Repeat this step for all links.
3. Write down which links are in service.

## Disable TTI

---



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter. Use screen 2 to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

## Power Down G2 System

---

1. At the common control's power distribution unit, set the main circuit breaker to OFF.
2. At the universal module's power distribution unit, set the main circuit breaker to OFF.

## Install Power-Failure Transfer Ground Wire

---



### CAUTION:

*To avoid contaminating single-point ground, do not connect the ground wire while the system is powered up.*

1. Connect a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) on the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground and connect.

## **Disconnect Cables**

---

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a #2 flat blade screwdriver into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect the cables associated with the carrier to be removed.
3. Remove the rear doors from the cabinet.
4. Behind a previously upgraded cabinet, remove all of the rear panels. Two different types of screws hold the back panels to the cabinet. Remove the #10 screws with a screwdriver or a 1/4-inch socket. Remove the #12 screws with a screwdriver or a 5/16-inch socket.

## **Remove Circuit Packs from Module Control Carrier A**

---

1. To ensure that power units in the “A” carrier are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the “A” carrier.
3. Remove all circuit packs and power units from carrier “A.” Store the circuit packs in the static-proof packaging.
4. Remove all circuit pack blanks.
5. Remove the front trim plate from the “A” carrier by pulling it straight off.

## **Remove CURL from Module Control Carrier A**

---

1. Remove the CFY1 current limiter (CURL) from the pin-field block marked “CURL” on the “A” carrier. The CURL is reused in the Release 8 EPN.



**NOTE:**

Verify the CURL meets the minimum usable vintage requirements.

## Remove Module Control Carrier A

---

### Disconnect TDM/LAN Cables



**NOTE:**

Note the position of the TDM/LAN cables before disconnecting.

1. Disconnect 1 end of the TDM/LAN cable (between the "A" and "C" carriers) from the "A" carrier. See [Figure 5-1](#).
2. Disconnect 1 end of the TDM/LAN cable (between the "A" and "D" carriers) from the "A" carrier.



**WARNING:**

*When removing the TDM/LAN cables from a previously upgraded carrier, be careful that none of the short pieces of shrink tubing come off the 4 corner pins of the pin-field block. Otherwise, when the new equipment is connected, -48 volts could short to ground.*

3. On port carrier J58890BB-1, connect the TDM cable or TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables to Slot 01.

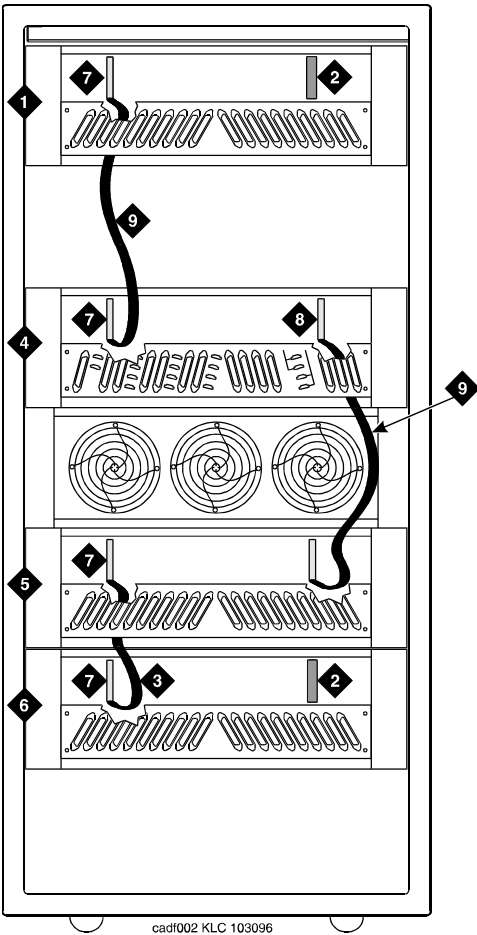


Figure Notes

- |                                          |                                |
|------------------------------------------|--------------------------------|
| 1. Port Carrier ("C" Position)           | 6. Port Carrier ("E" Position) |
| 2. ZAHF4 TDM/LAN Terminator              | 7. Slot 21                     |
| 3. TDM/LAN Cable (WP91716 L6)            | 8. Slot 01                     |
| 4. Module Control Carrier ("A" Position) | 9. TDM/LAN Cable (WP91716 L7)  |
| 5. Port Carrier ("D" Position)           |                                |

Figure 5-1. TDM/LAN Connections for Standard Reliability Module

Remove Carrier Ground Straps

1. Disconnect the top and bottom ground straps from the “A” carrier. See [Figure 5-2](#). These straps will reconnect to the new “A” carrier.

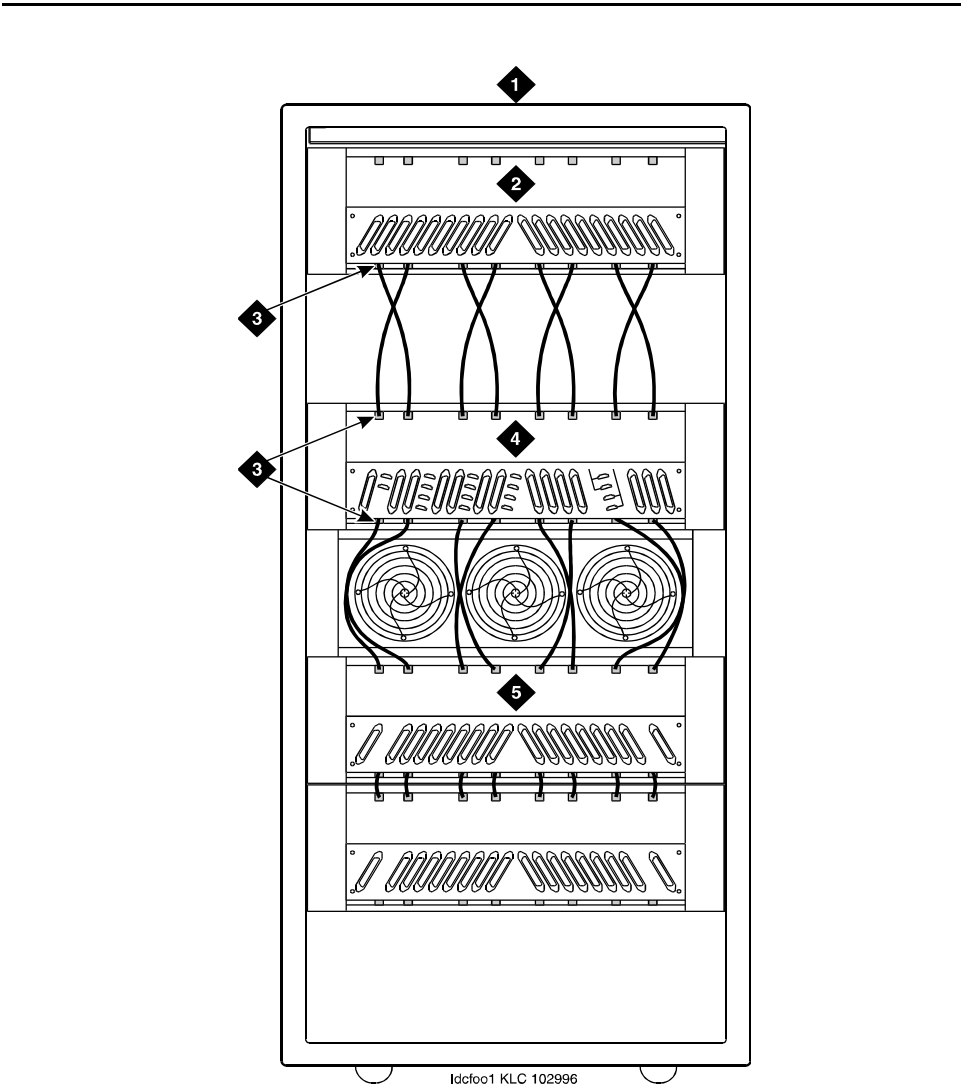


Figure Notes

- |                                |                                          |
|--------------------------------|------------------------------------------|
| 1. Rear of Cabinet             | 4. Module Control Carrier ("A" Position) |
| 2. Port Carrier ("C" Position) |                                          |
| 3. Ground Jumpers              | 5. Port Carrier ("D" Position)           |

Figure 5-2. Location of Ground Jumpers

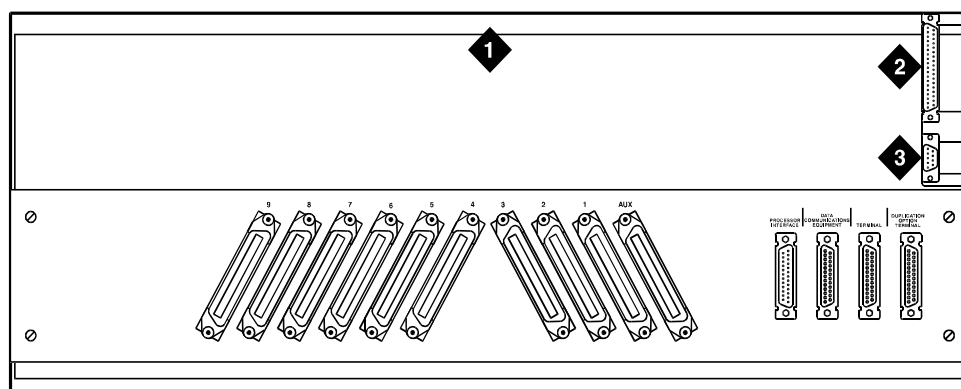
2. Disconnect the "P1" and "P2" cables from the "A" carrier. See [Figure 5-3](#).
3. Remove the fan trim plate by pulling it straight off.
4. Clean or replace the air filter (403326820) if necessary.
5. In front of the carrier, remove the 4 screws (top 2 first) holding the "A" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
6. Behind the carrier, remove the 2 screws holding the "A" carrier's rear connector panel to the cabinet frame.
7. Slide the carrier forward 1 to 2 inches. Be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



**CAUTION:**

*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

8. Remove the carrier by sliding it out the front of the cabinet.



crdtp12 KLC 101596

**Figure Notes**

- |                            |                 |
|----------------------------|-----------------|
| 1. Rear of Control Carrier | 3. P1 Connector |
| 2. P2 Connector            |                 |

**Figure 5-3. Location of P1 and P2 Connectors**

## Unpack and Inspect Expansion Control Carrier

1. Inspect the new J58890AF Expansion Control Carrier for any damage. Also verify that the backplane pins are not bent.
2. Place the expansion control carrier on the floor so that the rear of the carrier faces up.
3. Install the CFY1 current limiter (CURL) on the "A" carrier to the pin-field block labeled "CURL" Install the CURL with the components on the left.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4B cable retainer on each of these connectors.

## Install New Expansion Control Carrier A

1. Install the carrier in position "A" by aligning the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips support the carrier while installing the screws. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.



### NOTE:

Carefully realign the threads on the self-tapping screws by turning them counterclockwise 1 turn before tightening them to avoid stripping the threads out of the framework.

3. Connect the "P2" and "P1" cables to the "A" carrier. See [Figure 5-3](#). Snap the connector lock into place to ensure the connection is properly made.
4. Connect the 8 ground straps from the "C" carrier to the new "A" carrier. See [Figure 5-2](#).
5. Connect the 8 ground straps from the "D" carrier to the new "A" carrier.
6. For AC-powered systems, install the 2 new ground straps. One strap connects ground point "1" to the "A" carrier frame (right side), and the other connects ground point "8" to the "A" carrier frame (left side).



### NOTE:

DC-powered systems do not use these carrier ground straps.

7. Connect the remaining end of the TDM/LAN cable (between the "A" and "D" carriers) to the pin-field block marked "TDM" on the right side of the "A" carrier. See [Figure 5-4](#) and [Table 5-7](#).
8. Connect the remaining end of the TDM/LAN cable (between the "A" and "C" carriers) to the pin-field block marked "TDM" on the left side of the "A" carrier.

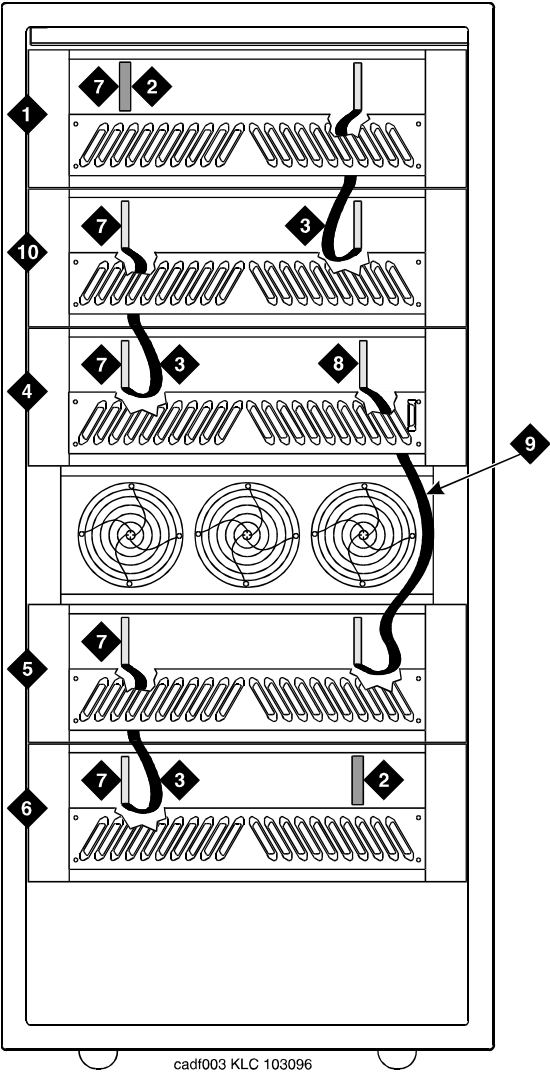


Figure Notes

- |                                          |                                    |
|------------------------------------------|------------------------------------|
| 1. Port Carrier ("C" Position)           | 6. Port Carrier ("E" Position)     |
| 2. ZAHF4 TDM/LAN Terminator              | 7. Slot 21                         |
| 3. TDM/LAN Cable (WP91716 L6)            | 8. Slot 01                         |
| 4. Module Control Carrier ("A" Position) | 9. TDM/LAN Cable (WP91716 L7)      |
| 5. Port Carrier ("D" Position)           | 10. Control Carrier ("B" Position) |

Figure 5-4. TDM/LAN Connections for Standard Reliability Release 8 EPN



9. On port carrier J58890BB-1, connect the TDM cable or TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables to Slot 01.

Table 5-7. TDM/LAN Connections

| "J" Number | Carrier Type    | LHS Slot | RHS Slot |
|------------|-----------------|----------|----------|
| J58890BB-1 | Port            | 21       | 02       |
| J58890BB-2 | Port            | 21       | 01       |
| J58890BB-3 | Port            | 21       | 01       |
| J58890AF   | EPN Control "A" | 21       | 02       |

10. Install the front trim plate on the "A" carrier. Install the fan trim plate.
11. Install the power units (removed from G2 universal module) into the "A" carrier. Do not interchange the physical locations of the units. The 631AR1, 631WA1, 631DA1, or 644A install in the left side, while the 631BR1, 631WB1, 631DB1, or 645B install in the right side.

 **NOTE:**  
In most cases, the new Release 8 carrier will contain the same power supplies as in the existing system. However, a Release 8 carrier may contain a 649A Power Unit. If so, re-use the power units from the G2 power module.

12. If the expansion control carrier contains a 631BR1, 631WB1, or 645B power unit, install the previously removed TN736 power unit in port slots "18" and "19" of the carrier (adjacent to the 631BR1, 631WB1, or 645B). If the system is equipped for neon message waiting, a TN752 or TN755 power unit must be used.

 **NOTE:**  
The TN736 is not required when the 631DB1 or 645B power unit is used in the J58890AF-1 expansion control carrier or the J58890BB-2 or J58890BB-3 port carriers. It is required in the J58890BB-1 port carrier, regardless of which 631 power unit is provided. Use the TN752 or TN755 if the system contains neon message waiting.

13. Connect the white power cords to the power units.

## Install Circuit Packs

---

1. Install the new Release 8 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 8 removable media) as a guide.

### ⇒ NOTE:

Currently, the TN768 Tone-Clock circuit pack resides in a port slot of the universal module being upgraded. Relocate this circuit pack to the "TONE CLOCK" slot of carrier "A." Lucent Technologies recommends upgrading to the TN2182 Tone-Clock.

2. Install circuit pack blanks in slots not equipped with circuit packs.
3. For a directly-connected standard reliability Release 8 system with 2 port networks, ensure the PPN and this EPN are both equipped with a TN776 or TN570 Expansion Interface circuit pack.

For a directly-connected system with 3 port networks, ensure the PPN and each EPN have two TN776 or TN570 circuit packs.

## Interconnect Port Networks

---

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PNs up to 4,900 feet (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PNs up to 25,000 feet (7620 m) apart. The 300A fiber optic lightwave transceiver can interconnect PNs up to 115,000 feet (21.7 miles, 35 km) apart.

### ⇒ NOTE:

These distance limits are approximate measurements of the *actual* fiber right-of-way (not of the shortest linear distance) between the 2 endpoints.

### ⇒ NOTE:

It is important to label every cable that you install.

### ⇒ NOTE:

Keep track of which fiber attaches to which connector on each lightwave transceiver. This section provides figures offering suggested ways of making these connections.

The connectors on the lightwave transceivers are labeled either "TX" (transmit) or "RX" (receive), while the fibers attaching to each connector are numbered either "1" or "2." A viable fiber connection is only made when both fibers in each cable ("1" and "2") route from the "TX" connector of a port network to the "RX" connector of its adjacent port network. See [Figure 5-6](#).

### ⇒ NOTE:

When finished, refer to [Appendix A, "Fiber Link Administration"](#) to administer the fiber links.

## Collocated Port Networks

For a standard reliability system with 1 collocated EPN, use 1 fiber optic cable and 2 lightwave transceivers to directly connect the networks.

For a standard reliability system with 2 collocated EPNs, use 3 fiber optic cables and 6 lightwave transceivers to directly connect the networks.



### NOTE:

Based on floor-plan considerations, the length of these cables may vary. 20 foot (6.1 m) cables are normally adequate for a Release 8 with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to the EPN cabinet. If a "DEFINITY style" PPN cabinet is collocated with another "DEFINITY style" EPN cabinet, the preferred routing is to run the cables *up* the cable tray and out the top of the PPN cabinet. The cables are then run to the other cabinet, through the top of the cabinet, and down the cable tray to the desired carrier level.

If a "DEFINITY style" PPN cabinet is collocated with either a small cabinet, medium cabinet, or single-carrier cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

## Fiber-Remoted Port Networks

For a standard reliability system with 1 fiber-remoted EPN, use 2 fiber optic cables, 2 lightwave transceivers, and 2 lightguide interconnect units (provided by the PSC).

For a standard reliability system with 2 fiber-remoted EPNs, use 6 fiber optic cables, 6 lightwave transceivers, and 6 lightguide interconnect units (provided by the PSC).

For fiber-remoted cabinets, route the cables down the cable tray and out the bottom of the cabinet to the MDF where the lightguide interconnect units are located.

In either case, use cable ties to secure the cable against the walls of the cable tray at the cable tie positions built into the trays.

## For Either 1 or 2 Collocated Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1 (see [Figure 5-5](#), [Figure 5-6](#), and [Figure 5-7](#)):

- Install a lightwave transceiver on the cable connector at slot 1A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 1A01.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on cable connector at slot 2A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2A01.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.

## For Two Collocated Expansion Port Networks

### 1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on cable connector at slot 1A02.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 1A02.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

### 2. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on cable connector at slot 3A01.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3A01.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.

### 3. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on cable connector at slot 2A02.

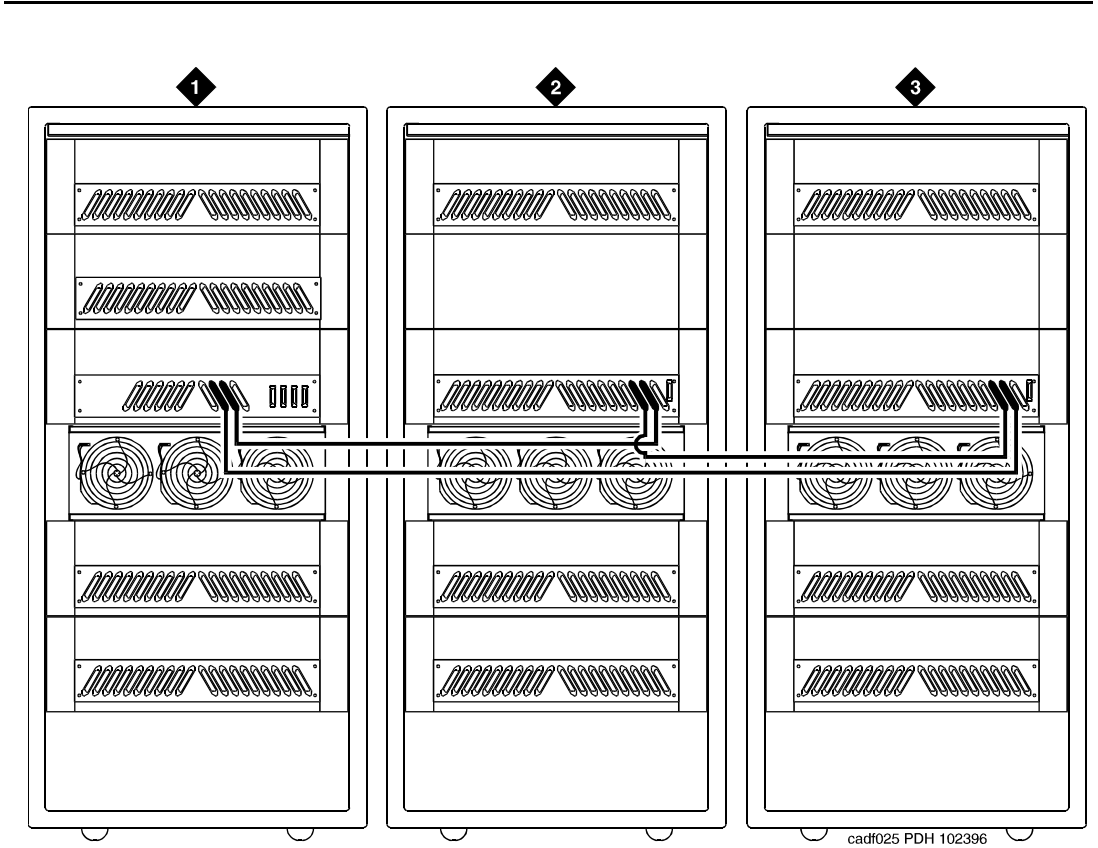


#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2A02.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

4. Behind control carrier A of EPN cabinet 3:
- Install a lightwave transceiver on cable connector at slot 3A02.
- NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
- Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3A02. See [Figure 5-8](#).
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.



**Figure Notes**

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| 1. Cabinet 1 Processor Port Network   | 3. Cabinet 3 Expansion Port Network 2 |
| 2. Cabinet 2 Expansion Port Network 1 |                                       |

**Figure 5-5. Standard Reliability Release 8 with Two or Three Port Networks**

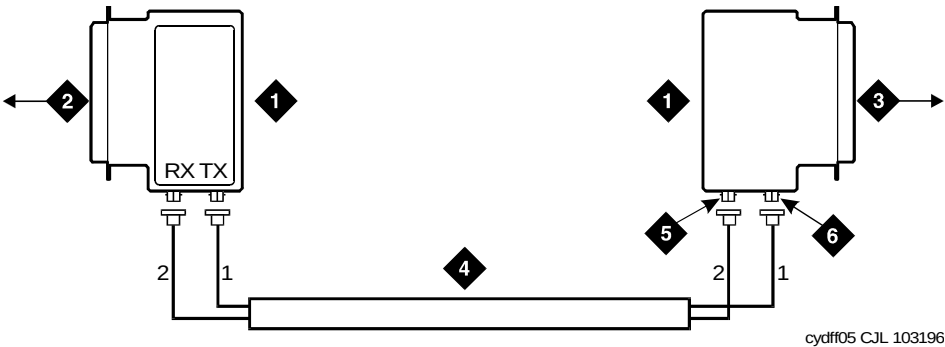


Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To PPN Carrier A Slot 1A01   | 5. TX Connector      |
| 3. To EPN 1 Carrier A Slot 2A01 | 6. RX Connector      |

Figure 5-6. Fiber Optic Connections PPN to EPN1

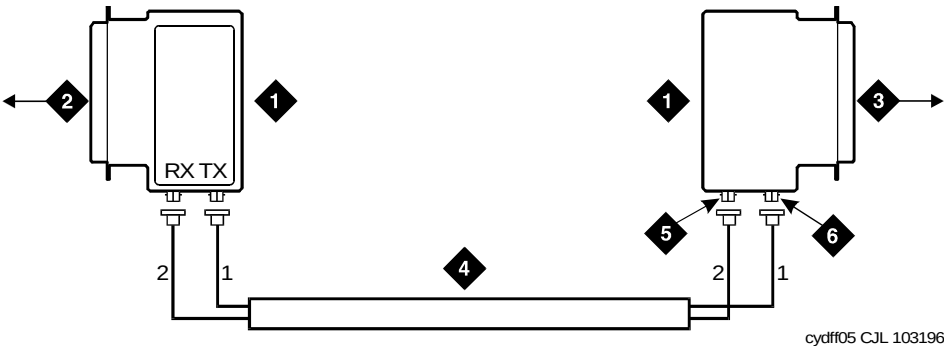
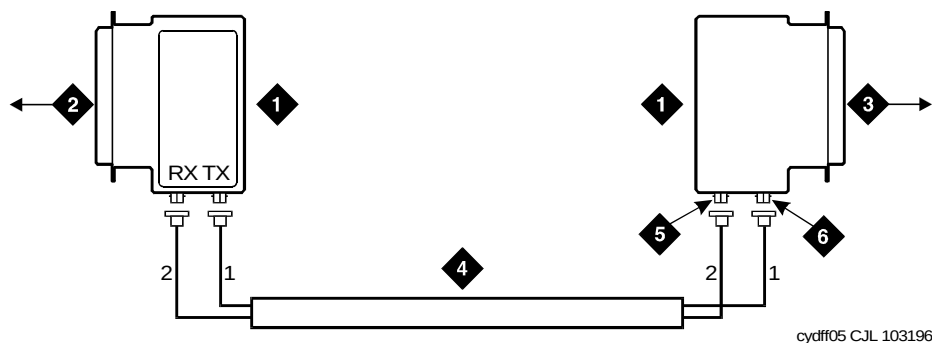


Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To PPN Carrier A Slot 1A02   | 5. TX Connector      |
| 3. To EPN 1 Carrier A Slot 3A01 | 6. RX Connector      |

Figure 5-7. Collocated Fiber Optic Connections PPN to EPN2



### Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To PPN Carrier A Slot 2A02   | 5. TX Connector      |
| 3. To EPN 1 Carrier A Slot 3A02 | 6. RX Connector      |

Figure 5-8. Collocated Fiber Optic Connections EPN1 to EPN2

### For Either One or Two Fiber-Remoted Expansion Port Networks

- At control carrier A of PPN cabinet 1. See [Figure 5-5](#) through [Figure 5-9](#).
  - Install a lightwave transceiver on the cable connector at slot 1A01.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Behind control carrier A of EPN cabinet 2:
    - Install a lightwave transceiver on cable connector at slot 2A01.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.



- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

## For Two Fiber-Remoted Expansion Port Networks

### 1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on cable connector at slot 1A02.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

### 2. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on cable connector at slot 3A01.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

3. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on cable connector at slot 2A02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

4. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on cable connector at slot 3A02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

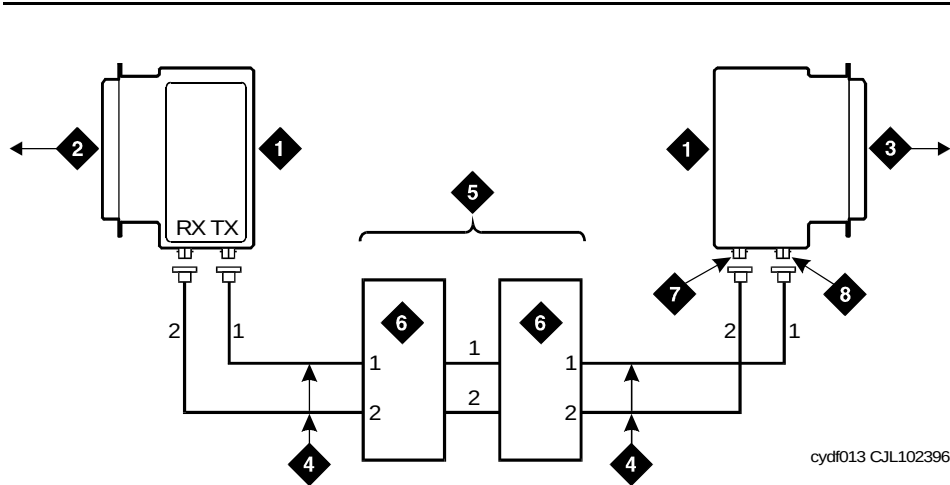


Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 5. Optical Cross-Connect Facility    |
| 2. To EPN1 Carrier A Slot 2A02 | 6. 100A Lightguide Interconnect Unit |
| 3. To EPN2 Carrier A Slot 3A02 | 7. TX Connector                      |
| 4. Fiber Optic Cable           | 8. RX Connector                      |

Figure 5-9. Fiber Optic Connections EPN1 to EPN2

Verify Usable Circuit Pack Vintages

Verify that each G2 circuit pack reused in the upgrade conforms to the usable vintage requirements for a Release 8 system (see *Reference Guide for Circuit Pack Vintages and Change Notices*).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm<sup>2</sup>) ground wire from the power-failure transfer unit.

## Boot the Release 8 System

---

1. Connect the PC to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*.
2. Insert the translation card in the TN794 faceplate.
3. At the EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading default system translations from the translation card. This takes 8 to 11 minutes.
6. Get the order number of the upgrade, and call the regional CSA to request an "init" login so that the right-to-use options can be enabled on the upgraded system.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

## Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have cabinets in several different time zones, you can set up rules for each on a location basis. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

 **NOTE:**  
The default daylight savings rule is 0, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

| DAYLIGHT SAVINGS RULES |                     |       |        |             |         |                |
|------------------------|---------------------|-------|--------|-------------|---------|----------------|
| Rule                   | Change              | Day   | Month  | Date        | Time    | Increment      |
| 0:                     | No Daylight Savings |       |        |             |         |                |
| 1:                     | Start:              | first | Sunday | on or after | April   | 1 at 2:0001:00 |
|                        | Stop:               | first | Sunday | on or after | October | 25 at 2:00     |
| 2:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 3:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 4:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 5:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 6:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 7:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. (for example, 1:00 equals one hour)

 **NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. When done, press Enter.

Set Date and Time

---

1. Type **set time** and press Enter to bring up the Date and Time screen.

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

Screen 5-1. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 5-8](#) for English day of the week names.

Table 5-8. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 5-9](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 5-9. English Month Names

| Month Number | Month Name |
|--------------|------------|
| 1            | January    |
| 2            | February   |
| 3            | March      |
| 4            | April      |
| 5            | May        |
| 6            | June       |
| 7            | July       |
| 8            | August     |
| 9            | September  |
| 10           | October    |
| 11           | November   |
| 12           | December   |

4. The cursor is positioned on the Day of the Month : field. Type the day of month (1 through 31) and press `Tab` to move to the next field.
5. The cursor is positioned on the Year : field. Type the current year and press `TAB` to move to the next field.
6. The cursor is positioned on the Hour : field. Type the current hour for a 24-hour clock. Press `Tab` to move to the next field.
7. The cursor is positioned on the Minute : field. Type current minute (0 through 59). Seconds cannot be set.
8. Type **standard** or **daylight savings** in the Type field.
9. Type the rule (number) in the Daylight Savings Rule field.
10. Press `Enter` when the information is correct.
11. Type **display time** and press `Enter` to verify date/time data.

## Set Additional Administration

---

1. Type **list configuration software-version** and press Enter to compare the version number of the Release 8 software program (displayed on the terminal) with the TN786B version number (written on a label on the TN786B's faceplate). If the version numbers are not the same, change the version number on the TN786B label so that they agree.
2. Type **change system-parameters customer-options** and press Enter. Use this screen to enable the customer's right-to-use options on the upgrade order. See *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for details.
3. Type **change site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation card.



### CAUTION:

*If the terminal screen displays "translation corruption detected; call Lucent Technologies distributor immediately", an error was detected in the translations. Call your Lucent Technologies representative.*

## Reconnect Cables to Upgraded EPN Cabinet

---

1. At the power distribution unit of the upgraded EPN, set the main circuit breaker to OFF.



### NOTE:

Powering down an EPN without powering down the PPN will set off alarms. However, these alarms should clear after power is restored to each EPN.

2. Temporarily disconnect the lightwave transceivers and fiber optic cables from the appropriate carriers.
3. Replace the rear doors or rear panels previously removed.
4. At the EPN cabinet, reconnect the lightwave transceivers, fiber optic cables, and the connector cables.
5. Install the front door on the EPN cabinet if previously removed.



## Power Up the EPN Cabinets

---

1. At each EPN power distribution unit, set the main circuit breaker to ON. After about 40 seconds, EPN power and PPN/EPN communications return.
2. After power returns to each EPN and all trouble is cleared, verify the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

## Retranslate Port Circuits

---

If port circuit packs in the G2 module control carrier were relocated in order to place:

- A critical port circuit pack, requiring longer nominal battery holdover (such as a DS1 or an Announcement circuit pack), in a port slot
- A TN736, TN752, or TN755 power supply in port slots “18” and “19”
- A TN776 or TN570 Expansion Interface in port slot “1”
- A TN776 or TN570 in port slot “2” (for a second directly connected EPN)

of the new expansion control carrier, verify that they were retranslated during the off-site software upgrade. If not, they must be retranslated now. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for instructions on performing the retranslations.

## Enable TTI

---

Type **change system-parameters features** and press Enter. Use this screen to change the TTI field back to its previous value before the upgrade.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link *number*** and press Enter. Repeat this step for each link.

## Enable Scheduled Maintenance

---

Type **change system-parameters maintenance** and press Enter. Enable the scheduled daily maintenance.

## Resolve Alarms

---

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft** at the Login: prompt.

### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. If the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.

## Save Translations

---

1. Type **save translation** and press Enter to get upgraded translations onto disk. If the translations were corrupted during the upgrade, the following error message displays when logging in:



### WARNING:

*Translation corruption detected; call Lucent Technologies distributor immediately.*



### NOTE:

The **save translation** command cannot function if the translation corruption message appears.

## **Back Up Disk**

---

1. Type **backup disk** and press Enter to backup all changed files.
2. Type **test stored-data long** and press Enter. This instructs the system to verify the consistency of the MSS files (on the disk and removable media).

## **Return Replaced Equipment**

---

Return unused G2 equipment to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations  
Methods and Procedures for Basic Material Returns*

# High Reliability

## Required Hardware

The equipment in [Table 5-10](#) must be on-site before the upgrade begins. To place a claim for missing equipment, as part of the Streamlined Implementation process, call 1-800-772-5409, or the number provided by your Lucent Technologies representative.

Table 5-10. Required Hardware

| Equipment                    | Description                                                  | Quantity                                     |
|------------------------------|--------------------------------------------------------------|----------------------------------------------|
| J58890A<br>(PEC 6300-05X)    | Processor Port Network                                       | 1                                            |
| J58890AF                     | Expansion Control Carrier                                    | 1                                            |
| 106647985                    | TN775B Maintenance                                           | 1                                            |
| 103557294<br>or<br>103281788 | TN776 Expansion Interface<br>TN570 Expansion Interface       | 2 or 6 <sup>1</sup><br>2 or 6 <sup>1,2</sup> |
| J58890TO-1 L1                | Removable Media                                              | 4                                            |
| 407439975                    | 20-Foot Multi-mode Fiber Optic Cable                         | 1 or 3 <sup>3</sup>                          |
| 106455348<br>or<br>106455363 | 9823-A Lightwave Transceiver<br>9823-B Lightwave Transceiver | 2 or 6 <sup>4</sup><br>2 or 6 <sup>5</sup>   |

1. Use 2 for a high reliability system with 2 port networks; 6 with 3 port networks. Either 1 or 4 Expansion Interfaces (EIs) ship loose with the EPN equipment. The factory has installed either 1 or 2 EIs in the new PPN.
2. Required port network interfaces in a Release 8 system with the optional packet bus.
3. Use 2 or 6 if the PPN and EPN(s) are remotely located. The fiber that previously connected an upgraded G2 universal module (not a traditional module) to the G2 TMS has the correct transceiver connectors and, therefore, can be reused.
4. One pair for each fiber connection. For each connection, install one 9823-type lightwave transceiver in an EPN and 1 in the PPN. A 9823-type transceiver can be reused from each upgraded G2 universal module. Additional transceivers also ship loose with the EPN equipment.

## Required Tools

The following tools and items may be required during the upgrade:

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect ground straps and straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve spare #12 and #10 self-tapping screws
- Four spare carrier ground straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Follow Routine Preventive Maintenance

Follow routine preventive maintenance procedures on the system to be upgraded. For information about the procedures and necessary equipment, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Label Cables

To make reconnecting the cables simpler and more reliable, label both ends of the connector cables associated with the carrier to be removed.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Write down all enabled links.
2. Type **status link *number*** and press Enter. Repeat this step for all links.
3. Write down which links are in service.

## Disable TTI

---



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter.
3. On the second screen, set the Enabled? field to **n** to prevent the TTI feature from activating.

## Power Down G2 System

---

At the power distribution unit, set the main circuit breaker to OFF.

## Install Power-Failure Transfer Ground Wire

---



### CAUTION:

*To avoid contaminating single-point ground, do not connect the ground wire while the system is powered up.*

1. Connect a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) on the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground and connect.

## Disconnect Cables

---

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a #2 flat blade screwdriver into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect the cables associated with the carrier to be removed.
3. Remove the rear doors from the cabinet.
4. Remove all of the rear panels. Two different types of screws hold the panels to the cabinet. Remove the #10 screws with a screwdriver or a 1/4-inch socket. Remove the #12 screws with a screwdriver or a 5/16-inch socket.)

## Remove Circuit Packs from Module Control Carrier A

---

1. To ensure that power units in the “A” carrier are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the “A” carrier.
3. Remove all circuit packs and power units from carrier “A.” Store the circuit packs in the static-proof packaging.
4. Remove the circuit pack blanks from the empty slots.
5. Remove the front trim plate from the “A” carrier by pulling it straight off.

## Remove CURL from Module Control Carrier A

---

Remove the CFY1 current limiter (CURL) from the pin-field block marked “CURL” on the “A” carrier. The CURL will be reused in the Release 8 EPN.



**NOTE:**

Verify that the CURL meets the minimum usable vintage requirements.

## Remove Module Control Carrier A

---



**NOTE:**

Note the position of each TDM/LAN cables before disconnecting.

1. Disconnect both TDM/LAN cables from the “A” carrier. See [Figure 5-10](#). Leave the other end connected to the “C” carrier.



**CAUTION:**

*When removing the TDM/LAN cables from a previously upgraded carrier, be careful that none of the short pieces of shrink tubing come off the 4 corner pins of the pin-field block. Otherwise, when the new equipment is connected, -48 volts could short to ground.*

2. On port carrier J58890BB-1, connect the TDM cable or TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables to Slot 01.

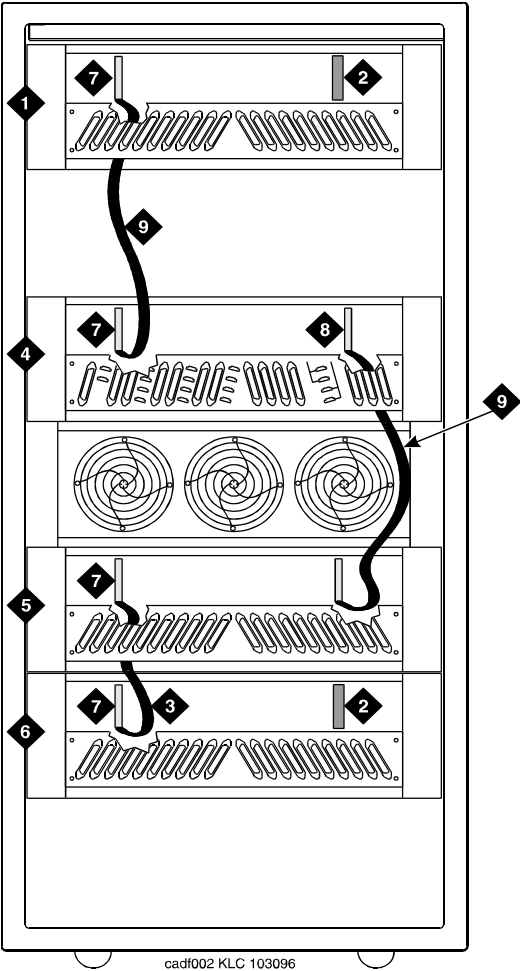


Figure Notes

- |                                          |                                |
|------------------------------------------|--------------------------------|
| 1. Port Carrier ("C" Position)           | 6. Port Carrier ("E" Position) |
| 2. ZAHF4 TDM/LAN Terminator              | 7. Slot 21                     |
| 3. TDM/LAN Cable (WP91716 L6)            | 8. Slot 01                     |
| 4. Module Control Carrier ("A" Position) | 9. TDM/LAN Cable (WP91716 L7)  |
| 5. Port Carrier ("D" Position)           |                                |

Figure 5-10. TDM/LAN Connections for High Reliability System



3. Disconnect the 16 ground straps from the top and bottom of the “A” carrier. See [Figure 5-11](#). These straps reconnect to the new “A” carrier.

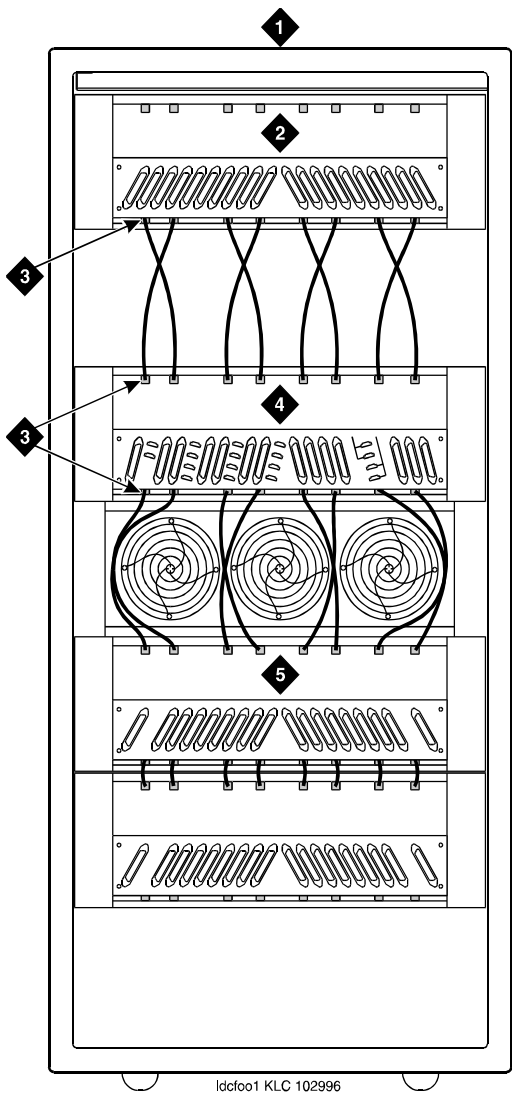
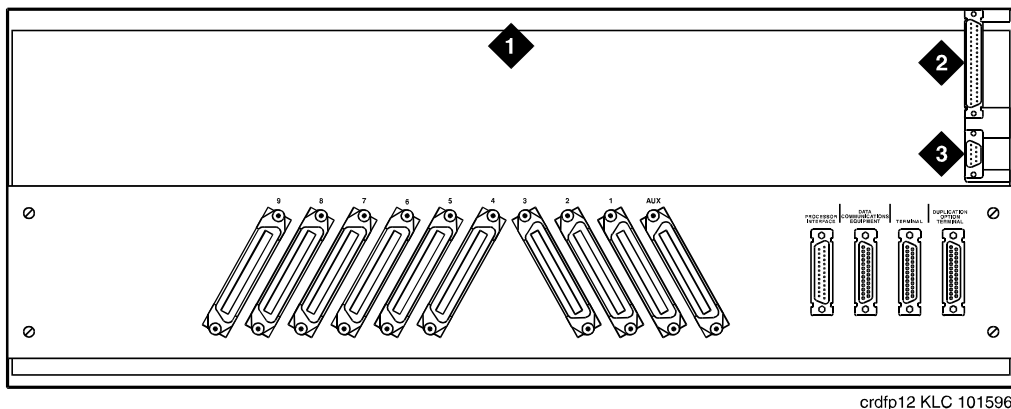


Figure Notes

- |                                |                                          |
|--------------------------------|------------------------------------------|
| 1. Rear of Cabinet             | 4. Module Control Carrier (“A” Position) |
| 2. Port Carrier (“C” Position) | 5. Port Carrier (“D” Position)           |
| 3. Ground Jumpers              |                                          |

Figure 5-11. Locations of Ground Jumpers

4. Disconnect the “P1” and “P2” cables from the “A” carrier. See [Figure 5-12](#).
5. Slide the latch up, and disconnect the “P1” cable from the “B” carrier.



#### Figure Notes

1. Rear of Control Carrier
2. P2 Connector
3. P1 Connector

Figure 5-12. Location of P1 and P2 Connectors

6. Remove the fan trim plate by pulling it straight off.
7. Clean or replace the air filter (403326820) if necessary.
8. In the front of the carrier, remove the 4 screws (top 2 first) holding the “A” carrier to the cabinet frame. Use a long handle screwdriver or 5/16-inch socket with a 10-inch (25 cm) extension.
9. Behind the carrier, remove the 2 screws holding the “A” carrier’s rear connector panel to the cabinet frame.
10. Slide the carrier forward 1 to 2 inches (2.5 to 5 cm). Be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



#### CAUTION:

*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

11. Remove the carrier by sliding it out the front of the cabinet.

## Unpack and Inspect Expansion Control Carrier

---

1. Inspect the new J58890AF Expansion Control Carrier for any damage. Also verify that the backplane pins are not bent.
2. Place the expansion control carrier on the floor so that the rear of the carrier faces up.
3. Install the CFY1 current limiter (CURL) on the "A" carrier to the pin-field block marked "CURL." Install the CURL with the components on the left.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4B cable retainer on each of these connectors.

## Install New Expansion Control Carrier A

---

1. Install the carrier in position "A" by aligning the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips support the carrier while installing the screws. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with the 4 self-tapping screws saved from the removal of the old carrier.



### CAUTION:

*Carefully realign the threads on the self-tapping screws by turning them counterclockwise 1 turn before tightening them to avoid stripping the threads out of the framework.*

3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier.
4. Connect the "P2" and "P1" cables to the "A" carrier. See [Figure 5-12](#). Snap the connector lock into place to ensure the connection is properly made.
5. Connect the "P1" cable to the "C" carrier. Snap the connector lock into place to ensure the connection is properly made.
6. Connect the 8 ground straps from the "D" carrier to the new "A" carrier. See [Figure 5-11](#). These straps were left connected to the "D" carrier.
7. Connect the 8 ground straps from the "C" carrier to the new "A" carrier. These straps were left connected to the "C" carrier.
8. For an AC-powered system, install the 2 new carrier ground straps. One strap connects ground point "1" to the A-carrier frame (right side), and the other connects ground point "8" to the A-carrier frame (left side).



### NOTE:

DC-powered carriers do not use these carrier ground straps.

9. Connect the remaining end of the TDM/LAN cable (between the “A” and “D” carriers) to the pin-field block marked “TDM” on the right side of the “A” carrier. See [Figure 5-13](#) and [Table 5-11](#). The other end remained connected to the “D” carrier when the old carrier was removed.
10. Connect the remaining end of the TDM/LAN cable (between the “A” and “C” carriers) to the pin-field block marked “TDM” on the left side of the “A” carrier. The other end remained connected to the “C” carrier when the old carrier was removed.
11. On port carrier J58890BB-1, connect the TDM cable or TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables to Slot 01.

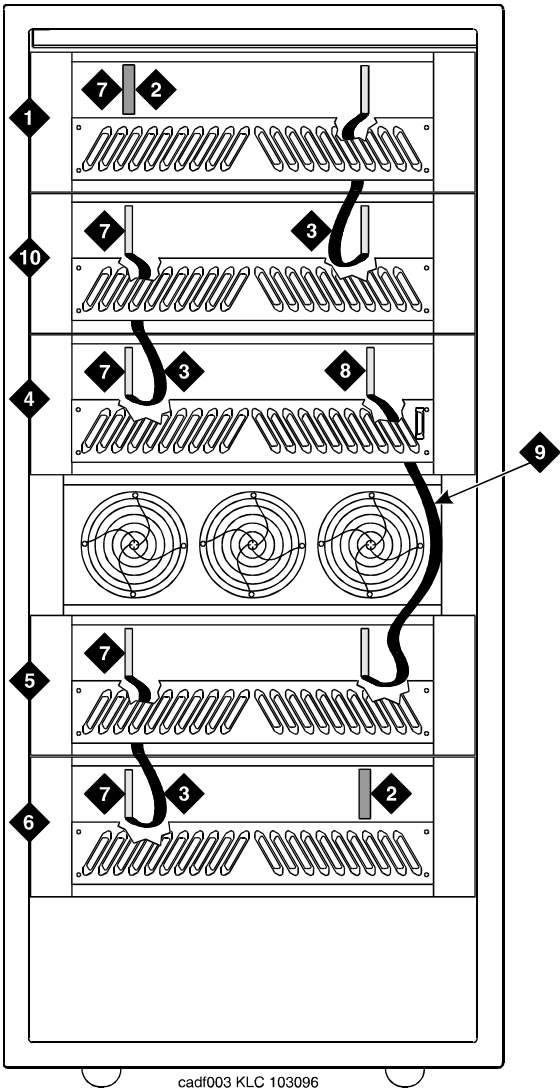


Figure Notes

- |                                             |                                 |
|---------------------------------------------|---------------------------------|
| 1. Port Carrier ("C" Position)              | 6. Port Carrier ("E" Position)  |
| 2. ZAHF4 TDM/LAN Terminator                 | 7. Slot 21                      |
| 3. TDM/LAN Cable (WP91716 L6)               | 8. Slot 02                      |
| 4. Expansion Control Carrier ("A" Position) | 9. TDM/LAN Cable (WP91716 L7)   |
| 5. Port Carrier ("D" Position)              | 10. Port Carrier ("B" Position) |

Figure 5-13. TDM/LAN Connections for High Reliability Release 8 EPN

Table 5-11. TDM/LAN Connections

| "J" Number | Carrier Type    | LHS Slot | RHS Slot |
|------------|-----------------|----------|----------|
| J58890BB-1 | Port            | 21       | 02       |
| J58890BB-2 | Port            | 21       | 01       |
| J58890BB-3 | Port            | 21       | 01       |
| J58890AF   | EPN Control "A" | 21       | 02       |

12. Install the front trim plate on the "A" carrier.
13. Install the power units (removed from G2 module control carrier) into the "A" carrier. Do not interchange the physical locations of the units. The 631AR1, 631WA1, 631DA1, or 644A install in the left side, while the 631BR1, 631WB1, 631DB1, or 645B install in the right side.

⇒ NOTE:

In most cases, the new Release 8 carrier will contain the same power supplies as in the existing system. However, the new Release 8 carrier may contain a 649A Power Unit. If so, use the power units from the G2 power module.

14. If the expansion control carrier contains a 631BR1, 631WB1, or 645B power unit, install the previously removed TN736 power unit in port slots "18" and "19" of the carrier (adjacent to the 631BR1, 631WB1, or 645B). If the system is equipped for neon message waiting, a TN752 or TN755 power unit must be used.

⇒ NOTE:

The TN736 is not required when the 631DB1 or 645B power unit is used in the J58890AH control carrier or the J58890BB-2 or J58890BB-3 port carriers. It is required in the J58890BB-1 port carrier, regardless of which 631 power unit is provided. Use the TN752 or TN755 if the system is equipped with neon message waiting.

15. Connect the white power cords to the power units.

## Install Circuit Packs

---

1. Install the new Release 8 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 8 removable media) as a guide.

### ⇒ NOTE:

Currently, the TN768 Tone-Clock circuit pack resides in a port slot of the universal module being upgraded. Relocate this circuit pack to the "TONE CLOCK" slot of carrier "A." Lucent Technologies recommends that you upgrade to the TN2182 Tone-Clock.

2. Install circuit pack blanks in slots not equipped with circuit packs.
3. For a directly-connected high reliability Release 8 system with 2 port networks, ensure the PPN and this EPN are both equipped with a TN776 or TN570 Expansion Interface circuit pack.

For a directly-connected system with 3 port networks, ensure that the PPN and each EPN have two TN776 or TN570 circuit packs.

## Interconnect Port Networks — High Reliability

---

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PNs up to 4,900 feet (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PNs up to 25,000 feet (7620 m) apart. A 300A fiber optic lightwave transceiver can interconnect PNs up to 115,000 feet (21.7 miles, 35 km) apart.

### ⇒ NOTE:

These distance limits are approximate measurements of the *actual* fiber right-of-way (not of the shortest linear distance) between the 2 endpoints.

### ⇒ NOTE:

It is important to label every cable that you install.

### ⇒ NOTE:

Keep track of which fiber attaches to which connector on each lightwave transceiver. This section provides figures offering the suggested way of making these connections.

The connectors on the lightwave transceivers are labeled either "TX" (transmit) or "RX" (receive), while the fibers attaching to each connector are numbered either "1" or "2." A viable fiber connection is only made when both fibers in each cable ("1" and "2") route from the "TX" connector of a port network to the "RX" connector of its adjacent port network. See [Figure 5-16](#).

### ⇒ NOTE:

When finished, refer to [Appendix A, "Fiber Link Administration"](#) to administer the fiber links.

## Collocated Port Networks

For a high reliability system with 1 collocated expansion port network, use 1 fiber optic cable and 2 lightwave transceivers to directly connect the networks.

For a high reliability system with 2 collocated expansion port networks, use 3 fiber optic cables and 6 lightwave transceivers to directly connect the networks.

### NOTE:

Based on floor plan considerations, the length of these fiber cables may vary. 20 foot (6.1 m) cables are normally adequate for a Release 8 with 2 port networks.

For collocated cabinets, the fiber optic cables should be routed directly from the PPN to the EPN cabinet. If a "DEFINITY style" PPN cabinet is collocated with another "DEFINITY style" EPN cabinet, the preferred routing is to run the cables *up* the cable tray and out the top of the PPN cabinet. The cables are then run to the other cabinet, through the top of the cabinet, and down the cable tray to the desired carrier level.

### NOTE:

Refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*, for additional guidelines about fiber routing.

If a "DEFINITY style" PPN cabinet is collocated with either a small cabinet, medium cabinet, or single-carrier cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

## Fiber-Remoted Port Networks

For a high reliability system with 1 fiber-remoted expansion port network, 2 fiber optic cables, 2 lightwave transceivers, and 2 lightguide interconnect units (provided by the PSC) are required.

For a high reliability system with 2 fiber-remoted expansion port networks, 6 fiber optic cables, 6 lightwave transceivers, and 6 lightguide interconnect units (provided by the PSC) are required.

For fiber-remoted cabinets, route the cables down the cable tray and out the bottom of the cabinet to the cross-connect field where the lightguide interconnect units are located.

In either case, use cable ties to secure the cable against the walls of the cable tray at the cable tie positions built into the trays.



## For Either 1 or 2 Collocated Expansion Port Networks

1. At control carrier A of PPN cabinet 1 (see [Figure 5-15](#) through [Figure 5-18](#)):
  - Install a lightwave transceiver on the cable connector at slot 1A01.  
 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2A01.  
 **NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
  - Connect the other end of the fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil the surplus of fiber optic cable and carefully attach the coil to the wall of the cable tray.

## For Two Collocated Expansion Port Networks

### 1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on the cable connector at slot 1A02.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

### 2. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on the cable connector at slot 3A01.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the other end of the fiber optic cable to the lightwave transceiver just installed.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.

### 3. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on the cable connector at slot 2A02.
- Connect a fiber optic cable to the transceiver just installed.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

### 4. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on the cable connector at slot 3A02.



#### NOTE:

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the other end of the fiber optic cable to the transceiver just installed.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.

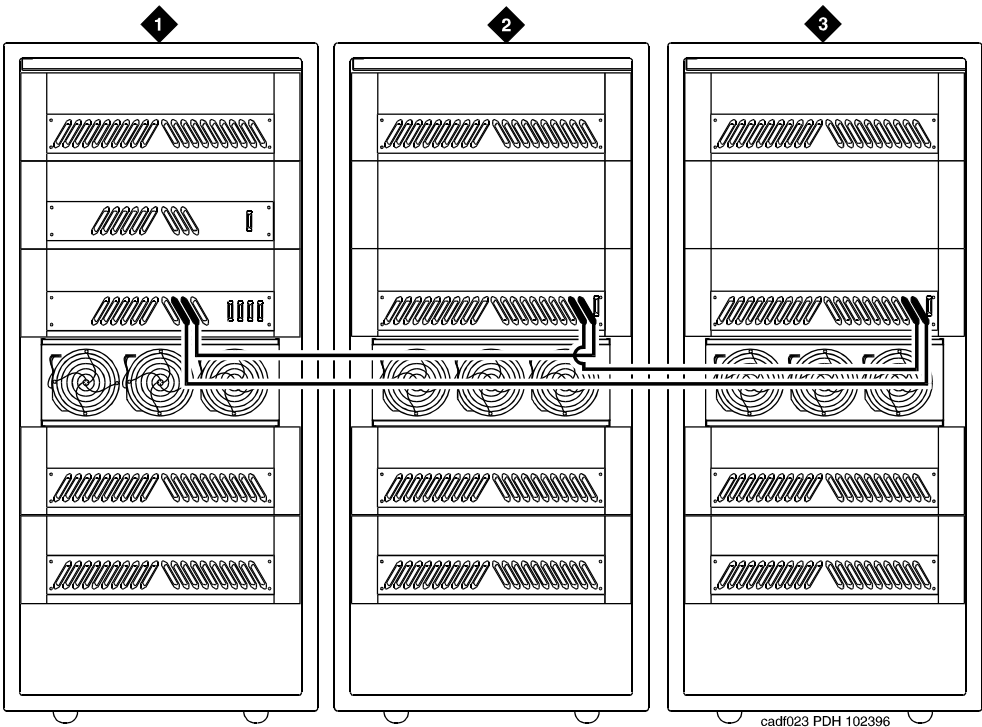


Figure Notes

1. Cabinet 1 Processor Port Network
2. Cabinet 2 Expansion Port Network 1
3. Cabinet 3 Expansion Port Network 2

Figure 5-14. High Reliability Release 8 with Two or Three Port Networks

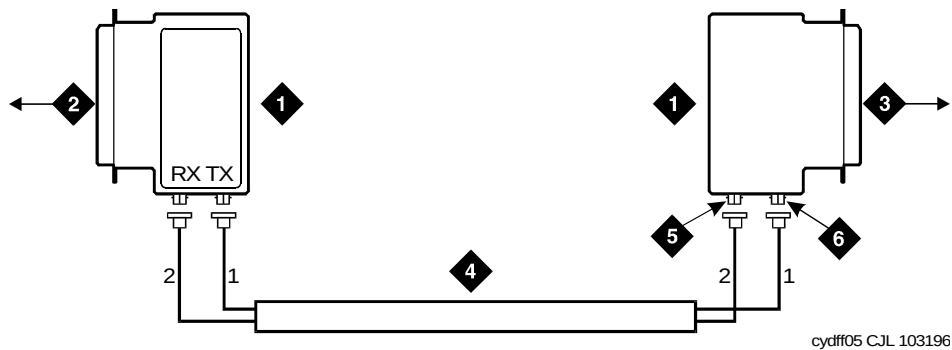


Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To PPN Carrier C Slot 1C02   | 5. RX Connection     |
| 3. To EPN 1 Carrier A Slot 2A01 | 6. TX Connection     |

Figure 5-15. Fiber Optic Connections PPN to EPN1

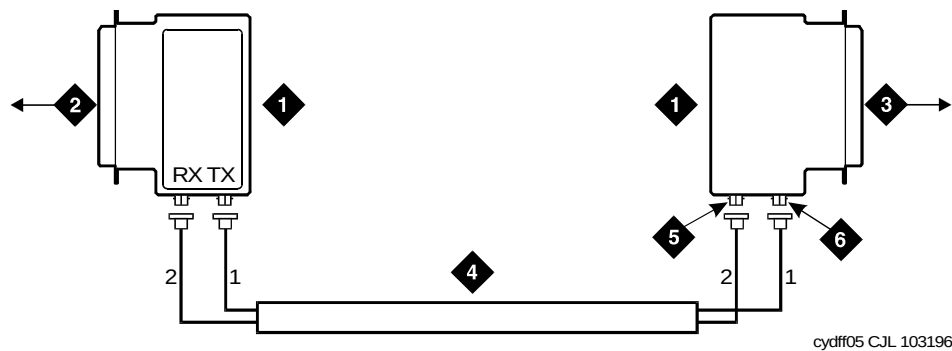
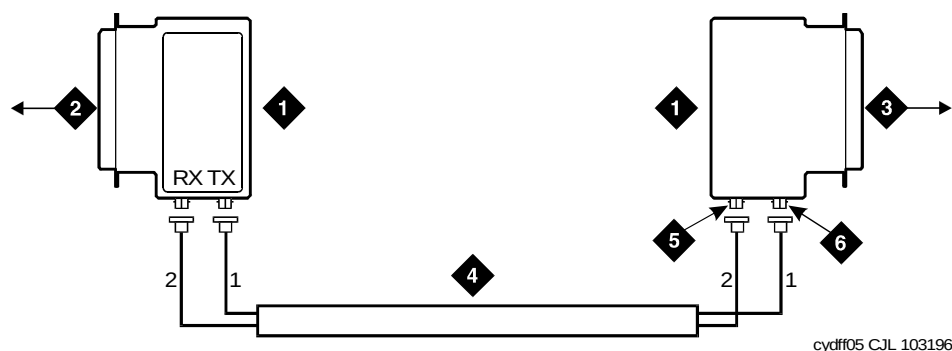


Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To PPN Carrier A Slot 1D02   | 5. RX Connection     |
| 3. To EPN 1 Carrier A Slot 3A01 | 6. TX Connection     |

Figure 5-16. Fiber Optic Connections PPN to EPN2



### Figure Notes

- |                                 |                      |
|---------------------------------|----------------------|
| 1. Lightwave Transceiver        | 4. Fiber Optic Cable |
| 2. To EPN Carrier A Slot 2A02   | 5. RX Connection     |
| 3. To EPN 1 Carrier A Slot 3A02 | 6. TX Connection     |

Figure 5-17. Fiber Optic Connections EPN1 to EPN2

### For Either One or Two Fiber-Remoted Expansion Port Networks

1. At control carrier A of PPN cabinet 1 (see [Figure 5-19](#) through [Figure 5-22](#)):
  - Install a lightwave transceiver on the cable connector at slot 1A01.

**NOTE:**  
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on the cable connector at slot 2A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

## For 2 Fiber-Remoted Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on the cable connector at slot 1A02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on the cable connector at slot 3A01.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the remaining end of the fiber cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

3. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on the cable connector at slot 2A02.
- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

4. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on the cable connector at slot 3A02.



**NOTE:**

Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver

- Connect the remaining end of the cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

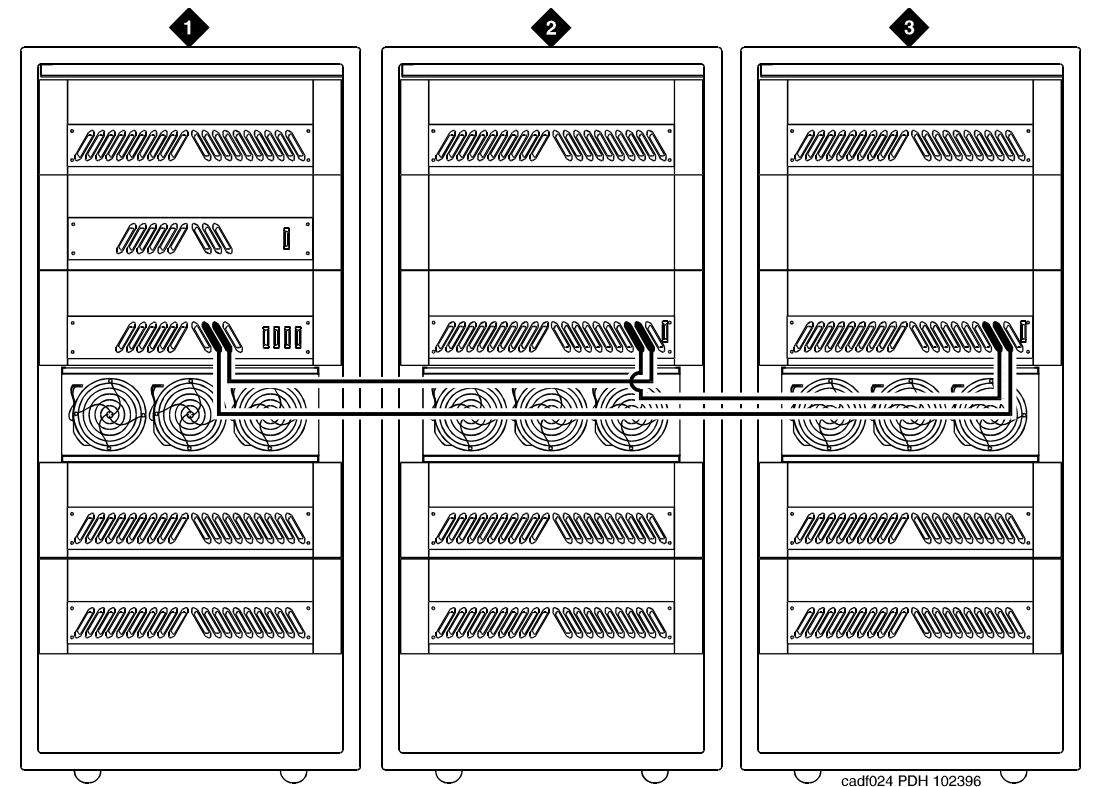


Figure Notes

1. Cabinet 1 Processor Port Network
2. Cabinet 2 Expansion Port Network 1
3. Cabinet 3 Expansion Port Network 2

Figure 5-18. High Reliability Release 8 with Two or Three Port Networks



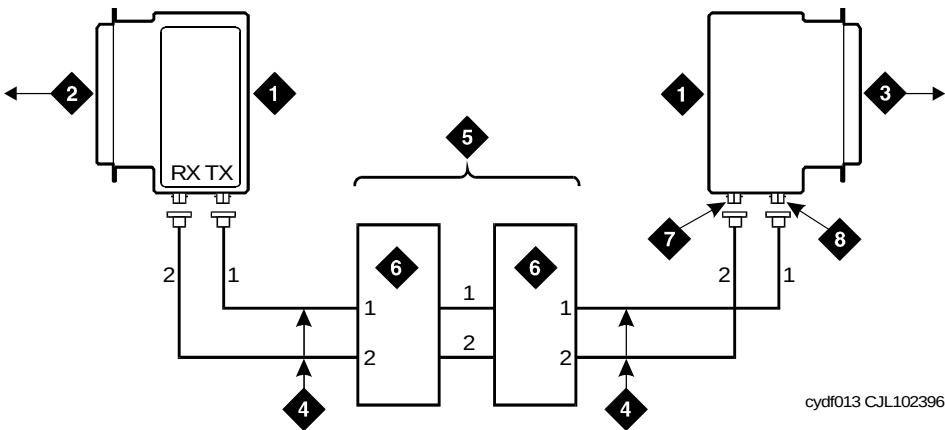


Figure Notes

- |                                 |                                            |
|---------------------------------|--------------------------------------------|
| 1. Lightwave Transceiver        | 5. Optical Cross-Connect Facility          |
| 2. To PPN Carrier C Slot 1C02   | 6. 100A Lightguide Interconnect Unit (LIU) |
| 3. To EPN 1 Carrier A Slot 2A01 | 7. TX COnnector                            |
| 4. Fiber Optic Cable            | 8. RX COnnector                            |

Figure 5-19. Fiber Optic Connections PPN to EPN1

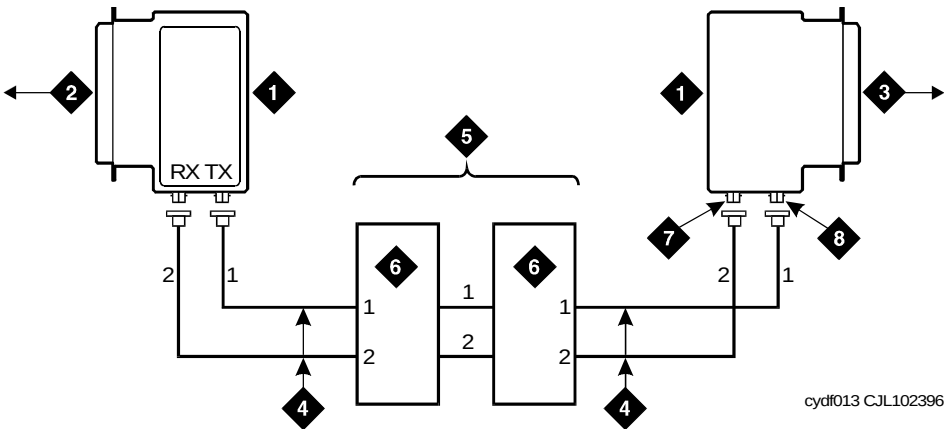


Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 5. Optical Cross-Connect Facility    |
| 2. To PPN Carrier D Slot 1D02  | 6. 100A Lightguide Interconnect Unit |
| 3. To EPN2 Carrier A Slot 3A01 | 7. TX COnnector                      |
| 4. Fiber Optic Cable           | 8. RX COnnector                      |

Figure 5-20. Fiber Optic Connections PPN to EPN2

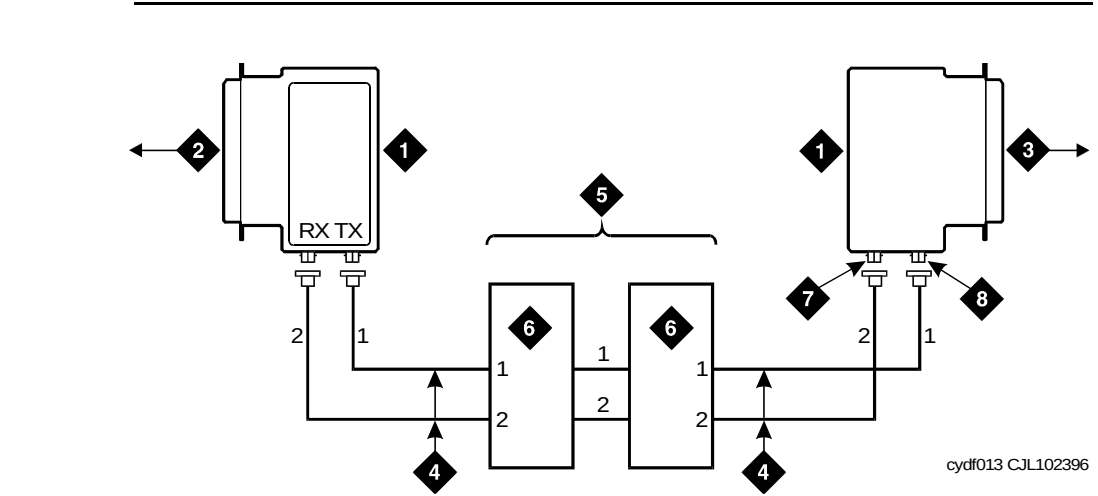


Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 5. Optical Cross-Connect Facility    |
| 2. To EPN1 Carrier A Slot 2A02 | 6. 100A Lightguide Interconnect Unit |
| 3. To EPN2 Cabinet A Slot 3A02 | 7. TX Connector                      |
| 4. Fiber Optic Cable           | 8. RX Connector                      |

Figure 5-21. Fiber Optic Connections EPN1 to EPN2

Verify Usable Circuit Pack Vintages

Verify that each reused circuit pack conforms to the usable vintage requirements for a Release 8 system (see Reference Guide for Circuit Pack Vintages and Change Notices).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm<sup>2</sup>) ground wire from the power-failure transfer unit.

## Boot the Release 8 System

---

1. Connect the management terminal to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*, 585-229-202.
2. Insert the translation cards in the TN794 faceplates.
3. At each EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading the default system translations from the translation card. This takes 8 to 11 minutes.
6. Get the order number of the upgrade, and call the regional CSA to request an "init" login so the right-to-use options can be enabled on the upgraded system.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

## Set Daylight Savings Rules

---

You can set up to 15 customized daylight savings time rules. If you have cabinets in several different time zones, you can set up rules for each on a location basis. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.



### NOTE:

The default daylight savings rule is **0**, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

| DAYLIGHT SAVINGS RULES |                     |       |               |             |                |           |                             |
|------------------------|---------------------|-------|---------------|-------------|----------------|-----------|-----------------------------|
| Rule                   | Change Day          |       | Month         | Date        | Time           | Increment |                             |
| 0:                     | No Daylight Savings |       |               |             |                |           |                             |
| 1:                     | Start:              | first | <u>Sunday</u> | on or after | <u>April</u>   | <u>1</u>  | at <u>2:00</u> <u>01:00</u> |
|                        | Stop:               | first | <u>Sunday</u> | on or after | <u>October</u> | <u>25</u> | at <u>2:00</u>              |
| 2:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |
| 3:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |
| 4:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |
| 5:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |
| 6:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |
| 7:                     | Start:              | first | _____         | on or after | _____          | ___       | at ___:___                  |
|                        | Stop:               | first | _____         | on or after | _____          | ___       | at ___:___                  |

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. (for example, **1:00** equals one hour)



**NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. When done, press Enter.

Set Date and Time

1. Type **set time** and press Enter to bring up the Date and Time screen.

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

Screen 5-2. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 5-12](#) for English day of the week names.

Table 5-12. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 5-13](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 5-13. English Month Names

| Month Number | Month Name |
|--------------|------------|
| 1            | January    |
| 2            | February   |
| 3            | March      |
| 4            | April      |
| 5            | May        |
| 6            | June       |
| 7            | July       |
| 8            | August     |
| 9            | September  |
| 10           | October    |
| 11           | November   |
| 12           | December   |

4. The cursor is positioned on the Day of the Month : field. Type the day of month (1 through 31) and press `Tab` to move to the next field.
5. The cursor is positioned on the Year : field. Type the current year and press `TAB` to move to the next field.
6. The cursor is positioned on the Hour : field. Type the current hour for a 24-hour clock. Press `Tab` to move to the next field.
7. The cursor is positioned on the Minute : field. Type current minute (0 through 59). Seconds cannot be set.
8. Type **standard** or **daylight savings** in the Type field.
9. Type the rule (number) in the Daylight Savings Rule field.
10. Press `Enter` when the information is correct.
11. Type **display time** and press `Enter` to verify date/time data.

## Set Additional Administration

---

1. Type **list configuration software-version long** and press **Enter** to compare the version number of the DEFINITY ECS Release 8 software program with the version number (written on a label on the processor's faceplate). If the version numbers are not the same, change the version number on the processor label so that they agree.
2. Type **change system-parameters customer-options** and press **Enter**. Use this screen to enable the Release 8 option and to assign the customer's other right-to-use options on the G2-to-DEFINITY ECS Release 8 upgrade order. See *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press **Enter**. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **status system 1** and press **Enter** to verify the system is in the "active/standby" mode.
5. Type **save translation** and press **Enter**. This instructs the system to write all translation information from memory to the translation card.



### **WARNING:**

*If the terminal screen displays "translation corruption detected; call Lucent Technologies distributor immediately", an error was detected in the translations.*

## Reconnect Cables

---

1. At the power distribution unit of the upgraded EPN, set the main circuit breaker to OFF.



### **NOTE:**

Powering down an EPN without powering down the PPN will set off alarms. However, these alarms should clear after power is restored to each EPN.

2. Temporarily disconnect the lightwave transceivers and fiber optic cables, already labeled, from the appropriate carriers.
3. Replace the back doors or back panels.
4. At the EPN cabinet, reconnect the lightwave transceivers, fiber optic cables, and the connector cables associated with the carrier being replaced.
5. Install the front door on the EPN cabinet.

## Power Up the EPN Cabinets

---

1. At each EPN power distribution unit, set the main circuit breaker to ON.  
After about 40 seconds, EPN power and PPN/EPN communications return.
2. After power returns to each EPN and all trouble is cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

## Retranslate Port Circuits

---

If port circuit packs in the G2 module control carrier were relocated in order to put:

- A critical port circuit pack, requiring longer nominal battery holdover (such as a DS1 or an Announcement circuit pack), in a port slot
- A TN736, TN752, or TN755 power supply in port slots "18" and "19"
- A TN776 or TN570 Expansion Interface in port slot "1"
- A TN776 or TN570 in port slot "2" (for a second directly connected EPN)

of the new expansion control carrier, verify that they were retranslated during the off-site software upgrade. If not, they must be retranslated now. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for instructions on performing the retranslations.

## Enable TTI

---

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the Enabled? field to **y** to activate the TTI feature.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link *number*** and press Enter. Repeat this step for each link.

## Enable Scheduled Maintenance

---

Type **change system-parameters maintenance** and press Enter. Enable the scheduled daily maintenance.



## Resolve Alarms

---

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8si*.

## Enable Customer Options and Alarm Origination to INADS

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft** at the Login: prompt.

### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. If the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.

## Save Translations

---

1. Type **save translation** and press Enter to get upgraded translations onto disk. If the translations were corrupted during the upgrade, the following error message displays when logging in:



**WARNING:**

*Translation corruption detected; call Lucent Technologies distributor immediately.*



**NOTE:**

The **save translation** command cannot function if the translation corruption message appears.

## Back Up Disk

---

1. Type **backup disk** and press Enter to backup all changed files.
2. Type **test stored-data long** and press Enter. This instructs the system to verify the consistency of the MSS files (on the disk and removable media).

## Return Replaced Equipment

---

Return unused G2 equipment to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

# Critical Reliability

## Upgrade Cabinets

An existing universal module cabinet is always upgraded to an EPN.

## Required Hardware

The equipment in [Table 5-14](#) *must* be on-site before the upgrade begins. To place a claim for missing equipment, as part of the Streamlined Implementation process, call “1-800-772-5409” or the number provided by your Lucent Technologies representative.

**Table 5-14. Required Hardware**

| Equipment                    | Description                                                      | Quantity                                       |
|------------------------------|------------------------------------------------------------------|------------------------------------------------|
| PEC 6300-05X                 | Processor Port Network                                           | 1                                              |
| J58890AF                     | Expansion Control Carrier                                        | 1                                              |
| J58890BB-3                   | Port Carrier                                                     | 1                                              |
| 106647985                    | TN775B Maintenance                                               | 1                                              |
| 103557294<br>or<br>103281788 | TN776 Expansion Interface<br><br>TN570 Expansion Interface       | 4 or 12 <sup>1</sup><br>4 or 12 <sup>1,2</sup> |
| J58890TO-1 L1                | Removable Media                                                  | 4                                              |
| H-600-204 G1                 | ICC                                                              | 2 <sup>3</sup>                                 |
| 407439975                    | 20-Foot Multi-mode Fiber Optic Cable                             | 2 or 6 <sup>4</sup>                            |
| 106455348<br>or<br>106455363 | 9823-A Lightwave Transceiver<br><br>9823-B Lightwave Transceiver | 4 or 12 (See Note 1)<br>4 or 12 (See Note 1)   |
| 106689516                    | TN771D Maintenance Test                                          | 1 or 2                                         |

1.

Use 4 for a critical reliability system with 2 port networks or 12 with 3 port networks. Either 2 or 8 Expansion Interfaces (EIs) ship loose with the EPN equipment. The factory has installed the other 2 or 4 EIs in the new PPN.
2.

Required port network interfaces in a Release 8 system with the optional packet bus.
3.

Required for an EPN in a critical reliability system.
4.

Use 4 or 12 if the EPNs and the PPN are remotely located. Assuming acceptable lengths, the fibers previously connecting an upgraded G2 universal module (not a traditional module) to the G2 TMS have the correct transceiver connectors and can be reused.

## Required Tools

The following tools and items may be required during the upgrade:

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect grounding straps and straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve #12 and #10 self-tapping screws
- Four spare carrier grounding straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*
  - *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*

## Follow Routine Preventive Maintenance

During the upgrade, follow routine preventive maintenance procedures on the system to be upgraded. For information about the procedures and necessary equipment, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Label Cables

To make reconnecting the cables simpler and more reliable, label both ends of the connector cables associated with the carrier to be removed.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Write down all enabled links.
2. Type **status link *number*** and press Enter. Repeat this step for all links.
3. Write down which links are in service.

## Disable TTI

---



### CAUTION:

*If you do not disable the TTI, the translations can be corrupted.*

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter.
3. On the second screen, set the Enabled? field to **n** to prevent the TTI feature from activating.

## Power Down G2 System

---

At the power distribution unit, set the main circuit breaker to OFF.

## Install Power-Failure Transfer Ground Wire

---



### CAUTION:

*To avoid contaminating single-point ground, do not connect the ground wire while the system is powered up.*

1. Connect 1 end of a 10 AWG (#25) (2.6 mm<sup>2</sup>) wire either to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) associated with the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground source and connect.

## **Disconnect Cables**

---

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a flat blade screwdriver with a 1/4-inch blade into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect previously labeled cables associated with the carrier to be removed.
3. Behind a "DEFINITY style" cabinet, remove the back doors from the cabinet.
4. Behind a previously upgraded cabinet, remove all of the back panels. (Two different types of screws hold the back panels to the cabinet. The #10 screws can be removed with a screwdriver or a 1/4-inch socket. The #12 screws can be removed with a screwdriver or a 5/16-inch socket.)

## **Remove Circuit Packs from Module Control Carriers A and B**

---

1. To ensure that power units in the "A" and "B" carriers are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the "A" and "B" carriers.
3. Remove all circuit packs and power units from carrier "A." Store the circuit packs in the static-proof packaging.
4. Remove all circuit packs from carrier "B." Store the circuit packs in the static-proof packaging.
5. Remove the circuit pack blanks from slots that do not contain circuit packs.
6. Remove the front trim plate from the "B" carrier by pulling it straight off. Then remove the front trim plate from the "A" carrier.

## **Remove CURL from Module Control Carrier A**

---

Remove the CFY1 current limiter (CURL) from the pin-field block marked "CURL" on the "A" carrier. The CURL will be reused in the DEFINITY ECS Release 8 EPN.



**NOTE:**

Note the position of the components on the left side of the CURL.



**NOTE:**

Verify that the CURL meets the minimum usable vintage requirements.

## Remove Module Control Carriers A and B

---

1. Remove the TDM/LAN cable from between the "A" and "B" carriers. See [Figure 5-23](#). This cable will be reused.
2. Disconnect 1 end of the TDM/LAN cable (between the "A" and "D" carriers) from the "A" carrier. Leave the other end connected to the "D" carrier, and move the cable into a position so that it will not interfere with removing the "A" carrier.



### NOTE:

Note the position of the TDM/LAN cable before disconnecting.

3. Disconnect 1 end of the TDM/LAN cable (between the "B" and "C" carriers) from the "B" carrier. Leave the other end connected to the "C" carrier, and move the cable into a position so that it will not interfere with removing the "B" carrier.



### CAUTION:

*When removing the TDM/LAN cables from a previously upgraded carrier, be careful that none of the short pieces of shrink tubing come off the 4 corner pins of the pin-field block. Otherwise, when the new equipment is connected, -48 volts could short to ground.*

4. Remove and retain the 8 ground straps from between the "A" and "B" carriers. See [Figure 5-24](#).
5. Disconnect 1 end of the 8 ground straps from between the "A" and "D" carriers. These straps will reconnect to the new "A" carrier.
6. Disconnect 1 end of the 8 ground straps from between the "B" and "C" carriers. These straps will reconnect to the new "B" carrier.
7. Disconnect the "P1" (small 9-pin) connector and the "P2" (large 38-pin) connector from the "A" carrier. See [Figure 5-25](#). Move the cables into a position where they will not interfere with removing the carrier.
8. Slide the latch up, and disconnect the "P1" (small 9-pin) connector from the "B" carrier. Move the cable into a position where it will not interfere with removing the carrier.
9. Disconnect and remove the ICC cables. See [Figure 5-23](#). They will not be reused.
10. Remove the fan trim plate by pulling it straight off.
11. Clean or replace the air filter (403326820) if necessary.
12. In front of carrier, remove the 4 screws (top 2 first) holding the "B" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
13. Behind the carrier, remove the 2 screws holding the "B" carrier's rear connector panel to the cabinet frame.

14. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.

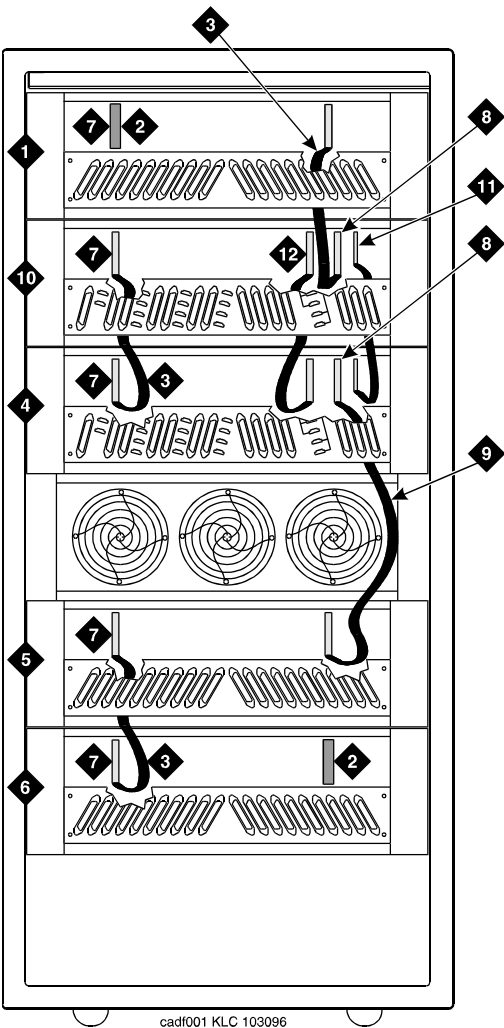


**CAUTION:**

*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

15. Remove the carrier by sliding it out the front of the cabinet.
16. Repeat Steps 12 through 15 for the "A" carrier.
17. On port carrier J58890BB-1, connect the TDM cable or the TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables or the TDM terminator to Slot 01. If the port carrier has J58890BB-1 and J58890BB-2 printed on it, treat it as a J58890BB-1.





- Figure Notes
1. Port Carrier ("C" Position)

2. ZAHF4 TDM/LAN Terminator

3. TDM/LAN Cable (WP91716 L6)

4. Module Control Carrier ("A" Position)

5. Port Carrier ("D" Position)

6. Port Carrier ("E" Position)

7. Slot 21

8. Slot 01

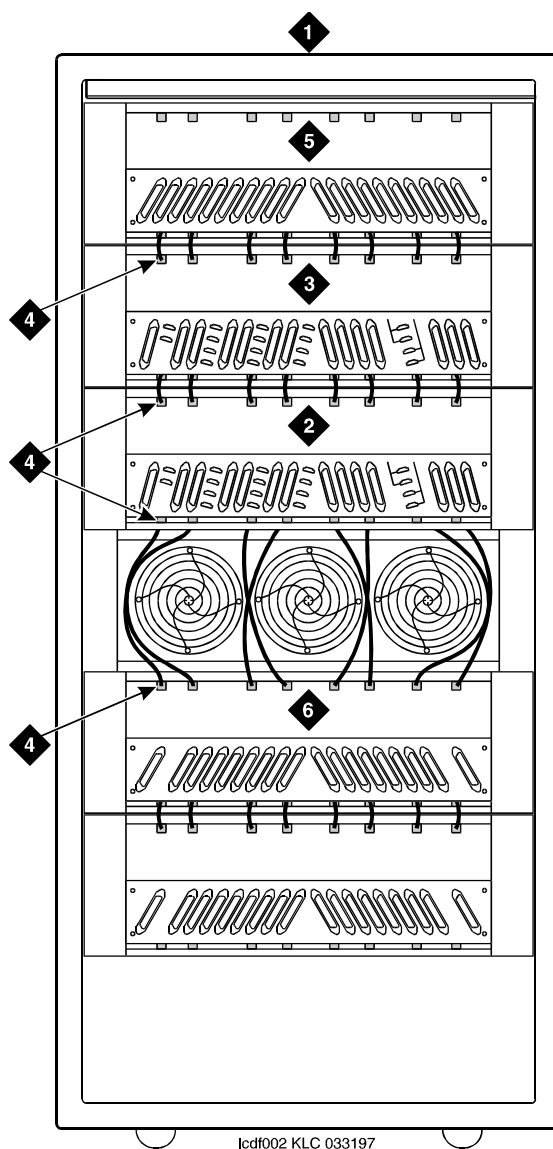
9. TDM/LAN Cable (WP91716 L7)

10. Duplicated Module Control Carrier ("B" Position)

11. ICCA Cable (Slot 03)

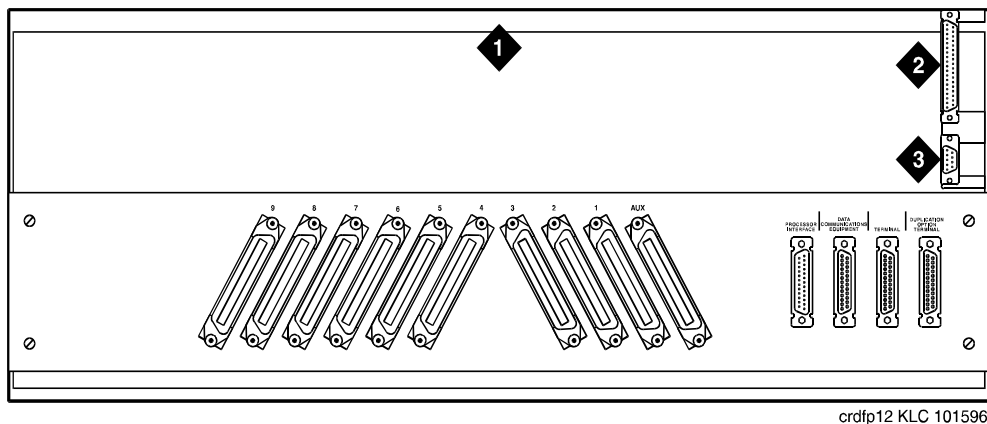
12. ICCB Cable

Figure 5-22. TDM/LAN Connections for Duplicated G2 Universal Module



## Figure Notes

1. Rear of Cabinet
2. Module Control Carrier ("A" Position)
3. Expansion Module Control Carrier ("B" Position)
4. Ground Jumpers
5. Port Carrier ("C" Position)
6. Port Carrier ("D" Position)



### Figure Notes

- |                            |                 |
|----------------------------|-----------------|
| 1. Rear of Control Carrier | 3. P1 Connector |
| 2. P2 Connector            |                 |

Figure 5-24. Location of P1 and P2 Connectors

### Prepare the New A and B Position Carriers

1. Inspect the new carriers for any damage. Verify that the backplane pins are not bent.
2. Place the expansion control carrier on the floor so that the rear of the carrier faces up.
3. Install the CFY1 current limiter (CURL) on the "A" carrier to the pin-field block marked "CURL." The CURL is inserted with the components on the left side as viewed from the rear.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4B cable retainer on each of these connectors.

## Install the New A and B Position Carriers

---

1. Install the J58890AF Expansion Control Carrier in position “A” by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips will support the carrier while the screws are being replaced. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.



### CAUTION:

*Carefully realign the threads on the self-tapping screws by turning them counterclockwise 1 turn before tightening them to avoid stripping the threads out of the framework.*

3. Behind the carrier in a “DEFINITY style” cabinet, replace the 2 screws saved from the removal of the old carrier.
4. Install the J58890BB-3 port carrier in position “B” by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips support the carrier while the screws are being replaced. Ensure the power cords are properly placed in the slots at the sides of the carrier.
5. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.
6. Connect the “P2” and “P1” (large and small) connectors to the “A” carrier. Snap the connector lock into place to ensure the connection is properly made. See [Figure 5-25](#).
7. Connect the “P1” (small) connector to the “B” carrier. To get enough slack in the cables, cut the tie wrap holding the intercabinet cables from the upright in the area of the carrier being installed. Snap the connector lock into place to ensure the connection is properly made.
8. Connect the 8 ground straps from the “D” carrier to the new “A” carrier. See [Figure 5-24](#). These straps were left connected to the “D” carrier.
9. Connect the 8 ground straps from the “C” carrier to the new “B” carrier. These straps were left connected to the “C” carrier.
10. Install the 8 ground straps between the new “A” and “B” carriers. These straps were removed from the old carriers.
11. For an AC-powered expansion control carrier, install the 2 new carrier ground straps. One strap connects ground point “1” to the A-carrier frame (on the right side), and the other connects ground point “8” to the A-carrier frame (on the left side).



### NOTE:

DC-powered carriers do not use these carrier ground straps.

- 12. Connect the loose end of the TDM/LAN cable (between the “A” and “D” carriers) to the pin-field block marked “TDM” on the right side of the “A” carrier (see [Figure 5-26](#) and [Table 5-15](#)). The other end remained connected to the “D” carrier when the old carrier was removed.
- 13. Connect the loose end of the TDM/LAN cable (between the “B” and “C” carriers) to the pin-field block marked “TDM” on the right side of the “B” carrier. The other end remained connected to the “C” carrier when the old carrier was removed.
- 14. Install the TDM/LAN cable between the “A” and “B” carriers. The cable is connected to the “A” and “B” carriers at the pin-field blocks marked “TDM” on the left side of each carrier.

Table 5-15. TDM/LAN Connections

| "J" Number | Carrier Type    | LHS Slot | RHS Slot |
|------------|-----------------|----------|----------|
| J58890BB-1 | Port            | 21       | 02       |
| J58890BB-2 | Port            | 21       | 01       |
| J58890BB-3 | Port            | 21       | 01       |
| J58890AF   | EPN Control “A” | 21       | 02       |

- 15. On port carrier J58890BB-1, connect the TDM cable or the TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables or the TDM terminator to Slot 01. If the port carrier has J58890BB-1 and J58890BB-2 printed on it, treat it as a J58890BB-1.

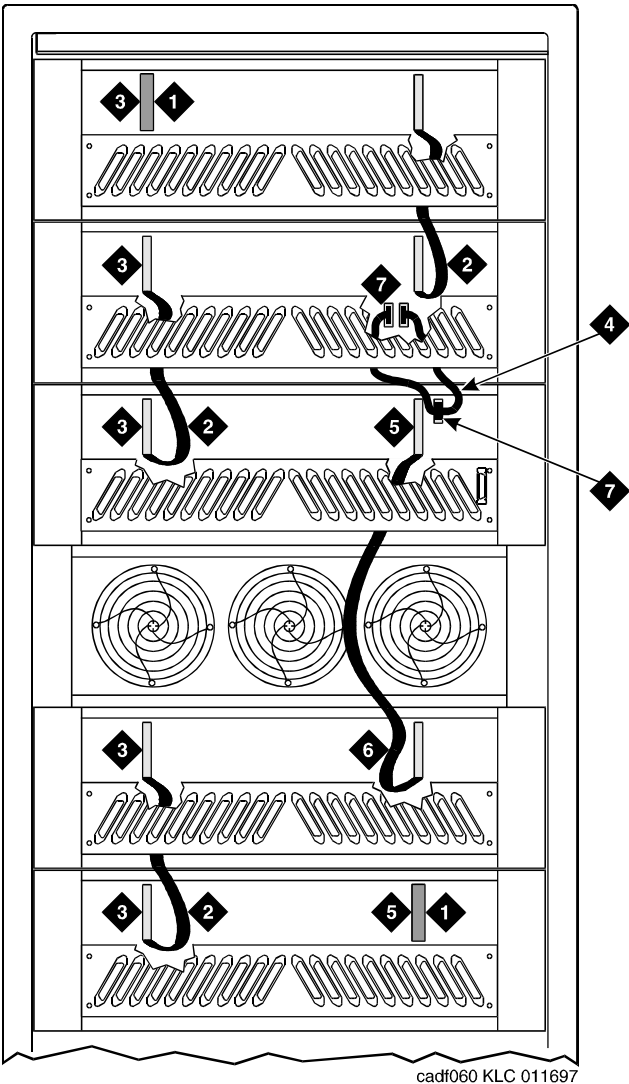


Figure Notes

- |                                                       |                               |
|-------------------------------------------------------|-------------------------------|
| 1. ZAHF4 TDM/LAN Terminator                           | 5. Slot 02                    |
| 2. TDM/LAN Cable (WP91716 L6)                         | 6. TDM/LAN Cable (WP91716 L7) |
| 3. Slot 21                                            | 7. ICCA and ICCB Connectors)  |
| 4. Inter-Carrier Cables ("A" and "B")<br>H600-204, G1 |                               |

Figure 5-25. TDM/LAN Connections for Critical Reliability Release 8 EPN

16. Install the front trim plates; first on the “A” carrier, and then on the “B” carrier.
17. Install the ICC cables (H600-204 G1) between carriers “A” and “B.” Connect the cables to the “ICC” pin-field block on both carriers (see [Figure 5-27](#) and [Figure 5-28](#) and [Table 5-16](#)). Install the cable so that the dark stripe is on the bottom at both ends.



**CAUTION:**

*While installing the ICC cable connectors, be careful not to bend any backplane pins. Double check each connection to verify that the pins are straight.*

18. Install the power units (removed from G2 universal module) into the “A” carrier. There are 4 different pairs of power units available. They are the 631AR1 and 631BR1, the 631WA1 and 631WB1, the 631DA1 and 631DB1, and the 644A and 645B.

Do not interchange the physical locations of the units. Install the 631AR1, 631WA1, 631DA1 or 644A in the left side. Install the 631BR1, 631WB1, 631DB1 or 645B in the right side.

19. If the expansion control carrier contains a 631BR1, 631WB1, or 645B power unit, install the previously removed TN736 power unit in port slots “18” and “19” of the carrier (adjacent to the 631BR1, 631WB1, or 645B). If the system contains neon message waiting, a TN752 or TN755 power unit must be used.



**NOTE:**

The TN736 is not required when the 631DB1 or 645B power unit is used in the J58890AH control carrier or the J58890BB-2 or J58890BB-3 port carriers. It is required in the J58890BB-1 port carrier regardless of which 631 power unit is provided. Use the TN752 or TN755 if the system is equipped with neon message waiting.

20. Connect the power cords to the power units. The power cords are the white cables equipped with plugs that are run through the slots in the front of each carrier.

Table 5-16. Inter-carrier Cable Connections

| Connect ICC Cables |          |                 |          |                 |
|--------------------|----------|-----------------|----------|-----------------|
|                    | From     |                 | To       |                 |
|                    | Carrier  | Pin-Field Block | Carrier  | Pin-Field Block |
| EPN                | J58890AF | ICCA<br>ICCB    | J58890BB | ICCA<br>ICCB    |

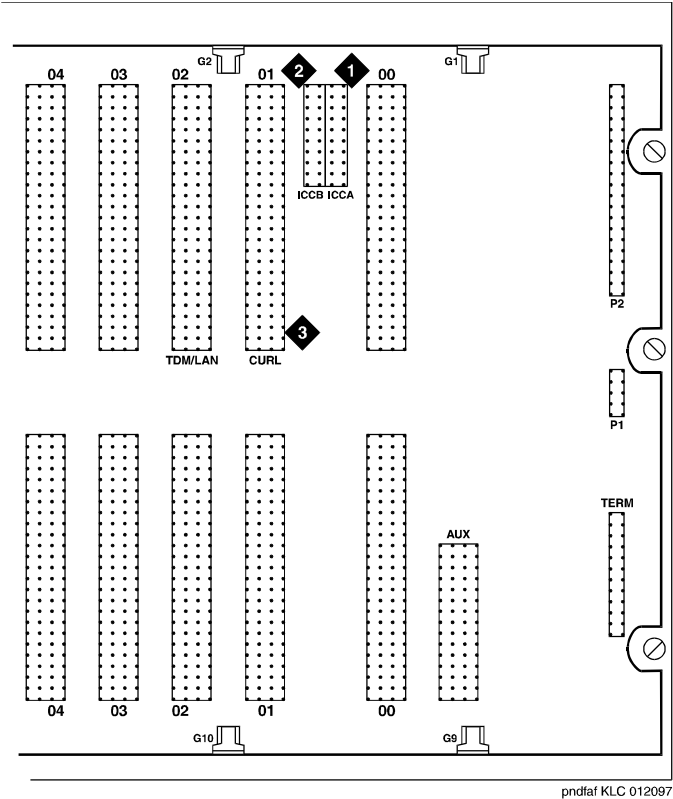


Figure Notes

1. ICCA Connectors
2. ICCB Connectors
3. CURL (Current Limiter) Connectors

Figure 5-26. ICC Connections for the Expansion Control Carrier



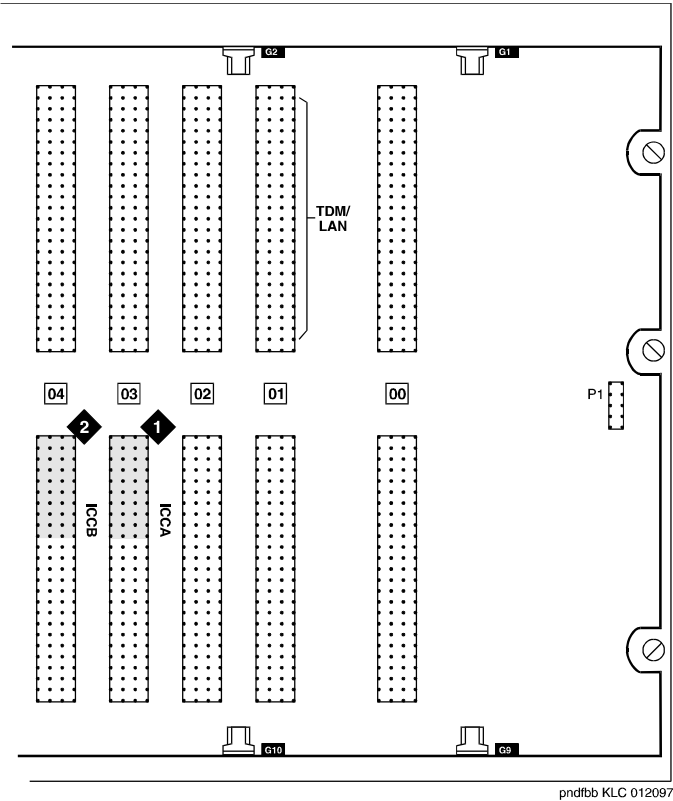


Figure Notes

1. ICCA Connectors
2. ICCB Connectors

Figure 5-27. ICC Connections for the Port Carrier

## Test the CURL

---

1. Plug the cabinet power cord into the appropriate receptacle.
2. At the power distribution unit, set the main circuit breaker to ON.
3. Unplug the power cord from the power unit "B" (right-hand side) in the "A" carrier.
4. The fans must be running. If not, check the installation of the CURL.
5. Reconnect the power cord to the power unit in the "A" carrier, then unplug the power cord from power unit "B" (right-hand side) in the "B" carrier.
6. The fans must be running. If not, check the installation of the CURL.
7. Reconnect the power cord to the power unit in the "B" carrier.
8. At the power distribution unit, set the main circuit breaker to OFF.

## Install Circuit Packs

---

1. Install the new Release 8 control circuit packs into carriers "A" and "B." Use the new decal and the annotated "list configuration all" (provided with the Release 8 translation card) as a guide.



### NOTE:

Currently, both TN768 Tone Clock circuit packs reside in port slots of the universal module being upgraded. As part of this step, relocate these circuit packs to the "TONE CLOCK" slot of carrier "A" and port slot "1" of carrier "B."

2. For a directly-connected critical reliability Release 8 system with 2 port networks, ensure that the PPN and this EPN are both equipped with 2 TN776 or TN570 Expansion Interface circuit packs.

For a directly-connected system with 3 port networks, ensure that the PPN and each EPN have 4 TN776s or TN570s.

## Interconnect Port Networks — Critical Reliability

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PNs up to 4,900 feet (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PNs up to 25,000 feet (7620 m) apart.

### ⇒ NOTE:

These distance limits are approximate measurements of the *actual* fiber right-of-way (not of the shortest linear distance) between the 2 endpoints.

### ⇒ NOTE:

It is important to label every cable that you install.

### ⇒ NOTE:

Keep track of which fiber attaches to which connector on each lightwave transceiver. This section provides figures offering the suggested way of making these connections.

The connectors on the lightwave transceivers are labeled either “TX” (transmit) or “RX” (receive), while the fibers attached to each connector are numbered either “1” or “2.” A viable fiber connection is only made when both fibers in each cable (“1” and “2”) route from the “TX” connector of a port network to the “RX” connector of its adjacent port network. For an example, refer to [Figure 5-29 on page 5-96](#).

### ⇒ NOTE:

When finished, refer to [Appendix A, “Fiber Link Administration”](#) to administer the fiber links.

## Collocated Port Networks

For a critical reliability system with 1 collocated EPN, use 2 fiber optic cables and 4 lightwave transceivers to directly connect the networks. For a critical reliability system with 2 collocated EPNs, use 6 fiber optic cables and 12 lightwave transceivers to directly connect the networks.

### ⇒ NOTE:

Based on floor-plan considerations, the length of these cables may vary. Twenty-foot (6.1 m) cables are normally adequate for a Release 8 with 2 port networks.

For collocated cabinets, the fiber optic cables should be routed directly from the PPN to the EPN cabinet. If a “DEFINITY style” PPN cabinet is collocated with another “DEFINITY style” EPN cabinet, route the cables *up* the cable tray and out the top of the PPN cabinet. The cables are then run to the other cabinet, through the top of the cabinet, and down the cable tray to the desired carrier level.

If a “DEFINITY style” PPN cabinet is collocated with either a small cabinet, medium cabinet, or single-carrier cabinet stack, route the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

## Fiber-Remoted Port Networks

For a critical reliability system with 1 fiber-remoted EPN, use 4 fiber optic cables, 4 lightwave transceivers, and 4 lightguide interconnect units (provided by the PSC). For a critical reliability system with 2 fiber-remoted EPNs, use 12 fiber optic cables, 12 lightwave transceivers, and 12 lightguide interconnect units (provided by the PSC).

For fiber-remoted cabinets, route the cables down the cable tray and out the bottom of the cabinet to the MDF to the lightguide interconnect units.

## For Either 1 or 2 Collocated Expansion Port Networks

1. At control carrier A of PPN cabinet 1 (see [Figure 5-28](#) through [Figure 5-31](#)):
  - Install a lightwave transceiver on the cable connector at slot 1A01.
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2A01.
  - Connect the other end of the fiber cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil the surplus fiber optic cable and attach it to the wall of the cable tray.
3. Behind control carrier B of PPN cabinet 1:
  - Install a lightwave transceiver on the cable connector at slot 1B01.
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2B02.
  - Connect the other end of the fiber cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil the surplus fiber optic cable and attach it to the wall of the cable tray.

## **For 2 Collocated Expansion Port Networks**

1. Behind control carrier A of PPN cabinet 1:
  - Install a lightwave transceiver on the cable connector at slot 1A02.
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 3:
  - Install a lightwave transceiver on the cable connector at slot 3A01.
  - Connect the other end of the fiber cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.
3. Behind control carrier B of PPN cabinet 1:
  - Install a lightwave transceiver on the cable connector at slot 1B02.
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 3:
  - Install a lightwave transceiver on cable connector at slot 3B02.
  - Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3B02.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - At the top of the cabinet, coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.
5. Behind control carrier A of EPN cabinet 2:
  - Install a lightwave transceiver on cable connector at slot 2A02.
  - Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2A02.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

6. Behind control carrier A of EPN cabinet 3:

- Install a lightwave transceiver on cable connector at slot 3A02.
- Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3A02.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil the surplus fiber optic cable, and carefully attach the coil to the wall of the cable tray.

7. Behind port carrier B of EPN cabinet 2:

- Install a lightwave transceiver on cable connector at slot 2B03.
- Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2B03.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

8. Behind port carrier B of EPN cabinet 3:

- Install a lightwave transceiver on cable connector at slot 3B03.
- Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3B03.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil the surplus fiber optic cable, and carefully attach the coil to the wall of the cable tray.

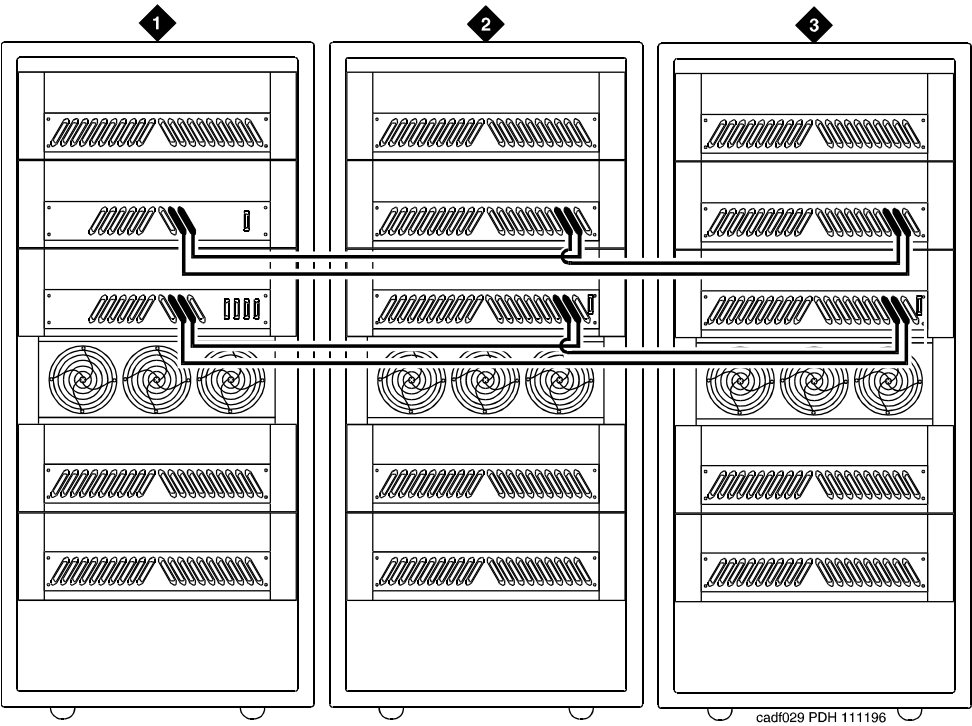


Figure Notes

1. Cabinet 1 PPN
2. Cabinet 2 EPN 1
3. Cabinet 3 EPN 2

Figure 5-28. Critical Reliability Release 8 with 2 or 3 Port Networks

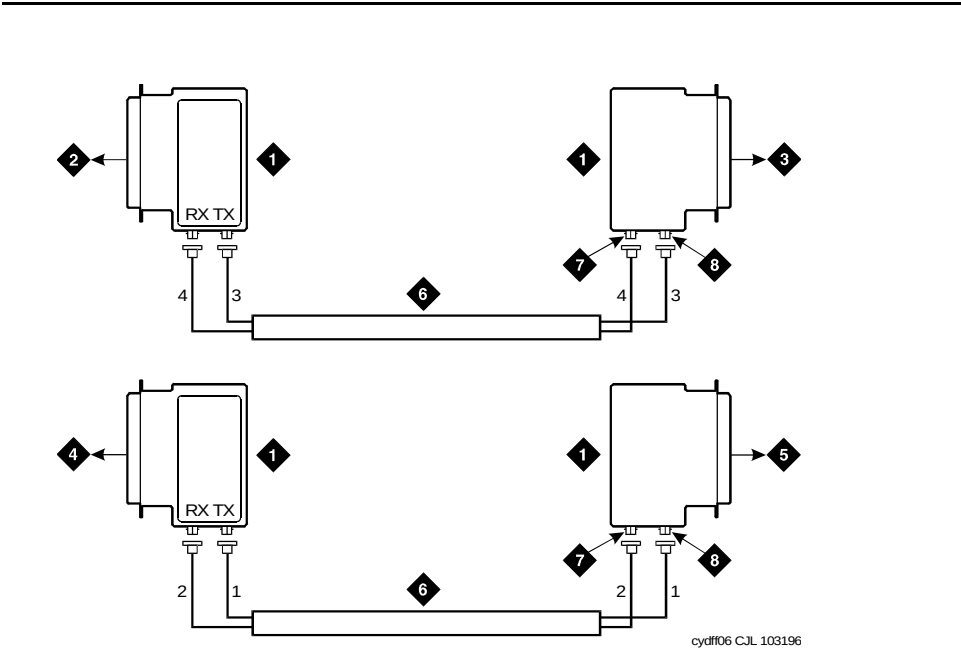


Figure Notes

- |                                |                             |
|--------------------------------|-----------------------------|
| 1. Lightwave Transceiver       | 5. EPN1 Carrier B Slot 2B02 |
| 2. To PPN Carrier A Slot 1A01  | 6. Fiber Optic Cable        |
| 3. To EPN1 Carrier A Slot 2A01 | 7. TX Connector             |
| 4. PPN Carrier B Slot 1B01     | 8. RX Connector             |

Figure 5-29. Fiber Optic Connections PPN to EPN1



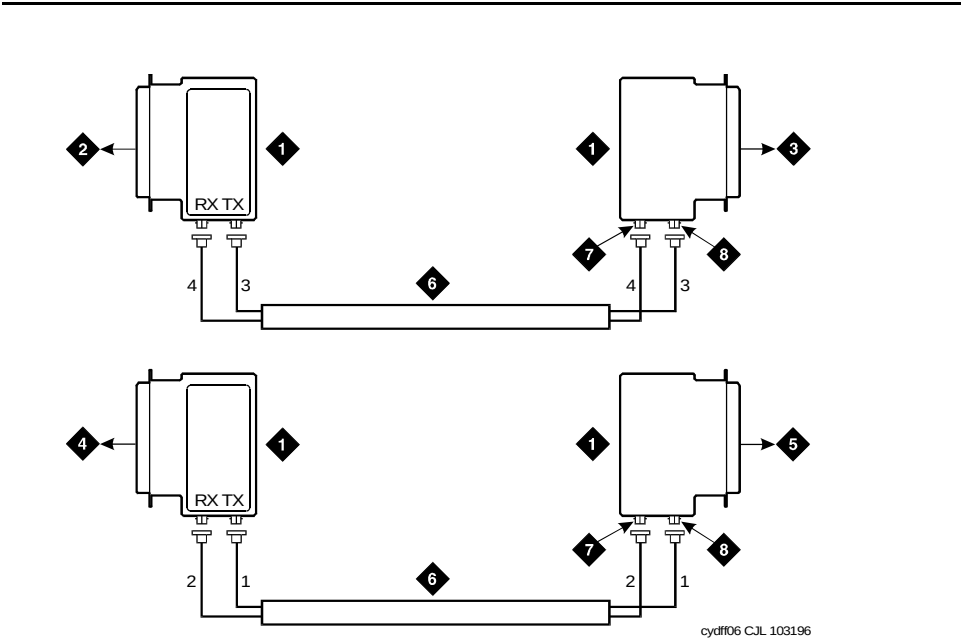


Figure Notes

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Lightwave Transceiver       | 5. To EPN2 Carrier A Slot 3A01 |
| 2. To PPN Carrier A Slot 1A02  | 6. Fiber Optic Cable           |
| 3. To EPN2 Carrier A Slot 3A01 | 7. TX Connector                |
| 4. To PPN Carrier B Slot 1B02  | 8. RX Connector                |

Figure 5-30. Fiber Optic Connections PPN to EPN2

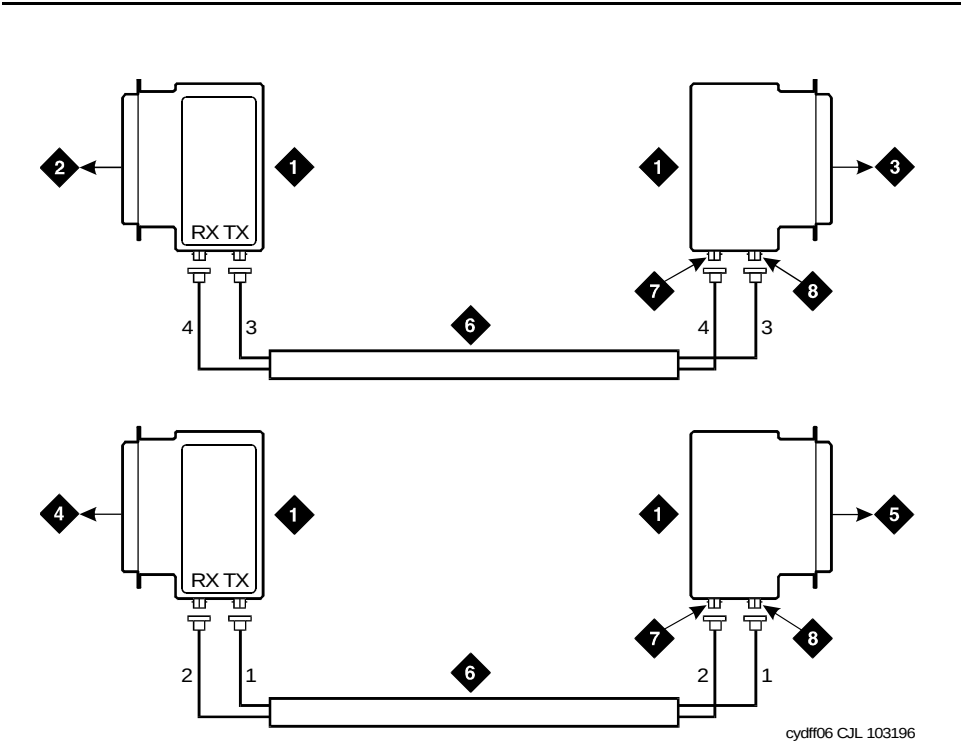


Figure Notes

- |                                |                                |
|--------------------------------|--------------------------------|
| 1. Lightwave Transceiver       | 5. To EPN2 Carrier B Slot 3B03 |
| 2. To EPN1 Carrier A Slot 2A02 | 6. Fiber Optic Cable           |
| 3. To EPN2 Carrier A Slot 3A02 | 7. TX Connector                |
| 4. To EPN1 Carrier B Slot 2B03 | 8. RX Connector                |

Figure 5-31. Fiber Optic Connections EPN1 to EPN2

## For Either 1 or 2 Fiber-Remoted Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1 (see [Figure 5-33](#) through [Figure 5-35](#)):
  - Install a lightwave transceiver on the cable connector at slot 1A01.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2A01.
  - Connect the fiber optic cable to the lightwave transceiver slot 2A01.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil the surplus fiber optic cable and place it in the cable manager.
3. Behind control carrier B of PPN cabinet 1:
  - Install a lightwave transceiver on the cable connector at slot 1B01.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2B02.
  - Connect the fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil the surplus fiber optic cable and place it in the cable manager.

## For Two Fiber-Remoted Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1:
  - Install a lightwave transceiver on the cable connector at slot 1A02.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 3:
  - Install a lightwave transceiver on cable connector at slot 3A01.
  - Connect the fiber optic cable to the transceiver just installed.
  - Route the fiber cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil the surplus fiber optic cable and place it in the cable manager.
3. Behind control carrier B of PPN cabinet 1:
  - Install a lightwave transceiver on cable connector at slot 1B02.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 3:
  - Install a lightwave transceiver on the cable connector at slot 3B02.
  - Connect the fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil up the surplus fiber cable and place it in the cable manager.

5. Behind control carrier A of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2A02.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
6. Behind control carrier A of EPN cabinet 3:
  - Install a lightwave transceiver on the cable connector at slot 3A02.
  - Connect the fiber optic cable to the transceiver just installed.
  - Route the fiber cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil up the surplus fiber cable and place it in the cable manager.
7. Behind port carrier B of EPN cabinet 2:
  - Install a lightwave transceiver on the cable connector at slot 2B03.
  - Connect a fiber optic cable to the transceiver just installed.
  - Route the fiber cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
8. Behind port carrier B of EPN cabinet 3:
  - Install a lightwave transceiver on the cable connector at slot 3B03.
  - Connect the fiber cable to the transceiver just installed.
  - Route the fiber cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
  - Connect the fiber cable to the lightguide interconnect unit provided.
  - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil up the surplus fiber cable and place it in the cable manager.

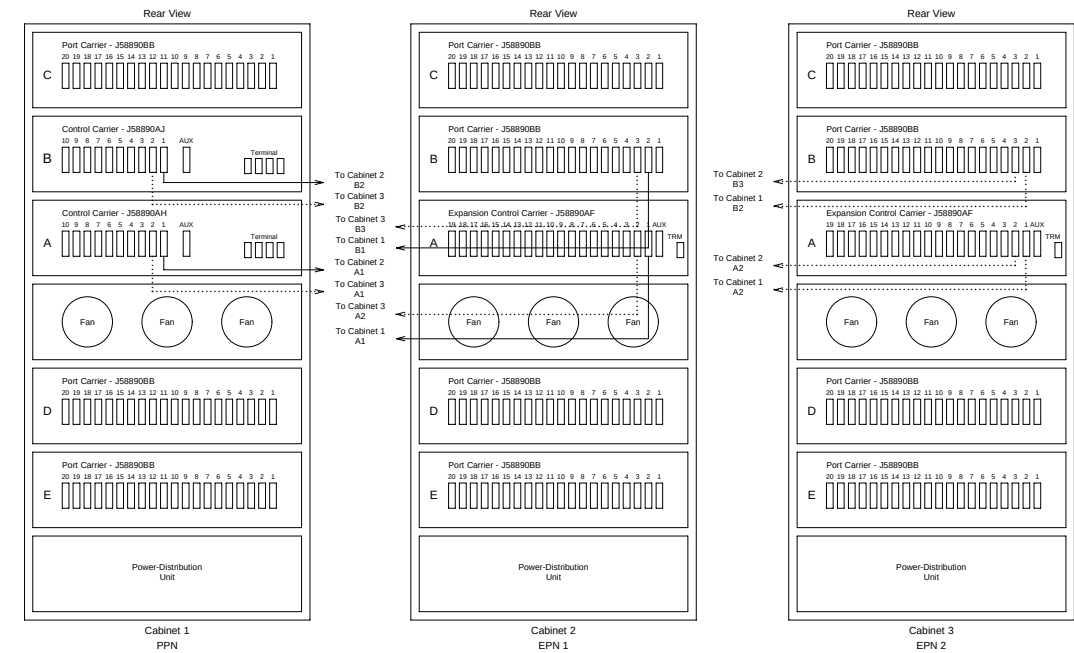
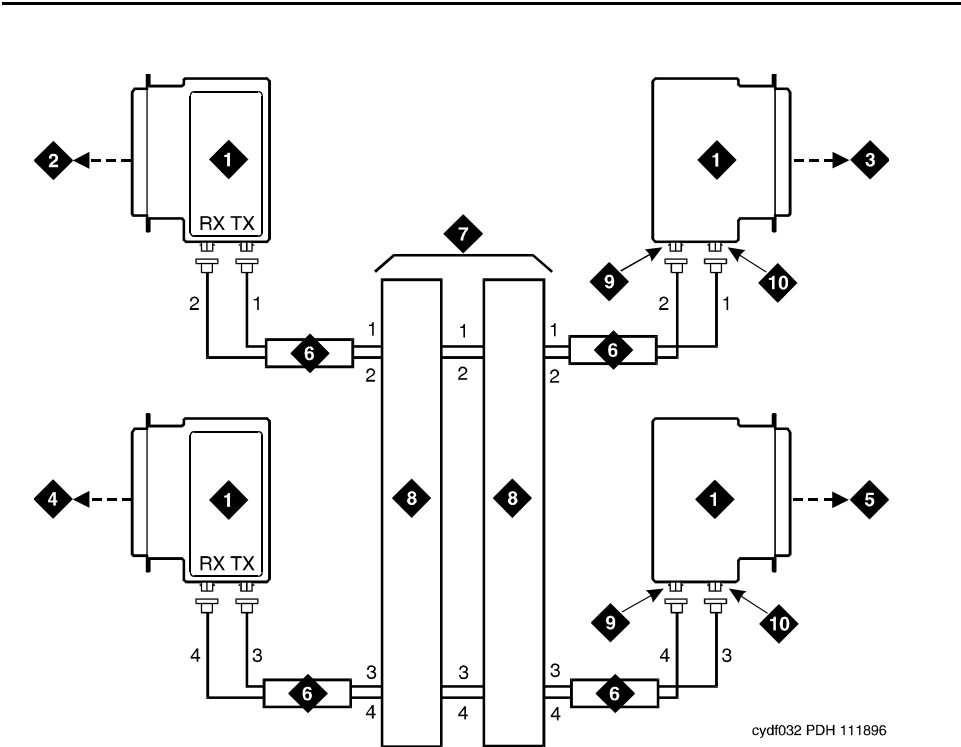


Figure 5-32. Critical Reliability Release 8 with 2 or 3 Port Networks



- Figure Notes
1. Lightwave Transceiver

2. To PPN Carrier A Slot 1A01

3. To EPN1 Carrier A Slot 2A01

4. To PPN Carrier B Slot 1B01

5. To EPN1 Carrier B Slot 2B02

6. Fiber Optic Cable

7. Optical Cross-Connect Facility

8. 100A Lightguide Interconnect Unit

9. TX Connector

10. RX Connector

Figure 5-33. Fiber Optic Connections PPN to EPN1

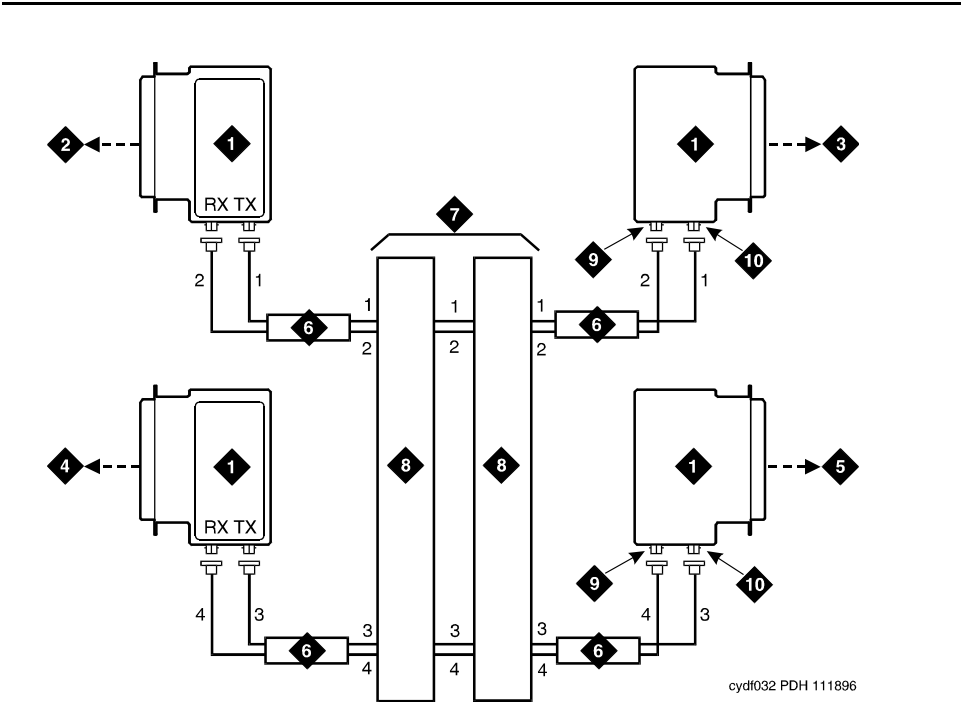


Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 6. Fiber Optic Cable                 |
| 2. To PPN Carrier A Slot 1A02  | 7. Optical Cross-Connect Facility    |
| 3. To EPN2 Carrier A Slot 3A01 | 8. 100A Lightguide Interconnect Unit |
| 4. To PPN Carrier B Slot 1B02  | 9. TX Connector                      |
| 5. To EPN2 Carrier B Slot 3B02 | 10. RX Connector                     |

Figure 5-34. Fiber Optic Connections PPN to EPN2



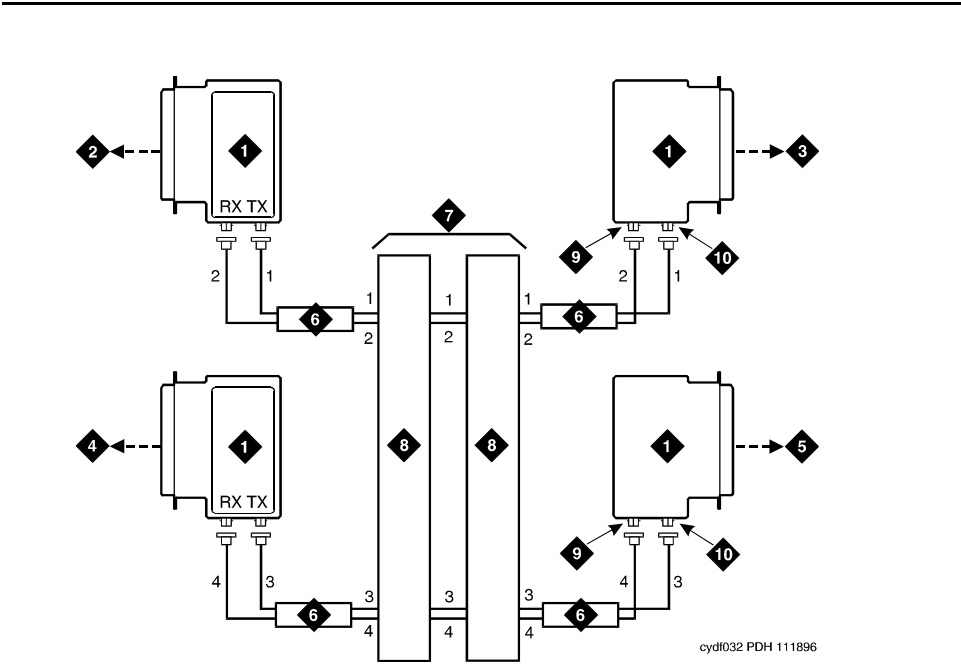


Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 6. Fiber Optic Cable                 |
| 2. To PPN Carrier A Slot 1A02  | 7. Optical Cross-Connect Facility    |
| 3. To EPN2 Carrier A Slot 3A01 | 8. 100A Lightguide Interconnect Unit |
| 4. To PPN Carrier B Slot 1B02  | 9. TX Connector                      |
| 5. To EPN2 Carrier B Slot 3B02 | 10. RX Connector                     |

Figure 5-35. Fiber Optic Connections EPN1 to EPN2

Verify Usable Circuit Pack Vintages

Verify that each circuit pack reused in the upgrade conforms to the usable vintage requirements for a DEFINITY ECS Release 8 system (see Reference Guide for Circuit Pack Vintages and Change Notices).

## **Remove Power-Failure Ground Strap**

Remove the ground strap from the power-failure transfer unit.

## **Boot the Release 8 System**

1. Connect the management terminal to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*, 585-229-202.
2. Insert the translation cards in the TN794 faceplates.
3. At each EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading the default system translations from the translation cards. This takes 8 to 11 minutes.
6. Get the order number of the upgrade and call the regional CSA to request an "init" login so the right-to-use options can be enabled.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

## Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have cabinets in several different time zones, you can set up rules for each on a location basis. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

 **NOTE:**  
The default daylight savings rule is 0, no daylight savings.

1. Type **change daylight-savings-rules** and press Enter.

| DAYLIGHT SAVINGS RULES |                     |       |        |             |         |                |
|------------------------|---------------------|-------|--------|-------------|---------|----------------|
| Rule                   | Change              | Day   | Month  | Date        | Time    | Increment      |
| 0:                     | No Daylight Savings |       |        |             |         |                |
| 1:                     | Start:              | first | Sunday | on or after | April   | 1 at 2:0001:00 |
|                        | Stop:               | first | Sunday | on or after | October | 25 at 2:00     |
| 2:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 3:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 4:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 5:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 6:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |
| 7:                     | Start:              | first |        | on or after |         | at ::          |
|                        | Stop:               | first |        | on or after |         | at ::          |

2. Type the appropriate start and stop information in the Change Day, Month, Date, Time, and Increment fields for each rule. (for example, 1:00 equals one hour)

 **NOTE:**  
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the Locations or Date and Time screens.

3. When done, press Enter.

Set Date and Time

1. Type **set time** and press Enter to bring up the Date and Time screen.

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

Screen 5-3. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 5-17](#) for English day of the week names.

Table 5-17. English Day of the Week Names

| Day Number | Day Name  |
|------------|-----------|
| 1          | Sunday    |
| 2          | Monday    |
| 3          | Tuesday   |
| 4          | Wednesday |
| 5          | Thursday  |
| 6          | Friday    |
| 7          | Saturday  |

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 5-18](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 5-18. English Month Names

| Month Number | Month Name |
|--------------|------------|
| 1            | January    |
| 2            | February   |
| 3            | March      |
| 4            | April      |
| 5            | May        |
| 6            | June       |
| 7            | July       |
| 8            | August     |
| 9            | September  |
| 10           | October    |
| 11           | November   |
| 12           | December   |

4. The cursor is positioned on the Day of the Month : field. Type the day of month (1 through 31) and press `Tab` to move to the next field.
5. The cursor is positioned on the Year : field. Type the current year and press `TAB` to move to the next field.
6. The cursor is positioned on the Hour : field. Type the current hour for a 24-hour clock. Press `Tab` to move to the next field.
7. The cursor is positioned on the Minute : field. Type current minute (0 through 59). Seconds cannot be set.
8. Type **standard** or **daylight savings** in the Type field.
9. Type the rule (number) in the Daylight Savings Rule field.
10. Press `Enter` when the information is correct.
11. Type **display time** and press `Enter` to verify date/time data.

## Set Additional Administration

---

1. Type **list configuration software-version long** and press Enter to compare the version number of the Release 8 software program (displayed on the terminal) with the version number (written on a label on the processor's faceplate). If the version numbers are not the same, change the version number on the processor label so that they agree.
2. Type **change system-parameters customer-options** and press Enter. Use this screen to enable the G3 V6 option and to assign the customer's other right-to-use options on the Release 8 upgrade order. See *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **status system 1** and press Enter to verify that the system is in the "active/standby" mode.
5. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation cards.



### **WARNING:**

*If the terminal screen displays "translation corruption detected; call Lucent Technologies distributor immediately", an error was detected in the translations. Call your Lucent Technologies representative.*

## Close Upgraded EPN Cabinet and Reconnect Cables

---

1. At the upgraded EPN, set the main circuit breaker to OFF.



### **NOTE:**

Powering down an EPN without powering down the PPN will set off alarms. However, these alarms should clear after power is restored to each EPN.

2. Temporarily disconnect the lightwave transceivers and fiber optic cables from the appropriate carriers.
3. Replace the back doors or back panels previously removed.
4. At the EPN cabinet, reconnect the lightwave transceivers, fiber optic cables, and the connector cables associated with the carrier being replaced.
5. Install the front door on the EPN cabinet.

## Power Up the EPN Cabinets

---

1. At each EPN power distribution unit, set the main circuit breaker to ON. After about 40 seconds, EPN power and PPN/EPN communications return.
2. After power returns to each EPN and all trouble is cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

## Retranslate Port Circuits

---

If port circuit packs were relocated in order to put:

- A critical port circuit pack, requiring longer nominal battery holdover (such as a DS1 or an Announcement circuit pack), in a port slot
- A TN736, TN752, or TN755 power supply in port slots "18" and "19"
- A TN776 or TN570 Expansion Interface in port slot "1"
- A TN776 or TN570 in port slot "2" (for a second directly connected EPN)

of the new expansion control carrier, verify that they were retranslated during the off-site software upgrade. If not, they must be retranslated now. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*.

## Enable TTI

---

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the Enabled? field to **y** to activate the TTI feature.

## Check Link Status

---

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status.
2. Type **status link *number*** and press Enter. Repeat this step for each link.

## Enable Scheduled Maintenance

---

Type **change system-parameters maintenance** and press Enter. Enable the scheduled daily maintenance.

## Resolve Alarms

---

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8si* or *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.

## Enable Customer Options and Alarm Origination

---

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the steps in the shaded box. See ["Where to Call for Technical Support" on page -xx](#) for telephone numbers.



### NOTE:

As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

2. When administration is completed, log in as **craft** at the Login: prompt.

### "init" login administration:

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to verify that the customer options are properly set.
3. Go to screen 6, QSIG Optional Features, and set the Basic Call Setup field to **y** if the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade.
4. Type **change system-parameters offer-options** and press Enter.
5. If the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.



## Save Translations

---

1. Type **save translation** and press Enter to get upgraded translations onto disk. If the translations were corrupted during the upgrade, the following error message displays when logging in:



**WARNING:**

*Translation corruption detected; call Lucent Technologies distributor immediately.*



**NOTE:**

The **save translation** command cannot function if the translation corruption message appears. See ["Troubleshooting an Upgrade" on page B-1](#).

## Back Up Disk

---

1. Type **backup disk** and press Enter to backup all changed files.
2. Type **test stored-data long** and press Enter. This instructs the system to verify the consistency of the MSS files (on the disk and removable media).

## Return Replaced Equipment

---

Return replaced equipment to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

5 Multicarrier G2 Universal Module to R8r EPN  
Critical Reliability

5-114

Adding or Removing Cabinet Hardware

6

This chapter contains information to add or remove cabinet hardware. To install adjunct or peripheral equipment, refer to *DEFINITY Enterprise Communications Server Release 8 Installation for Adjuncts and Peripherals*.

To add fiber optic cables to an existing system, refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.

Single-Mode Fiber Attenuators

Attenuators may be required when using single-mode fiber. See the table below.

|           |                  |                             |
|-----------|------------------|-----------------------------|
| 106060718 | 5 dB attenuator  | 2 for each fiber connection |
| 106060734 | 10 dB attenuator | 2 for each fiber connection |
| 106061021 | 15 dB attenuator | 2 for each fiber connection |

A different value attenuator may be required even though the fiber span is between the same 2 cabinets (local and remote cabinet). Refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets* for detailed fiber attenuator information.

## Add Circuit Packs

---

When installing additional features or equipment, it may be necessary to install additional circuit packs. This is a general procedure to use when adding features or equipment that require adding circuit packs.

1. Log onto the system and answer **y** to the *Suppress Alarm Origination* question during login.
2. Install the circuit pack into the carrier.
3. Log off the system after the addition (and any required administration) is complete.

For information about administering circuit packs and other equipment, refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*.

## List of Circuit Packs

[Table 6-1](#) lists the circuit packs sorted by apparatus code, including circuit packs used in non-United States installations.

Table 6-1. Circuit Packs and Circuit Modules

| Apparatus Code                                         | Name                                                               | Type             |
|--------------------------------------------------------|--------------------------------------------------------------------|------------------|
| 631DA1                                                 | AC Power Unit                                                      | Power            |
| 631DB1                                                 | AC Power Unit                                                      | Power            |
| 644A1                                                  | DC Power Unit                                                      | Power            |
| 645B1                                                  | DC Power Unit                                                      | Power            |
| 649A                                                   | DC Power Unit                                                      | Power            |
| 676B/C                                                 | DC Power Supply                                                    | Power            |
| 982LS                                                  | Current Limiter                                                    | Power            |
| CFY1B                                                  | Current Limiter                                                    | Power            |
| CPP1                                                   | Memory Expansion                                                   | Control          |
| ED-1E546<br>(TN2169)<br>(TN2170)<br>(TN566)<br>(TN567) | DEFINITY AUDIX R3 System                                           | Port<br>Assembly |
| ED-1E546<br>(TN2208)<br>(TN2170)                       | Call Visor ASAI over the DEFINITY (LAN) Gateway R1                 | Port<br>Assembly |
| J58890M1<br>(TN801)                                    | Call/Visor ASAI/Call/Visor PC/LAN over the DEFINITY LAN Gateway R2 | Port<br>Assembly |
| TN417                                                  | Auxiliary Trunk                                                    | Port             |
| TN419B                                                 | Tone-Clock                                                         | Control          |
| TN420B/C                                               | Tone Detector                                                      | Service          |
| TN429B/C/D                                             | Direct Inward/Outward Dialing (DIOD) Trunk                         | Port             |
| TN433                                                  | Speech Synthesizer                                                 | Service          |
| TN436B                                                 | Direct Inward Dialing Trunk                                        | Port             |
| TN437                                                  | Tie Trunk - Australia                                              | Port             |

Continued on next page

Table 6-1. Circuit Packs and Circuit Modules — Continued

| Apparatus Code | Name                                            | Type    |
|----------------|-------------------------------------------------|---------|
| TN438B         | Central Office Trunk                            | Port    |
| TN439          | Tie Trunk                                       | Port    |
| TN447          | Central Office Trunk                            | Port    |
| TN457          | Speech Synthesizer                              | Service |
| TN458          | Tie Trunk- U.K.                                 | Port    |
| TN459B         | Direct Inward Dialing Trunk                     | Port    |
| TN464C/D/E/F   | DS1 Interface - T1, 24 Channel - E1, 32 Channel | Port    |
| TN465/B/C      | Central Office Trunk                            | Port    |
| TN467          | Analog Line                                     | Port    |
| TN468B         | Analog Line                                     | Port    |
| TN479          | Analog Line                                     | Port    |
| TN497          | Tie Trunk - Italy                               | Port    |
| TN553          | Packet Data Line                                | Port    |
| TN556B/C/D     | ISDN-BRI 4-Wire S/T-NT Interface                | Port    |
| TN570/B/C      | Expansion Interface                             | Port    |
| TN572          | Switch Node Clock                               | Control |
| TN573/B        | Switch Node Interface                           | Control |
| TN574          | DS1 Converter - T1, 24 Channel                  | Port    |
| TN722B         | DS1 Tie Trunk                                   | Port    |
| TN725B         | Speech Synthesizer                              | Service |
| TN726/B        | Data Line                                       | Port    |
| TN735          | MET Line                                        | Port    |
| TN742          | Analog Line                                     | Port    |
| TN744/B        | Call Classifier                                 | Service |
| TN744/C/D      | Call Classifier - Detector                      | Service |
| TN746/B        | Analog Line                                     | Port    |
| TN747/B        | Central Office Trunk                            | Port    |
| TN748/B/C/D    | Tone Detector                                   | Service |

Continued on next page

Table 6-1. Circuit Packs and Circuit Modules — Continued

| Apparatus Code | Name                                      | Type    |
|----------------|-------------------------------------------|---------|
| TN750/B/C      | Announcement                              | Service |
| TN753/B        | Direct Inward Dialing Trunk               | Port    |
| TN754/B/C      | Digital Line 4-Wire DCP                   | Port    |
| TN755/B        | Neon Power Unit                           | Power   |
| TN756          | Tone Detector                             | Service |
| TN758          | Pooled Modem                              | Port    |
| TN760B/C/D/E   | Tie Trunk                                 | Port    |
| TN762/B        | Hybrid Line                               | Port    |
| TN763B/C/D     | Auxiliary Trunk                           | Port    |
| TN765          | Processor Interface                       | Control |
| TN767B/C/D/E   | DS1 Interface - T1, 24 Channel            | Port    |
| TN768          | Tone-Clock                                | Control |
| TN769          | Analog Line                               | Port    |
| TN771/D        | Maintenance/Test                          | Service |
| TN773          | Processor                                 | Control |
| TN775/B/C      | Maintenance                               | Service |
| TN776          | Expansion Interface                       | Port    |
| TN780          | Tone-Clock                                | Control |
| TN786          | Processor                                 | Control |
| TN786B         | Processor                                 | Control |
| TN787F/G/H/J/K | Multimedia Interface                      | Service |
| TN788B         | Multimedia Voice Conditioner              | Service |
| TN789          | Radio Controller                          | Control |
| TN790/B        | Processor                                 | Control |
| TN792          | Duplication Interface (DUPINT)            | Control |
| TN793          | Analog Line                               | Port    |
| TN794          | Network Control/Packet Interface (NetPkt) | Control |
| TN796B         | Processor                                 | Control |

Continued on next page

Table 6-1. Circuit Packs and Circuit Modules — Continued

| Apparatus Code | Name                                          | Type    |
|----------------|-----------------------------------------------|---------|
| TN797          | Analog CO Trunk and Line Combo                | Port    |
| TN799          | Control-LAN (C-LAN)                           | Port    |
| TN802B         | IP Interface Assembly                         | Port    |
| TNPRI/BRI      | PRI to BRI Converter                          | Port    |
| TN1648/B       | System Access/Maintenance                     | Control |
| TN1650B        | 32-MB Memory                                  | Control |
| TN1654         | DS1 Converter - T1, 24 Channel/E1, 32 Channel | Port    |
| TN1655         | Packet Interface                              | Control |
| TN1657         | Disk Drive                                    | Control |
| TN2135         | Analog Line                                   | Port    |
| TN2136         | Digital Line 2-Wire DCP                       | Port    |
| TN2138         | Central Office Trunk                          | Port    |
| TN2139         | Direct Inward Dialing Trunk                   | Port    |
| TN2140/B       | Tie Trunk - Hungary, Italy                    | Port    |
| TN2144         | Analog Line                                   | Port    |
| TN2146         | Direct Inward Dialing Trunk                   | Port    |
| TN2147/C       | Central Office Trunk                          | Port    |
| TN2149         | Analog Line                                   | Port    |
| TN2180         | Analog Line                                   | Port    |
| TN2181         | Digital Line 2-Wire DCP                       | Port    |
| TN2182/B       | Tone-Clock -Tone Detector and Call Classifier | Control |
| TN2183         | Analog Line                                   | Port    |
| TN2184         | DIOD Trunk                                    | Port    |
| TN2198         | ISDN-BRI 2-Wire U Interface                   | Port    |
| TN2199         | Central Office Trunk                          | Port    |
| TN2202         | Ring Generator                                | Power   |
| TN2211         | Optical Drive                                 | Control |
| TN2224/B       | Digital Line, 24-Port, 2-Wire DCP             | Port    |

Continued on next page



Table 6-1. Circuit Packs and Circuit Modules — Continued

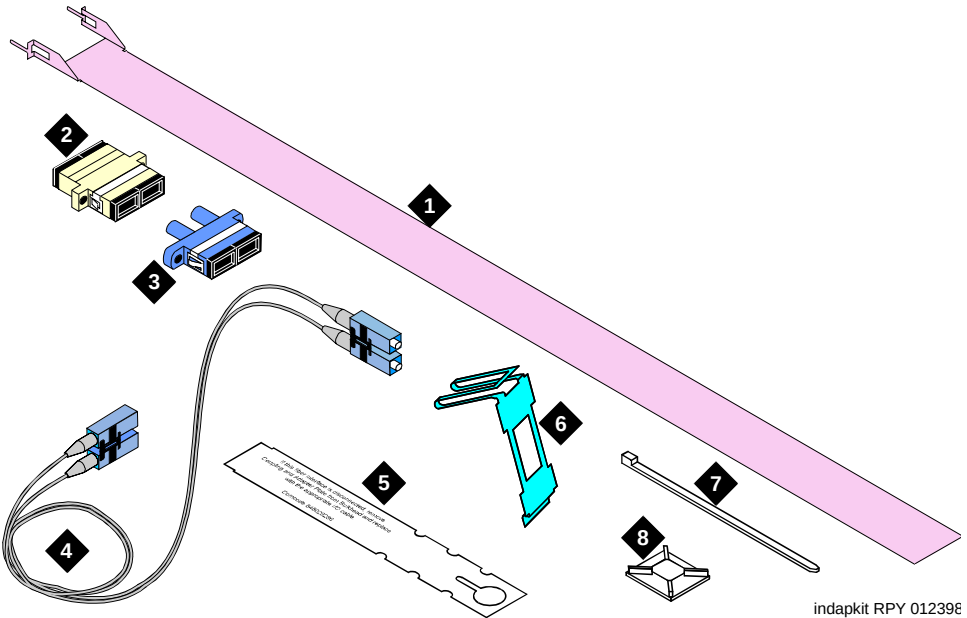
| Apparatus Code | Name                                             | Type    |
|----------------|--------------------------------------------------|---------|
| TN2305         | ATM Interface (multimode fiber)                  | Port    |
| TN2306         | ATM Interface (single-mode fiber)                | Port    |
| TN2313         | DS1 Interface                                    | Port    |
| UN330B         | Duplication Interface                            | Control |
| UN331B         | Processor                                        | Control |
| UN332/B/C      | Mass Storage/Network Control                     | Control |
| WP-90510       | AC Power Supply (Compact Single-Carrier Cabinet) | Power   |
| WP-91153       | AC Power Supply (Single-Carrier Cabinet)         | Power   |

## Add the Fiber Optic Cable

This chapter details the installation of the fiber optic cable using the DEFINITY fiber optic pass-thru kit for Multicarrier Cabinets (MCC) only. This kit (comcode 848029278) provides the equipment necessary to install the fiber optic connectors and associated cabling.

### Unpack and Inspect

1. Verify the equipment received. See [Figure 6-1](#). Actual equipment may vary in appearance and may ship in separate packages.
2. See [Table 6-2](#) for a list of part comcodes.



#### Figure Notes

- |                              |                                       |
|------------------------------|---------------------------------------|
| 1. Pass-thru Tool            | 5. Fiber Optic Cable Disconnect Label |
| 2. SC-SC Fiber Optic Adapter | 6. I/O Connector Adapter Bracket      |
| 3. ST-SC Fiber Optic Adapter | 7. Cable Tie                          |
| 4. Fiber Optic Cable         | 8. Cable Tie Mount                    |

Figure 6-1. Fiber Pass-Thru Kit Equipment

Table 6-2. Parts List

| Quantity | Description                                  | Comcode   |
|----------|----------------------------------------------|-----------|
| 1        | Pass-thru Tool                               | 847978715 |
| 1        | Beige SC-SC Fiber Optic Adapter (multimode)  | 107118903 |
| 1        | Beige ST-SC Fiber Optic Adapter (multimode)  | 107087967 |
| 1        | Ten-foot (3 m) Fiber Optic Cable (multimode) | 107122640 |
| 1        | I/O Connector Adapter Bracket                | 847978673 |
| 1        | Fiber Optic Cable Disconnect Label           | 848029286 |
| 10       | Cable Ties                                   | 407814672 |
| 6        | Cable Tie Mounts                             | 403053150 |

**LASER Product**

**CLASS 1 LASER PRODUCT**  
**IEC 825 1993**

The DEFINITY ECS may contain a Class 1 LASER device if single-mode fiber optic cable is connected to a remote Expansion Port Network (EPN). The LASER device operates within the following parameters:

- Maximum Power Output: -5dBm
- Wavelength: 1310 nm
- Mode Field Diameter: 8.8 microns

 **CAUTION:**  
*Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.*

Contact your Lucent Technologies representative for more information.

## Cabinet Preparation

---

1. Open the front door.



**NOTE:**

Administration may be required before removing the circuit pack in the following step.

2. Determine which slot (1 or 2) will contain the new fiber optic circuit pack. Remove the circuit pack or the blanking plate from this slot.



**NOTE:**

If a circuit pack is removed from the required slot, it must be installed into a different slot in the cabinet. All translations associated with this circuit pack must also be moved.

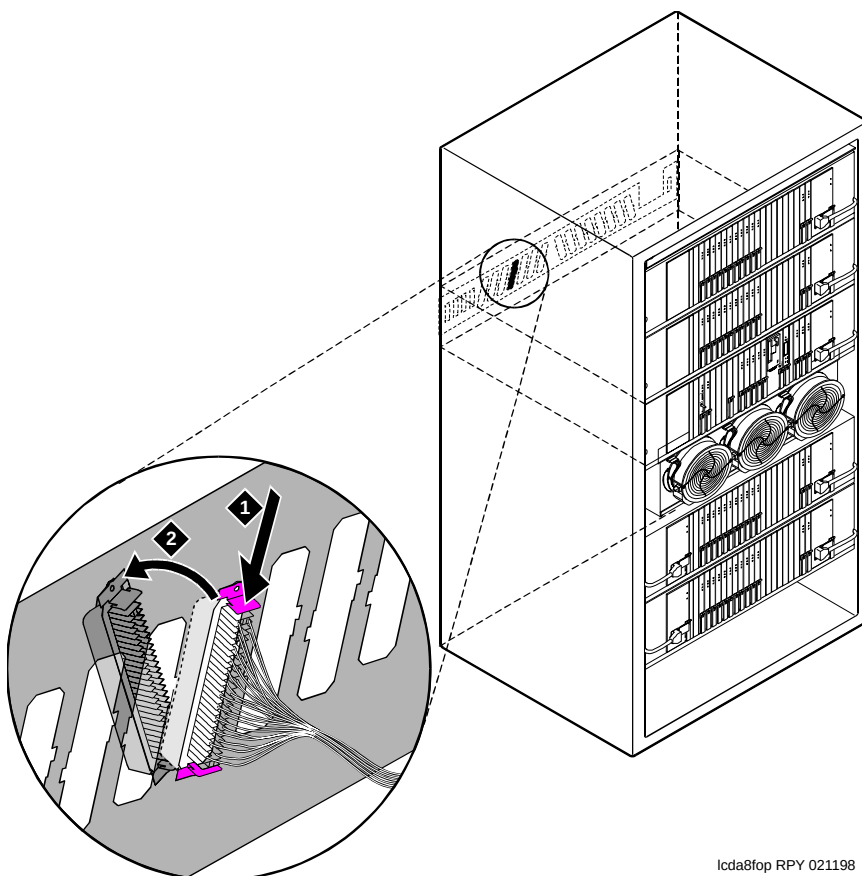
3. Remove the circuit pack or the blanking plate from the slot next to the slot determined in step 2. Two consecutive open slots are required to install the fiber optic adapter.



**NOTE:**

If a circuit pack was removed in step 3, it will be replaced into the same slot, later in this section.

4. Install the new circuit pack.
5. Open the rear door.
6. From the rear, remove the I/O cable connector associated with the slot that will contain the new fiber optic circuit pack. See [Figure 6-2](#).



lcda8top RPY 021198

### Figure Notes

1. Press tab down
2. Pull connector forward

Figure 6-2. Remove the I/O Cable Connector

7. Using a supplied cable tie, secure the removed I/O connector to nearby cabling. See [Figure 6-3](#).

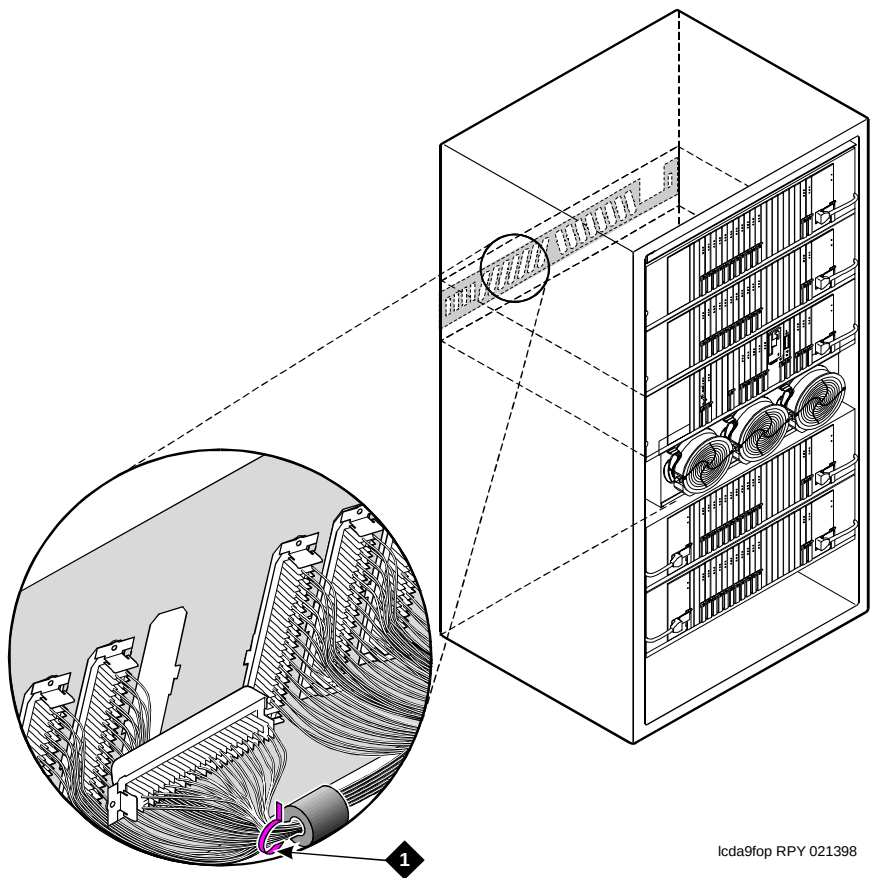


Figure Notes

- 1. Tie wrap

Figure 6-3. Secure the I/O Cable Connector

8. From the front, remove the fan cover. See [Figure 6-4](#).

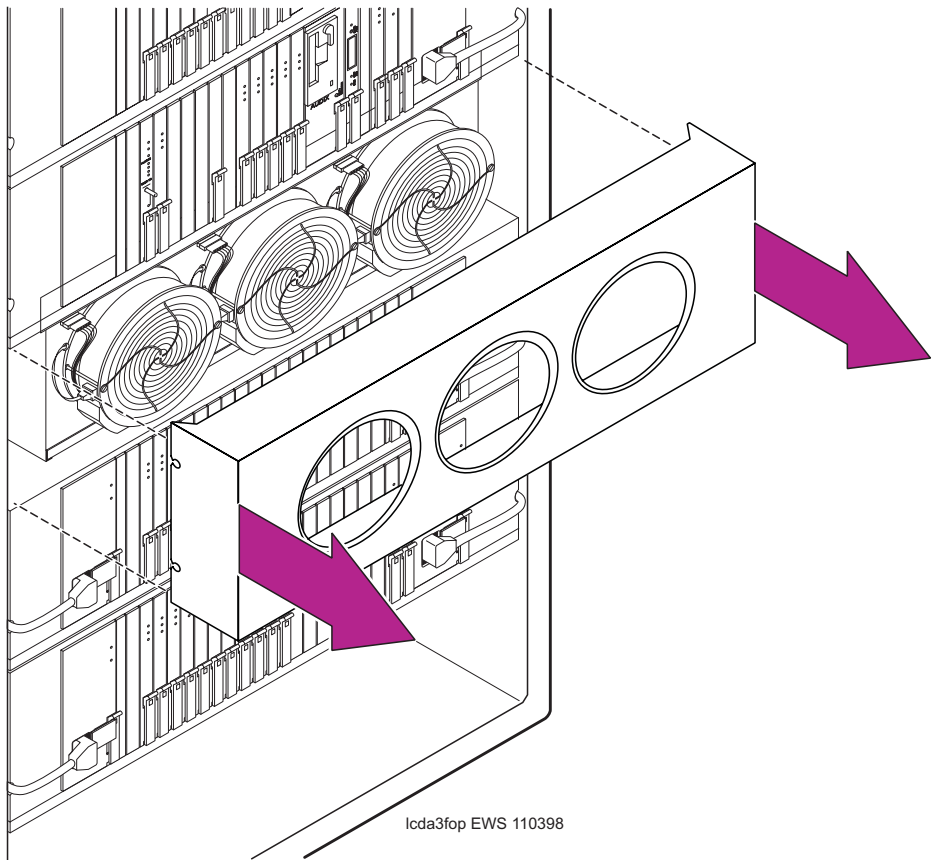
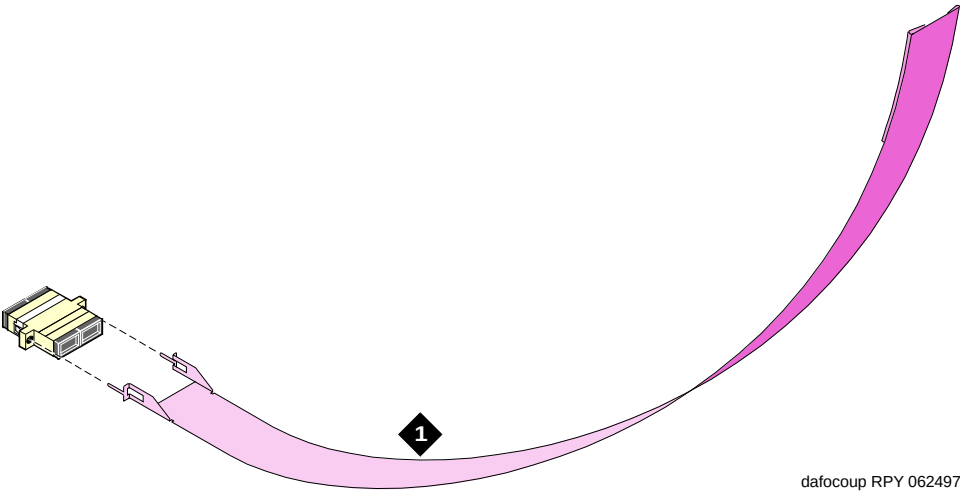


Figure 6-4. Remove the Fan Cover

### Install the Pass-thru Kit

1. Snap the SC-SC fiber optic adapter on the pass-thru tool. See [Figure 6-5](#). Use the beige adapter even if single-mode fiber is being installed. The SC-SC adapter is better suited for cable routing in the next steps.

**⇒ NOTE:**  
If single-mode fiber is being installed, the beige adapter will be replaced with a blue adapter, later in this section.



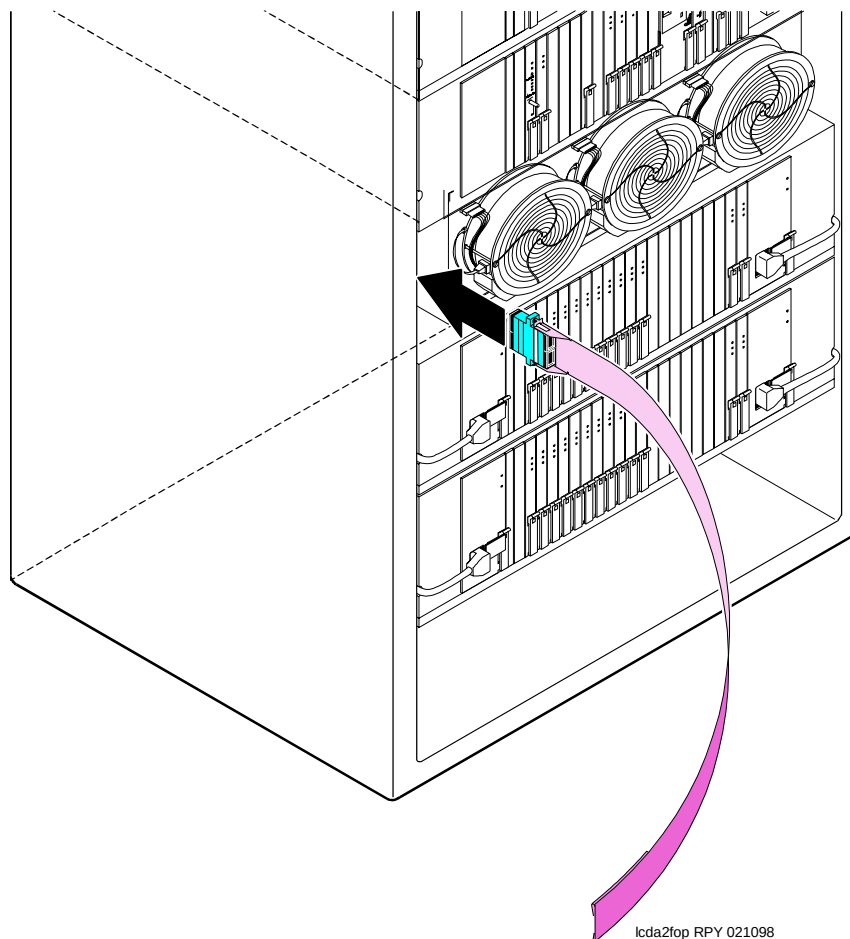
#### Figure Notes

1. Pass-thru Tool
2. SC-SC Fiber Optic Adapter

Figure 6-5. Fiber Optic Adapter and Pass-Thru Tool

2. Slide the tool to the rear of the cabinet. See [Figure 6-6](#).





lcda2fop RPY 021098

Figure 6-6. Insert the Pass-thru Tool



**CAUTION:**

*Avoid bending fiber optic cables to a radius smaller than 1.5 inches (3.8 cm), to prevent mechanical stress on the cables.*

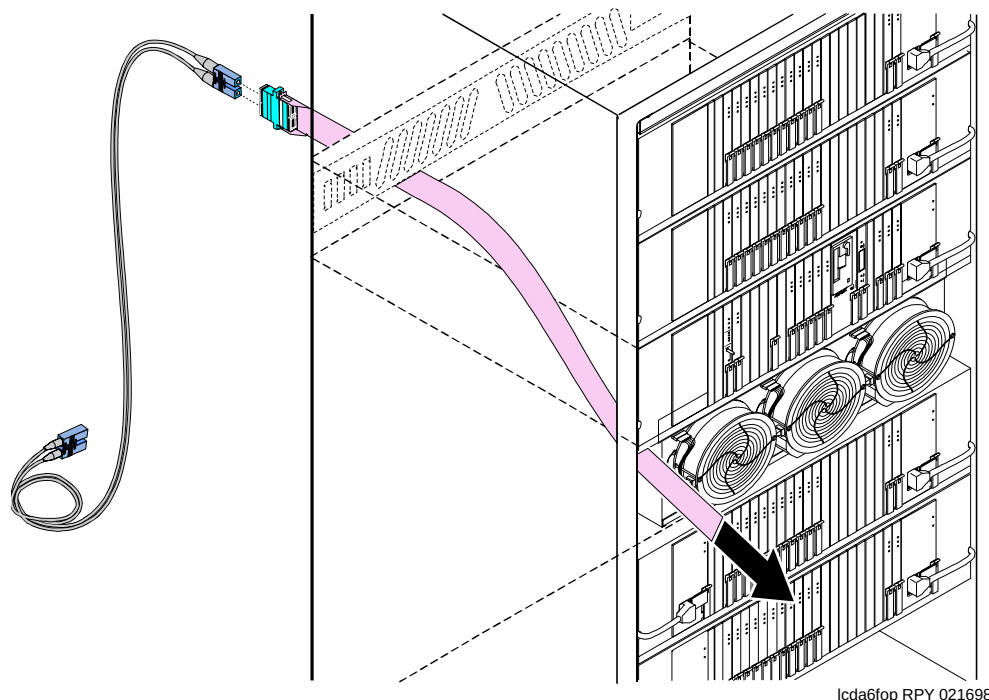


**CAUTION:**

*During the actual installation of fiber optic components, use either all beige or all blue adapters. Beige denotes multimode fiber and blue denotes single-mode fiber. Do not mix beige with blue.*

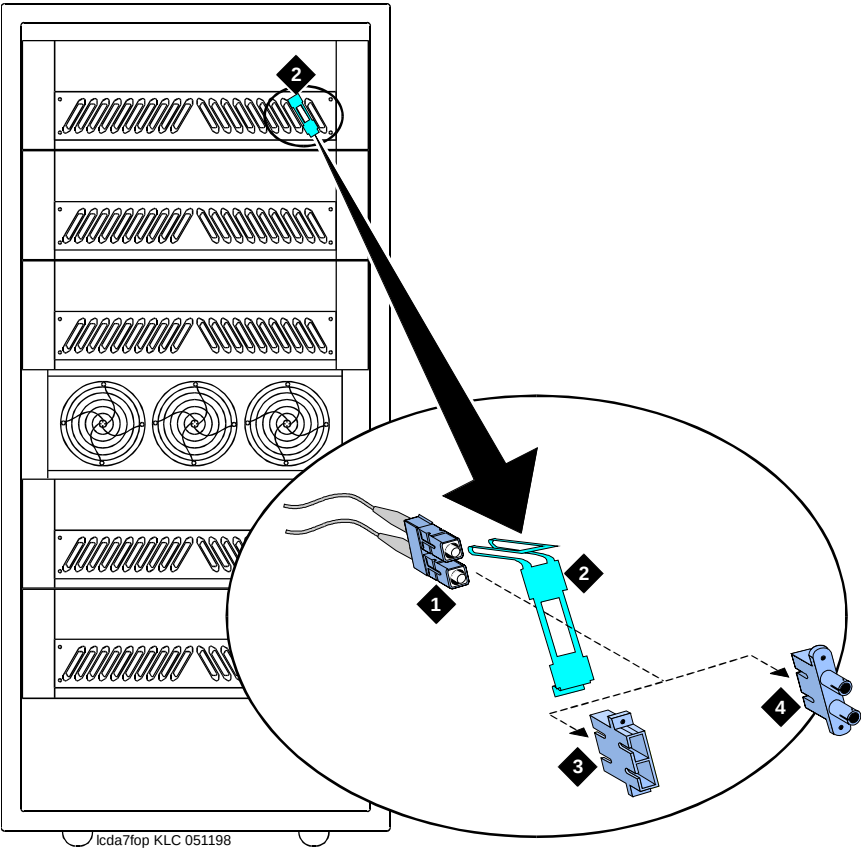
3. Attach the supplied fiber optic cable to the adapter.

4. Pull the tool (with adapter and cable attached) out through the front of the cabinet. See [Figure 6-7](#).



**Figure 6-7. Fiber Optic Cable and Adapter**

5. From the rear, route the fiber optic cable through the opening vacated by the I/O cable connector.
6. If necessary, remove the fiber adapter from the tool and plug the fiber optic cable into the SC-SC (single-mode) or ST-SC (multimode) adapter. See [Figure 6-8](#). Check the house cabling before selecting a coupling to use.
7. From the front of the I/O connector adapter bracket (with fiber cable), snap the coupling into the supplied I/O connector adapter bracket.
8. Snap the I/O connector adapter bracket into the I/O connector opening.
9. Attach the outside fiber plant to the I/O connector on the rear of the cabinet.



**Figure Notes:**

- |                                  |                  |
|----------------------------------|------------------|
| 1. Fiber cable                   | 3. SC-SC adapter |
| 2. I/O connector adapter bracket | 4. SC-ST adapter |

**Figure 6-8. Bracket Attachments**

10. Wrap the cable disconnect label around the fiber optic cable. See [Figure 6-9](#).

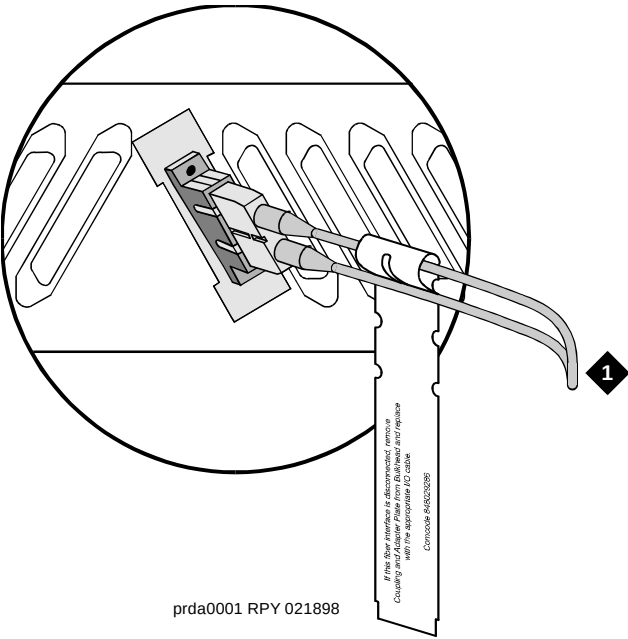


Figure Notes

- 1. To outside plant fiber

Figure 6-9. Cable Disconnect Label

- 11. Close the rear door.

**CAUTION:**  
*Avoid bending fiber optic cables to a radius smaller than 1.5 inches (3.8 cm), to prevent mechanical stress on the cables. Plan the use of cable ties to avoid crimping the cable or creating a fixed stress point where, at a later time, movement of the cable causes it to exceed the minimum bend radius.*

**CAUTION:**  
*Be careful not to crimp the fiber cable when you are performing the following step.*

- 12. Replace the fan cover. See [Figure 6-10](#).

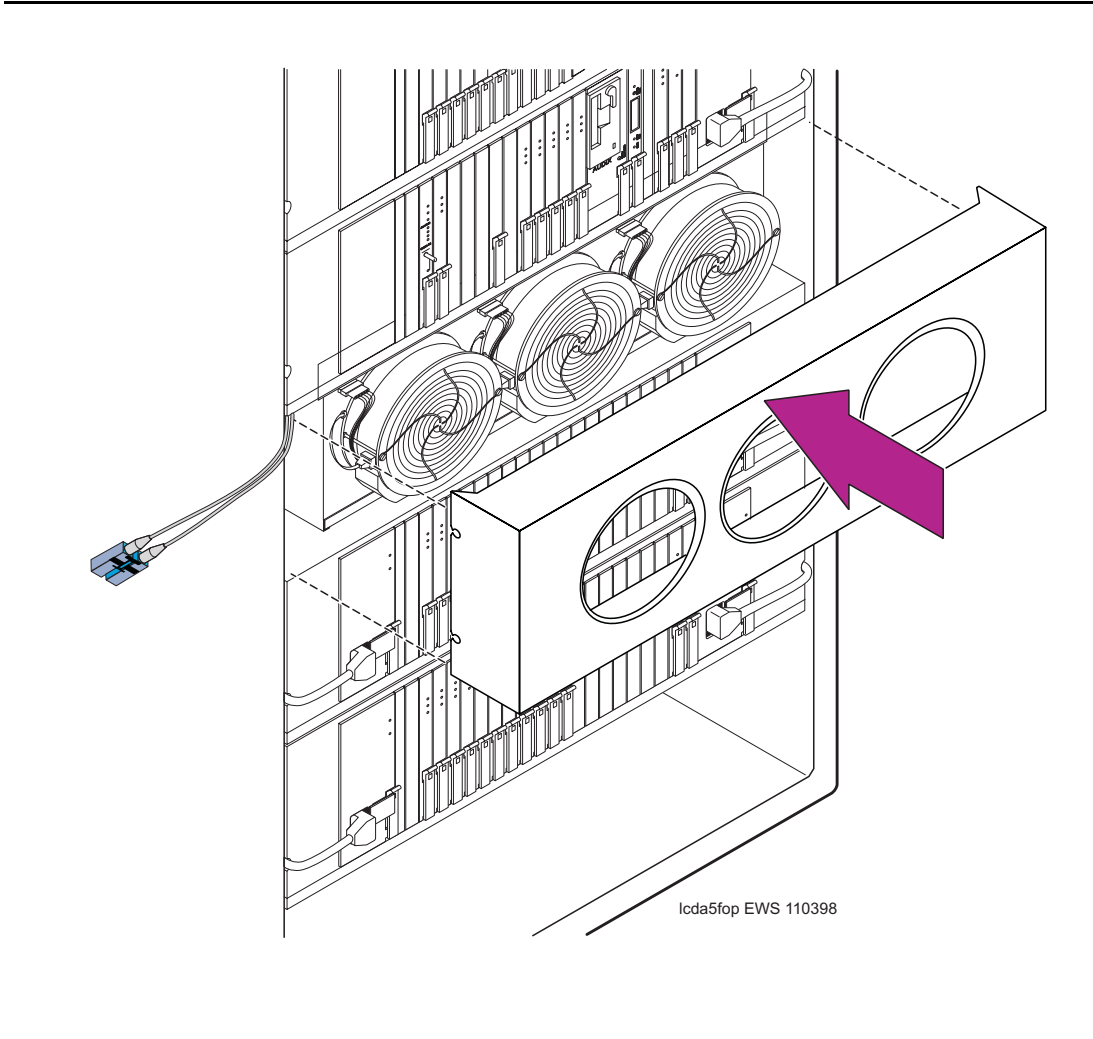


Figure 6-10. Replace the Fan Cover

- 13. Connect the fiber cable to the angled connector on the front of the circuit pack. See [Figure 6-11](#).

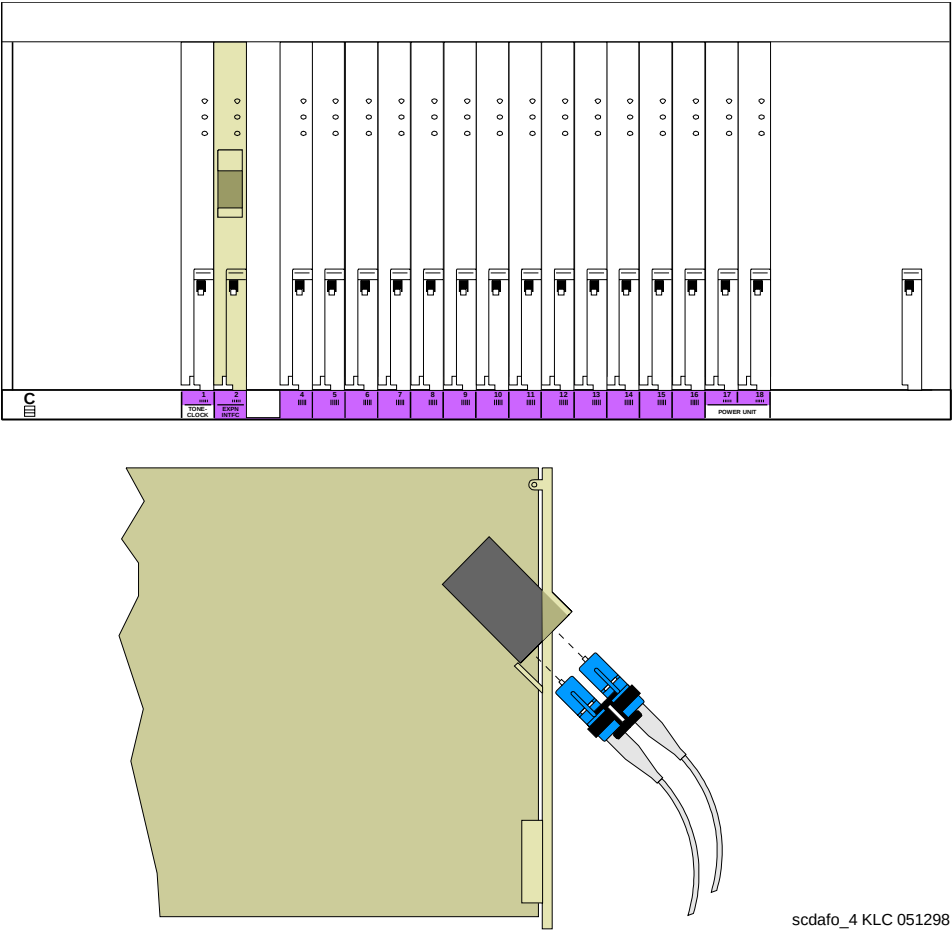


Figure 6-11. Connect Fiber Cable to Circuit Pack

14. Dress the cable using the supplied cable ties and cable tie mounts. See [Figure 6-12](#).



**NOTE:**  
Dress the fiber optic cable straight down the front of the circuit pack. Do not allow the cable to cross in front of another circuit pack.

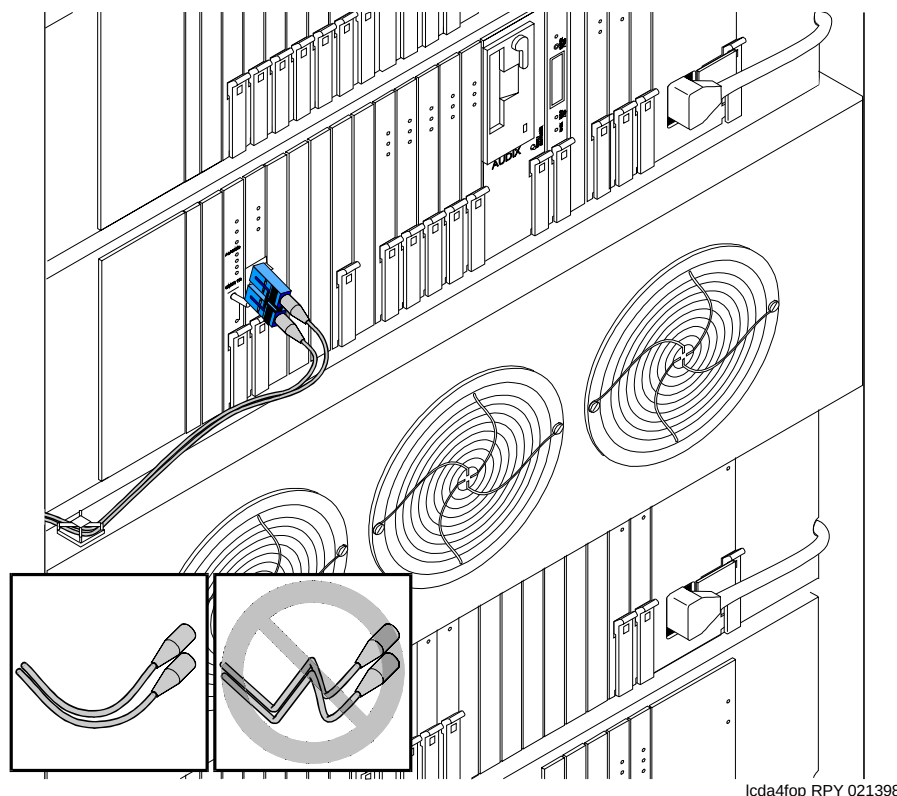


Figure 6-12. Dress the Cable

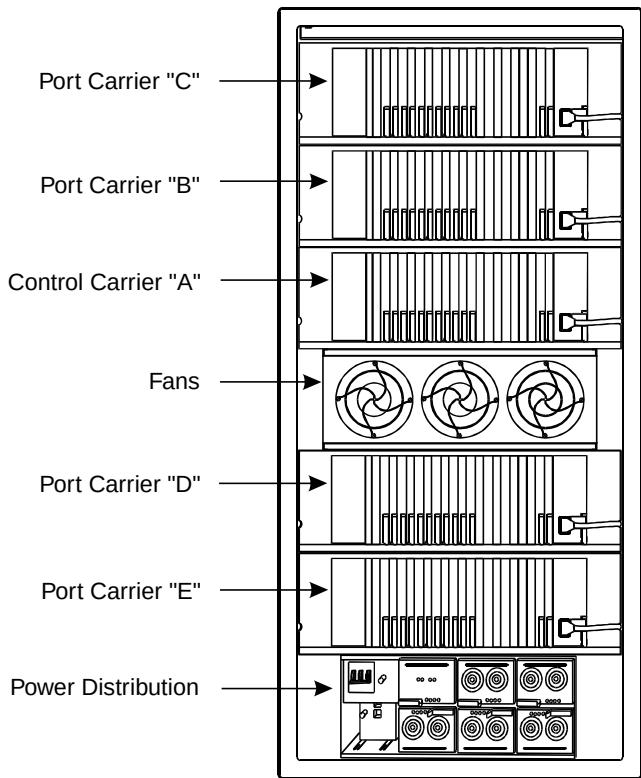
15. If a circuit pack was removed to access 2 open slots (from [“Cabinet Preparation” on page 6-10](#)), replace the circuit pack into its original slot.
16. Close the front door.
17. Discard the pass-thru tool.

## Test the Installation

1. Login to the management terminal.
2. Administer the system by referring to the ATM section of the *Installation and Test for Adjuncts and Peripherals*.
3. Type **list configuration all** and press Enter to determine if the new circuit pack appears in the correct slot and that there are no circuit pack conflicts.

# Install a New EPN Cabinet in an Existing System

Figure 6-13 shows a typical multicarrier EPN cabinet. Each EPN cabinet is normally positioned adjacent to the PPN cabinet but may be located remotely in a different room or a different building.



0075\_0 RBP 080196

Figure 6-13. Typical Multicarrier EPN Cabinet

1. Uncrate and position the cabinet as instructed at the beginning of this chapter.
2. Install earthquake protection as instructed on page 1-9.



### Connect Power and Ground

1. For an AC- or DC-powered system, connect power and ground to the cabinet as instructed in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.
2. Connect the approved ground to the new cabinet as instructed in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.

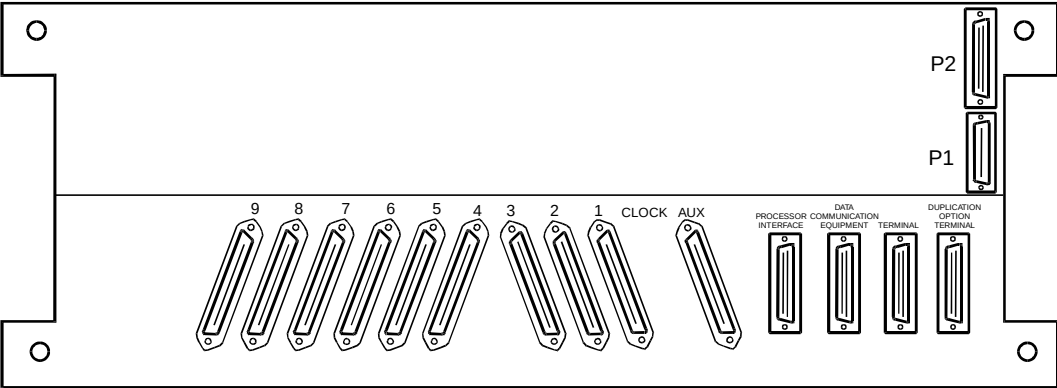
**⇒ NOTE:**  
Do not power up the system until all power and ground connections are completed.

### Interconnect Cabling Release 8r

For fiber optic cabling information and comcode numbers, refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*. The fiber link connections installed in this section are later administered using the fiber link administration instructions in [Appendix A, “Fiber Link Administration”](#).

**⇒ NOTE:**  
Use multi-mode fiber transceivers and fiber optic cables between cabinets unless single-mode is required for distance restrictions.

### Direct-Connect New EPN to Existing PPN (Standard Reliability)



0063\_0 RBP 071096

Figure 6-14. Rear of J58890AH Control Carrier (PPN)

**6 Adding or Removing Cabinet Hardware**

*Install a New EPN Cabinet in an Existing System*

6-24

1. Install a 9823A lightwave transceiver onto Slot 1 on the rear of the PPN Control Carrier. See [Figure 6-14](#).
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to the EPN cabinet easier.
3. Route the fiber cable to the J58890AF Expansion Control Carrier in the EPN cabinet.
4. On the rear of the EPN Expansion Control Carrier, install a 9823A lightwave transceiver onto Slot 2.
5. Connect the 20-foot fiber optic cable from the PPN Control Carrier to the TX and RX connectors on the transceiver on the EPN Expansion Control Carrier. Be sure the cable connected to the TX connector on the PPN transceiver is connected to the RX connector on the EPN transceiver and vice versa.

**Direct-Connect New EPN to Existing PPN (High or Critical Reliability)**

---

1. On the rear of the Duplicated Control Carrier, install a 9823A lightwave transceiver onto Slot 1.
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to the EPN cabinet easier.
3. Route the fiber cable to the J58890BB Port Carrier in position C in the EPN cabinet.
4. On the rear of the Port Carrier, install a 9823A lightwave transceiver onto Slot 2.
5. Connect the 20-foot fiber optic cable from the PPN Duplicated Control Carrier to the TX and RX connectors on the transceiver on the EPN Port Carrier. Be sure the cable connected to the TX connector on the PPN transceiver is connected to the RX connector on the EPN transceiver and vice versa.

## Direct-Connect New EPN to Existing PPN and EPN (Standard Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet (next to the PPN cabinet) is called Cabinet 2, and the last EPN cabinet is called Cabinet 3.

1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2.
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 3 easier.
3. Route the fiber cable to the Expansion Control Carrier in Cabinet 3.
4. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 1.
5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 2.
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 2.
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1.
11. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 2.
12. Route the fiber cable to the Port Carrier in position B in Cabinet 1.
13. Install a 9823A lightwave transceiver onto Slot 2 on the Port Carrier in position D in Cabinet 1.
14. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 1. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

## Direct-Connect New EPN to Existing PPN and EPN (High or Critical Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet (next to the PPN cabinet) is called Cabinet 2, and the last EPN cabinet is called Cabinet 3.

1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2.
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 2 easier.
3. Route the fiber cable to the Expansion Control Carrier in Cabinet 2.
4. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1.
5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 2. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 2.
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 2.
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 1.
11. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3.
12. Route the fiber cable to the Port Carrier in position D in Cabinet 1.
13. At the rear of the Port Carrier in position D in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2.
14. Connect the 20-foot fiber optic cable from Cabinet 3 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 1. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

## Interconnect Cabling Release 8r

---

For more fiber optic cabling information, refer to *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.

### Switch-Connect New EPN to Existing PPN and EPN (Standard Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet is called Cabinet 2, and the EPN cabinet containing the Switch Node Carrier is called Cabinet 4.

#### NOTE:

For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

1. At the rear of the Port Carrier in position B in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1B02). See [Figure 6-15](#).
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 4 easier.
3. Route the fiber cable to the Port Carrier in position E in Cabinet 4.
4. At the rear of the Port Carrier in position E in Cabinet 4, install a 9823A lightwave transceiver onto Slot 2 (4E02).
5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1 (2A01).
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Switch Node Carrier in position E in Cabinet 4, install a 9823A lightwave transceiver onto Slot 20 (4E20).
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Switch Node Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. Connect an H600-278 Metallic Cable from Slot 1 in the Expansion Control Carrier in Cabinet 4 (4A01) to Slot 19 on the Switch Node Carrier in position E in Cabinet 4 (4E19).

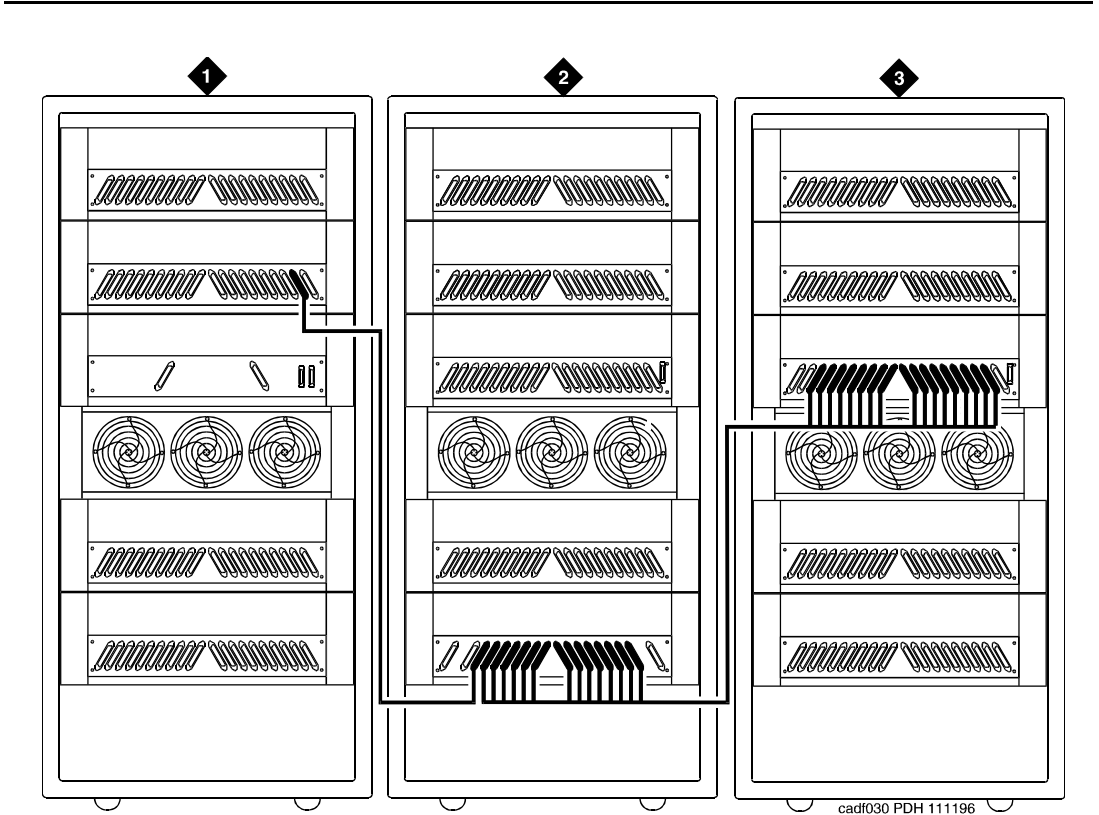


Figure Notes:

1. Cabinet 1 (PPN)
2. Cabinet 4 (MCC EPN with One Switch Node)
3. Cabinet 2, 3, and 5 through 16 (MCC or SCC EPNs)

Figure 6-15. Switch-Connected Release 8r with SNC in EPN

Switch-Connect New EPN to Existing PPN and EPN (High Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet is called Cabinet 2, and the EPN cabinet containing the Switch Node Carrier is called Cabinet 4.

NOTE:

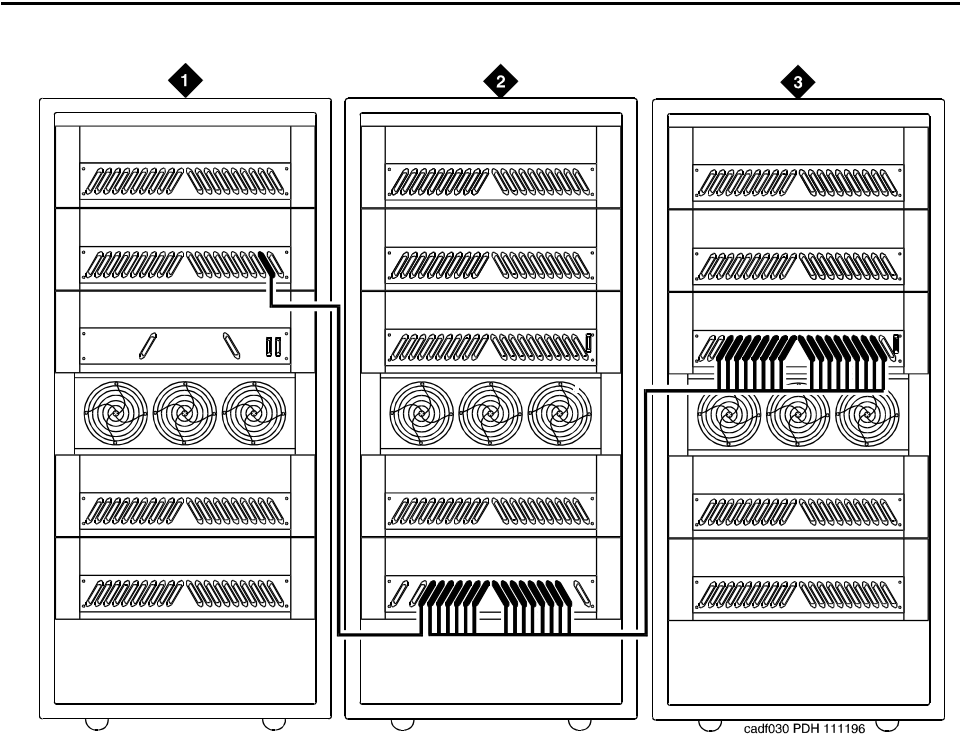
For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

**6 Adding or Removing Cabinet Hardware**

*Install a New EPN Cabinet in an Existing System*

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1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1C02). See [Figure 6-16](#).
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 4 easier.
3. Route the fiber cable to the Port Carrier in position E in Cabinet 4.
4. At the rear of the Port Carrier in position E in Cabinet 4, install a 9823A lightwave transceiver onto Slot 2 (4E02).
5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1 (2A01).
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Switch Node Carrier in position E in Cabinet 4, install a 9823A lightwave transceiver onto Slot 20 (4E20).
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Switch Node Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. At the rear of the Port Carrier in position D in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1D02).
11. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
12. Route the fiber cable to Switch Node Carrier in position E in Cabinet 4.
13. At the rear of the Switch Node Carrier in position E in Cabinet 4, install a 9823A lightwave transceiver onto Slot 3 (4E03).
14. Connect the 20-foot fiber optic cable from Cabinet 1 to the TX and RX connectors on the transceiver on the Switch Node Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
15. Connect an H600-278 Metallic Cable from Slot 1 in the Expansion Control Carrier in Cabinet 4 (4A01) to Slot 19 on the Switch Node Carrier in position E in Cabinet 4 (4E19).



**Figure Notes:**

1. Cabinet 1 (PPN)

2. Cabinet 2, 3, and 5 through 16 (MCC or SCC EPNs)

3. Cabinet 4 (MCC EPN with One Switch Node)

**Figure 6-16. Switch-Connected Release 8r with SNC in EPN**



## Switch-Connect New EPN to Existing PPN and EPN (Critical Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet is called Cabinet 2, and the EPN cabinet containing the Switch Node Carrier is called Cabinet 4.

### NOTE:

For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

1. At the rear of the Port Carrier in position C in Cabinet 1, install a lightwave transceiver onto Slot 2 (1C02). See [Figure 6-17](#).
2. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 4 easier.
3. Route the fiber cable to the Switch Node Carrier in position D in Cabinet 4.
4. At the rear of the Switch Node Carrier in position D in Cabinet 4, install a lightwave transceiver onto Slot 2 (4E02).
5. Connect the 20-foot (6 m) fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Switch Node Carrier in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Port Carrier in position D in Cabinet 1, install a lightwave transceiver onto Slot 2 (1D02).
7. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Switch Node Carrier in position D in Cabinet 4, install a lightwave transceiver onto Slot 2 (4D02).
9. Connect the 20-foot (6 m) fiber optic cable from the Port Carrier in position D in Cabinet 1 to the TX and RX connectors on the transceiver. Be sure to label the cable.
10. At the rear of the Port Carrier in position B in Cabinet 2, install a 9823A lightwave transceiver onto Slot 2 (2B02).
11. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
12. At the rear of the Switch Node Carrier in position D in Cabinet 4, install a lightwave transceiver onto Slot 20 (4D20).
13. Connect the 20-foot (6 m) fiber optic cable from the transceiver on the Switch Node Carrier position D in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

6 Adding or Removing Cabinet Hardware

*Install a New EPN Cabinet in an Existing System*

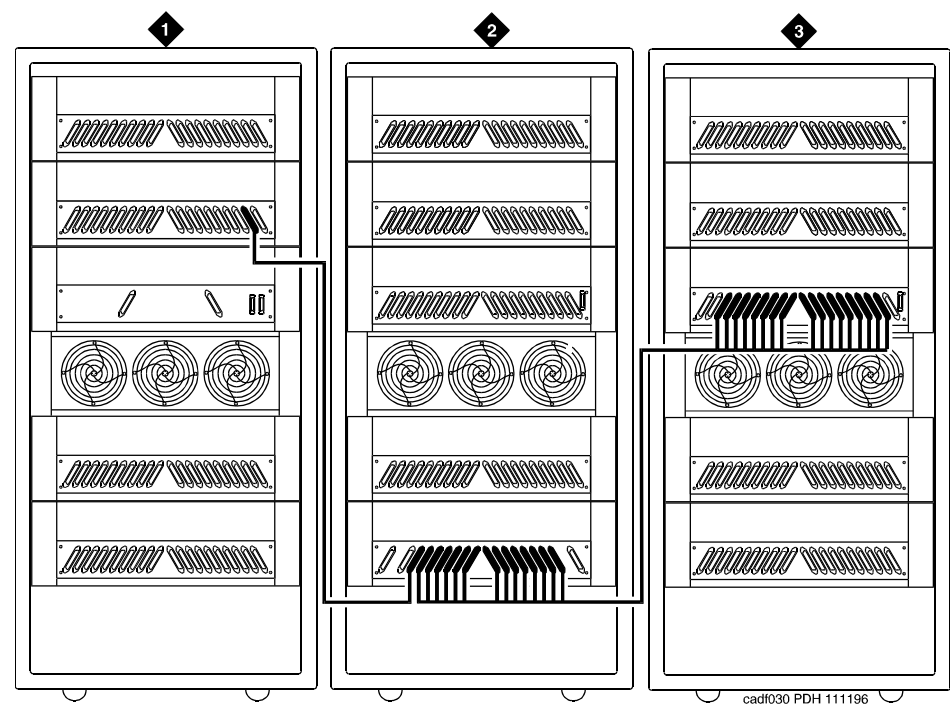
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14. At the rear of the Expansion Control Carrier in position A in Cabinet 2, install a lightwave transceiver onto Slot 1 (2A01).
15. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
16. At the rear of the Switch Node Carrier in position E in Cabinet 4, install a lightwave transceiver onto Slot 20 (4E20).
17. Connect the 20-foot (6 m) fiber optic cable from the transceiver on the Switch Node Carrier position E in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
18. At the rear of the Port Carrier in position B in Cabinet 3, install a lightwave transceiver onto Slot 2 (3A01).
19. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
20. At the rear of the Switch Node Carrier in position E in Cabinet 4, install a lightwave transceiver onto Slot 3 (4E03).
21. Connect the 20-foot (6 m) fiber optic cable from the transceiver on the Switch Node Carrier position E in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
22. At the rear of the Expansion Control Carrier in position A in Cabinet 3, install a lightwave transceiver onto Slot 2 (3B02).
23. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
24. At the rear of the Switch Node Carrier in position D in Cabinet 4, install a lightwave transceiver onto Slot 3 (4D03).
25. Connect the 20-foot (6 m) fiber optic cable from the transceiver on the Switch Node Carrier position D in Cabinet 4. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

 **NOTE:**

Continue connecting the fiber cables in this manner until all fiber connections are made. Be sure to add links to PNs in alternating order (20 and 2, 19 and 3, 18 and 4, and so forth).

26. Connect an H600-278 Metallic Cable from Slot 1 in the Expansion Control Carrier in Cabinet 4 (4A01) to Slot 19 on the Switch Node Carrier in position E in Cabinet 4 (4E19).



**Figure Notes:**

1. Cabinet 1 (PPN)
2. Cabinet 4 (MCC EPN with One Duplex Switch Node)
3. Cabinet 2, 3, and 5 through 16 (MCC or SCC EPNs) H600-278 Metallic Cable

**Figure 6-17. Switch-Connected Release 8r with SNC in EPN**

27. Connect an H600-278 Metallic Cable from Slot 2 in the Port Carrier in position B in Cabinet 4 (4B02) to Slot 19 on the Switch Node Carrier in position D in Cabinet 4 (4D19).



**NOTE:**

Both fibers from each PN must connect to the same slot number in each Switch Node Carrier. For example: if Slot 3A01 of EPN 3 connects to Switch Node Carrier Slot 4E19, then Slot 3B02 of EPN 3 must connect to Switch Node Carrier Slot 4D19.

28. Proceed to [Appendix A, "Fiber Link Administration"](#) to add the new fiber links.

## Remove an EPN Cabinet from an Existing System

---

### All Systems

---

Before starting the EPN removal process, perform the following:



#### NOTE:

If you do not disable the TTI, the translations can be corrupted.

1. Type **change system-parameters features** and press **Enter**. Use screen 2 to disable Terminal Translation Initialization (TTI) by changing the setting to **n**.
2. Unadminister *all* of the affected trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet being removed. These port-related translations must be unadministered before removing any hardware. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* for more information.

### Unadminister Fiber Links (Simplex Systems)

---

The fiber links routing to and from the EPN cabinet being removed must be unadministered before removing *any* hardware from the cabinet.



#### CAUTION:

*Failure to unadminister fiber links before removing hardware causes unnecessary alarm reports to INADS and causes errors that are very difficult to clear.*

The fiber links are administered to match hardware and the Fiber Optic Cable Running List. Fiber link administration creates translation data by identifying the endpoint pairs for each link. To properly unadminister the fiber links, this translation data must be removed.

1. Unadminister the TN570 Expansion Interface and the TN574 or TN1654 DS1 Converter circuit packs. Type **change circuit-packs** and press **Enter**. Scroll through the screens until the carrier containing the circuit packs is displayed. Remove the TN570 and the TN574 or TN1654 circuit packs from the slot locations on the screen. Press **Enter** when finished.
2. Type **list fiber** and press **Enter**. All administered fiber connections are displayed. Make note of which fiber links are to be removed.

6 Adding or Removing Cabinet Hardware

*Remove an EPN Cabinet from an Existing System*

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3. Type **change fiber link** and press **Enter**. The Fiber Link Administration screen appears. Use this screen to unadminister fiber links, each of which is identified by a fiber number.
  - a. The Is one endpoint remoted via DS1 Converter complex? field must remain administered.
  - b. Remove the location of the TN570 and the TN574 or TN1654 circuit pack for both ENDPOINT-1 and ENDPOINT-2.
4. Scroll to screen 2.
  - a. Type **no**, as applicable, in each Facility Installed? field (A, B, C, and D).
  - b. The Bit Rate: field must remain administered if other fiber connections associated with the facility will remain.
  - c. The idle code in the Idle Code MSB (1) . . . . LSB (8): field must remain administered.
  - d. The Line Coding: field must remain administered.
5. For a T1 site, proceed to ["T1 Installations Only"](#). For an E1 site, proceed to ["E1 Installations Only"](#).

### T1 Installations Only

1. The Framing Mode: field is display only.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only.
3. Remove the Facility Circuit ID: from the facilities being unadministered, if used. Press **Enter**.
4. A display similar to the following appears after the procedure is completed:  
  
RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

### E1 Installations Only

1. The CRC? field must remain administered.
2. The Line Termination: field is display only.
3. Remove the Facility Circuit ID information from the facilities being unadministered, if used. Press **Enter**.
4. A display similar to the following appears after the procedure is completed:  
  
RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

## All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be off for each inactive facility administered. For example, if Facility A and Facility B are unadministered, then the top 2 Span LEDs on the circuit pack must be off. If the yellow LEDs are on, then problems were encountered during the unadministration of hardware. Span LEDs associated with administered facilities (C and D, in this example) should be on.

## Removing the Hardware

---

1. Be sure that you have unadministered the trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet.
2. Remove the fiber optic cables from the fiber transceivers at both ends of the fiber span. Carefully coil the fiber optic cables. Avoid bending cables to a radius smaller than 1.5 inches (3.8 cm).
3. Remove the fiber transceivers from the DS1 and/or DS1 converter circuit packs at both ends of each fiber span.
4. Remove the 25-pair cables from the connector panel on each carrier of the EPN.
5. Type **remove cabinet <number>** and press Enter. This removes the EPN cabinet administration.
6. Remove the power cords from the power units in each carrier in the EPN and remove the AC power cord or DC power wires.
7. Check the grounding scheme for the cabinets. Perform the following:
  - a. If any cabinet ground wires connect in *series* between the EPN cabinet and any other cabinet, remove the wires from the EPN cabinet and connect them to the next cabinet in the ground plane.



### CAUTION:

*Never leave cabinets ungrounded. When a ground wire is removed from a series-connected cabinet, the ground plane becomes open with respect to all subsequent cabinets.*

- b. If any cabinet ground wires connect in *parallel* to other cabinets, or connect directly to the AC power panel ground or other approved ground, remove the wire from each end of the ground span.
8. Carefully remove the EPN cabinet. The cabinet may weigh as much as 800 pounds. Use caution.

6 Adding or Removing Cabinet Hardware

*Remove an EPN Cabinet from an Existing System*

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9. Type **change system-parameters features** and press Enter. Use this screen to change the TTI field back to its previous setting before the upgrade.
10. When finished, place dust covers over all exposed fiber couplings that remain after the fiber optic cables are removed.
11. If any fiber optic cables were removed from Lightguide Interconnect Units (LIUs) or Fiber Patch Panels, remove the associated cable labeling. This will prevent confusion if existing fiber is later moved.
12. Return all unused equipment (not owned by the customer) to Lucent Technologies according to the requirements outlined in:  
*BCS/Material Logistics, MSL/Attended Stocking Locations*  
*Methods and Procedures for Basic Material Returns*
13. If any message waiting lamps are on, skip to [“Troubleshooting” on page 6-40](#).

## Unadminister Fiber Links (Duplex Systems)

The fiber links routing to and from the EPN cabinet being removed must be unadministered before removing *any* hardware from the cabinet.



**CAUTION:**

*Failure to unadminister fiber links before removing hardware causes unnecessary alarm reports to INADS and causes errors that are very difficult to clear.*

The fiber links are administered to match hardware and the Fiber Optic Cable Running List. Fiber link administration creates translation data by identifying the endpoint pairs for each link. To properly unadminister the fiber links, this translation data must be removed.

1. Type **list fiber** and press Enter. All administered fiber connections are displayed. Make note of the fiber links to be removed.
2. Type **change fiber link** and press Enter. The Fiber Link Administration screen appears. On screen 1:
  - a. Remove the Board Location: information for ENDPOINT-1 and ENDPOINT-2. This is the cabinet, carrier, and slot that identifies the physical location of an SNI or EI circuit pack that is the first endpoint of the fiber link. Repeat for the remaining endpoints.
  - b. The Board Type field is display only.

## 6 Adding or Removing Cabinet Hardware

### *Remove an EPN Cabinet from an Existing System*

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- c. In the DS1CONV Board Location: field, remove the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
  - d. The DS1CONV Board Type: field is a display only field.
  - e. The Is one endpoint remoted via a DS1 Converter Complex? field must remain administered if other fiber connections associated with the facility will remain.
3. Scroll to screen 2.
  - a. Remove the DS1 Converter Facilities information. In the Facility Installed? field, type **no** for all facilities (A, B, C, and D) to be removed.
  - b. The Bit Rate: field must remain administered.
  - c. The idle code in the Idle Code MSB (1) . . . . LSB (8): field must remain administered.
  - d. The data in the Line Coding: field must remain administered.
4. For a T1 site, proceed to ["T1 Installations Only"](#). For an E1 site, proceed to ["E1 Installations Only"](#).

### **T1 Installations Only**

1. The Framing Mode: field is display only.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only.
3. Remove the Facility Circuit ID information from the facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

### **E1 Installations Only**

1. The CRC? field must remain administered.
2. The Line Termination: field is display only.
3. Remove the Facility Circuit ID information from facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.



## All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be off for each inactive facility administered. For example, if Facility A and Facility B are unadministered, then the top 2 Span LEDs on the circuit pack must be off. If the yellow LEDs are on, then problems were encountered during the unadministration of hardware. Span LEDs associated with administered facilities (C and D, in this example) should be on.

## Removing the Hardware

---

1. Be sure that you have unadministered the trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet.
2. Remove the fiber optic cables from the fiber transceivers at both ends of the fiber span. Carefully coil the fiber optic cables. Avoid bending cables to a radius smaller than 1.5 inches (3.8 cm).
3. Remove the fiber transceivers from the DS1 and/or DS1 converter circuit packs at both ends of each fiber span.
4. Remove the 25-pair cables from the connector panel on each carrier of the EPN.
5. Type **remove cabinet <number>** and press Enter. This removes the EPN cabinet administration.
6. Remove the power cords from the power units in each carrier in the EPN and remove the AC power cord or DC power wires.
7. Check the grounding scheme for the cabinets. Perform the following:
  - a. If any cabinet ground wires connect in *series* between the EPN cabinet and any other cabinet, remove the wires from the EPN cabinet and connect them to the next cabinet in the ground plane.



### CAUTION:

*Never leave cabinets ungrounded. When a ground wire is removed from a series-connected cabinet, the ground plane becomes open with respect to all subsequent cabinets.*

- b. If any cabinet ground wires connect in *parallel* to other cabinets, or connect directly to the AC power panel ground or other approved ground, remove the wire from each end of the ground span.
8. Carefully remove the EPN cabinet. The cabinet may weigh as much as 800 pounds. Use caution.

6 Adding or Removing Cabinet Hardware

*Remove an EPN Cabinet from an Existing System*

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9. Type **change system-parameters features** and press Enter. Use this screen to change the TTI field back to its previous value before the upgrade.
10. When finished, place dust covers over all exposed fiber couplings that remain after the fiber optic cables are removed.
11. If any fiber optic cables were removed from Lightguide Interconnect Units (LIUs) or Fiber Patch Panels, remove the associated cable labeling. This will prevent confusion if existing fiber is later moved.
12. Return all unused equipment (not owned by the customer) to Lucent Technologies according to the requirements outlined in:

*BCS/Material Logistics, MSL/Attended Stocking Locations*

*Methods and Procedures for Basic Material Returns*

## Troubleshooting

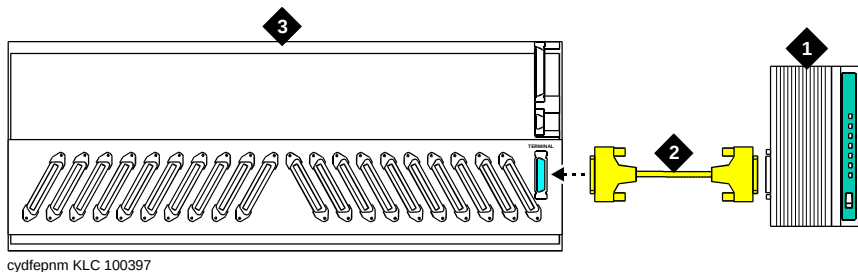
### Message Waiting Lamps On

This usually means that all affected port-related translations were not unadministered.

1. Type **clear amw all <extension>** and press Enter. This clears the message waiting lamp for the specified extension.
2. Repeat the command for each extension with a lit message waiting lamp.

## Add External Modem to EPN

### U.S. Robotics Model USR 33.6 EXT External Modem



#### Figure Notes:

1. U.S. Robotics External Modem
2. RS-232 Cable
3. Expansion Port Network

Figure 6-18. Connect External Modem to EPN

1. Connect an RS-232 cable to the modem. See [Figure 6-18](#).



#### NOTE:

In the following steps, a PC with Windows 95 or Windows NT 4.0 may be substituted for the dumb terminal. Use the Hyperterminal (terminal emulation) application.

2. Connect the opposite end of the RS-232 cable to a dumb terminal.
3. Set the dumb terminal to full duplex mode.
4. Type **AT&N6** to set the baud rate to 9600.



#### NOTE:

The modem connects at 9600 baud but throughput is at 1200 baud.

5. Type **AT&W0** to save the setting into non-volatile RAM.
6. Set Switch 5 to the OFF (up) position to disable auto answer.
7. Disconnect the RS-232 cable from the terminal and connect it to the **TERMINAL** connector on the rear of the system cabinet.

## Add DCS Interface

---

Systems in a Distributed Communications System (DCS) network are interconnected by both tie trunks (for voice communications) and data links (for control and transparent feature information). These data links, also called DCS signaling links, support the feature transparency.

Various subsets (depending on the specific configuration) of DS1 Interface circuit packs (including TN464F, TN767E, and TN760E) provide the voice-communications interface.

Meanwhile, the data link interface (between the processor and the physical signaling link) is provided by (or through) a TN799 Control-LAN circuit pack. In some configurations, the TN799 passes the signaling information over a separate 10BaseT TCP/IP network (usually via a hub). For use with 10BaseT, connect the appropriate pins of the I/O field to the hub. For pinouts and diagrams, refer to the installation manual for your cabinet type. In other configurations, the TN799 circuit pack carries signaling over point-to-point protocol (PPP) for subsequent inclusion (via the switching fabric) in the same DS1 bit stream as the DCS voice transmissions.

A TN780 Tone-Clock circuit pack (installed in the PPN) can interface external Stratum 3 synchronization for DS1 connections.

For further information about DCS, refer to the following documents:

- *AT&T System 75/85 Network and Data Services Reference Manual*
- *System 75 Application Notes Network Services*
- *DEFINITY ECS Release 8 Administration for Network Connectivity*

## Add Circuit Packs

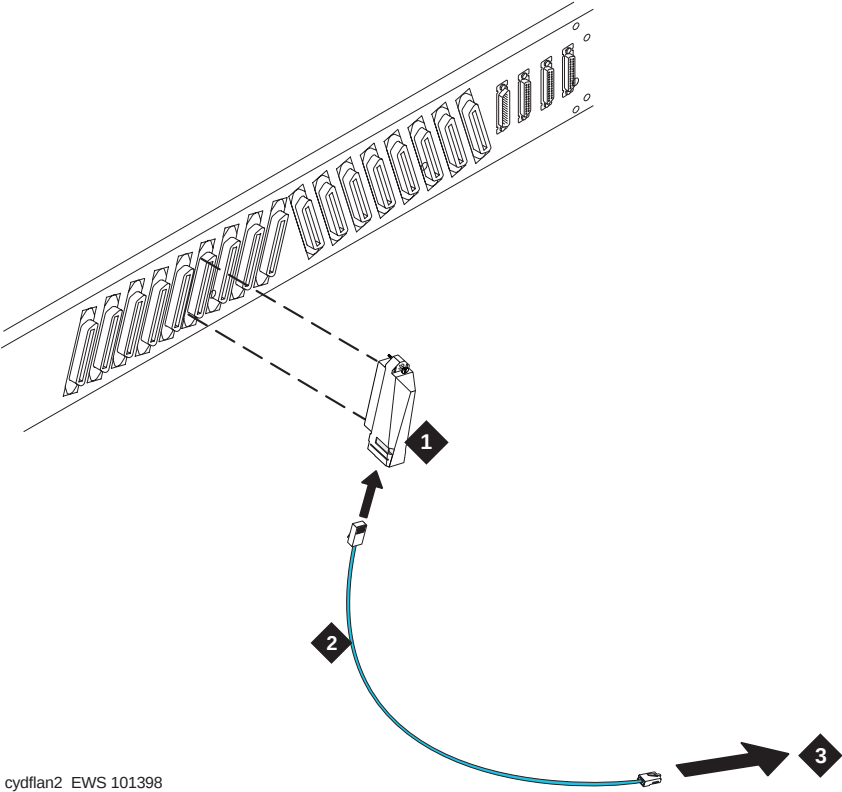
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A TN464F, TN767E, or TN760E DS1 circuit pack is required for PPP connections. A TN799 Control-LAN circuit pack is also required.

1. Determine the port assignments of the circuit packs to be added. If there are no available port slots in the processor cabinet for the Control-LAN circuit pack, place it in a R8 EPN cabinet port slot. You do not need to power down the cabinet to install the circuit pack.

### Install Cables

1. Install cable from the cabinet to a hub or 110 (purple) wall field as required. Connect the 259A connector to the port slot containing the Control-LAN circuit pack. See [Figure 6-19](#). For a pinout of TN799, see [Table 6-3](#).



#### Figure Notes

- |                   |                                   |
|-------------------|-----------------------------------|
| 1. 259A Connector | 3. Hub or 110 (Purple) Wall Field |
| 2. DW8A Cable     |                                   |

Figure 6-19. Cable Connection for Control-LAN

Table 6-3. TN799 Pinout

| Backplane Pin | 25-Pair Wire Color | Lead Name | Peripheral Connector Pin |
|---------------|--------------------|-----------|--------------------------|
| 103           | White/Orange       | TD+       | 27                       |
| 003           | Orange/White       | TD-       | 2                        |
| 104           | White/Green        | RD+       | 28                       |
| 004           | Green/White        | RD-       | 3                        |

Enter Added Translations

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To enable DCS, set the DCS field on the System Parameters-Customer Options screen to **y**.
3. Administer the other required translation data using the forms listed under Distributed Communications System (DCS) in *DEFINITY Communications System Administration for Network Connectivity*.

Save Translations

1. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
2. Enter **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).

## Add IP Interface Assembly

---

DEFINITY ECS IP Solutions allows you to send voice and fax from the DEFINITY ECS through an Internet protocol (IP) network to other DEFINITY ECSs having this feature or to other H.323 V2 compliant endpoints. It is implemented using the TN802/B IP Interface, which is a Windows NT server residing on the IP Interface Assembly inside the DEFINITY ECS.

The IP Interface is an assembly composed of a TN802B circuit board, a processor card, and DSP resource card. For ordering purposes, the assembly is identified as a J58890MA-1 L30, but for simplicity, we refer to it in this book as the TN802B IP Interface.

The TN802B IP Interface operates in two modes: IP Trunk, available with Release 7 or later, and Media Processor (MedPro), available with Release 8. The IP Trunk mode is Internet Telephone Server—Enterprise (ITS-E) compatible, and the MedPro mode is H.323 V2 compatible. The TN802B IP Interface is backwards compatible and defaults to IP Trunk mode. You must administer it to use it in MedPro mode.

For more information on the IP Interface capabilities and limitations, refer to the *DEFINITY Enterprise Communications Server Release 8 Overview*.

The following sections describe the process for

- [Installing in Media Processor Mode](#)
- [Installing in IP Trunk Mode](#)
- [Upgrading a TN802 V3 \(or later\) to a TN802B \(MedPro mode\)](#)



**WARNING:**

*When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.*

### Installing in Media Processor Mode

---

To operate in MedPro mode, you must install the TN802B IP Interface and, if the system does not have one, you must also install and administer a TN799B C-LAN circuit pack. For C-LAN administration, refer to *DEFINITY Enterprise Communications Server Administration for Network Connectivity*.

If you have existing TN802 IP Interface circuit packs, you can upgrade them either by replacing the circuit pack with a TN802B or by downloading the TN802B firmware onto the circuit packs (see [“Upgrade to TN802B \(R8\)” on page 6-76](#)).

## Prepare for Installation

Have the following equipment on site before your shipment arrives:

- AC power outlets for the modem and monitor.
- Three unoccupied and adjoining port slots in the DEFINITY ECS for the TN802B IP Interface, if needed.  
  
The TN802B occupies only one slot, but it needs the two slots to its left for clearance.
- An additional unoccupied port slot for the TN799B, if needed. If you have an existing TN799 circuit pack, replace it with the TN799B.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network for the TN802B.
- A 10 BaseT Ethernet connection into your local area network for the TN799B.
- Two or more valid, unused IP addresses on your network (one for MedPro and one for C-LAN) that can be assigned to the IP Interface server. You also need the subnet mask and default gateway.
- An analog telephone line reserved (DID is okay) for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

In addition if non-U.S. customer:

- Modem comparable to a U.S. Robotics Sportster Model USR 33.6 EXT.
- Cable from modem to TN802B external cable assembly.

We recommend that you protect your cabinet with an uninterruptible power system (UPS).

## Check your Shipment

When your DEFINITY ECS order arrives at your site, check the contents (see [Table 6-4](#)).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

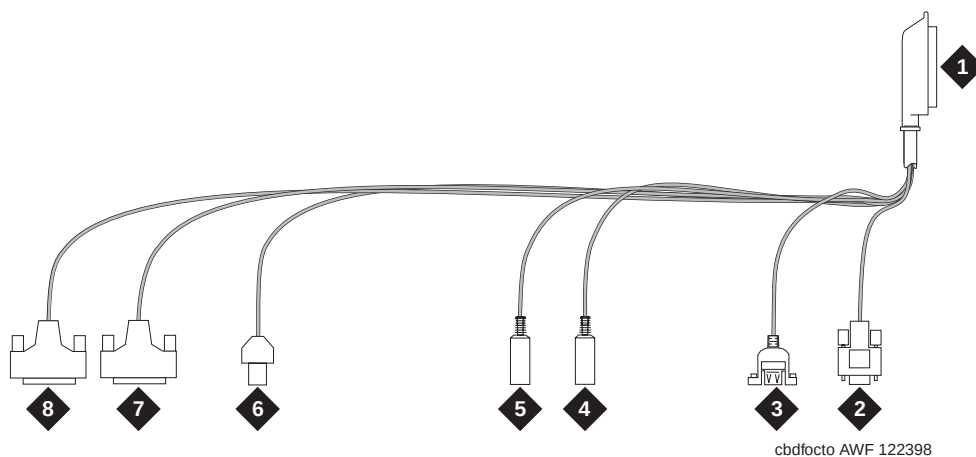


Table 6-4. Required Hardware

| Comcode/Code   | Description                                                                                                                                         | Quantity  |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 108525528      | TN799B C-LAN circuit pack. One TN799B supports more than one TN802B.                                                                                | 1         |
| J58890MA-1 L30 | TN802B IP Interface Assembly                                                                                                                        | 1 or more |
| 601939804      | H600-512,G1 external cable assembly                                                                                                                 | 1 or more |
|                | 259A connector                                                                                                                                      | 1         |
|                | CAT5 or better cable                                                                                                                                | 1         |
| 407633999      | U.S. Robotics Sportster external modem, Model USR 33.6 EXT (U.S. customers only). Non-U.S. customers must provide a modem comparable to this model. | 1         |
| 601087091      | 20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only). Non-U.S. customers must provide a serial cable.        | 1         |

3. Read and follow any directions inserted into the package by the factory.

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 6-20](#). Look for the label where the bundle enters the amphenol connector.



### Figure Notes

- |                                                                 |                                   |
|-----------------------------------------------------------------|-----------------------------------|
| 1. Amphenol connector to connector corresponding to TN802B slot | 5. To mouse                       |
| 2. To VGA monitor                                               | 6. To ethernet                    |
| 3. To USB (not used)                                            | 7. 25-pin male connector to modem |
| 4. To keyboard                                                  | 8. 25-pin male connector to COM2  |

Figure 6-20. TN802B IP Interface External Cable Assembly

### Connect the Cables

1. Determine into which port slots you are putting the TN799B C-LAN and TN802B IP Interface circuit packs.



#### NOTE:

Make sure that at least 3 adjacent slots are free for the TN802B.

From the rear of the cabinet:

2. If adding a new TN799B, connect the 259A connector to the backplane connector corresponding to the TN799B slot.
3. If adding a new TN799B, connect one end of the DW8 cable to the 259A connector. Connect the other end to the customer's network.
4. Connect the amphenol connector on the external cable assembly to the backplane connector corresponding to the TN802B slot (the highest numbered connector of the 3 slots required)

Connect the Modem

**NOTE:**  
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

- 1. Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

**NOTE:**  
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2. Connect an analog telephone line to the left most analog-line port on the modem as shown in [Figure 6-21](#).
- 3. Make sure that the modem's DIP switches are set as shown in [Figure 6-21](#) and [Table 6-5](#).
- 4. Plug the modem into an AC power outlet.
- 5. Turn on the modem using the switch on the front of the modem.

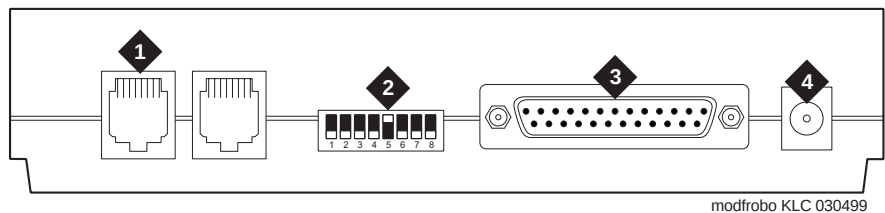


Figure Notes

- |                              |                                  |
|------------------------------|----------------------------------|
| 1. Connect analog line here. | 3. Connect MODEM connector here. |
| 2. DIP switch 5 must be up.  | 4. Connect power connector here. |

Figure 6-21. External Modem Connections for U.S. Robotics Modem

Table 6-5. U.S. Robotics Modem Dip Switch Settings

| Dip Switch | Setting    | Description                                                                         |
|------------|------------|-------------------------------------------------------------------------------------|
| 1          | UP<br>DOWN | Data Terminal Ready normal<br>Data Terminal Ready override                          |
| 2          | UP<br>DOWN | Verbal result codes<br>Numeric result codes                                         |
| 3          | UP<br>DOWN | Suppress result codes<br>Display result codes                                       |
| 4          | UP<br>DOWN | Echo offline commands<br>No echo, offline commands                                  |
| 5          | UP<br>DOWN | <b>Auto answer on first ring or higher if specified in NVRAM</b><br>Auto answer off |
| 6          | UP<br>DOWN | Carrier detect normal<br>Carrier detect override                                    |
| 7          | UP<br>DOWN | Load NVRAM defaults<br>Load factory defaults                                        |
| 8          | UP<br>DOWN | Dumb mode<br>Smart mode                                                             |

Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

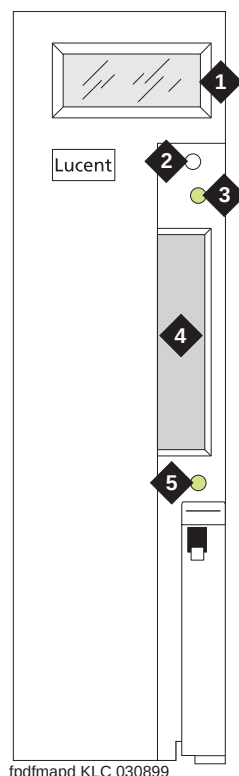
 **NOTE:**  
You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs

 **CAUTION:**  
*When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.*

 **NOTE:**  
The TN799B and TN802B circuit packs are hot-swappable, so you do not need to power down the carrier to install them.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see [Figure 6-22](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT \***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.



### Figure Notes

- |                            |                                  |
|----------------------------|----------------------------------|
| 1. LCD display             | 4. PCMCIA card slot              |
| 2. Reset button (recessed) | 5. Yellow PCMCIA disk-in-use LED |
| 3. Red board status LED    |                                  |

Figure 6-22. TN802B IP Interface faceplate

### ➤ NOTE:

If replacing the existing TN799 circuit pack, remove it first and replace it with the new one.

1. Insert the TN799B circuit pack into the port slot identified earlier.

### ➤ NOTE:

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

2. Insert the TN802B IP Interface into the right most of the three slots you reserved for it (see [Figure 6-23](#)) and seat it properly.

When you plug in the TN802B IP Interface Assembly, the circuit pack starts to boot and the LCD reads **PC Boot**. The circuit pack reboots automatically, and after about 3 to 4 minutes the LCD changes to **IPTRK\***, the default mode, or **MEDPRO\***.

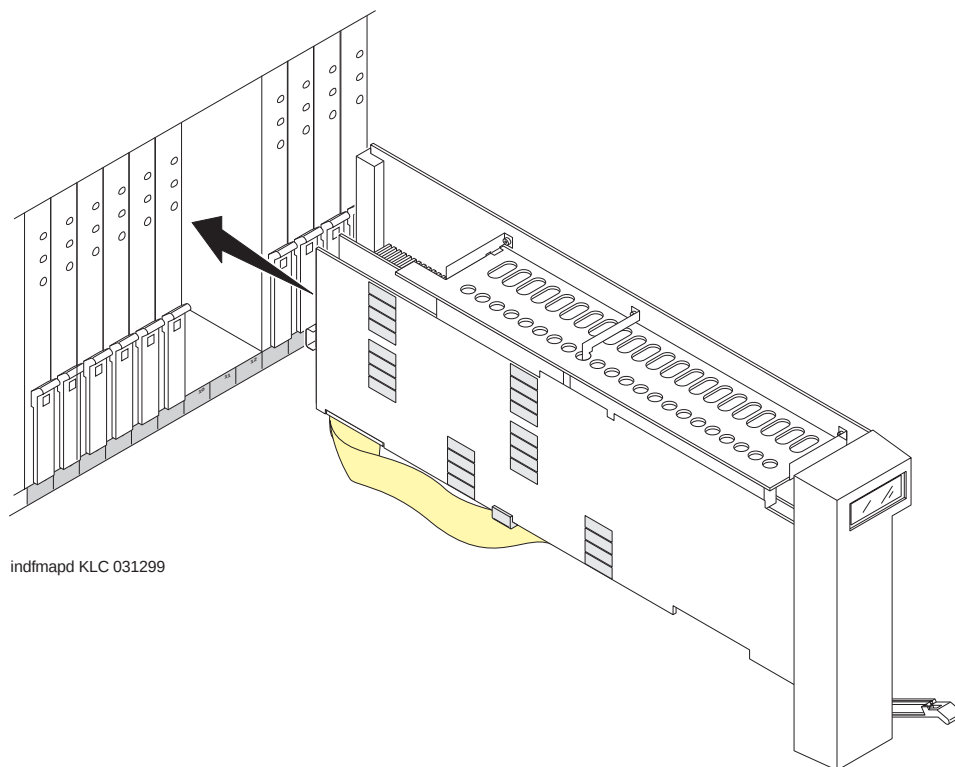
If the TN802B is pre-administered at the factory, it reboots several times to initialize to MedPro mode.

If the TN802B is not pre-administered, go to [“Administration Steps” on page 6-53](#)



**NOTE:**

For an initial installation, the TN802B IP Interface needs to be administered first (see [“Administer the IP Interface” on page 6-53](#)).



indfmapd KLC 031299

Figure 6-23. J58890MA-1 L30 IP Interface Assembly

Administer the TN799B C-LAN

Refer to the *DEFINITY Enterprise Communications Server Administration for Network Connectivity*.

Administer the IP Interface

Administration is usually done remotely; call your service representative to start the process.

Administration Steps

 **NOTE:**  
Refer to the *DEFINITY Enterprise Communications Server Administration for Network Connectivity for Release 8* for specific information.

- 1. Log in as **craft**.
- 2. Type **change node-names** and press Enter.
- 3. On screen 2, type in the node name and IP address for the TN802B.

change node-names

Page 2 of 6

| NODE NAMES |               |      |            |
|------------|---------------|------|------------|
| Name       | IP Address    | Name | IP Address |
| clan-a1    | 192.168.1 .31 | .    | .          |
| clan-b1    | 192.168.2 .31 | .    | .          |
| default    | 0 .0 .0 .0    | .    | .          |
| med-a1     | 192.168.1 .81 | .    | .          |
|            | .             | .    | .          |
|            | .             | .    | .          |
|            | .             | .    | .          |
|            | .             | .    | .          |

- 4. Type **change circuit-pack** and press Enter.
- 5. Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

change circuit-packsPage 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A  
Carrier Type: processor

| Slot Code   | Sf | Mode | Name             | Slot Code   | Sf | Mode | Name        |
|-------------|----|------|------------------|-------------|----|------|-------------|
| 01: TN754   |    |      | DIGITAL LINE     | 11: MEDPRO  |    |      | RESERVED-IP |
| 02: TN758   |    |      | POOLED MODEM     | 12: MEDPRO  |    |      | RESERVED-IP |
| 03: TN2144  |    |      | ANALOG LINE      | 13: TN802 B |    |      | MAPD BOARD  |
| 04: TN746 B | B  |      | ANALOG LINE      | 14:         |    |      |             |
| 05          |    |      |                  | 15:         |    |      |             |
| 06: TN771 C | C  |      | MAINTENANCE/TEST | 16:         |    |      |             |
| 07: TN464 F | F  |      | DS1 INTERFACE    |             |    |      |             |
| 08: TN2140  |    |      | E&M TIE TRUNK    |             |    |      |             |
| 09: TN767 E | E  |      | DS1 INTERFACE    |             |    |      |             |
| 10: TN799 B | B  |      | CONTROL-LAN      |             |    |      |             |

'#' indicates circuit pack conflict.

6. If not, type MEDPRO in the slot just above TN802B slot and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:  
  
MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
7. Type **change ip-interfaces** and press Enter.
8. Type in the information for the TN802B IP Interface,
9. Set the Enabled field to **y**, and press Enter.

 **NOTE:**

The customer provides the IP address, subnet mask, and gateway address.

At this time the TN802B LCD reads **PC BOOT \***, and about 3 to 4 minutes later reads **MEDPRO \*** with the asterisk flashing



change ip-interfacesPage 1 of 2

Network regions are interconnected? n

| En-abled | Type   | Slot  | Code  | Sfx | Node Name | Subnet        | Mask | Bcast/Gway    | Net |
|----------|--------|-------|-------|-----|-----------|---------------|------|---------------|-----|
| Addr Rgn |        |       |       |     |           |               |      |               |     |
| n        | C-LAN  | 01A09 | TN799 |     | clan-a1   | 255.255.255.0 |      | 192.168.1.100 | 1   |
| y        | MEDPRO | 01A13 | TN802 | B   | med-a1    | 255.255.255.0 |      | 192.168.1.21  | 1   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |
| n        |        |       |       |     |           | 255.255.255.0 |      | .             | .   |

Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server, and ping a known computer connected to your network. If everything is configured correctly, the Result column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.  
The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN802B IP Interface and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

ping ip-address 192.168.10.21

| PING RESULTS  |    |       |           |        |          |            |
|---------------|----|-------|-----------|--------|----------|------------|
| End-pt        | IP | Port  | Port Type | Result | Time(ms) | Error Code |
| 192.168.10.21 |    | 01A13 | MEDPRO    | PASS   | 10       | 1124       |

2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.  
The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter. The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network.

## Installing in IP Trunk Mode

---



### NOTE:

IP Trunk mode should only be used to maintain compatibility with existing Release 7 IP Trunk or ITS-E installations. We strongly recommend that MedPro mode be used whenever possible.

## Prepare for Installation

Have the following equipment on site before your shipment arrives:

- A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need AC power outlets for the modem and monitor.
- Three adjoining, unoccupied port slots in the DEFINITY ECS  
The TN802B IP Interface slides into only 1 slot, but its faceplate occupies 3 slots.
- A 10 BaseT or 10/100 BaseT Ethernet connection into the customer's local area network (LAN)
- A valid, unused IP address on the customer's LAN that can be assigned to the IP Interface server. You also need the subnet mask, default gateway, domain name, and so forth from the customer's network administrator.
- An analog telephone line reserved for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

If non-U.S. customer:

- Modem comparable to a U.S. Robotics, Inc. Sportster Model USR 33.6 EXT.
- A cable from the modem to the TN802B external cable assembly.

We recommend that you protect the cabinet where the IP Interface is installed with an uninterruptible power system (UPS).

Check your Shipment

When your DEFINITY ECS order arrives at the customer's site, check the contents (see [Table 6-6](#)).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

Table 6-6. Required Hardware

| Comcode/Code   | Description                                                                                              | Quantity |
|----------------|----------------------------------------------------------------------------------------------------------|----------|
| J58890MA-1 L30 | TN802B IP Interface Assembly                                                                             | 1        |
| 601939804      | H600-512,G1 external cable assembly                                                                      | 1        |
| 407633999      | U.S. Robotics Sportster external modem, model number USR 33.6 EXT (U.S. customers only) <sup>1</sup>     | 1        |
| 601087091      | 20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only) <sup>2</sup> | 1        |

1. For non-U.S. customers, you need a modem comparable to the U.S. Robotics Sportster and a serial cable.

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 6-24](#). Look for the label where the bundle enters the amphenol connector.

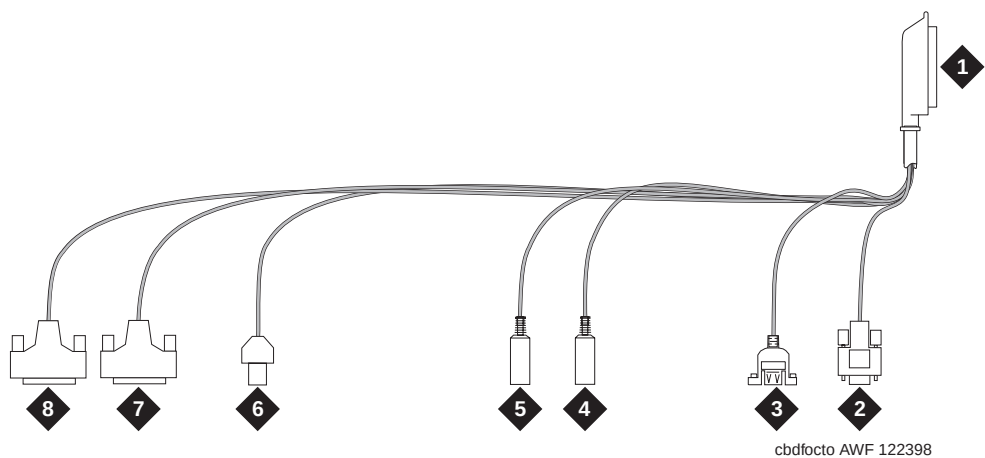


Figure Notes

- |                                                                 |                                   |
|-----------------------------------------------------------------|-----------------------------------|
| 1. Amphenol connector to connector corresponding to TN802B slot | 5. To mouse                       |
| 2. To VGA monitor                                               | 6. To ethernet                    |
| 3. To USB (not used)                                            | 7. 25-pin male connector to modem |
| 4. To keyboard                                                  | 8. 25-pin male connector to COM2  |

Figure 6-24. TN802B IP Interface External Cable Assembly

3. Read and follow any directions inserted into the package by the factory.

Connect the Cables

1. Determine into which port slot you are putting the TN802B IP Interface.



**NOTE:**  
Make sure that at least 3 adjoining slots are free.

2. From the rear of the cabinet, connect the amphenol connector on the external cable assembly to the backplane connector corresponding to that slot (the highest numbered connector of the 3 slots required).

Connect the Modem

**NOTE:**  
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

- 1. Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

**NOTE:**  
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2. Connect an analog telephone line to the leftmost analog-line port on the modem as shown in [Figure 6-25](#).
- 3. Make sure that the modem's DIP switches are set as shown in [Figure 6-25](#) and [Table 6-7](#).
- 4. Plug the modem into an AC power outlet.
- 5. Turn on the modem using the switch on the front of the modem.

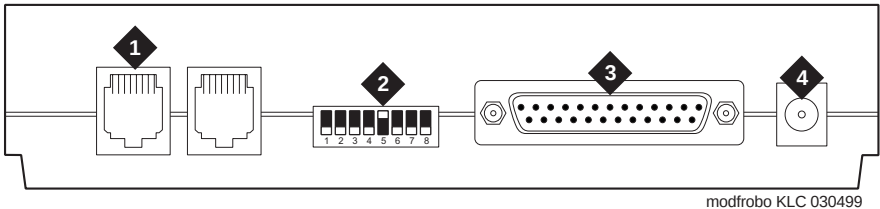


Figure Notes

- |                              |                                  |
|------------------------------|----------------------------------|
| 1. Connect analog line here. | 3. Connect MODEM connector here. |
| 2. DIP switch 5 must be up.  | 4. Connect power connector here. |

Figure 6-25. External Modem Connections for U.S. Robotics Sporster

Table 6-7. U.S. Robotics Modem Dip Switch Settings

| Dip Switch | Setting           | Description                                                                         |
|------------|-------------------|-------------------------------------------------------------------------------------|
| 1          | UP<br>DOWN        | Data Terminal Ready normal<br>Data Terminal Ready override                          |
| 2          | UP<br>DOWN        | Verbal result codes<br>Numeric result codes                                         |
| 3          | UP<br>DOWN        | Suppress result codes<br>Display result codes                                       |
| 4          | UP<br>DOWN        | Echo offline commands<br>No echo, offline commands                                  |
| 5          | <b>UP</b><br>DOWN | <b>Auto answer on first ring or higher if specified in NVRAM</b><br>Auto answer off |
| 6          | UP<br>DOWN        | Carrier detect normal<br>Carrier detect override                                    |
| 7          | UP<br>DOWN        | Load NVRAM defaults<br>Load factory defaults                                        |
| 8          | UP<br>DOWN        | Dumb mode<br>Smart mode                                                             |

Connect the Monitor, Keyboard, and Mouse



**NOTE:**  
Only make these connections if administered locally. Not necessary if administered remotely.

You must connect these before inserting the TN802B IP Interface.

1. Attach a VGA monitor to the VGA connector of the TN802B IP Interface external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the external cable assembly.
3. Attach the mouse to the MOUSE connector of the external cable assembly.
4. Plug the monitor into an AC power receptacle and turn it on.

## Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.



**NOTE:**

You need a CAT5 or better cable for 100-Mbyte operation.

## Install the Circuit Pack



**CAUTION:**

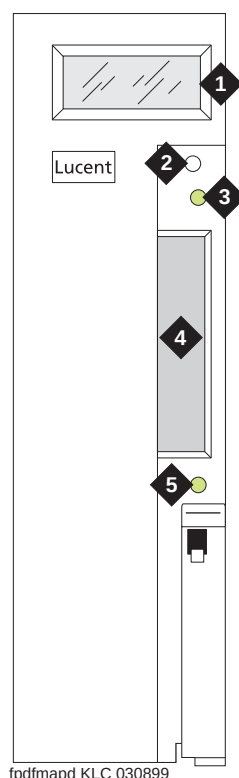
*When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.*



**NOTE:**

The TN802B IP Interface is hot-swappable, so you do not need to power down the carrier to install it.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see [Figure 6-26](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT \***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.



### Figure Notes

- |                            |                                  |
|----------------------------|----------------------------------|
| 1. LCD display             | 4. PCMCIA card slot              |
| 2. Reset button (recessed) | 5. Yellow PCMCIA disk-in-use LED |
| 3. Red board status LED    |                                  |

Figure 6-26. TN802B IP Interface faceplate

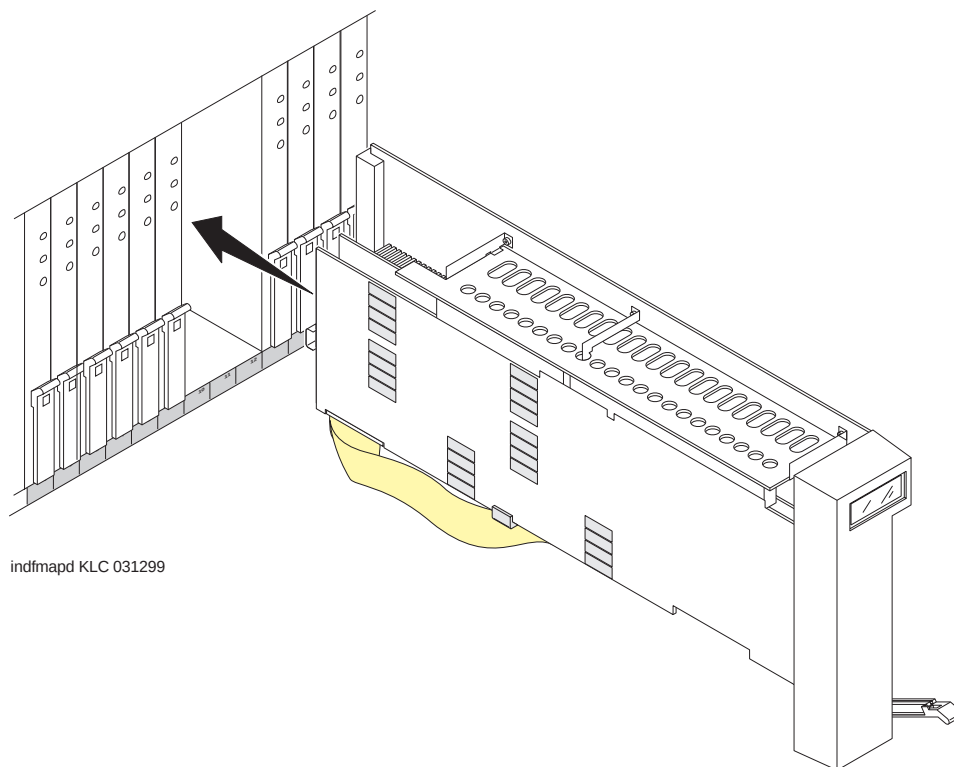
### NOTE:

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1. Insert the TN802B IP Interface into the rightmost of the three slots you reserved for it (see [Figure 6-27](#)).

When you plug in the TN802B IP Interface, the circuit pack starts to boot and the LCD reads **PC Boot** then after about 3 to 4 minutes it changes to **IP TRK \***, the default mode.





indfmapd KLC 031299

Figure 6-27. J58890MA-1 L30 IP Interface Assembly

## Test the Modem

1. Check for dial tone.
2. Contact Lucent Technologies Customer Support and ask a representative to dial into your IP Interface server.

## Administer the IP Interface

Administration is done either locally or remotely. If administered locally, proceed with the following administration steps on the attached keyboard, mouse, and monitor. If administered remotely, call your service representative to start the process.

Administration Steps

- 1. Log in as **craft**.
- 2. Type **change circuit-pack** and press Enter.
- 3. Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

change circuit-packsPage 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A  
Carrier Type: processor

| Slot | Code   | Sf | Mode | Name             | Slot | Code   | Sf | Mode | Name        |
|------|--------|----|------|------------------|------|--------|----|------|-------------|
| 01:  | TN754  |    |      | DIGITAL LINE     | 11:  | DSMAPD |    |      | RESERVED-IP |
| 02:  | TN758  |    |      | POOLED MODEM     | 12:  | DSMAPD |    |      | RESERVED-IP |
| 03:  | TN2144 |    |      | ANALOG LINE      | 13:  | TN802  | B  |      | MAPD BOARD  |
| 04:  | TN746  | B  |      | ANALOG LINE      | 14:  |        |    |      |             |
| 05:  |        |    |      |                  | 15:  |        |    |      |             |
| 06:  | TN771  | C  |      | MAINTENANCE/TEST | 16:  |        |    |      |             |
| 07:  | TN464  | F  |      | DS1 INTERFACE    |      |        |    |      |             |
| 08:  | TN2140 |    |      | E&M TIE TRUNK    |      |        |    |      |             |
| 09:  | TN767  | E  |      | DS1 INTERFACE    |      |        |    |      |             |
| 10:  | TN799  | B  |      | CONTROL-LAN      |      |        |    |      |             |

'#' indicates circuit pack conflict.

- 4. If MEDPRO, go to the entry just above the TN802B that says MEDPRO.
- 5. Type DSMAPD, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:  
  
MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.

Log onto the TN802B Interface Server

If administered remotely through pcANYWHERE:

- 1. Dial in to the server through pcANYWHERE using the dialup number supplied.
- 2. Click on the pcANYWHERE Remote Host Computer button on the toolbar to send CTRL ALT DEL to the host.
- 3. Type **administrator** in the User Name field.
- 4. Type **iptrunk** in the Password field and click **OK**.
- 5. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

If administered locally on a monitor, keyboard, and mouse:

1. Press CTRL, ALT, and DEL simultaneously.
2. Type **administrator** in the User Name field.
3. Type **iptrunk** in the Password field and click **OK**.
4. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

### A-Law versus Mu-Law

For systems using A-Law companding, an additional procedure is necessary.

On the SAT:

1. Busyout the trunk group associated with the IP trunk by typing **busyout board UUCSS** and pressing Enter.

In the Windows interface to TN802B:

1. Click on **Control Panel > Services**.
2. Highlight **IP Trunk Service**, then click on **Stop**.
3. In the lower left-hand corner, right-click Start > Explore.
4. Go to the c: drive and click on its, then bin.
5. Double-click on the its.ini file to open it in Notepad.
6. Under the [MediaLib] section, go to COMPANDING=MLAW. Change **MLAW** to **ALAW**.
7. Click on **File > Save** to save the file.
8. Click on **File > Exit** to exit Notepad.
9. Click on **Control Panel > Services**.
10. Highlight **IP Trunk Service**, then click on **Start**.



#### NOTE:

Do not select Startup.

After service has started, go to the SAT:

1. Release the trunk group associated with the IP trunk by typing **release board UUCSS** and pressing Enter.

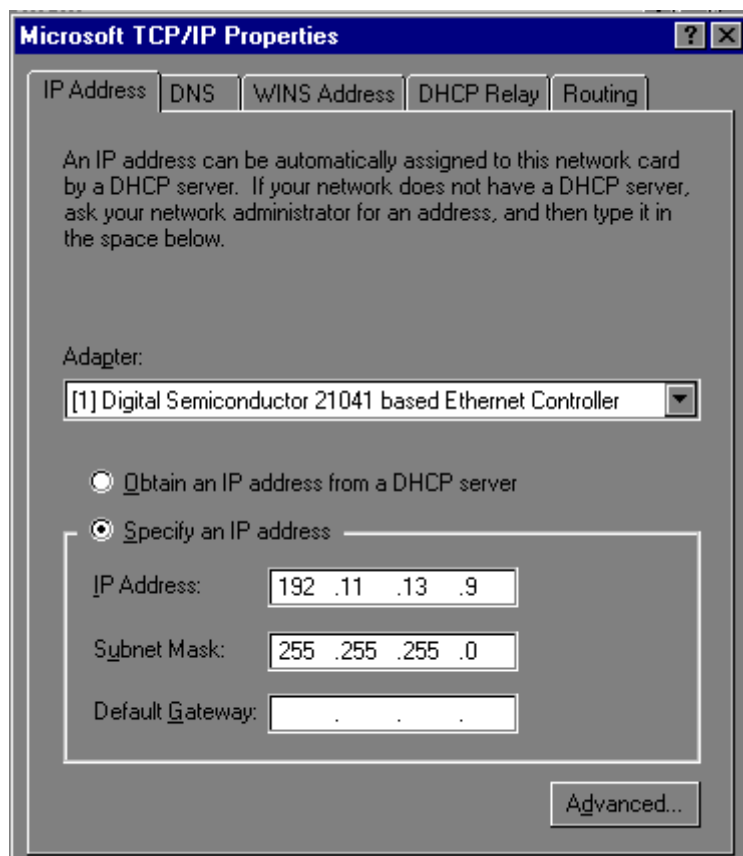
## Assign Server and Domain Names

The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within your network.

1. Click on **My Computer > Control Panel > Network**.
2. Select the **Identification** tab, then click **Change**.
3. Type the new server name in the Computer Name field.
4. Type the new domain name in the Domain field and click **OK > OK > Close**.
5. When prompted to reboot the computer, select one of the following options:
  - **No** if you have not assigned IP addresses then go to ["Assign an IP Address"](#)
  - **Yes** if you have assigned IP addresses.

## Assign an IP Address

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window.



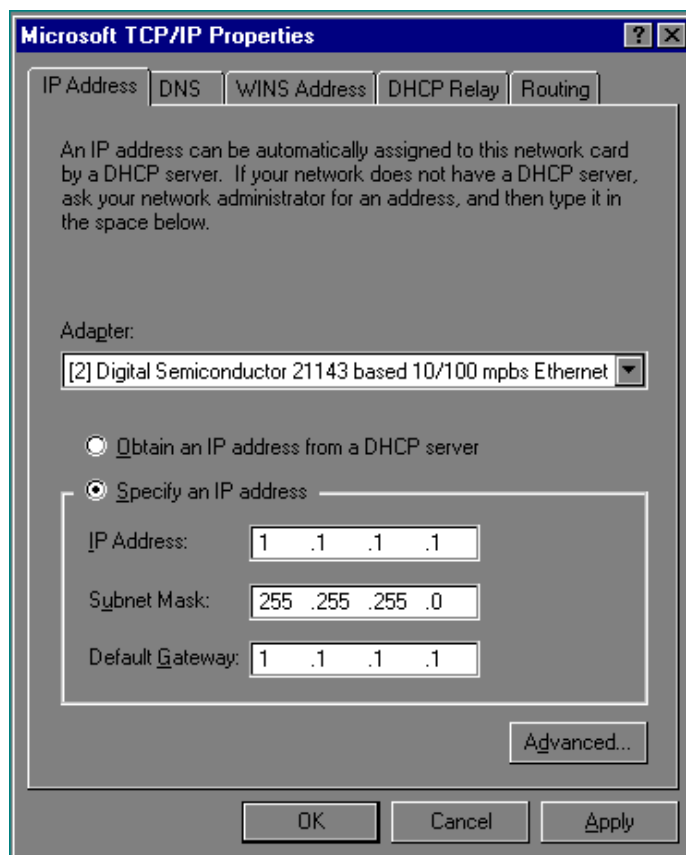
5. Verify that the Adapter drop down menu lists 2 DEC Ethernet adapters.



**CAUTION:**

Do not change any settings on the adapter labeled [1] for any reason.

6. Select the DEC Ethernet adapter labeled [2].

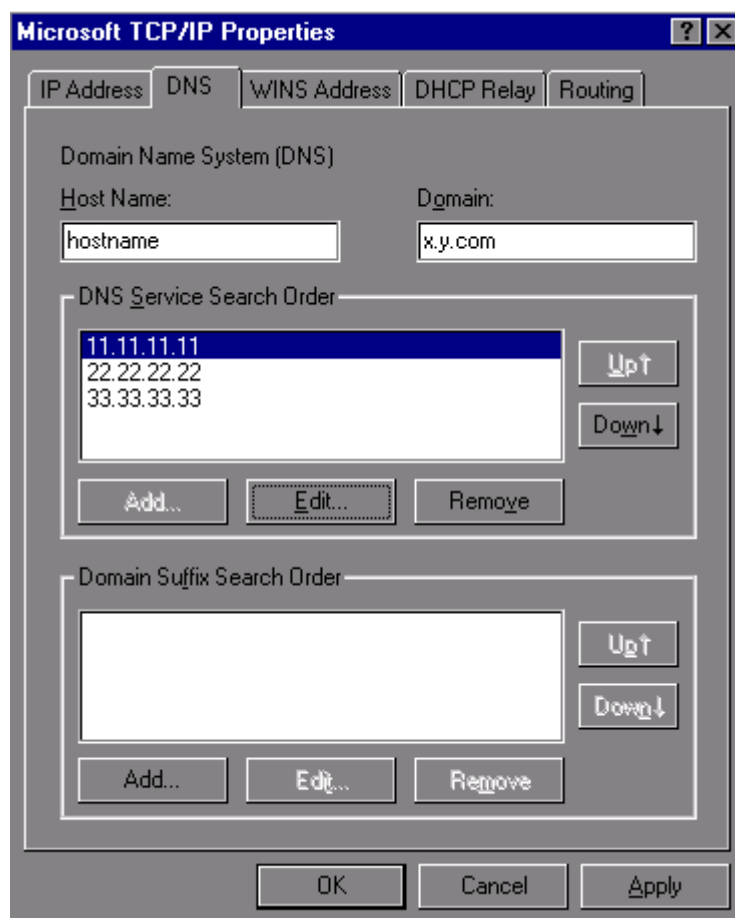


7. Type a valid IP address for the IP Interface server in the IP Address : field.
8. Type the appropriate subnet mask in the Subnet Mask : field.

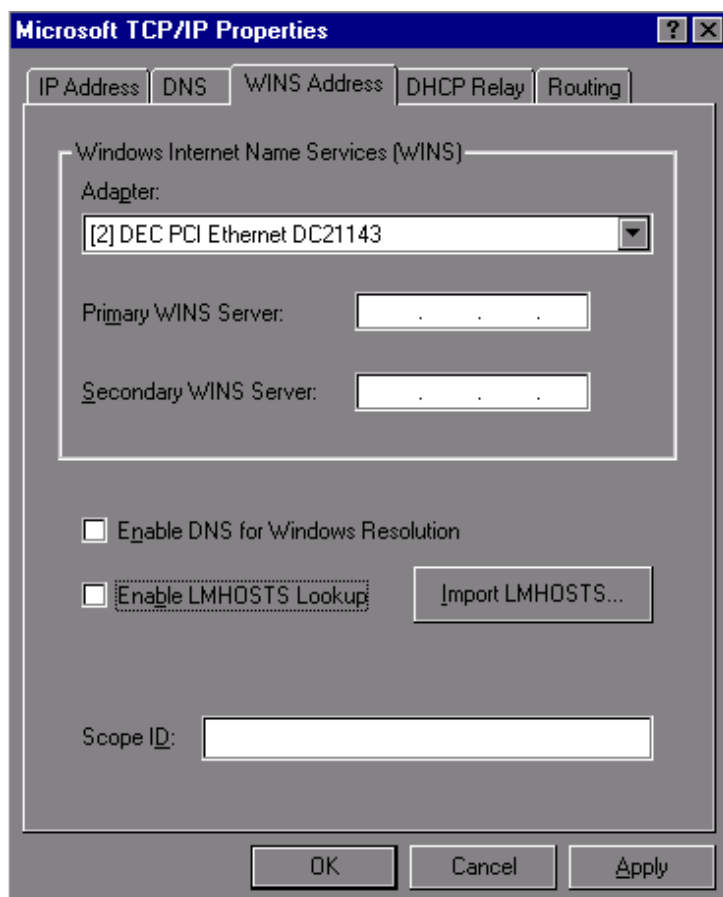
**NOTE:**

Not all networks require steps 9 through 18. Check with the local network administrator to determine which are required.

9. If you use gateways, type the IP address of the default gateway for the IP Interface server in the Default Gateway : field.
10. Click on the DNS tab and verify that the domain DNS server is correct.



11. Type domain name in the Domain field.
12. If using DNS, click Add under the DNS Service Search Order field and type its IP address.
13. Click on the WINS Address tab.



14. Make sure the [2] DEC shows in the Adapter field.
15. If WINS server is available, type its IP address in the Primary WINS Server field.
16. If DNS is available, select Enable DNS for Windows Resolution.
17. If the network uses an imported LMHOSTS file, select Enable LMHOSTS Lookup and Import LMHOSTS and click **OK**.
18. If the following dialog box opens, click **Yes**:

At least one of the adapter cards has an empty primary WINS address. Do you want to continue?
19. Click the **Bindings** tab to effect the changes.

NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (a red circle with a line through it), review the previous network-configuration steps for omissions or errors.
20. Click **Close**.



If administered remotely through pcANYWHERE:

21. Click on the pcANYWHERE Restart Host Computer button on the toolbar to restart the computer.

If administered locally on a monitor, keyboard, and mouse:

21. Click **Yes** in the dialog box to restart the computer.



**WARNING:**

*When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.*

## Check Network Services

When the server restarts, make sure that the required network services have started correctly. If you see an error dialog box, then the network services did not start correctly. Also, check the NT Event Log.

1. Click on **My Computer > Control Panel > Network > Services**. Make sure that the following services are listed:
  - Computer Browser
  - Microsoft Internet Information Server 2.0
  - NetBIOS Interface
  - RPC Configuration
  - Server
  - Workstation
2. Click the **Protocols** tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
3. Click **OK**.

## Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server and ping a known computer connected to your network.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping nnn.nnn.nnn.nnn** (which is your IP address).
  - If everything is configured correctly, the system responds with the following message:  
  
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
  - If no response, verify the IP-address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of your gateway).
  - If everything is configured correctly, the system responds with the following message:  

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
  - If no response, verify the IP address information and check the connectivity, including the cabling.
  - If all else fails, click on **Start > Settings > Control Panel > Network**. Select the **Adapters** tab and highlight the [2] DEC adapter.
  - Click **Properties > Change**.
  - From the Duplex Mode dropdown menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test
4. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of another external computer beyond the gateway).
  - If you have connectivity, the system responds with the following message:  

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
  - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
5. Type **exit** and press Enter.

## Test the IP Interface Onboard LAN Connections

To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B IP Interface.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping 192.11.13.9** (which is the IP address of the internal IP Interface server).
  - If everything is configured correctly, the system responds with the following message:  

```
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
```
  - If no response, verify the IP address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
  - If you have connectivity, the system responds with the following message:  
  
Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
  - If no response, verify the IP settings for Adapter [1].
4. Type **exit** and press Enter.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (preinstalled on the TN802B hard disk) and DEFINITY ECS switch administration to administer connections to other IP Trunk and ITS-E equipment.

## Upgrading a TN802 V3 (or later) to a TN802B (MedPro mode)

---

If you have a TN802 V3 (or later) IP Interface, you must either replace it with a TN802B circuit pack or upgrade the existing TN802 circuit pack to operate in MedPro mode. Also, to operate in the MedPro mode, the DEFINITY ECS switch must be Release 8 or later.

### NOTE:

The TN802 IP Interface must be V3 or later to upgrade to TN802B.

To upgrade the TN802 to a TN802B, you need the following hardware:

- Monitor, keyboard, and mouse to access the IP Interface's Windows NT environment or pcANYWHERE software.
- 10-Mbyte SanDisk PCMCIA flashcard loaded with the MedPro NT Application Install Wizard
- TN802B label

The upgrade adds or modifies the following directories or files on your computer's hard drive:

- c:\dolan\\*
- c:\mapd\dnld\medpro.img
- c:\mapd\dnld\tmp.img

## Connect the Monitor, Keyboard, and Mouse

1. Attach a VGA monitor to the VGA connector of the TN802 IP Interface external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the external cable assembly.
3. Attach the mouse to the MOUSE connector of the external cable assembly.
4. Plug the monitor into an AC power receptacle and turn it on.
5. If upgrading locally, reboot Windows NT by pressing the recessed reset button on the faceplate (see [Figure 6-26](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT \***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.
6. After the TN802B is shut down, reseal the circuit pack to restart the system.
7. Log in using **ctrl alt del**

## Upgrading IP trunks (R7) to H.323 trunks

If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to ["Upgrade to TN802B \(R8\)" on page 6-76](#)

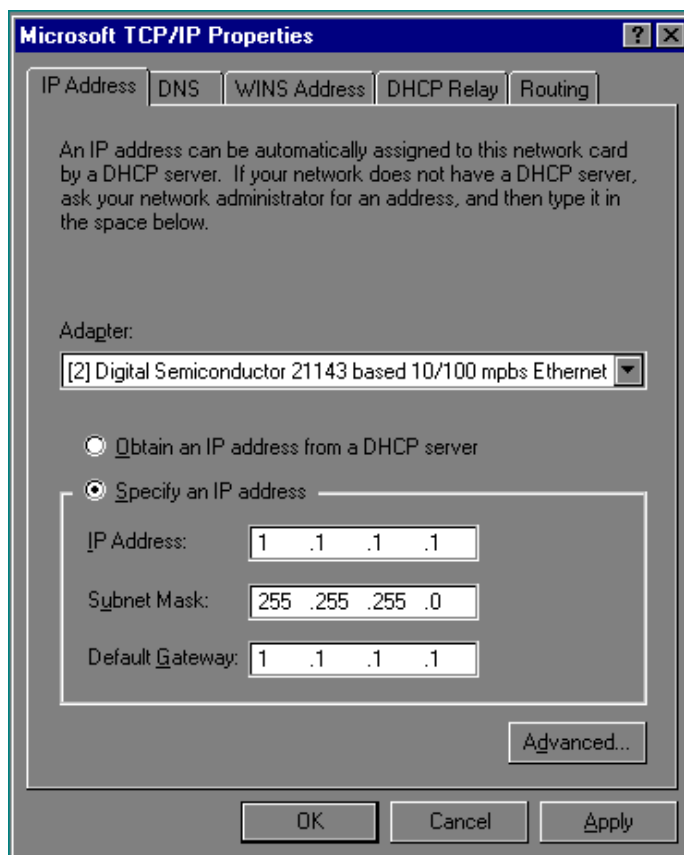
To upgrade an existing IP trunk (R7) to an H.323 trunk (R8) requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window. Write down the IP address, subnet address, and gateway address shown for adaptor [2] (see example below).



### NOTE:

Do not use the addresses for adapter [1].



5. When done, click **OK, OK**.

## Upgrade to TN802B (R8)

### NOTE:

The upgrade takes about 20 minutes.

1. Insert the flash disk into the right most slot on the TN802 IP trunk. On the monitor, a dialog box assigns a drive letter with the removable media designation; the default is D:.
2. Right click on **Start > Explore** to open the Windows NT Exploring pane and select the drive letter indicated in step 1.
3. Double-click on **Medpro** and select the Setup icon.
4. Follow the Install Shield procedure to transfer all the necessary files to the TN802 IP Interface.

### NOTE:

In the Finish dialog box, select **I will restart later**. Do not select **Restart computer**.

This would be a good time to read the Readme.txt file.

5. Click on **Start > Settings > Control Panel > Services**.
6. Select **IP Trunk** and click on **Startup**.

### NOTE:

Do not click on **Start**.

7. Under Startup Type, select **Disabled** and click **OK** to disable IP Trunk mode.

### NOTE:

If IP trunk and MedPro services are both set to automatic, the TN802B defaults to IP Trunk and MedPro features cannot be used.

8. Select **MedPro** and click on **Startup**.

### NOTE:

Do not click on **Start**.

9. Under Startup Type, select **Automatic** and click **OK** to enable MedPro mode.

10. Click **Start > Shut Down** and select Restart the computer?

or on the TN802:

Press the recessed reset button on the faceplate (see [Figure 6-26](#)) until the LCD shows a flashing **MSHUT \***. When the flashing stops and the asterisk disappears (about 2 min), reseal the circuit pack to restart the system.

or on the SAT:

- a. Type **busyout board UUCSS** and press Enter .
- b. Type **reset board UUCSS** and press Enter.
- c. Type **release board UUCSS** and press Enter.

Once the system is completely initialized, the LCD reads **MEDPRO \***.



**WARNING:**

*When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.*

11. Affix the new TN802B label to the circuit pack.
12. Disconnect the monitor, keyboard, and mouse.

Circuit Pack Verification

- 1. Type **change circuit-pack** and press Enter.
- 2. Check the Code column to see if it says DSMAPD or MedPro.

change circuit-packsPage 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A  
Carrier Type: processor

| Slot | Code   | Sf | Mode | Name             | Slot | Code   | Sf | Mode | Name        |
|------|--------|----|------|------------------|------|--------|----|------|-------------|
| 01:  | TN754  |    |      | DIGITAL LINE     | 11:  | MEDPRO |    |      | RESERVED-IP |
| 02:  | TN758  |    |      | POOLED MODEM     | 12:  | MEDPRO |    |      | RESERVED-IP |
| 03:  | TN2144 |    |      | ANALOG LINE      | 13:  | TN802  | B  |      | MAPD BOARD  |
| 04:  | TN746  | B  |      | ANALOG LINE      | 14:  |        |    |      |             |
| 05:  |        |    |      |                  | 15:  |        |    |      |             |
| 06:  | TN771  | C  |      | MAINTENANCE/TEST | 16:  |        |    |      |             |
| 07:  | TN464  | F  |      | DS1 INTERFACE    |      |        |    |      |             |
| 08:  | TN2140 |    |      | E&M TIE TRUNK    |      |        |    |      |             |
| 09:  | TN767  | E  |      | DS1 INTERFACE    |      |        |    |      |             |
| 10:  | TN799  | B  |      | CONTROL-LAN      |      |        |    |      |             |

'#' indicates circuit pack conflict.

- 3. To correct it, go to the entry just above the TN802B that says DSMAPD.
- 4. Type MEDPRO, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:  
  
MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
- 5. To complete the administration, refer to the *DEFINITY ECS Release 8 Network Connectivity* book.



# Add TTC Japanese 2Mbit Trunks

The TN2242 Japan 2Mbit trunk interconnects DEFINITY with other vendor equipment in Japan as well as to interconnect other DEFINITY switches through the Time Division Multiplexor device.

## Installation

1. Determine the port assignment of the trunk from the Trunk Group screen.

|          |                        |         |             |             |
|----------|------------------------|---------|-------------|-------------|
| EXAMPLE: | 1                      | A       | 07          | 01          |
|          | Cabinet (Port Network) | Carrier | Slot Number | Port Number |

2. Install a TN2242 circuit pack in assigned carrier slot.
3. Connect the H600-513 cable from the DEFINITY cabinet to the Time Division Multiplexor device.
4. To administer forms, see the following sections in the *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*.
  - For ISDN applications, see the "ISDN Service" section.
  - For non-ISDN applications, see the "Managing Trunks" section.

## Add a Control Carrier (Add Duplication)

---

To upgrade a standard-reliability system to a high- or critical-reliability DEFINITY ECS Release 5 system, a second control carrier is added to carrier position "B" of the existing multicarrier cabinet PPN.

### Service Interruption

---

1. Since the addition of the second control carrier requires a service interruption, notify the customer in advance as to when the addition will be carried out.

### Verify System Status

---

1. Before proceeding, the system should be examined for alarms, and every problem should be corrected. The system must be alarm-free.

### Disable Alarm Origination

---

1. Type **change system-parameters maintenance** and press **Enter**.
2. Make a note of the Alarm Origination Activated field administration. If the feature is enabled, type **n** in this field and press **Enter** to disable Alarm Origination. This will be activated again later.



**WARNING:**

*If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets is critical for measuring the quality of Lucent services and products.*



**NOTE:**

For earlier releases of the system software, you may also need to disable Cleared Alarm Notification and Restart Notification fields before you can submit the form successfully.

## Save Translations

---

1. Log in at the management terminal.
2. Type **save translation [spe-a] disk** and press Enter. This command instructs the system write all translation information from memory to disk.
3. If the PPN or an EPN (where PPN Port Carrier B will be relocated) contains a TN750 Announcement circuit pack, type **display announcements** and press Enter.
4. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to see when the announcements were last saved. Save the current announcements by typing **save announcements disk** and pressing Enter.
5. Type **backup disk [spe-a]** and press Enter. This instructs the system to backup the current information on disk to the system tape.
6. Update backup tape, if required.

## Label Cables

---

1. To make reconnecting the cables simpler and more reliable, label both ends of the connector cables associated with the port carrier "B" to be removed.

## Shut Down DEFINITY LAN Gateway System

---

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



### CAUTION:

*Before using this procedure to shut down the DEFINITY LAN Gateway, make sure that you save the system parameters if you plan to reuse the current system.*



### WARNING:

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet where it resides can damage the LAN Gateway disk.*

1. Log onto the DEFINITY LAN Gateway. See *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway* for the procedure to log in.
2. When the main menu appears, select *Maintenance*.

3. Select *Reset System* from the *Maintenance* menu.
4. Select *Shutdown* from the *Reset System* menu.
5. Unseat the LAN Gateway assembly from its backplane connectors.

## Shut Down DEFINITY AUDIX System

1. If a DEFINITY AUDIX resides in the PPN or an EPN (where PPN Port Carrier B will be relocated), shut down the AUDIX and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 6-141](#).



### **WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

2. Unseat the AUDIX assembly from its backplane connectors.

## Power Down Port Networks

1. At the PPN, set the main circuit breaker to OFF.
2. At an EPN (where PPN port carrier B will be relocated), set the main circuit breaker to OFF.

## Remove Doors and Panels and Disconnect Cables

1. Remove the front door from the PPN cabinet.
2. With the cable retainer in front of you and the part number visible, locate the slot that is almost vertical. (This slot is adjacent to the part number.) Insert a flat blade screwdriver with a wide blade (1/4-inch recommended) into the slot, and twist. The retainer snap opens easily so that the cable can be removed.
3. At the cabinet, disconnect previously labeled cables associated with the carrier to be removed.
4. Remove the back doors from the cabinet.

## Remove Circuit Packs from Port Carrier B

---

1. To ensure that circuit packs and power units in the "B" carrier are properly replaced, label each component with its slot number.
2. Disconnect the power cords from the power units in the "B" carrier.
3. Remove all circuit packs and power units from carrier "B." Store the circuit packs in the static-proof packaging.
4. Remove the circuit pack blanks from slots that do not contain circuit packs.
5. Remove the front trim plate from the "B" carrier by pulling it straight off.

## Remove Port Carrier B

---

1. Behind the PPN, disconnect and remove the ICCB cable from between carrier "B" and carrier "A." It will not be reused.



### NOTE:

Note the position of the TDM/LAN cables before disconnecting them.

2. Disconnect 1 end of the TDM/LAN cable (between the "B" and "C" carriers) from the "B" carrier (See [Figure 6-28](#)).
3. Disconnect 1 end of the TDM/LAN cable (between the "B" and "A" carriers) from the "B" carrier (See [Figure 6-28](#)).
4. Disconnect 1 end of the 8 ground straps (between the "B" and "C" carriers) from the "B" carrier (See [Figure 6-29](#)). These straps are reconnected to the new "B" carrier.
5. Disconnect 1 end of the 8 ground straps (between the "B" and "A" carriers) from the "B" carrier (See [Figure 6-29](#)). These straps are reconnected to the new "B" carrier.
6. Disconnect the "P1" (small 9-pin) connector from the "B" carrier. Move the cable into a position where it will not interfere with removing the carrier.
7. Behind the "B" carrier, remove the 2 screws holding the "B" carrier's rear connector panel to the cabinet frame. These are frame ground screws.
8. In front of "B" carrier, remove the 4 screws (top 2 first) holding the "B" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.

9. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.

**CAUTION:**  
*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

10. Remove the carrier by sliding it out the front of the cabinet.

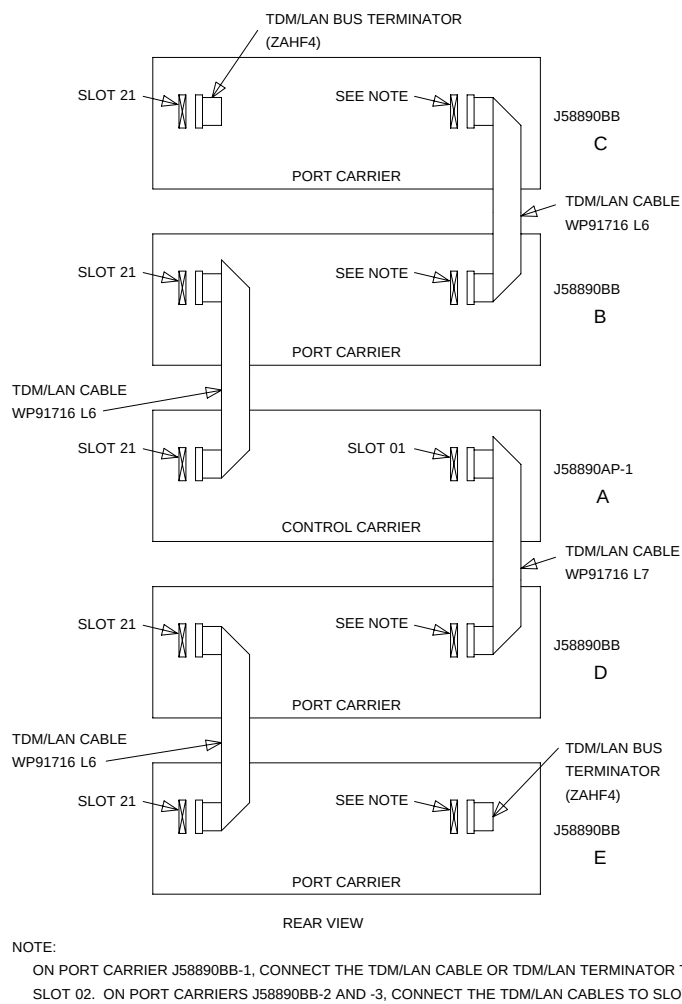


Figure 6-28. TDM/LAN Connections for Standard-Reliability PPN

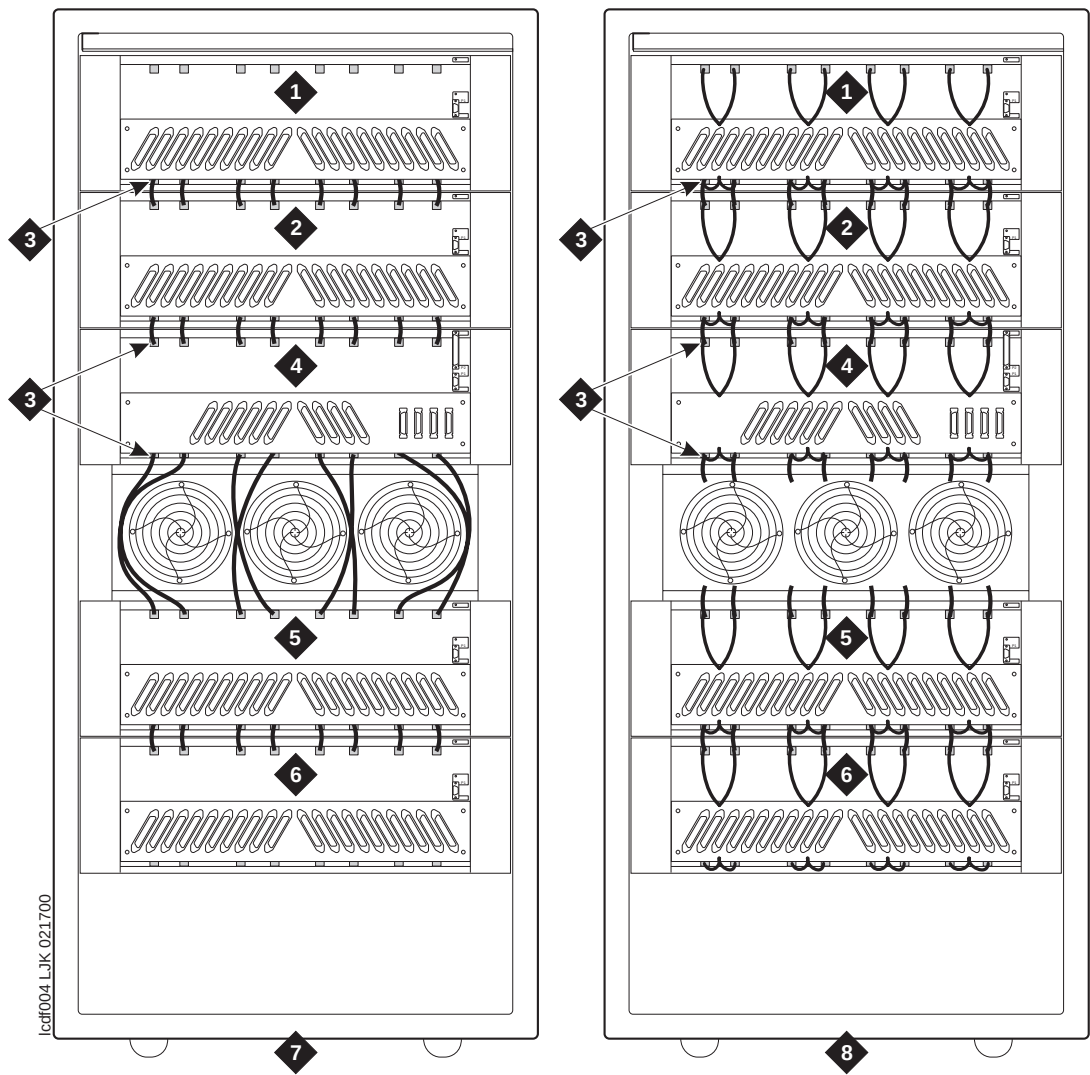


Figure Notes

- |                        |                                                         |
|------------------------|---------------------------------------------------------|
| 1. Port Carrier "C"    | 5. Port Carrier "D"                                     |
| 2. Port Carrier "B"    | 6. Port Carrier "E"                                     |
| 3. Ground Jumpers      | 7. Cabinet with standard fan unit and carriers          |
| 4. Control Carrier "A" | 8. Cabinet with enhanced fan unit and enhanced carriers |

Figure 6-29. Locations of Ground Jumpers on standard and enhanced fan-unit cabinets

## Prepare New Control Carrier B

---

1. Visually inspect the new carrier for any damage. Verify that the backplane pins are not bent.



### NOTE:

The enhanced R8r PPN AC carrier may look different than the other carriers because it comes with 16 new grounding jumpers and 8 mounting screws.

2. Place the control carrier on the floor so that the rear of the carrier faces up.
3. Verify that the 2 AHF111 processor-bus (PX) terminators are installed on the "B" carrier to the pin-field blocks marked "PX" (top portion of slots "4" and "10"). The PX terminators are attached with the components on the left side as viewed from the rear.

## Install New Control Carrier B

---

1. Install the J58890AP control carrier in position "B" by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips will support the carrier while the screws are being replaced. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.



### CAUTION:

*Carefully realign the threads on the self-tapping screws by turning them clockwise 1 turn before tightening them to avoid stripping the threads out of the framework.*

3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier. These are frame ground screws.
4. Connect the "P1" (small) connector to the "B" carrier. To get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from the "C" carrier to the new "B" carrier (See [Figure 6-29](#)). These straps were left connected to the "C" carrier when the old "B" carrier was removed.



6. Connect the 8 ground straps from the "A" carrier to the new "B" carrier (See [Figure 6-29](#)). These straps were left connected to the "A" carrier when the old "B" carrier was removed.
7. For a standard AC-powered control carrier, install the 4 carrier ground straps. The straps connect ground points G1 and G8 from the top of the B-carrier backplane to the B-carrier connector panel bracket and ground points G9 and G16 from the bottom of the B-carrier backplane to the B-carrier connector panel bracket.

For an enhanced carrier, install the 16 carrier-ground straps. The straps connect ground points G1 through G8 from the top of the B-carrier backplane to the B-carrier connector panel and ground points G9 through G16 from the bottom of the B-carrier backplane to the B-carrier connector panel . Use the 8 screws to connect the ground straps to the connector panel (see [Figure 6-30](#)).

 **NOTE:**

An enhanced carrier is used only in an R8r PPN cabinet that uses either AC power (U.S.) or Global power.

 **NOTE:**

DC-powered cabinets DO NOT use any of the above carrier-ground straps.

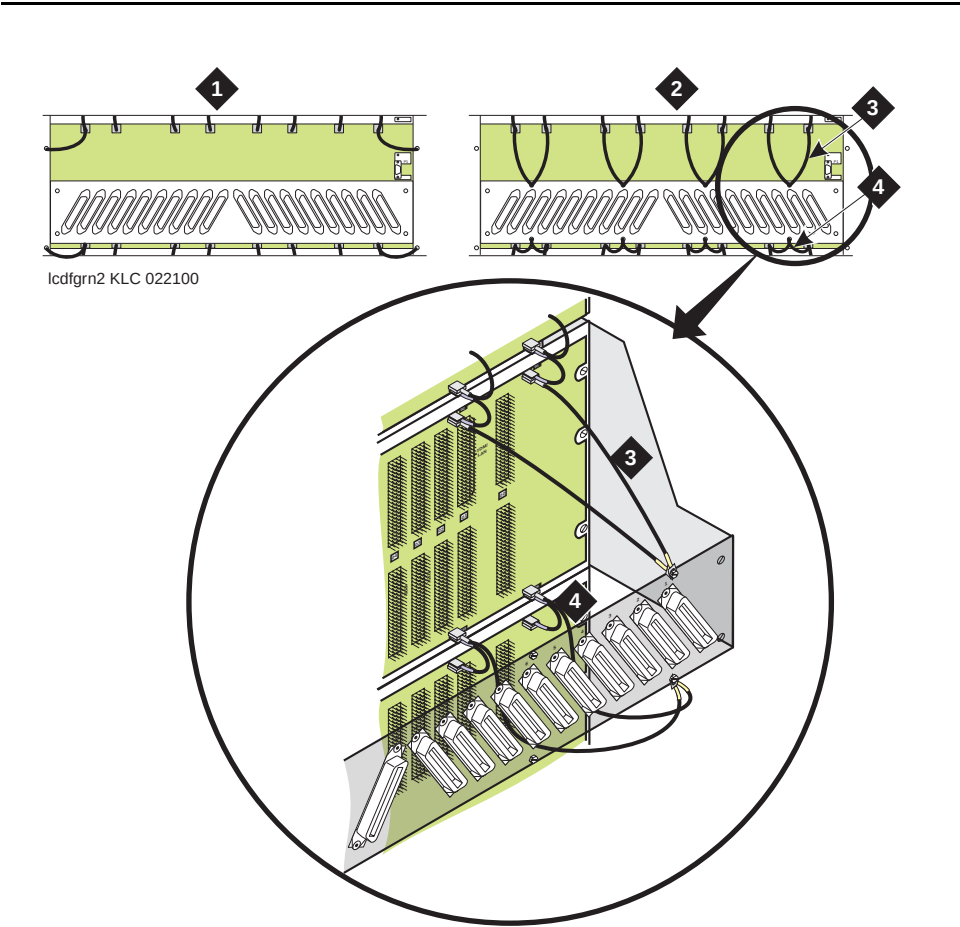


Figure Notes

- |                                                                                |                         |
|--------------------------------------------------------------------------------|-------------------------|
| 1. Standard AC-powered Carrier                                                 | 3. Top Ground Straps    |
| 2. Enhanced Carrier (in R8r PPNs using either AC power [U.S.] or Global power) | 4. Bottom Ground Straps |

Figure 6-30. Locations of Top and Bottom Ground Straps on Standard and Enhanced Carriers

8. Connect the loose end of the TDM/LAN cable (between the “C” and “B” carriers) to the pin-field block marked “TDM/LAN” on the right side of the “B” carrier (See [Figure 6-31](#) and [Table 6-8](#)). The other end remained connected to the “C” carrier when the old carrier was removed.

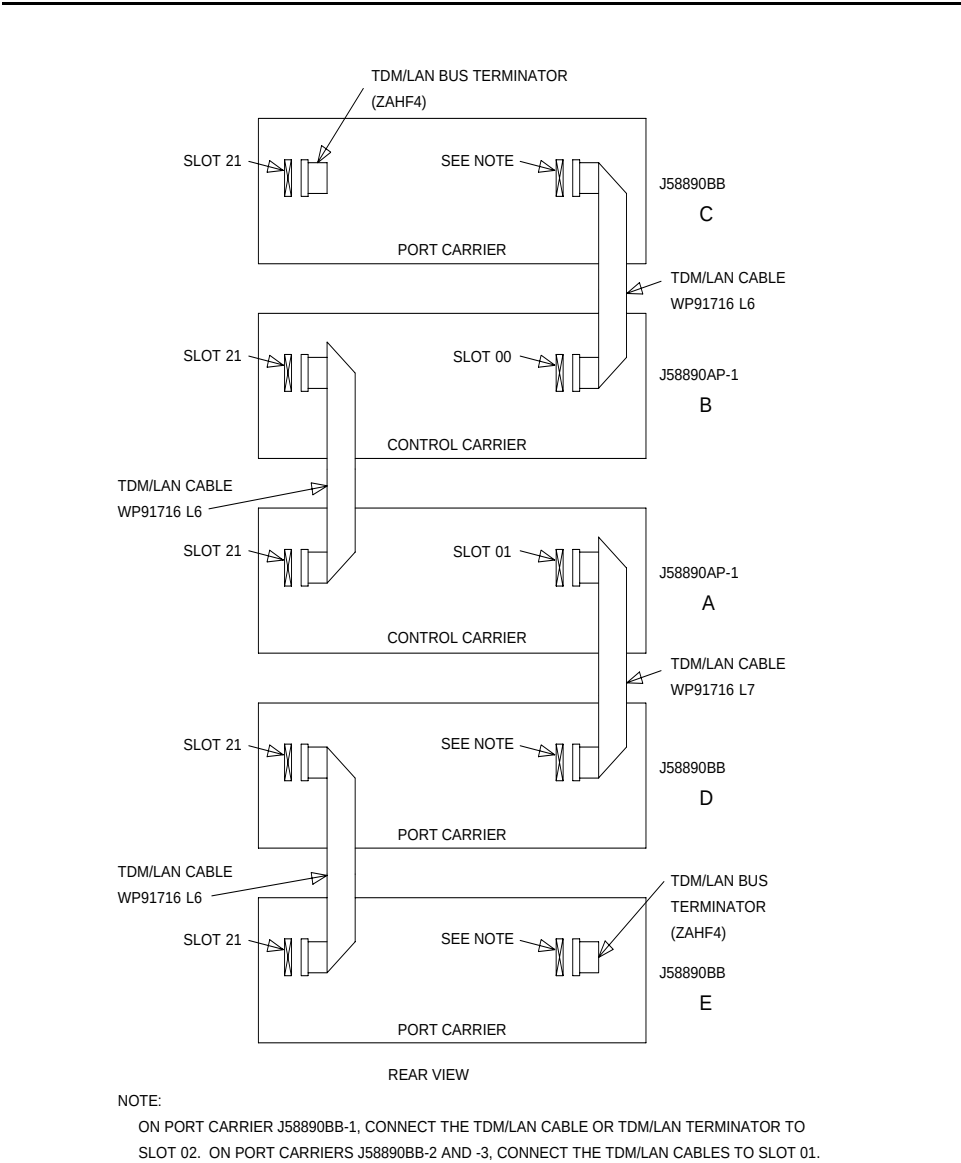


Figure 6-31. TDM/LAN Connections for High-Reliability PPN

9. Connect the loose end of the TDM/LAN cable (between the “A” and “B” carriers) to the pin-field block marked “TDM/LAN” on the left side of the “B” carrier (See [Figure 6-31](#) and [Table 6-8](#)). The other end remained connected to the “A” carrier when the old carrier was removed.

- 10. Connect the loose end of the TDM/LAN cable (between the “C” and “B” carriers) to the pin-field block marked “TDM/LAN” on the right side of the “B” carrier (See [Figure 6-31](#) and [Table 6-8](#)). The other end remained connected to the “C” carrier when the old carrier was removed.
- 11. Connect the loose end of the TDM/LAN cable (between the “A” and “B” carriers) to the pin-field block marked “TDM/LAN” on the left side of the “B” carrier (See [Figure 6-31](#) and [Table 6-8](#)). The other end remained connected to the “A” carrier when the old carrier was removed.

Table 6-8. TDM/LAN Connections

| “J” Number  | Carrier Type | LHS Slot | RHS Slot |
|-------------|--------------|----------|----------|
| J58890BB L1 | Port         | 21       | 02       |
| J58890BB L2 | Port         | 21       | 01       |
| J58890BB L3 | Port         | 21       | 01       |
| J58890AP    | Control      | 21       | 02       |

- 12. Install the alarm duplication cable (H600-198 G1) between carriers “B” and “A.” Connect the cable to the “ICCA” pin-field block (to the right of the pin-field block for slot “00”) of both carriers. See [Figure 6-32](#). Connect the “UAK” (upper) connector to carrier “B,” and connect the “LAK” (lower) connector to carrier “A.”

 **CAUTION:**  
*While installing the ICC cable connectors, be careful not to bend any backplane pins. Double check each connection to verify that the pins are straight.*

 **NOTE:**  
With a connector in each hand, flex the wires within the cable’s sheath to form a usable C-shaped cable.

- 13. Install the ICCC cable (H600-182 G1) between carriers “B” and “A.” Connect the cable to the “ICCC” pin-field block (behind slot “01”) of both carriers. See [Figure 6-32](#).
- 14. Install the duplication cable (WP91954 L1) between carriers “B” and “A.” Connect the cable to the “ICCD” pin-field block (behind slot “02”) of both carriers. See [Figure 6-32](#).

 **NOTE:**  
The duplication cable’s connectors are keyed to ensure proper positioning on the pin-field block.

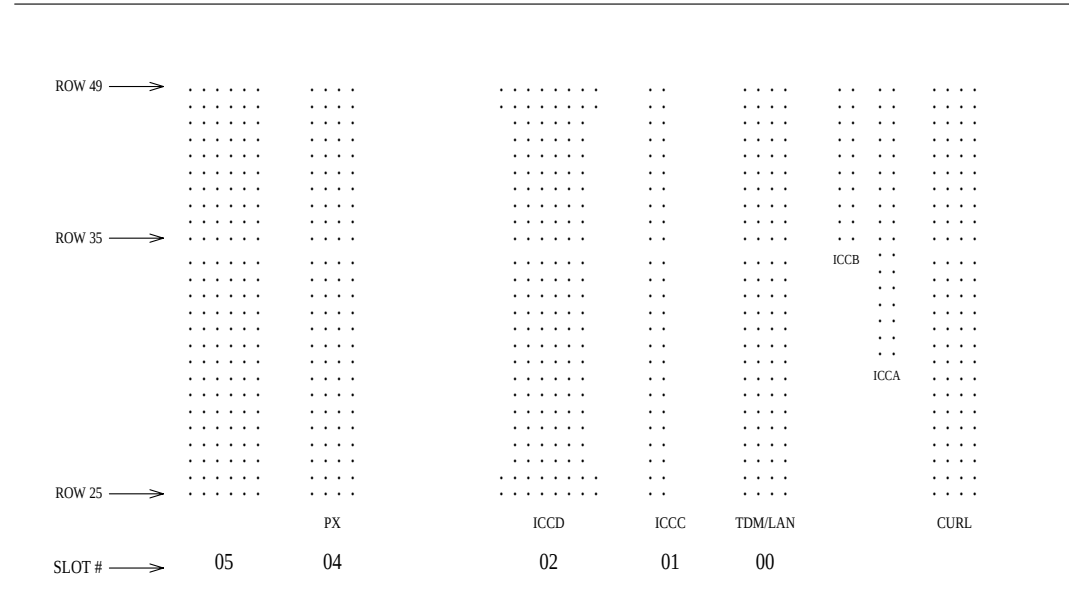


Figure 6-32. ICC Connections for R8r Control Carrier

15. Install the front trim plate on the “B” carrier.
16. Install the new power units into the “B” carrier. The 631DA1 or 644A is installed on the left side, while the 631DB1 or 645B and the 649A are installed on the right side.
17. Connect the white power cords to the power units. The power cords are equipped with plugs that are run through the slots in the front of each carrier.

Install Circuit Packs

1. Install a new UN330B Duplication Interface circuit pack into carrier “A.” Use the decal as a guide.
2. Install the new R8r control circuit packs into carrier “B.” Use the new decal (provided with the equipment) as a guide.
3. Install the new TN570B Expansion Interface circuit packs into each port network, and (if not duplicating a switch node carrier) interconnect the port networks with the fiber optic cables.
4. For a critical reliability R8r system, install a new TN771D Maintenance/Test circuit pack into an available port slot of each EPN (if not already present).
5. Install circuit pack blanks in slots not equipped with circuit packs.

## Relocate Port Carrier B

---

Refer to [Add a Switch Node Carrier \(High or Critical Reliability\)](#) to relocate the removed port carrier.

## Connect Management Terminal or PC

---

1. Behind control carrier "A," disconnect the management terminal or PC cable from the "TERM" connector, and reconnect the cable to the "DOT" (duplication option terminal) connector.

## Reseat DEFINITY LAN Gateway System

---

1. Reseat the LAN Gateway assembly into its backplane connectors.

## Reseat DEFINITY AUDIX System

---

1. If a DEFINITY AUDIX System resides in the PPN or an EPN (where PPN port carrier "B" was relocated), reseat the AUDIX assembly to its backplane connectors.

## Power Up System

---

1. At an EPN (where PPN port carrier "B" was relocated), set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs a level 4 rebooting process, loading the system program and default or current translations from the disk. Rebooting takes 5 to 11 minutes.



### NOTE:

Ignore alarms for now.

4. Type the **reset system 4** and press Enter to copy the translations from removable media to memory.
5. Clear any alarms.
6. Type **save translation [both]** and press Enter if translation changes were made in Step 8.
7. Type **restore disk [both] full** and press Enter to copy the translations from removable media to disk.
8. Verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal operating mode.

## Restart DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Restart System* from the *Reset System* menu.

## Enable SPE Duplication

1. If not also duplicating switch node carriers, refer to Duplication-Related System Parameters in *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*, to enable Switch Processing Element (SPE) duplication.

## Enable PNC Duplication

1. For a critical-reliability R8r system, type **change system-parameters customer-options** and press Enter. Use this screen to enable the Port Network Connectivity (PNC) duplication option.

## Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.
2. If the Alarm Origination Activated field administration is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press Enter.  
The Alarm Origination Activated field was changed to Alarm Origination to OSS Numbers to support more than 1 OSS.
4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).  
Be sure to enter **y** in both Cleared Alarm Notification and Restart Notification fields. Press Enter.
5. Type **save translation spe-a disk** and press Enter.



### NOTE:

The INADS Database Administrator enables Alarm Origination as part of the registration process.



### WARNING:

If you do not enable Alarm Origination when the customer has purchased a services contract, the switch will not report any alarm to the TSC automatically, causing the TSC to be unable to fulfill the services contract.

## Add a Switch Node Carrier (Standard Reliability)

---

To upgrade to a standard reliability R8r with Center Stage Switch (CSS), a switch node carrier is added either to an empty "E" carrier position of an existing multicarrier port network or to the "D" carrier position.



### NOTE:

To avoid moving a port carrier, the preferred practice is to place the new switch node carrier in an empty carrier position.

## Service Interruption

---

1. Since the addition of the switch node carrier requires a service interruption, notify the customer in advance as to when the addition will take place.

## Verify System Status

---

1. Before proceeding, examine the system for alarms and correct all problems. The system must be alarm-free.

## Disable Alarm Origination

---

1. Type **change system-parameters maintenance** and press **Enter**.
2. Make a note of the Alarm Origination Activated field administration. If the feature is enabled, type **n** in this field to disable Alarm Origination.



### WARNING:

*If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets.*



### NOTE:

For some releases of the software, disable Cleared Alarm Notification and Restart Notification fields before submitting the form.



## Save Translations

---

1. Log in at the management terminal.
2. Type **save translation disk** and press Enter. This instructs the system to take all translation information in memory and write it to the disk.
3. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter.
4. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to find out when the announcements were last saved. Save the current announcements by typing **save announcements disk** and pressing Enter.
5. Type **backup disk** and press Enter. This instructs the system to backup the current information on disk to the system tape(s).
6. Update backup tape(s), if required.

## Shut Down DEFINITY LAN Gateway System

---

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



### CAUTION:

*Make sure that you save the system parameters if you plan to reuse the current system.*



### WARNING:

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet where it resides can damage the LAN Gateway disk.*

1. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Shutdown* from the *Reset System* menu.
5. Unseat the LAN Gateway assembly from its backplane connectors.

## Shut Down DEFINITY AUDIX System

---

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 6-141](#).



### **WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

2. Unseat the AUDIX assembly from its backplane connectors.

## Power Down Cabinet

---

1. At the cabinet that is receiving the new switch node carrier, set the main circuit breaker to OFF.

## Remove Doors

---

1. Remove the front and rear doors from the cabinet where the switch node carrier will be installed.

## Disconnect Ground Cables

---

Skip these steps if a switch node carrier is being added to an empty carrier position.

1. Label the ground cables associated with the port carrier to be removed.
2. Disconnect the ground cables from the top of the port carrier to be removed. Allow the cables to hang down for now.

## Remove Circuit Packs from Port Carrier D

---

Skip these steps if a switch node carrier is being added to an empty carrier position.

1. To ensure that circuit packs and power units in the "D" carrier are properly replaced, label each component with its slot number.
2. Disconnect the power cords from the power units in the "D" carrier.
3. Remove all circuit packs and power units from carrier "D." Store the circuit packs in static-proof packaging.
4. Remove the circuit pack blanks from slots that do not contain circuit packs.
5. Remove the front trim plate from the "D" carrier by pulling it straight off.

## Remove Port Carrier D

---

Skip these steps if a switch node carrier is being added to an empty carrier position.



### NOTE:

Note the position of the TDM/LAN cables before disconnecting.

1. If a switch node carrier is being installed in the "D" position of an EPN, remove the TDM/LAN cable from between the "D" and "A" carriers.  
  
For other EPNs or the PPN, disconnect 1 end of the TDM/LAN cable (between the "D" and "A" carriers) from the "D" carrier.
2. Remove the ZAHF4 TDM/LAN bus terminator from slot "21" of the "D" carrier.
3. Disconnect 1 end of the 8 ground straps (between the "D" and "E" carriers) from the "D" carrier (See [Figure 6-33](#)). These straps will be reconnected to the new "D" carrier.
4. Disconnect the 8 ground straps from the "D" carrier (between the "D" and "A" carriers or the "D" carrier and the enhanced fan unit—see [Figure 6-33](#)). Reconnect the 8 ground straps to the "D" carrier.
5. Disconnect the "P1" (small 9-pin) connector from the "D" carrier. Move the cable into a position where it will not interfere with removing the carrier.
6. Remove the 4 screws (top 2 first) holding the "D" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
7. Behind the "D" carrier in a "DEFINITY style" cabinet, remove the 2 screws holding the "D" carrier to the cabinet frame.
8. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



### CAUTION:

*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

9. Remove the carrier by sliding it out the front of the cabinet.

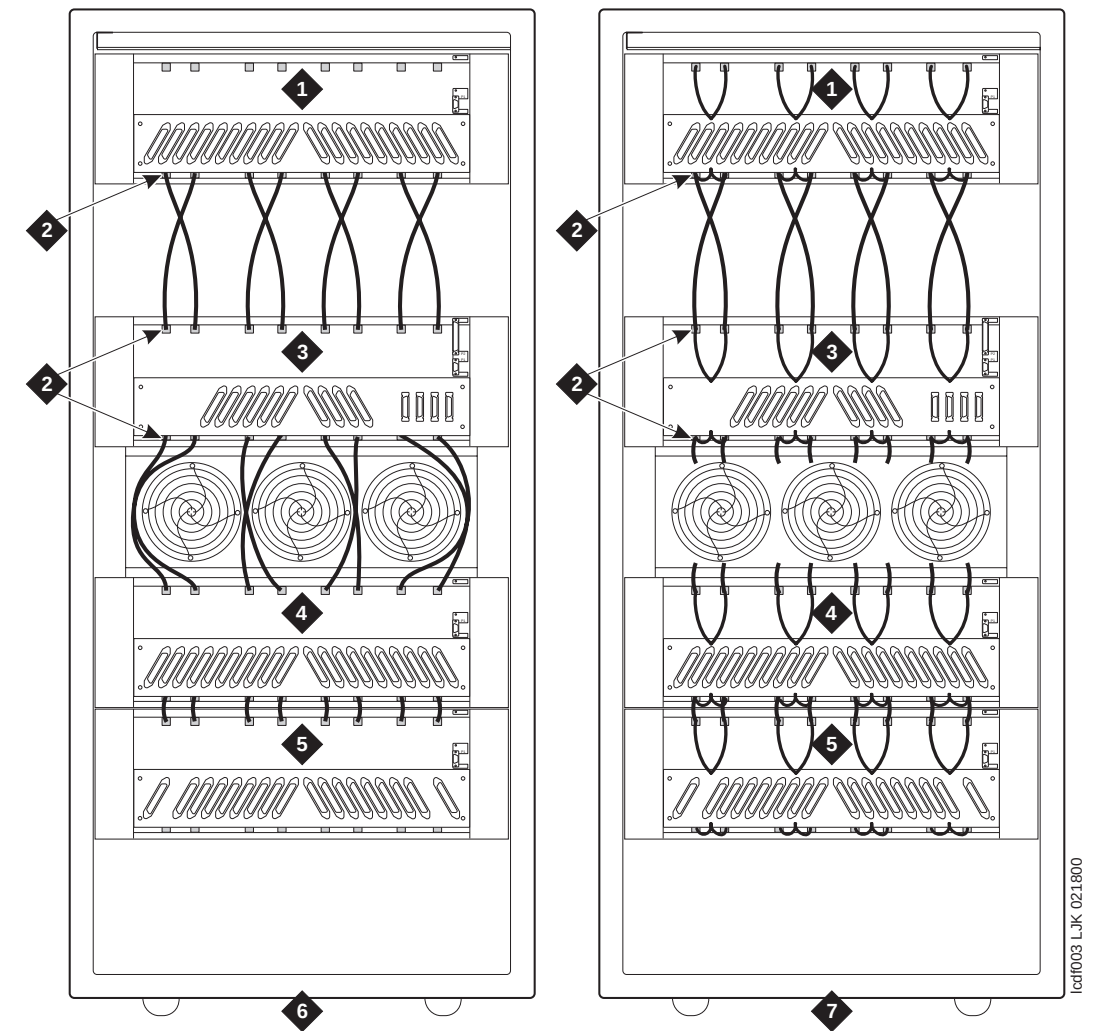


Figure Notes

- |                                   |                                                        |
|-----------------------------------|--------------------------------------------------------|
| 1. Port Carrier ("C" Position)    | 4. Switch Node Carrier ("D" Position)                  |
| 2. Ground Jumpers                 | 5. Switch Node Carrier ("E" Position)                  |
| 3. Control Carrier ("A" Position) | 6. Cabinet with standard fan unit and carrier          |
|                                   | 7. Cabinet with enhanced fan unit and enhanced carrier |

Figure 6-33. Locations of Ground Jumpers

### Prepare New Switch Node Carrier D

1. Visually inspect the new J58890SA Switch Node Carrier for any damage. Verify that the backplane pins are not bent.

**NOTE:**  
The enhanced R8r PPN AC carrier may look different than the other carriers because it comes with 16 new grounding jumpers and 8 mounting screws.

2. Place the switch node carrier on the floor so that the rear of the carrier faces up.
3. Verify that the four AHF105 switch node (SN) bus terminators are installed on the “D” carrier to the pin-field blocks marked “SNTRM” (top and bottom portions of slots “02” and “20”). See [Figure 6-34](#). The SN bus terminators attach with the components on the left side as viewed from the rear.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4C cable retainer on each of these connectors.

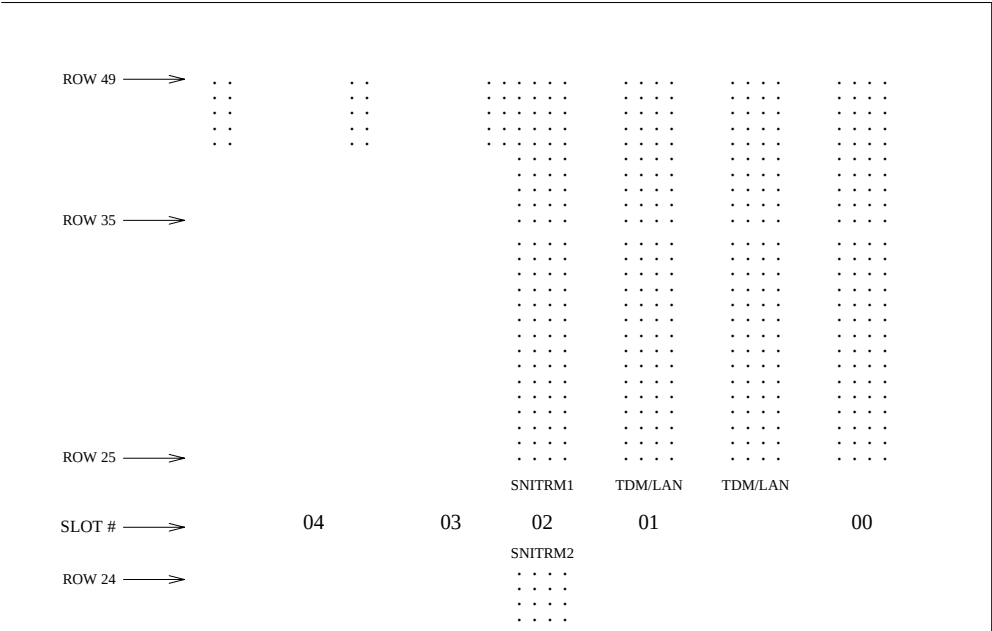


Figure 6-34. ICC Connections for Switch Node Carrier

## Install New Switch Node Carrier

---

1. Install the switch node carrier into position "D" by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips support the carrier while the screws are being replaced. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws.



### CAUTION:

*Carefully realign the threads on the self-tapping screws by turning them clockwise 1 turn before tightening them to avoid stripping the threads out of the framework.*

3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier.
4. Connect the "P1" (small) connector to the "D" carrier. If necessary, to get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from either the "A" carrier or the enhanced fan unit to the new "D" carrier. See [Figure 6-33](#). These straps were left connected when the old "D" carrier was removed.
6. Connect the 8 ground straps from the "E" carrier (if installed) to the new "D" carrier. See [Figure 6-33](#). These straps were left connected to the "E" carrier when the old "D" carrier was removed.
7. For a standard AC-powered control carrier, install the 4 carrier ground straps. The straps connect ground points G1 and G8 from the top of the B-carrier backplane to the B-carrier connector panel bracket and ground points G9 and G16 from the bottom of the B-carrier backplane to the B-carrier connector panel bracket.

For an enhanced carrier, install the 16 carrier-ground straps. The straps connect ground points G1 through G8 from the top of the B-carrier backplane to the B-carrier connector panel and ground points G9 through G16 from the bottom of the B-carrier backplane to the B-carrier connector panel. Use the 8 screws to connect the ground straps to the connector panel (see [Figure 6-35](#)).



### NOTE:

An enhanced carrier is used only in an R8r PPN cabinet that uses either AC power (U.S.) or Global power.



### NOTE:

DC-powered cabinets DO NOT use any of the above carrier-ground straps.

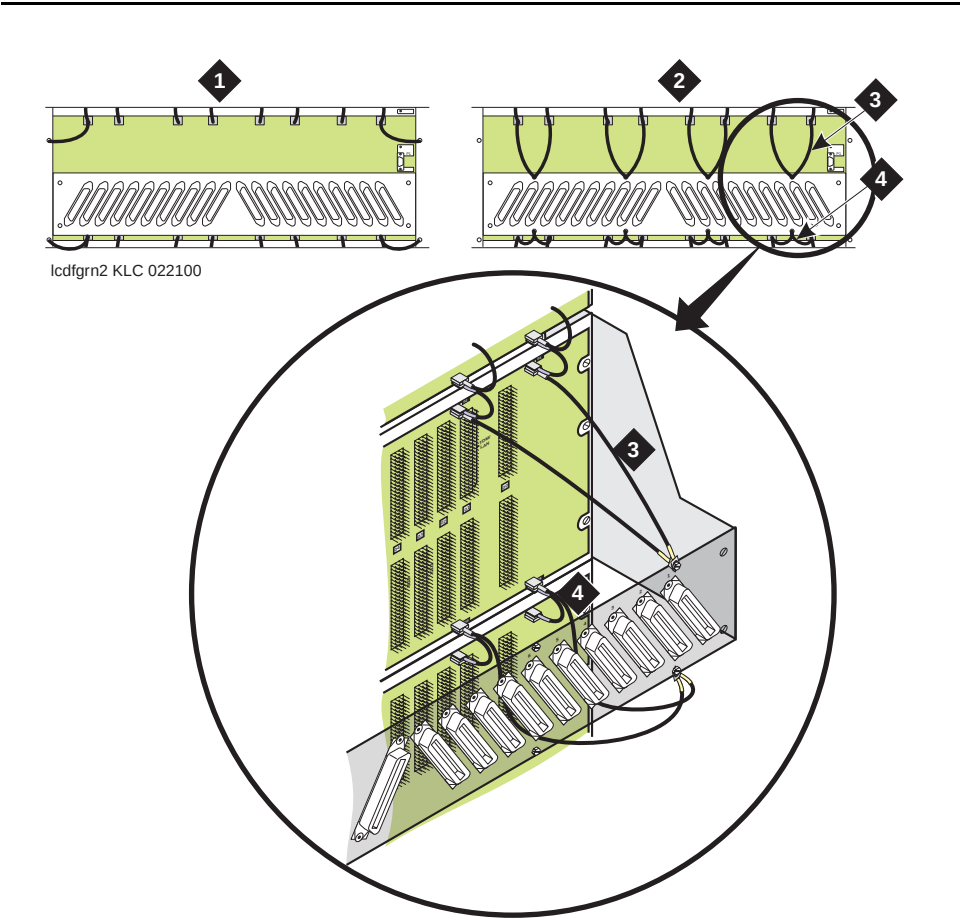


Figure Notes

- |                                                                                |                         |
|--------------------------------------------------------------------------------|-------------------------|
| 1. Standard AC-powered Carrier                                                 | 3. Top Ground Straps    |
| 2. Enhanced Carrier (in R8r PPNs using either AC power [U.S.] or Global power) | 4. Bottom Ground Straps |

Figure 6-35. Locations of Top and Bottom Ground Straps on Standard and Enhanced Carriers

8. If the switch node carrier was installed in the “D” position of the PPN, install the TDM/LAN cable (between the “A” and “D” carriers) to the pin-field block labeled “TDM/LAN” on the right side of both carriers. See [Figure 6-36](#) and [Table 6-9](#).

**6** Adding or Removing Cabinet Hardware

*Add a Switch Node Carrier (Standard Reliability)*

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9. If a switch node carrier was installed in the “D” position, verify that the ZAHF4 TDM/LAN bus terminator is installed at slot 02 of the switch node carrier “D”. See [Figure 6-36](#).

If a switch node carrier is being installed in the “E” position, verify that the ZAHF4 TDM/LAN bus terminator is installed at slot 21.

10. Install the front trim plates on the “D” carrier.
11. Install the new power units into the “D” carrier. Install a 649A on the left and right sides of the carrier.
12. Connect the power cords to the power units. The power cords are the white cables equipped with plugs that are run through the slots in the front of each carrier.



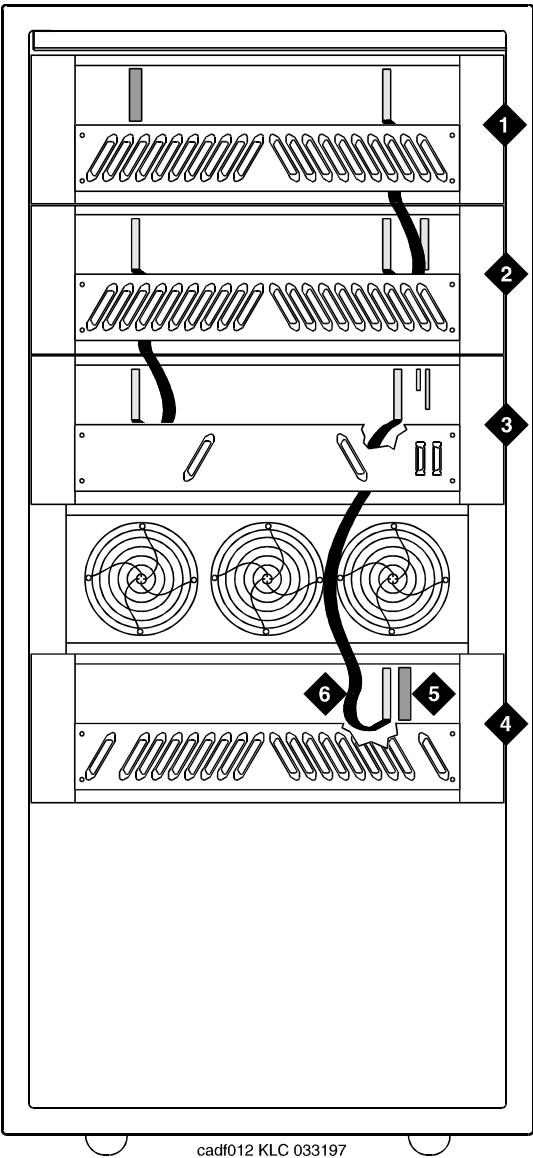


Figure Notes

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| 1. Port Carrier ("C" Position)      | 4. Switch Node Carrier ("D" Position) |
| 2. Port Carrier ("B" Position)      | 5. TDM/LAN Bus Terminator (ZAHF4)     |
| 3. Processor Carrier ("A" Position) | 6. TDM/LAN Cable (WP91716 L7)         |

Figure 6-36. TDM/LAN Connections for Standard Reliability R8r EPN

Table 6-9. TDM/LAN Connections

| "J" Number  | Carrier Type | LHS Slot | RHS Slot |
|-------------|--------------|----------|----------|
| J58890BB L1 | Port         | 21       | 02       |
| J58890BB L2 | Port         | 21       | 01       |
| J58890BB L3 | Port         | 21       | 01       |
| J58890AP    | Control      | 21       | 02       |

Install Circuit Packs

1. Install the new circuit packs into carrier "D." Use the decal and the upgrade configuration document (provided with the equipment) as a guide.
2. Install circuit pack blanks in slots not equipped with circuit packs.

Interconnect Port Networks

1. Behind the cabinet containing the switch node carrier (See [Figure 6-37](#)):
  - a. Connect the metallic intracarrier cable (H600-278) to slots 1D01 and 1D02.
2. Behind switch node carrier D of PPN cabinet 1 (See [Figure 6-37](#)):
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1D20, 1D03, 1D19, 1D04, 1D18, 1D05, and so forth.
  - b. Connect 1 end of a fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
3. Behind processor carrier A of each EPN cabinet:
  - a. Install a lightwave transceiver on cable connector at slot 1A01.
  - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot A01.
  - c. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
  - d. Coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.

4. Behind port carrier B of each EPN cabinet:
- a. Install a lightwave transceiver on cable connector at slot 1B02.

b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed.

c. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.

d. Coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.

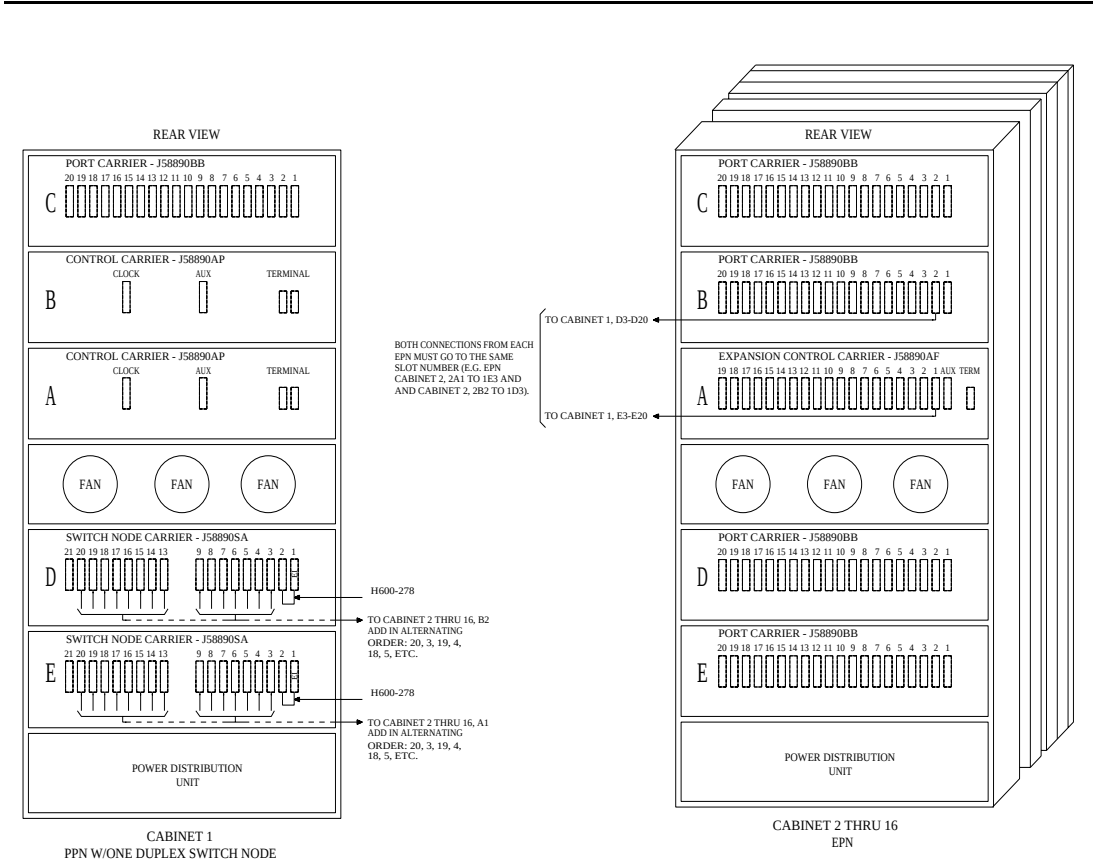


Figure 6-37. Critical-Reliability Fiber-Optic Connections through Center Stage Switch

## Reseat DEFINITY LAN Gateway System

1. Reseat the LAN Gateway assembly into its backplane connectors.

## Reseat DEFINITY AUDIX System

1. Reseat the AUDIX assembly to its backplane connectors.

## Power Up System

1. At the cabinet containing the new switch node carrier, set the main circuit breaker to ON.
2. The system performs the level 4 rebooting process, loading the system program and default or current translations from the disk. Rebooting takes 5 to 11 minutes.



### NOTE:

Ignore alarms for now.

3. Type **reset system 4** and press **Enter** to copy the translations from removable media to memory.
4. Clear any alarms.
5. Type **save translation** and press **Enter** if translation changes were made in Step 7 above.
6. Type **restore disk full** and press **Enter** to copy the translations from removable media to disk.
7. After the system reboot is finished and all trouble cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal operating mode.

## Restart DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Restart System* from the *Reset System* menu.

## Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.
2. If the Alarm Origination Activated field administration that you previously noted is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press Enter.  
The name of the Alarm Origination Activated field was changed to Alarm Origination to OSS Numbers to support more than 1 OSS.
4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).  
Be sure to type **y** in both Cleared Alarm Notification and Restart Notification fields. Press Enter.
5. Type **save translation disk** and press Enter.



### **WARNING:**

*If you do not enable Alarm Origination when the customer has purchased a services contract, the switch will not report any alarm to the TSC automatically, causing the TSC to be unable to fulfill the services contract.*

## Add a Switch Node Carrier (High or Critical Reliability)

---

To upgrade to a high or critical reliability R8r, a second switch node carrier is added either to an empty "E" carrier position of an existing multicarrier port network or to the "D" carrier position (as the duplicate switch node carrier) of an existing multicarrier cabinet.



### NOTE:

To avoid moving a port carrier, the preferred practice is to place the new switch node carrier in an empty carrier position.

## Service Interruption

---

1. Since the addition of the second switch node carrier requires a service interruption, notify the customer in advance as to when the addition will be carried out.

## Verify System Status

---

1. Before proceeding, the system should be examined for alarms, and every problem should be corrected. The system must be alarm-free.

## Disable Alarm Origination

---

1. Type **change system-parameters maintenance** and press **Enter**.
2. Make a note of the Alarm Origination Activated field administration. If the feature is enabled, type **n** in this field and press **Enter** to disable Alarm Origination.



### WARNING:

*If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets.*



### NOTE:

For some releases of the system software, you may also need to disable Cleared Alarm Notification and Restart Notification fields before submitting the form.

## Save Translations

---

1. Log in at the management terminal.
2. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
3. Type **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).
4. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter.
5. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to find out when the announcements were last saved. Save the current announcements by typing **save announcements disk** and pressing Enter.
6. Type **backup disk [spe-a or both]** and press Enter. This instructs the system to backup the current information on disk to the system tape(s).
7. Update backup tape(s), if required.

## Shut Down DEFINITY LAN Gateway System

---

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



### CAUTION:

*Make sure that you save the system parameters if you plan to reuse the current system.*



### WARNING:

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet where it resides can damage the LAN Gateway disk.*

1. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Shutdown* from the *Reset System* menu.
5. Unseat the LAN Gateway assembly from its backplane connectors.

**6 Adding or Removing Cabinet Hardware**

*Add a Switch Node Carrier (High or Critical Reliability)*

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## **Shut Down DEFINITY AUDIX System**

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 6-141.](#)



**WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

2. Unseat the AUDIX assembly from its backplane connectors.

## **Power Down System**

1. At the PPN, set the main circuit breaker to OFF.

## **Remove Doors and Panels and Disconnect Cables**

1. Remove the front door from the multicarrier cabinet where the switch node carrier will be installed.
2. With the cable retainer in front of you and the part number visible, locate the slot that is almost vertical. (This slot is adjacent to the part number.) Insert a flat-blade screwdriver with a wide blade (1/4-inch recommended) into the slot, and twist the screwdriver. The retainer will snap open easily so that the cable can be removed.
3. At the cabinet, disconnect the previously labeled cables associated with the carrier to be removed.
4. Remove the rear doors from the cabinet.

## **Remove Circuit Packs from Port Carrier D**



**NOTE:**

Skip these steps if a switch node carrier is being added to an empty carrier position.

1. To ensure that circuit packs and power units in the "D" carrier are properly replaced, label each component with its slot number.
2. Disconnect the power cords from the power units in the "D" carrier.
3. Remove all circuit packs and power units from carrier "D." Store the circuit packs in the static-proof packaging.
4. Remove the circuit pack blanks from slots that do not contain circuit packs.
5. Remove the front trim plate from the "D" carrier by pulling it straight off.



## Remove Port Carrier D

---



### NOTE:

Note the position of the TDM/LAN cables before disconnecting.

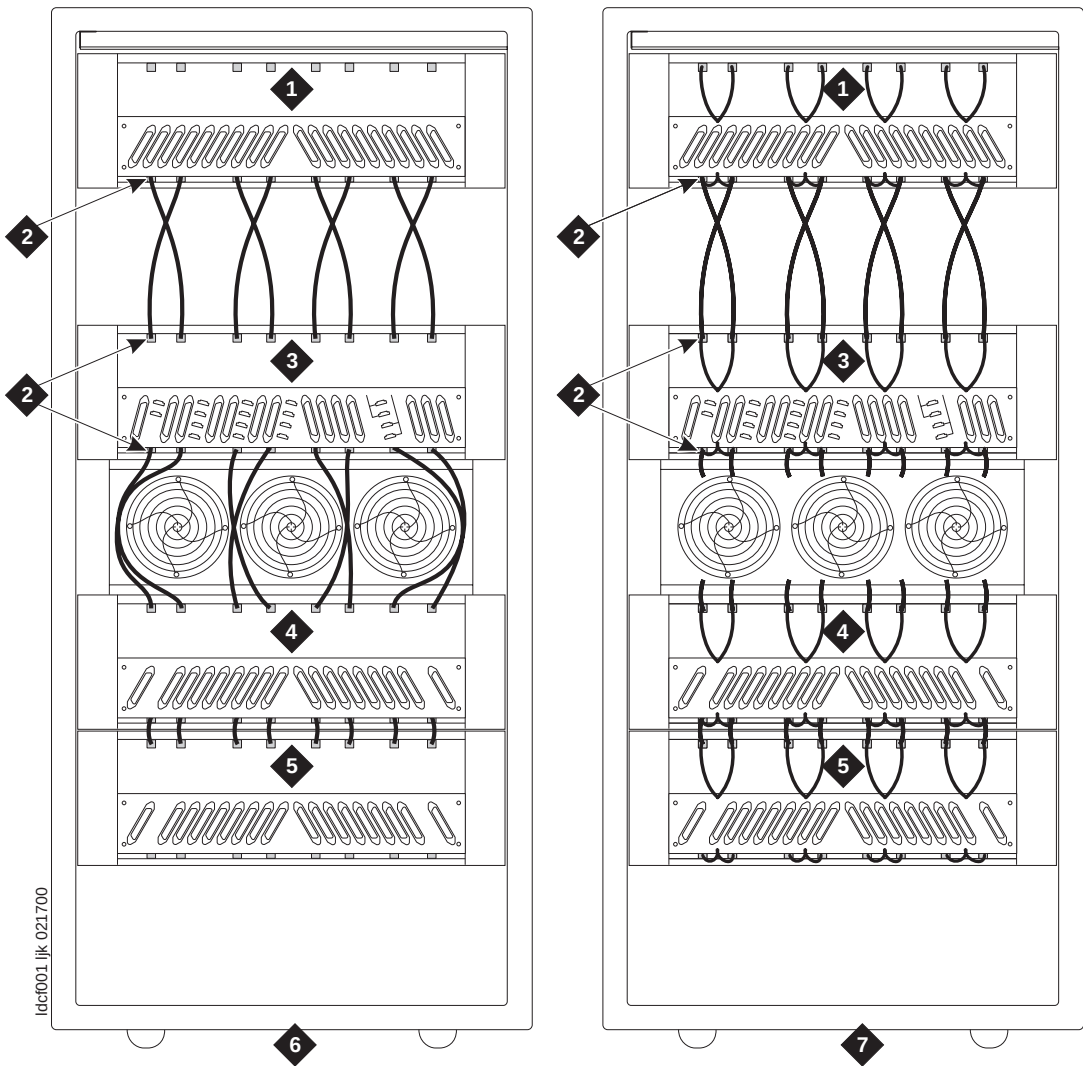
1. If a switch node carrier is being installed in the "D" position of an EPN, remove the TDM/LAN cable from between the "D" and "A" carriers.  
For other EPNs or the PPN, disconnect 1 end of the TDM/LAN cable (between the "D" and "A" carriers) from the "D" carrier.
2. Remove the ZAHF4 TDM/LAN bus terminator from slot "21" of the "D" carrier.
3. Disconnect 1 end of the 8 ground straps (between the "D" and "E" carriers) from the "D" carrier (See [Figure 6-38](#)). These straps will be reconnected to the new "D" carrier.
4. Disconnect the 8 ground straps from the "D" carrier (between the "D" and "A" carriers or the "D" carrier and the enhanced fan unit—see [Figure 6-38](#)). Reconnect the 8 ground straps to the "D" carrier.
5. Disconnect the "P1" (small 9-pin) connector from the "D" carrier. Move the cable into a position where it will not interfere with removing the carrier.
6. Remove the 4 screws (top 2 first) holding the "D" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
7. Behind the "D" carrier in a "DEFINITY style" cabinet, remove the 2 screws holding the "D" carrier to the cabinet frame.
8. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



### CAUTION:

*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

9. Remove the carrier by sliding it out the front of the cabinet.



**Figure Notes**

|                                   |                                                        |
|-----------------------------------|--------------------------------------------------------|
| 1. Port Carrier ("C" Position)    | 4. Switch Node Carrier ("D" Position)                  |
| 2. Ground Jumpers                 | 5. Switch Node Carrier ("E" Position)                  |
| 3. Control Carrier ("A" Position) | 6. Cabinet with standard fan unit and carrier          |
|                                   | 7. Cabinet with enhanced fan unit and enhanced carrier |

**Figure 6-38. Locations of Ground Jumpers**

Prepare New Switch Node Carrier D

1. Visually inspect the new carrier for any damage. Verify that the backplane pins are not bent.
2. Place the switch node carrier on the floor so that the rear of the carrier faces up.
3. Verify that the four AHF105 switch node (SN) bus terminators are installed on the “D” carrier to the pin-field blocks marked “SNTRM” (top and bottom portions of slots “02” and “20”). See [Figure 6-39](#). The SN bus terminators are attached with the components on the left side as viewed from the rear.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4C cable retainer on each of these connectors.

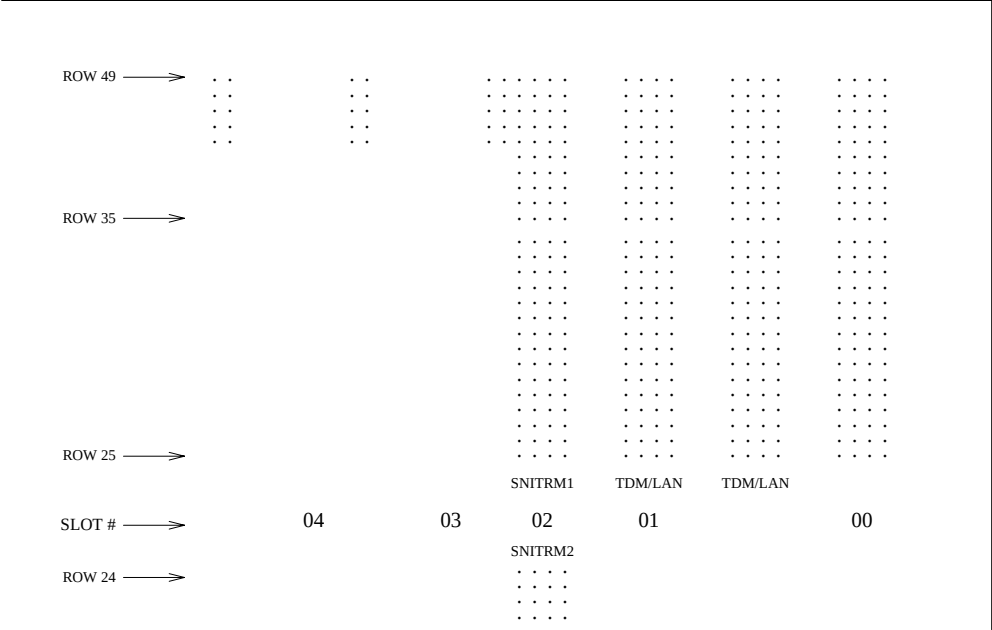


Figure 6-39. ICC Connections for Switch Node Carrier

## Install New Switch Node Carrier D

---

1. Install the J58890SA switch node carrier in position “D” by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips will support the carrier while the screws are being replaced. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.



### CAUTION:

*Carefully realign the threads on the self-tapping screws by turning them clockwise 1 turn before tightening them to avoid stripping the threads out of the framework.*

3. Behind the carrier in a “DEFINITY style” cabinet, replace the 2 screws saved from the removal of the old carrier.
4. Connect the “P1” (small) connector to the “D” carrier. If necessary, to get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from either the “A” carrier or the enhanced fan unit to the new “D” carrier. See [Figure 6-38](#). These straps were left connected when the old “D” carrier was removed.
6. Connect the 8 ground straps from the “E” carrier (if installed) to the new “D” carrier. See [Figure 6-38](#). These straps were left connected to the “E” carrier when the old “D” carrier was removed.
7. For a standard AC-powered control carrier, install the 4 carrier ground straps. The straps connect ground points G1 and G8 from the top of the B-carrier backplane to the B-carrier connector panel bracket and ground points G9 and G16 from the bottom of the B-carrier backplane to the B-carrier connector panel bracket.

For an enhanced carrier, install the 16 carrier-ground straps. The straps connect ground points G1 through G8 from the top of the B-carrier backplane to the B-carrier connector panel and ground points G9 through G16 from the bottom of the B-carrier backplane to the B-carrier connector panel. Use the 8 screws to connect the ground straps to the connector panel (see [Figure 6-40](#)).



### NOTE:

An enhanced carrier is used only in an R8r PPN cabinet that uses either AC power (U.S.) or Global power.



### NOTE:

DC-powered cabinets DO NOT use any of the above carrier-ground straps.

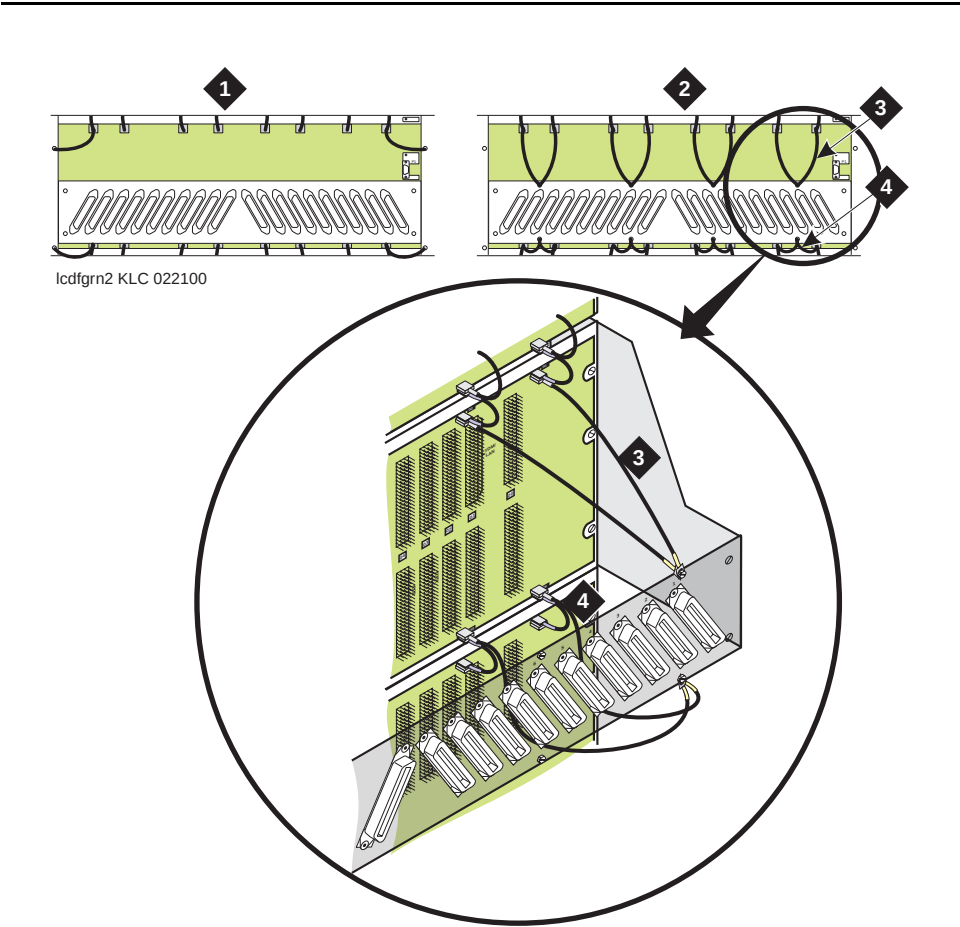


Figure Notes

- |                                                                                |                         |
|--------------------------------------------------------------------------------|-------------------------|
| 1. Standard AC-powered Carrier                                                 | 3. Top Ground Straps    |
| 2. Enhanced Carrier (in R8r PPNs using either AC power [U.S.] or Global power) | 4. Bottom Ground Straps |

Figure 6-40. Locations of Top and Bottom Ground Straps on Standard and Enhanced Carriers

8. If a switch node carrier is being installed in the “D” position of the PPN, install the TDM/LAN cable (between the “E” and “D” carriers) to the pin-field block marked “TDM/LAN” on the right side of both carriers. See [Figure 6-41](#) and [Table 6-10](#).

9. Also, for the PPN, connect the loose end of the TDM/LAN cable (between the “A” and “D” carriers) to the other pin-field block marked “TDM/LAN” on the right side of the “D” carrier. See [Figure 6-41](#) and [Table 6-10](#). The other end remained connected to the “A” carrier when the old carrier was removed.

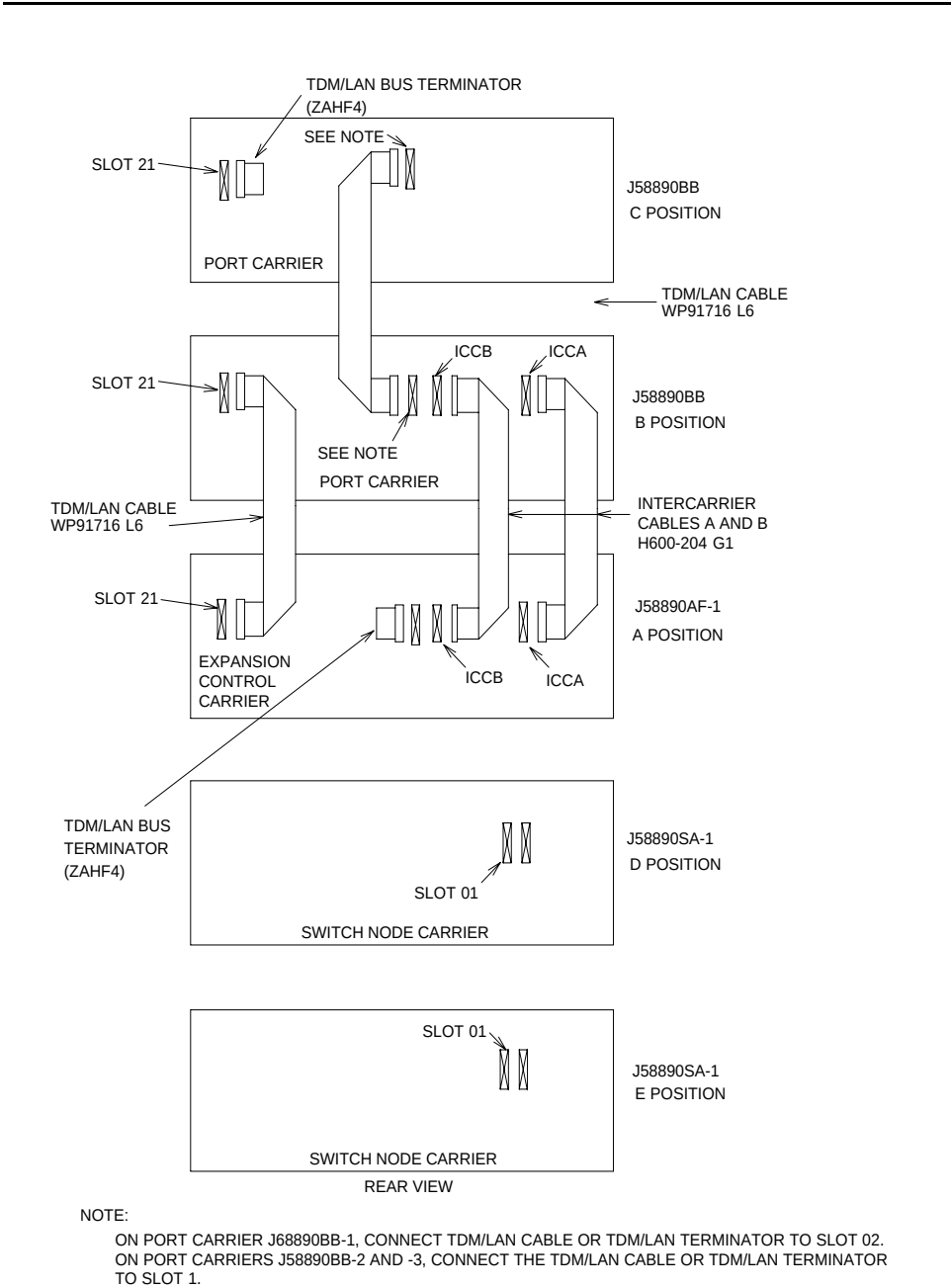


Figure 6-41. TDM/LAN Connections for Critical Reliability R8r EPN

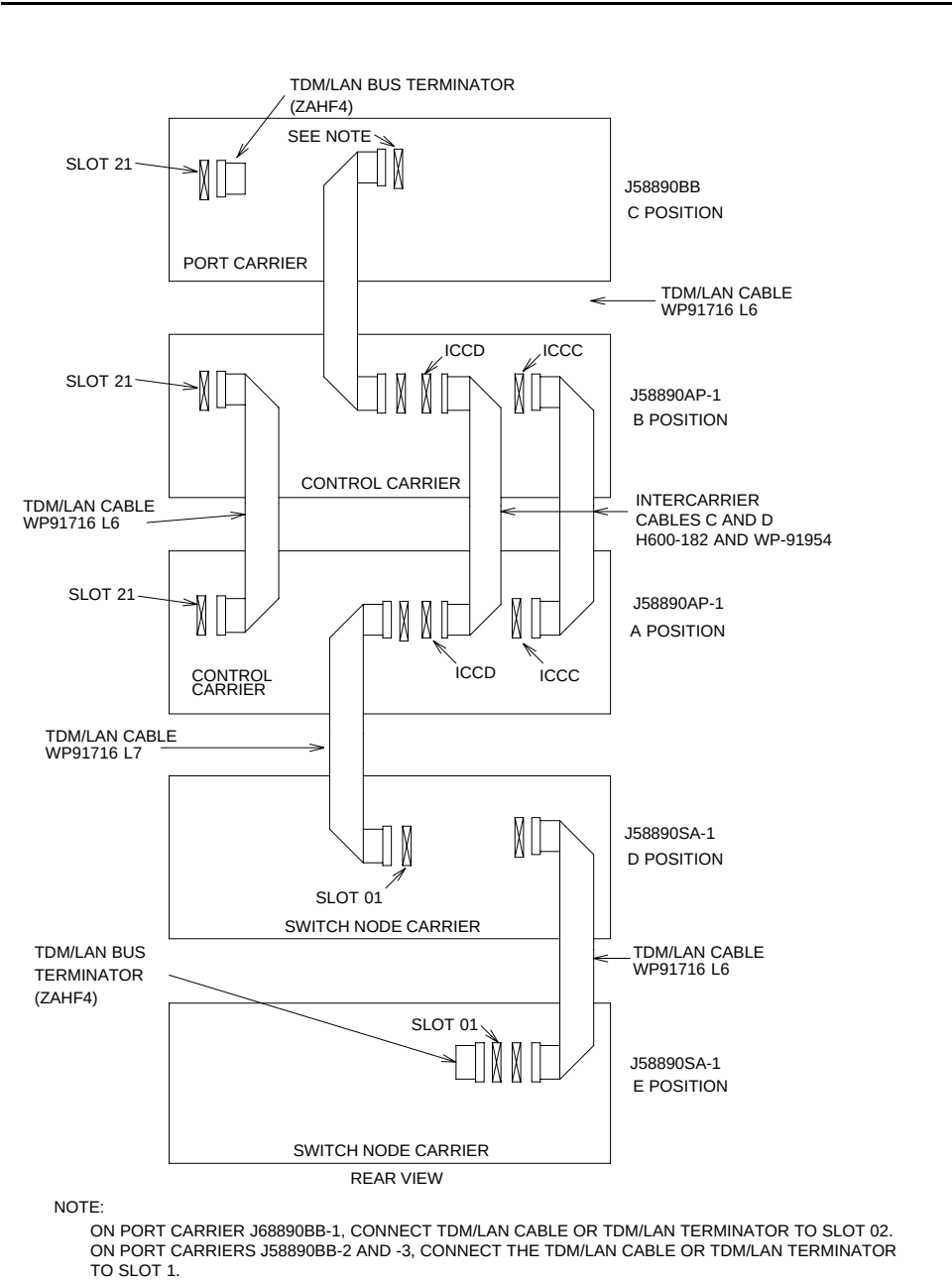


Figure 6-42. TDM/LAN Connections for Critical Reliability R8r PPN

Table 6-10. TDM/LAN Connections

| "J" Number  | Carrier Type | LHS Slot | RHS Slot |
|-------------|--------------|----------|----------|
| J58890BB L1 | Port         | 21       | 02       |
| J58890BB L2 | Port         | 21       | 01       |
| J58890BB L3 | Port         | 21       | 01       |
| J58890AP    | Control      | 21       | 02       |

10. If a switch node carrier is being installed in the "D" position of an EPN, verify that the ZAHF4 TDM/LAN bus terminator is installed at slot "02" of expansion control carrier "A". See [Figure 6-42](#).  
  
If a switch node carrier is being installed in the "E" position of an EPN, verify that the ZAHF4 TDM/LAN bus terminator is installed at slot "21" of port carrier "D."  
  
For a PPN, install the ZAHF4 TDM/LAN bus terminator at slot "01" of switch node carrier "E."
11. Install the front trim plates on the "D" carrier.
12. Install the new power units into the carrier. One 649A is installed on the left and right sides of the carrier.
13. Connect the power cords to the power units. The power cords are the white cables equipped with plugs that are run through the slots in the front of each carrier.

Install Circuit Packs

1. Install the new circuit packs into carrier "D." Use the decal and the upgrade configuration document (provided with the equipment) as a guide.
2. Install circuit pack blanks in slots not equipped with circuit packs.



## Interconnect Port Networks

---

1. Behind the PPN cabinet (See [Figure 6-37](#)):
  - a. Connect the metallic intracarrier cable between slots 1E01 and 1E02.
  - b. Connect the metallic intracarrier cable between slots 1D01 and 1D02.
2. Behind switch node carrier E of PPN cabinet 1 (See [Figure 6-37](#)):
  - a. For each EPN, install one 9823-type lightwave transceiver on the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
3. Behind control carrier A of each EPN cabinet:
  - a. Install a lightwave transceiver on slot A01.
  - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
  - d. Coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.
4. Behind switch node carrier D of PPN cabinet 1 (See [Figure 6-37](#)):
  - a. For each EPN, install a lightwave transceiver on the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
5. Behind port carrier B of each EPN cabinet:
  - a. Install a lightwave transceiver on slot B02.
  - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed.
  - c. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
  - d. Coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.

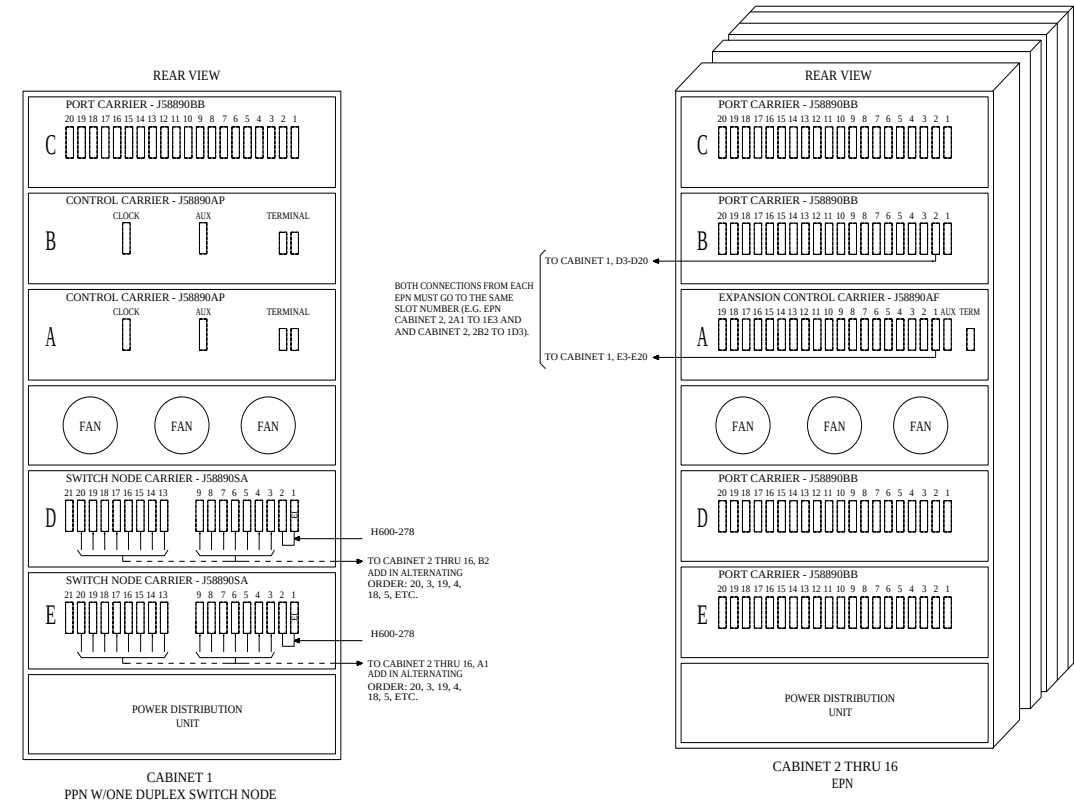


Figure 6-43. Critical-Reliability Fiber-Optic Connections through Center Stage Switch

6 Adding or Removing Cabinet Hardware

Add a Switch Node Carrier (High or Critical Reliability)

6-121

## Reseat DEFINITY LAN Gateway System

1. Reseat the LAN Gateway assembly into its backplane connectors.

## Reseat DEFINITY AUDIX System

1. Reseat the AUDIX assembly to its backplane connectors.

## Power Up System

1. At each EPN, if present, set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs the level 4 rebooting process, loading the system program and default or current translations from the disk. Rebooting takes 5 to 11 minutes.



**NOTE:**

Ignore alarms for now.

4. Type **reset system 4** and press **Enter** to copy the translations from removable media to memory.
5. Clear any alarms.
6. Type **save translation [both]** and press **Enter** if translation changes were made in Step 8 above.
7. Type **restore disk [both] full** and press **Enter** to copy the translations from removable media to disk.
8. After the system reboot is finished and all trouble cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal operating mode.

## Restart DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Restart System* from the *Reset System* menu.

## Enable PNC Duplication

All non-duplicated SNIs to SNI fiber links are automatically duplicated.

1. Type **change system-parameters customer-options** and press Enter. On screen 2, set the PNC Duplication? field to **yes**. Press Enter.
2. Type **change system-parameters duplication** and press Enter. Change the Enable operation of PNC duplication? field to **yes**. Press Enter.
3. Type **status pnc** and press Enter. Verify the Duplicated ? field is **yes**.

## Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.
2. If the Alarm Origination Activated field administration that you previously noted is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press Enter.

The name of the Alarm Origination Activated field was changed to Alarm Origination to OSS Numbers to support more than 1 OSS.

4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).

Be sure to type **y** in both Cleared Alarm Notification and Restart Notification fields if they are not enabled already. Press Enter.

5. Type **save translation [spe-a or both] disk** and press Enter.

If you have lost the previous administration of the Alarm Origination field, you may register the system again with the INADS Database Administrator at the TSC. The INADS Administrator enables Alarm Origination as part of the registration process.



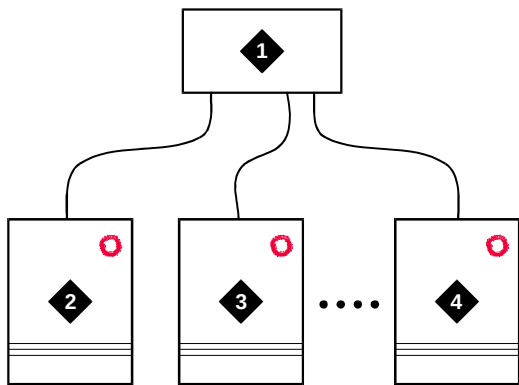
### **WARNING:**

*If you do not enable Alarm Origination when the customer has purchased a services contract, the switch will not report any alarm to the TSC automatically, causing the TSC to be unable to fulfill the services contract.*

## Add Center Stage Switch

Because of the numerous installation possibilities for center stage switches, this section is intended to provide general installation procedures only. For exact requirements per site, contact your Lucent Technologies representative.

The center stage switch (CSS) is comprised of 1, 2, or 3 switch nodes (SNs). Each SN consists of a switch node carrier (SNC), or 2 SNCs for high reliability. Each SNC supports up to 16 switch node interface (SNI) circuit packs and up to 16 EPNs. Connections between the CSS and PNs, and between SNs within the CSS, are generally made with fiber optic links. [Figure 6-44](#) shows 1 switch node used as a center stage switch for 11 EPNs.



cydfpbx3 RPY 081897

### Figure Notes

- |                  |                   |
|------------------|-------------------|
| 1. Switch Node 1 | 3. EPN Cabinet 1  |
| 2. PPN Cabinet   | 4. EPN Cabinet 11 |

Figure 6-44. Single Switch Node CSS

Figure 6-45 shows 2 SNs used as a CSS for up to 23 EPNs. Use this configuration when high inter-SN traffic is expected.

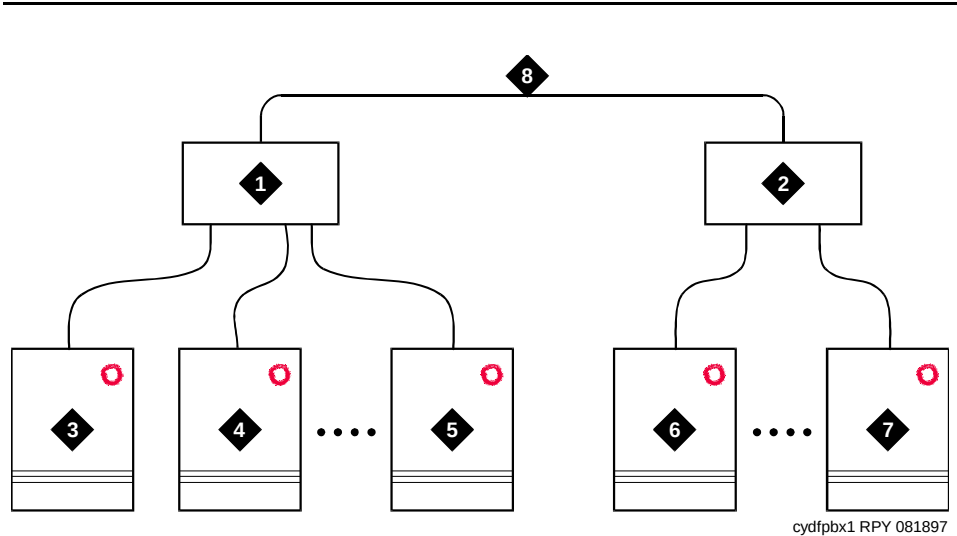


Figure Notes

- |                       |                                   |
|-----------------------|-----------------------------------|
| 1. Switch Node (SN) 1 | 5. EPN Cabinet 11                 |
| 2. Switch Node 2      | 6. EPN Cabinet 12                 |
| 3. PPN Cabinet        | 7. EPN Cabinet 23                 |
| 4. EPN Cabinet 1      | 8. Inter-SN Connection (4 fibers) |

Figure 6-45. 2-Switch Node CSS with High Inter-SN Traffic

Fiber Engineering for 2 SNs

Switches with 2 SNs are connected by 1 to 7 fiber links to provide sufficient switching fabric at the CSS. The traffic in all locales within a single SN does not require engineering. Only traffic that links from locales in 1 SN to the other SN (and vice versa) must be engineered. The traffic that links across these fibers is simply the sum of the traffic that links to locales located in the other SN.

Figure 6-46 shows 2 SNs used as a CSS for up to 29 EPNs. Use this configuration when low inter-SN traffic is expected.

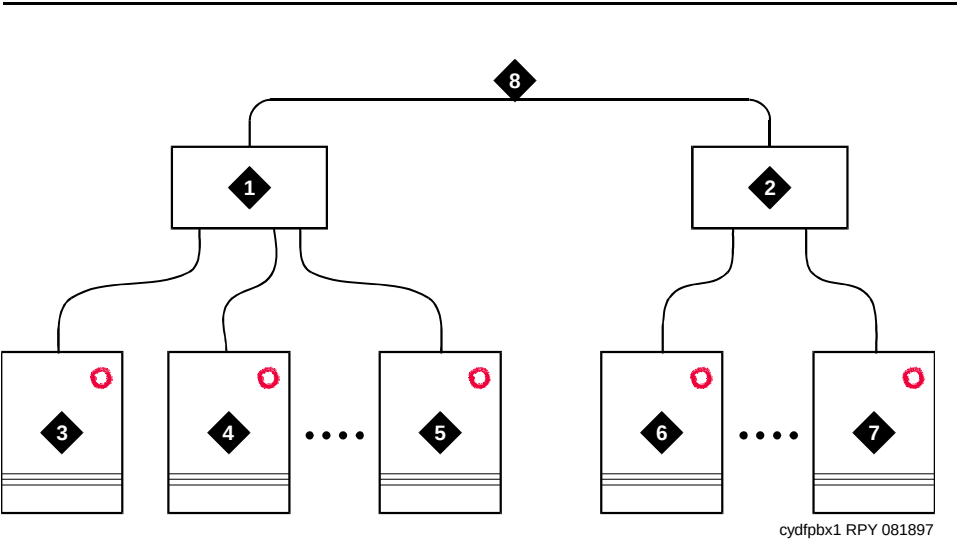


Figure Notes

- |                       |                                  |
|-----------------------|----------------------------------|
| 1. Switch Node (SN) 1 | 5. EPN Cabinet 14                |
| 2. Switch Node 2      | 6. EPN Cabinet 15                |
| 3. PPN Cabinet        | 7. EPN Cabinet 29                |
| 4. EPN Cabinet 1      | 8. Inter-SN Connection (1 fiber) |

Figure 6-46. 2-SN CSS with Low Inter-SN Traffic

Fiber Engineering for 2 SNs

Switches with 2 SNs are connected by 1 to 7 fiber links to provide sufficient switching fabric at the CSS. The traffic in all locales within a single SN does not require engineering. Only traffic that links from locales in 1 SN to the other SN (and vice versa) must be engineered. The traffic that links across these fibers is simply the sum of the traffic that links to locales located in the other SN.

Figure 6-47 shows 3 SNs used as a CSS for up to 31 EPNs. Use this configuration when high inter-SN traffic is expected.

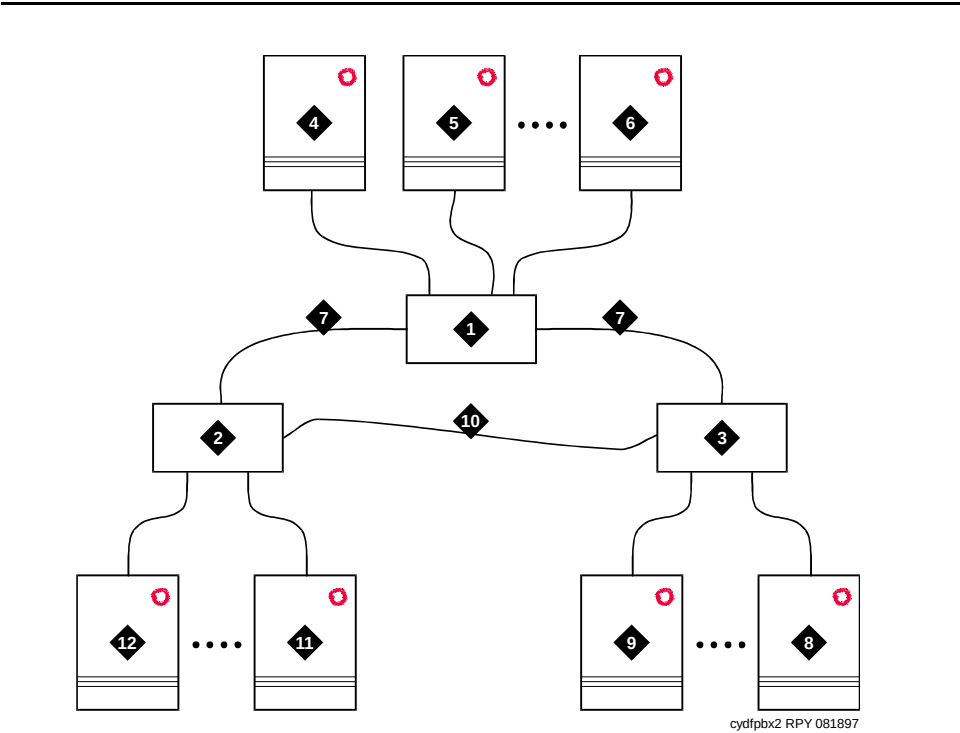


Figure Notes

- |                       |                                    |
|-----------------------|------------------------------------|
| 1. Switch Node (SN) 1 | 7. Inter-SN Connections (3 fibers) |
| 2. Switch Node 2      | 8. EPN Cabinet 10                  |
| 3. Switch Node 3      | 9. EPN Cabinet 20                  |
| 4. PPN Cabinet        | 10. Inter-SN Connection (2 fibers) |
| 5. EPN Cabinet 1      | 11. EPN Cabinet 21                 |
| 6. EPN Cabinet 9      | 12. EPN Cabinet 31                 |

Figure 6-47. 3-SN CSS with High Inter-SN Traffic

Fiber Engineering for 3 SNs

Switches with 3 SNs are connected by 1 to 7 fiber links to provide sufficient switching fabric at the CSS. The traffic in all locales within a single SN does not require engineering. Only traffic that links from locales in 1 SN to another SN (and vice versa) must be engineered. The traffic that links across these fibers is simply the sum of the traffic that links to locales located in the other SN.



Figure 6-48 shows 3 SNs used as a CSS for up to 43 EPNs. Use this configuration when low inter-SN traffic is expected.

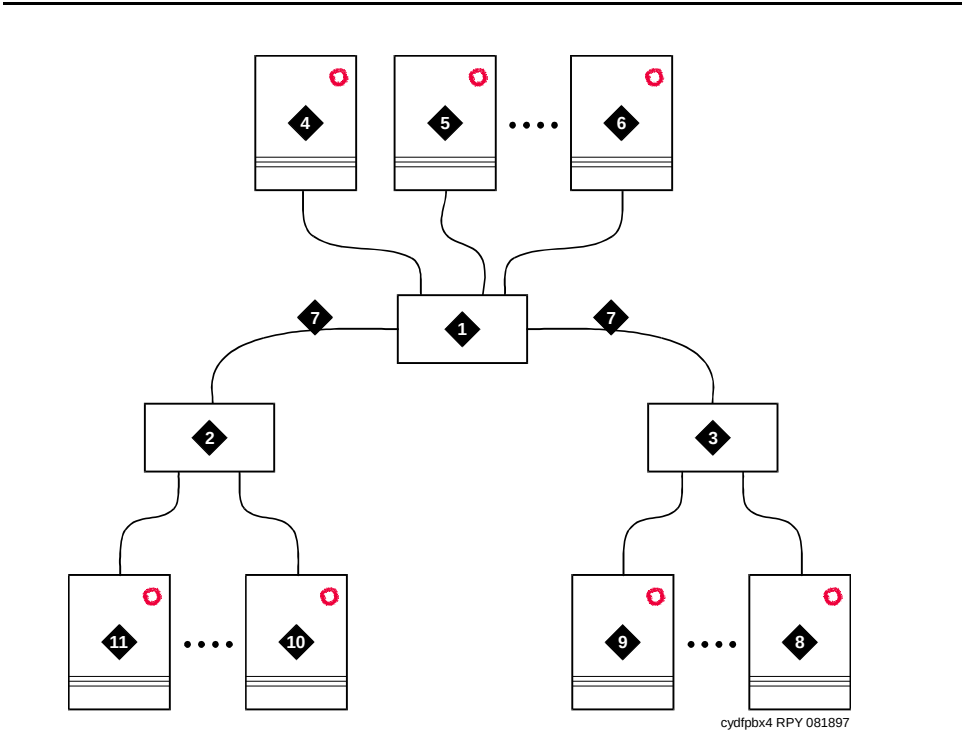


Figure Notes

- |                       |                                   |
|-----------------------|-----------------------------------|
| 1. Switch Node (SN) 1 | 7. Inter-SN Connections (1 fiber) |
| 2. Switch Node 2      | 8. EPN Cabinet 14                 |
| 3. Switch Node 3      | 9. EPN Cabinet 28                 |
| 4. PPN Cabinet        | 10. EPN Cabinet 29                |
| 5. EPN Cabinet 1      | 11. EPN Cabinet 43                |
| 6. EPN Cabinet 13     |                                   |

Figure 6-48. 3-SN CSS with Low Inter-SN Traffic

Fiber Engineering for 3 SNs

Switches with 3 SNs are connected by 1 to 7 fiber links to provide sufficient switching fabric at the CSS. The traffic in all locales within a single SN does not require engineering. Only traffic that links from locales in 1 SN to another SN (and vice versa) must be engineered. The traffic that links across these fibers is simply the sum of the traffic that links to locales located in the other SN.

## Add MCC Port Carriers

---

A new port carrier can be installed when additional features or equipment exceed the capacity of the present system. Port carriers are identified as B, C, D, and E except for a PPN cabinet with the duplication option. The "B" carrier is the second control carrier. PEC 63155 provides the necessary equipment for adding the carrier.

Add each new port carrier to a port network in the "B," "C," "D," "E" order of carrier positions.

Before proceeding with the addition of a port carrier, ensure that 3 TN1650B Memory Circuit Packs exist in the system. Refer to the section entitled ["Remove the Circuit Packs" on page 1-11](#) for installation instructions.

Before proceeding with the addition of a port carrier, ensure that the TN1657 Disk Drive is of Vintage 4 (or higher). Refer to [Chapter 1, "Upgrading G3rV2, V3, V4 to R8r and Adding Memory"](#) for installation instructions.

## Service Interruption

---

1. Since the addition of port carriers requires a service interruption, notify the customer in advance as to when the addition will take place.

## Verify System Status

---

1. Before proceeding, examine the system for alarms. Every problem should be corrected. The system must be alarm-free.

## Disable Alarm Origination

---

1. Type **change system-parameters maintenance** and press Enter.
2. Make a note of the Alarm Origination Activated field. If the feature is enabled, type **n** in this field to disable Alarm Origination.

You will enable this feature again in 1 of the final processes.



### WARNING:

*If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets is critical for measuring the quality of Lucent services and products.*



### NOTE:

For some releases of the software, disable Cleared Alarm Notification and Restart Notification fields before submitting the form.

## Save Translations

---

1. Log in at the management terminal.
2. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
3. Type **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).
4. If the MCC port network contains a TN750 Announcement circuit pack, type **display announcements** and press Enter.

If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to find out when the announcements were last saved.

Save the current announcements by typing **save announcements** and pressing Enter.

5. Type **backup disk [spe-a or both]** and press Enter. This command instructs the system to backup the current information on disk to the system tape(s).
6. Update backup tape(s), if required.

## Shut Down DEFINITY LAN Gateway System

---

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



### CAUTION:

*Make sure that you save the system parameters if you plan to reuse the current system.*



### WARNING:

*Neglecting to shut down a DEFINITY LAN Gateway assembly before powering down the system cabinet where it resides can damage the LAN Gateway disk.*

1. Unseat the LAN Gateway assembly from its backplane connectors in the carrier.
2. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*.
3. When the main menu appears, select *Maintenance*.
4. Select *Reset System* from the *Maintenance* menu.
5. Select *Shutdown* from the *Reset System* menu.

## Shut Down DEFINITY AUDIX System

---

1. If a DEFINITY AUDIX resides in the MCC port network to be upgraded, shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 6-141](#).



### **WARNING:**

*Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.*

2. Unseat the AUDIX assembly from its backplane connectors.

## Power Down MCC Port Network

---

1. At the MCC port network, set the main circuit breaker to OFF.

## Install Port Carrier

---

1. Open the rear doors.
2. Remove the blank port carrier panel by pushing outward on panel from the rear of the cabinet until the panel clears the 4 retaining pins on the cabinet frame. See [Figure 6-49](#).
3. Use a screwdriver to loosen and remove the 4 retaining pins from the cabinet frame.
4. Align the carrier through the front of the system cabinet with the 4 pilot holes on cabinet frame.



### **NOTE:**

Support the carrier by the molded-in support pins above the top mounting holes.

5. Insert self-tapping screws in the pilot holes and tighten.
6. Attach the magnetically-held nomenclature panel to front of carrier.
7. At the rear, install 8 grounding jumpers from the adjacent backplane to the new carrier backplane wiring ([Figure 6-50](#) and [Figure 6-51](#)).
8. Connect a 9-pin D subminiature plug on right side of cabinet to P1 connector on carrier. If necessary, cut the tie wrap holding the intercabinet cable to the upright in the area of the carrier being installed.
9. Connect the TDM/LAN cable to the newly installed port carrier. See [Figure 6-52](#), [Figure 6-53](#), [Figure 6-54](#), or [Figure 6-55](#) and [Table 6-11](#).

10. Install a 631AR, 631WA1, 631DA1, or 644A power unit in the leftmost slot and a 631BR, 631WB1, 631DB1, 645B, or 649A power unit in the right-most slot of installed port carrier as follows:
  - a. Set the circuit breaker on the power unit to be added to OFF.
  - b. Move locking slide on power unit to its leftmost position and open the lever.
  - c. Align and slide the power unit into slot in the carrier until some resistance is felt.
  - d. Lift the locking lever upward until it latches.
  - e. Move the locking slide on power unit to its rightmost position.
  - f. Connect a power cord inside the cabinet to the outlet on the power unit.
  - g. Set the circuit breaker on the power unit to ON.
11. Install a TN736 power converter in the slot next to the 631AR power converter or a TN752 power converter in the slot next to the 631WA1 power converter on the left side of the carrier.



**NOTE:**

The TN736 is not required when the 631DB1 power unit is used in the J58890B-2 or J58890B-3 port carriers. It is required in the J58890B-1 port carrier regardless of which 631 power unit is provided. Use the TN752 or TN755B if the system is equipped with neon message waiting.

12. Install the port circuit packs in the carrier.
13. Connect the AC/DC power cords located inside the cabinet to the power units.
14. Install the rear panels around the port carrier.
15. Install cables from the port carrier to the MDF.
16. Install the cable access panel, as required.

## **Reseat DEFINITY LAN Gateway System**

1. Reseat the LAN Gateway assembly into its backplane connectors in the carrier.

## **Reseat DEFINITY AUDIX System**

1. Reseat the AUDIX assembly into its backplane connectors.

## Power Up MCC Port Network

1. At the MCC port network, set the main circuit breaker to ON.
2. The system performs a level 4 rebooting process, loading the system program and default translations from the disk. Rebooting takes 5 to 11 minutes.
3. Refer to "Initialization and Recovery" and "LED Interpretation" chapters in *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*, for circuit pack LED indications and management terminal displays that occur during system reboot.
4. After the system reboot is finished and all trouble cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal operating mode.

## Restart DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. When the main menu appears, select *Maintenance*.
3. Select *Reset System* from the *Maintenance* menu.
4. Select *Restart System* from the *Reset System* menu.

## Enter Added Translations

1. Enter added translation data as applicable using *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide*.

## Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 8 Maintenance for R8r*.
2. If the Alarm Origination Activated field administration is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press **Enter**.  
  
The Alarm Origination Activated field was changed to Alarm Origination to OSS Numbers to support more than 1 OSS.

4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).

Be sure to type **y** in both Cleared Alarm Notification and Restart Notification fields. Press Enter.



**NOTE:**

The INADS Database Administrator enables Alarm Origination as part of the registration process.



**CAUTION:**

*If you do not enable Alarm Origination when the customer has purchased a services contract, the switch will not report any alarm to the TSC automatically, causing the TSC to be unable to fulfill the services contract.*

## Save Translations

---

1. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
2. Type **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).
3. If the MCC port network contains a TN750 Announcement circuit pack, type **list configuration software-version** and press Enter.

If screen 2 shows that recorded announcements were saved, these announcements can be restored using the restore announcements command. Type **restore announcements** and press Enter.

4. Type **backup disk [spe-a or both]** and press Enter. This command instructs the system to backup the current information on disk to the removable media.

## Update Port-Assignment Records

1. Update the customer's port-assignment records.

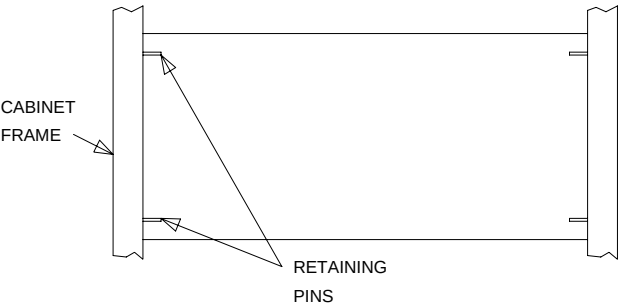


Figure 6-49. Blank Carrier Panel (Rear View)

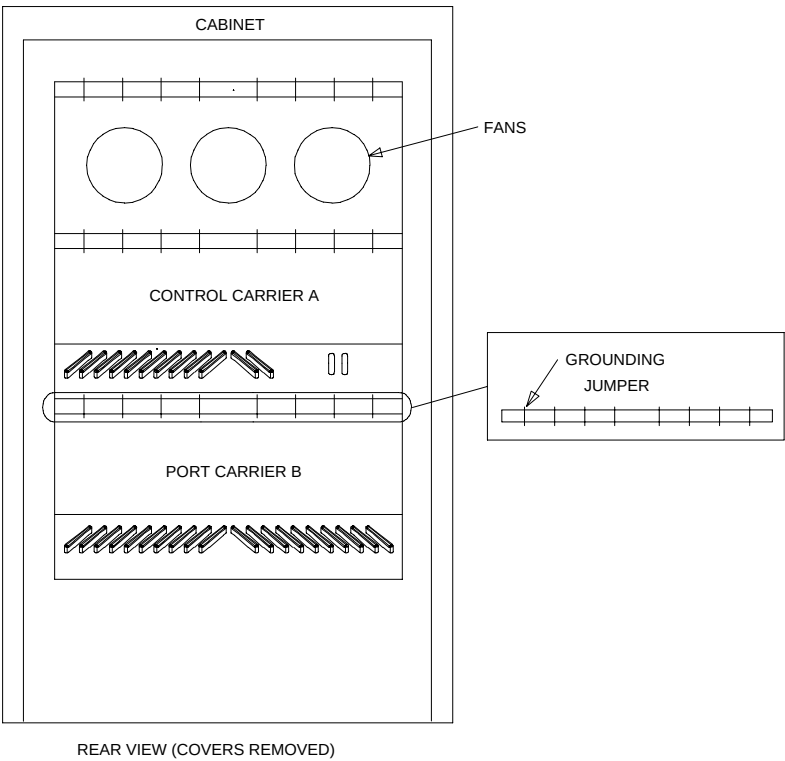


Figure 6-50. Locations of Grounding Jumpers (Small Cabinet)



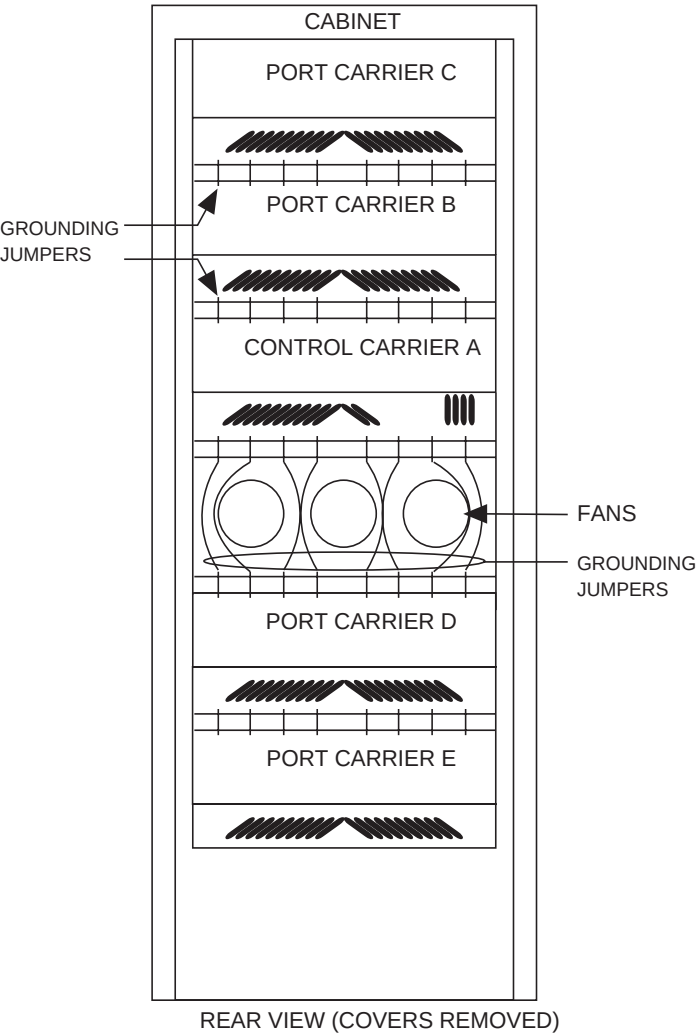


Figure 6-51. Locations of Grounding Jumpers

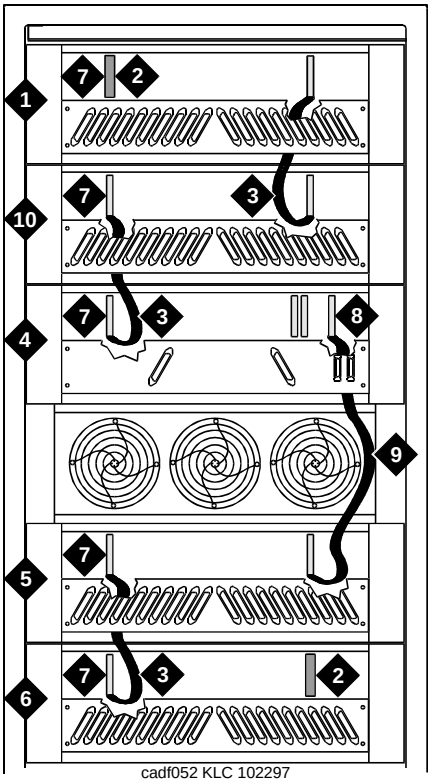


Figure Notes

1. Port Carrier ("C" Position)

2. ZAHF4 TDM/LAN Terminator

3. TDM/LAN Cable (WP91716L6)

4. Process Carrier ("A" Position)

5. Port Carrier ("D" Position)

6. Port Carrier ("E" Position)
7. Slot 21

8. Slot 00

9. TDM/LAN Cable (WP91716L7)

10. Port Carrier ("B" Position)

11. Slot TDM/LAN2 (20)

Figure 6-52. TDM/LAN Bus Connections for Standard Reliability R8r PPN

**NOTE:**

On port carrier J58890BB-1, connect the TDM cable or TDM terminator to slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TMD cables or TDM terminator to slot 01. If the port carrier has J58890BB-1 and J58890BB-2 stencilled on it, treat it as a J58890BB-1.

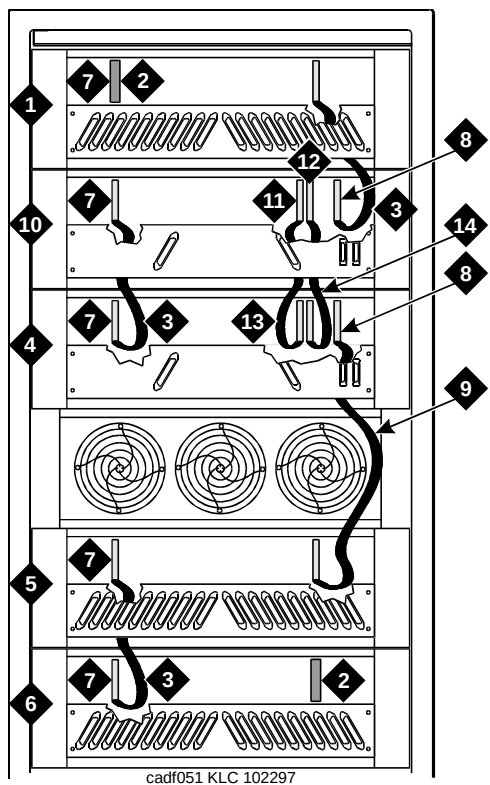
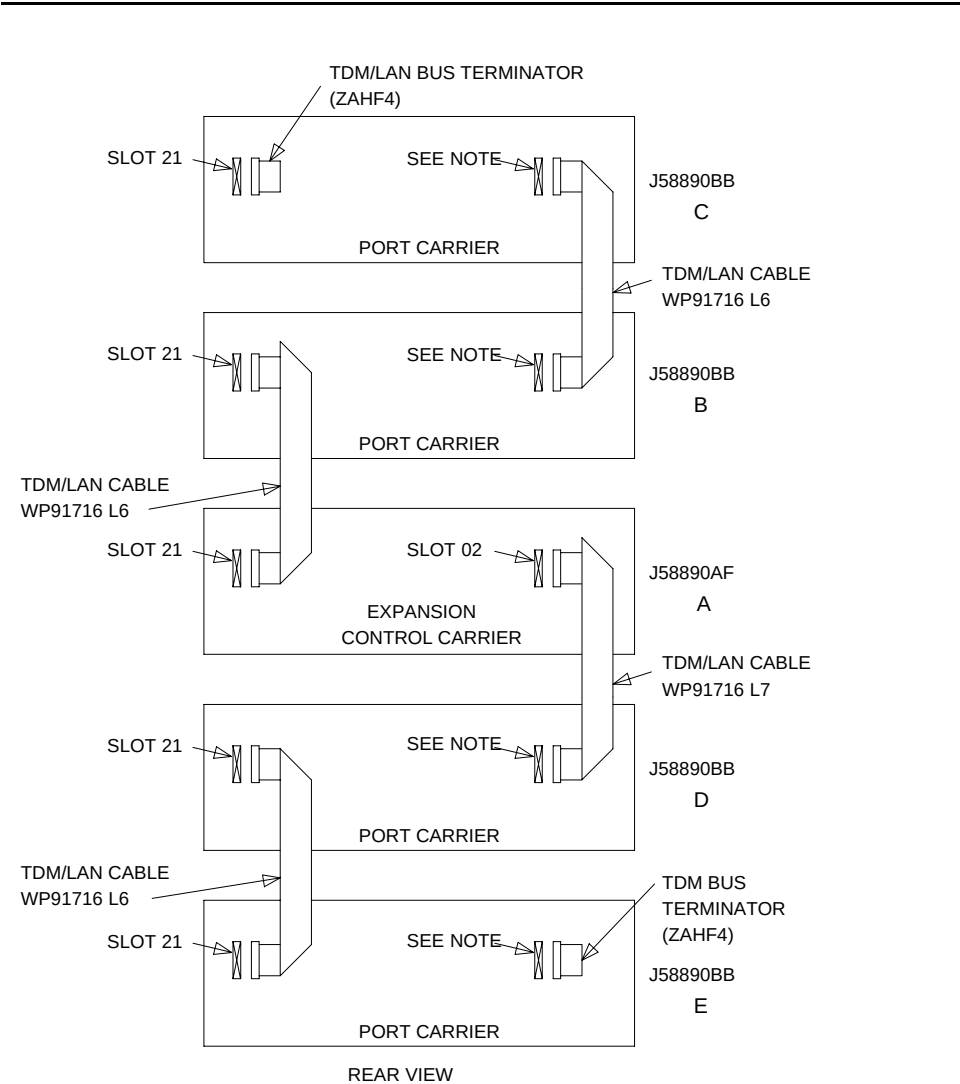


Figure Notes

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 1. Port Carrier ("C" Position)    | 8. Slot 00                          |
| 2. ZAHF4 TDM/LAN Terminator       | 9. TDM/LAN Cable (WP91716L7)        |
| 3. TDM/LAN Cable (WP91716L6)      | 10. Process Carrier ("B" Position)  |
| 4. Process Carrier ("A" Position) | 11. ICCD Connector                  |
| 5. Port Carrier ("D" Position)    | 12. ICCC Connector                  |
| 6. Port Carrier ("E" Position)    | 13. Intercarrier Cable D (WP-91954) |
| 7. Slot 21                        | 14. Intercarrier Cable C (H600-182) |

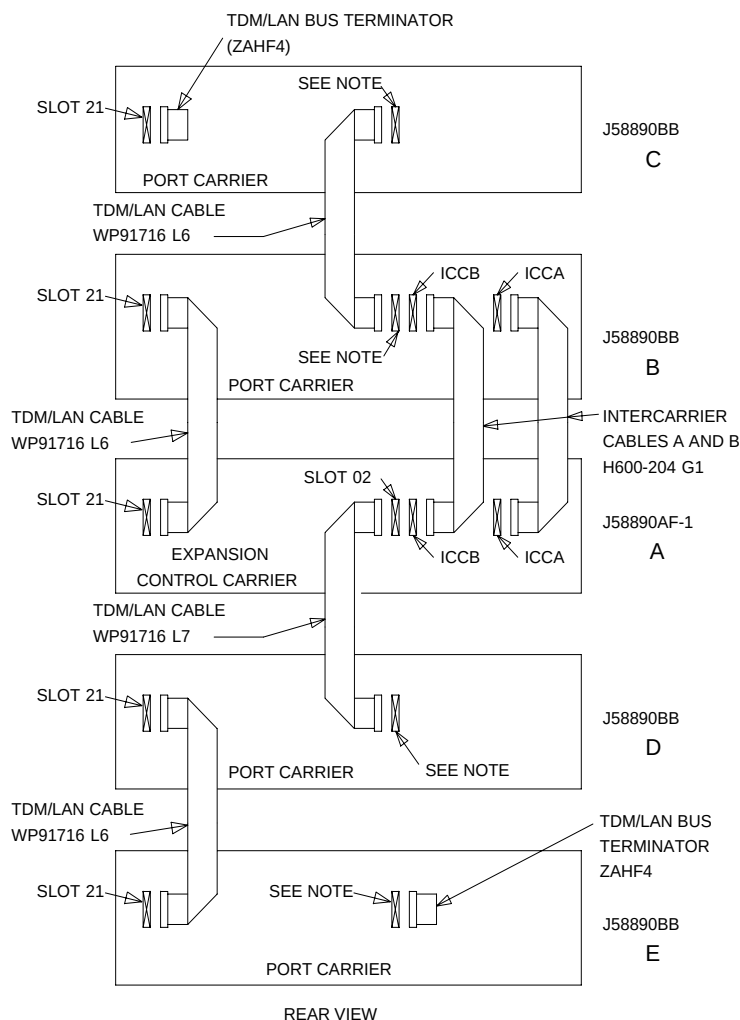
Figure 6-53. TDM/LAN Bus Connections for Critical-Reliability PPN

**NOTE:**  
On port carrier J58890BB-1, connect the TDM cable or TDM terminator to slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TMD cables or TDM terminator to slot 01. If the port carrier has J58890BB-1 and J58890BB-2 stencilled on it, treat it as a J58890BB-1.



NOTE:  
ON PORT CARRIER J58890BB-1, CONNECT THE TDM CABLE OR TDM TERMINATOR TO SLOT 02.  
ON PORT CARRIERS J58890BB-2 AND -3, CONNECT THE TDM CABLES TO SLOT 01.

Figure 6-54. TDM/LAN Bus Connections for Standard- or High-Reliability EPN



NOTE:

ON PORT CARRIER J58890BB-1, CONNECT TDM/LAN CABLE OR TDM/LAN TERMINATOR TO SLOT 02.  
ON PORT CARRIERS J58890BB-2 AND -3, CONNECT THE TDM/LAN CABLE OR TDM/LAN TERMINATOR  
TO SLOT 01.

Figure 6-55. TDM/LAN Bus Connections for Critical-Reliability EPN

Table 6-11. TDM/LAN Cable Connections

| "J" Number | Carrier Type           | LHS Slot | RHS Slot |
|------------|------------------------|----------|----------|
| J58890B-1  | Port                   | 21       | 02       |
| J58890B-2  | Port                   | 21       | 01       |
| J58890B-3  | Port                   | 21       | 01       |
| J58890AP   | PPN Control "A" or "B" | 20       | 03       |
| J58890AF   | AC EPN Control "A"     | 21       | 02       |
| J58890AF   | DC EPN Control "A"     | 21       | 02       |

## DEFINITY AUDIX Power Procedures

---

### Power Down the AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

1. Log into the AUDIX System as **craft**.
2. Type **reset system shutdown**. Press Enter *once*.



#### NOTE:

Do not press Enter again. This will force the AUDIX to shutdown immediately, dropping all active calls on the AUDIX.

3. The "SHUTDOWN Completed" message appears when the AUDIX is successfully shutdown. This takes about 2 minutes.
4. The AUDIX System can now be removed for service.

### Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
  1. Re-install the AUDIX and allow it to boot up automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but power was removed from the cabinet:
  1. Power up the cabinet. The AUDIX reboots automatically.
  2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
  1. At the AUDIX console, hold the `ctrl` key and type **cc**.
  2. Type **5** at the prompt. In about 2 minutes, the AUDIX boots up.
  3. When the system initialization is complete, log in as **craft**.
  4. Check for AUDIX System errors.

## Installing an Integrated Channel Service Unit (ICSU) Module

---

The integrated channel service unit (ICSU) is a combination of a 120A CSU module integrated with a DS1 circuit pack. Use this device with the 700A DS1 loopback jack when testing the DS1 span.

### Checking for required components

---

The integrated channel service unit (ICSU) package contains:

- 120A CSU module
- Cable H600-383  
4-pair modular cord  
Group 2, 50-Foot (15.2 m) cable (standard)
- Cord DW8A-DE  
4-pair modular cord to alarm contacts
- DS1 circuit pack

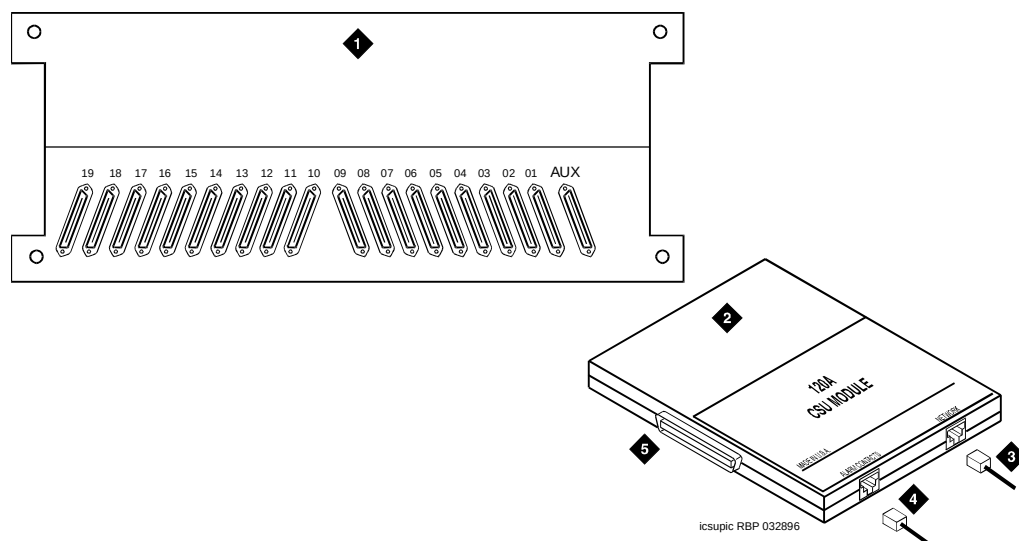
The basic ICSU requires a TN474E or TN777D or later suffix. The enhanced integrated channel service unit requires a TN474F or TN777E or later suffix.

### Installing the 120A CSU

---

See [Figure 6-56](#).





1. Rear of carrier containing DS1 circuit pack
2. 120A CSU
3. 4-pair cord to network interface (H600-383)
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. To 25-pair connector on rear of carrier containing DS1 circuit pack

Figure 6-56. 120A Channel Service Unit Module



**CAUTION:**

*Do not plug the 120A into any circuit pack other than a TN474F or TN777E or later release/vintage. Do not connect the 120A to any interface other than a network smart jack.*

*Be sure the DS1 circuit pack is set for 24-channel operation (1.544 Mbps). The 120A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.*



**CAUTION:**

*Always wear an anti-static wrist strap when installing a 120A module. Do not touch the external alarm cable when it is connected to the 120A. Static discharge can damage connector terminals and relays.*

1. Unplug the DS1 circuit pack from its slot.
2. Install a 4C retainer in the 50-pin plug associated with the DS1 circuit pack slot.
3. Plug the 120A's 25-pair connector directly into the plug associated with the DS1 circuit pack slot.

6 Adding or Removing Cabinet Hardware

*Installing an Integrated Channel Service Unit (ICSU) Module*

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4. Secure the 4C retainer around the 120A.
5. Attach the supplied H600-383 cable to the 120A and to the network smart jack.

This cable is directional. To determine the end that connects to the 120A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A end. The shield is grounded only at the 120A end.

Use the cable provided. If cabling other than that provided with the 120A is used, observe the following guidelines:

- Use 24-gauge wire that provides individually shielded, twisted pairs for transmit and receive signals. Use the cable between the network interface and the 120A. Ground the shields of this cable only at the 120A end to avoid ground loops.
  - Cabling between the network interface and 120A can have no bridge taps.
  - If using standard house riser cable for connections between the network interface and the 120A, maintain a 100-pair separation between the receive and transmit twisted pairs.
  - If using standard house riser cable for connections between the network interface and the 120A, allow no more than 2 cross connects to 110-type cross connect blocks.
  - Never use quad cable (untwisted two pair telephone cable) in a DS1 line.
  - Avoid mixing wires of different gauges in a DS1 line.
6. If using external alarm equipment, attach the supplied DW8 cable to the 120A and the external equipment. The maximum length of this cable depends on the alarm equipment.
  7. If a TN474F is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack as shown in Figure 2-1.
  8. From the DS1 circuit-pack screen of the system administration console, set the line compensation field to 0-133 feet (40.6 m).
  9. Reset the 120A by reseating the DS1 circuit pack.

When you reinsert the DS1 circuit pack after installing a 120A CSU the 120A resets. The DS1 circuit pack initializes and tests the 120A. When initialization and testing is complete, the green LED goes off. If the RED indicator is OFF after the test, the ICSU is working.
  10. If the circuits do not pass the self test, troubleshoot the 120A as instructed in *Integrated CSU Module Installation and Operation*.

[Table 6-12](#) provides the H600-383 cable pinouts. [Table 6-13](#) provides the cable lengths for each cable group number.

**Table 6-12. H600-383 cable Pin Assignments**

| Pin | Color  | Channel Service Unit Designation | Network Designation | Function     |
|-----|--------|----------------------------------|---------------------|--------------|
| 1   | BK     | Line in 0                        | R1                  | RCV          |
| 2   | Y      | Line in 1                        | T1                  |              |
| 3   | Shield |                                  |                     |              |
| 4   | R      | Line out 0                       | R                   | XMT          |
| 5   | G      | Line out 1                       | T                   |              |
| 7   | Shield |                                  |                     |              |
| 7   |        |                                  |                     | Not assigned |
| 8   |        |                                  |                     | Not assigned |

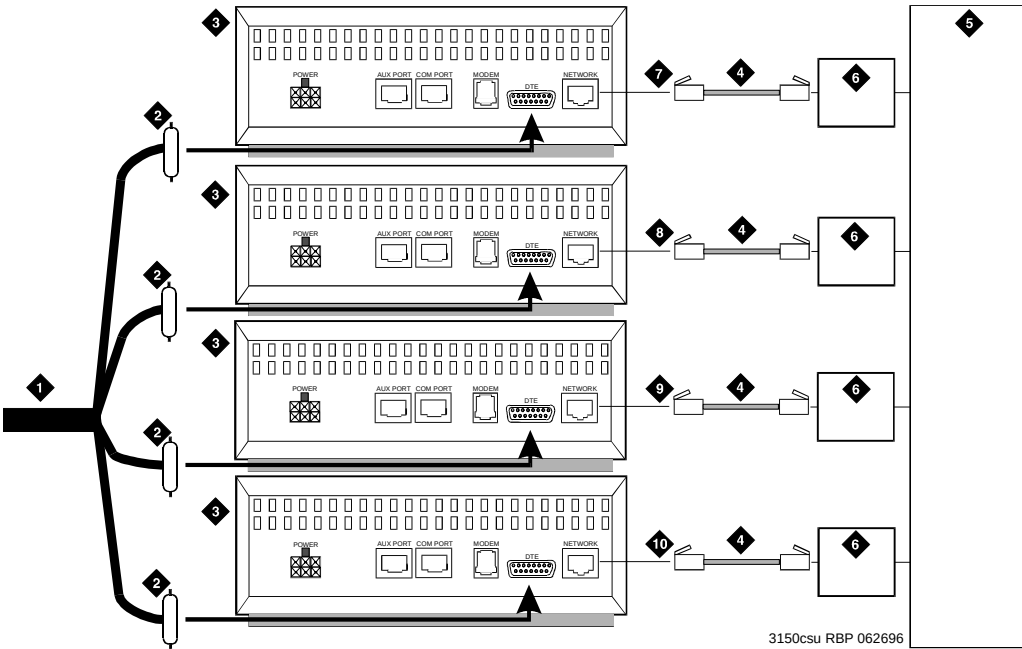
**Table 6-13. H600-383 cable Lengths by Group Number**

| Group | Length            | Group | Length             |
|-------|-------------------|-------|--------------------|
| 1     | 25 feet (7.7 m)   | 5     | 125 feet (38.1 m)  |
| 2     | 50 feet (15.2 m)  | 7     | 200 feet (71 m)    |
| 3     | 75 feet (22.9 m)  | 7     | 400 feet (122 m)   |
| 4     | 100 feet (30.5 m) | 8     | 750 feet (198.1 m) |

# Installing a 3150/3170 Channel Service Unit

1. Install the CSU as shown in [Figure 6-57](#). For some installations (such as a DS1 converter), use a Y-cable to connect the DEFINITY System to the quad cable. [Table 6-14](#) shows the Y-cable lengths. Be sure to label all cables.

[Figure 6-57](#) shows a typical connection from the H600-348 Quad cable to the CSU, through the H600-307 network cable, and to the network interface through the smart jacks. The quad cable provides up to four connections using a 15-pin connector that plugs into the DTE jack on each CSU. The H600-348 quad cable may require an adapter cable.



1. H600-348 quad cable

2. 15-pin male "D" connectors (to DTE jacks on CSU)

3. Channel service unit (CSU)

4. H600-307 cable (RJ-48C to RJ-48C)
5. Network interface

6. Smart jack (if provided)

7. Cable A

8. Cable B
9. Cable C

10. Cable D

Figure 6-57. 3150/3170 Channel Service Unit Connections

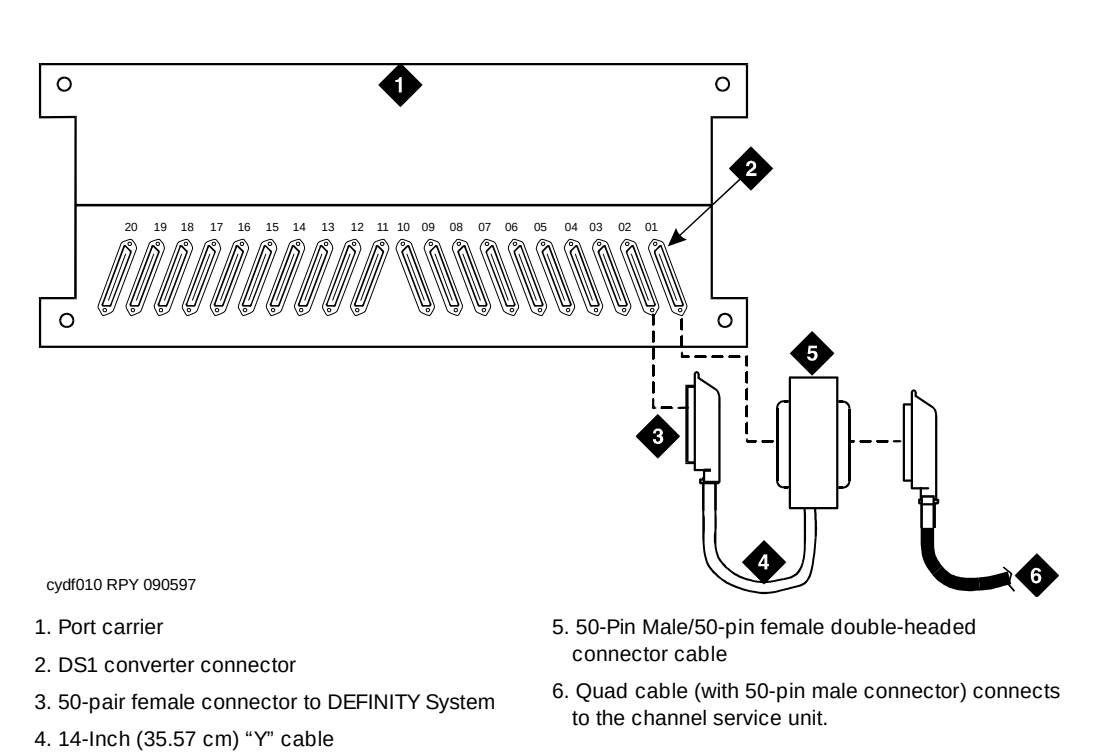


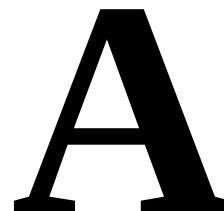
Figure 6-58. DS1 Converter Connections Using Double-Headed cable

Table 6-14. "Y" cable Lengths (DS1 converter Only)

| Length (in/cm) | Description                                                                                                      | Comcode   |
|----------------|------------------------------------------------------------------------------------------------------------------|-----------|
| 14/35.5        | TN1754 to adjacent expansion interface circuit pack or TN573B switch node interface circuit pack in same carrier | 847245750 |
| 70/177.8       | TN1754 to expansion interface circuit pack or switch node interface in another carrier                           | 847245778 |
| 14/35.5        | TN1754 to fiber optic transceiver (DC-powered cabinets only). This cable is for intercabinet cabling only.       | 847245777 |
| 14/35.5        | TN1754 to adjacent TN570/B/C expansion interface circuit pack                                                    | 847747741 |

|          |                                                    |              |
|----------|----------------------------------------------------|--------------|
| <b>6</b> | <b>Adding or Removing Cabinet Hardware</b>         |              |
|          | <i>Installing a 3150/3170 Channel Service Unit</i> | <i>6-148</i> |

# Fiber Link Administration



---

This appendix describes the steps required to administer fiber links on G3rV4 and later systems.

Before starting the administration process, verify the following:

1. Be sure all fiber optic transceivers and all fiber optic cables are correctly installed on the DS1 and/or DS1 converter circuit packs.
2. Verify connections to the Lightguide Interconnect Units (LIUs) or shelves, to the fiber multiplexers, and to the outside world. Refer to Appendix A in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.

## Administer Fiber Links

---

Administer system fiber link configurations to match the hardware installed and according to the Fiber Optic Cable Running List.

### NOTE:

Fiber link administration interacts with or depends upon other system features that must be administered before it.

Fiber link administration creates translation data by identifying the endpoint pairs for each link. Endpoints can be:

- An Expansion Interface (EI) circuit pack
- A Switch Node Interface (SNI) circuit pack

## Circuit Pack Form

---

After installing the equipment (including circuit packs), the circuit packs must be administered *before* the fiber link is administered. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* for more information.

The following information describes general circuit pack administration information:

- a. Use the Circuit Packs form to administer circuit packs to carrier slots. Install or administer the circuit packs (or assigned using the Circuit Packs form) before administering voice terminals, attendant consoles, or trunks.
- b. Each page of the form represents 1 carrier in the cabinet shown on the command line.
- c. Refer to *DEFINITY Communications System Generic 3 Planning and Configuration* for more information about circuit pack administration and port assignment records.
- d. For initial installation, assign circuit packs to slots using the hardware configuration layout record from the factory or Customer Services Organization. Do not arbitrarily assign circuit packs to slots.
- e. If the carrier type administered on the Cabinet Administration form does not match the physical hardware, question marks (??) may display in the Code fields.
- f. When a circuit pack in a slot differs from what has been administered on the form, a “#” displays between the “Sfx” and “Name” fields to indicate a conflict.
- g. For Release 8r, the number of slot fields displayed represents administrable slots for the given carrier type.



## Administer Fiber Links on Simplex Systems

Administer the TN570 Expansion Interface and the TN574 or TN1654 DS1 Converter circuit packs.

1. Type **change circuit packs** and press Enter. Scroll through the pages on the form until the carrier containing the new circuit packs displays on the screen.
2. Enter the circuit packs into the appropriate slot locations on the form. Press Enter when finished.
3. Type **list fiber** and press Enter. All administered fiber connections display.
4. If a previously used fiber link is to be reused, enter **add fiber <number>** and press Enter. If this is a new fiber link, type **add fiber next** and press Enter. The Fiber Link Administration screen appears. Each fiber link is identified by a fiber number.
  - a. Type **y** or **n** in the field **Is one endpoint remoted via DS1 Converter complex?** and press Enter.
  - b. Enter the location of the TN570 and the TN574 or TN1654 circuit packs for both **ENDPOINT-1** and **ENDPOINT-2**.
  - c. Scroll to page 2 of the form. Enter **y** as applicable, in each **Facility Installed?** field (A, B, C, and D).
  - d. In the **Bit Rate:** field, type either **1.544** (T1) or **2.048** (E1).
  - e. Enter the idle code in the **Idle Code MSB (1) . . . . LSB (8) :** field. The default value is **11101000**. It is recommended that the default value be used unless it becomes absolutely necessary to change it. The "MSB" means Most Significant Bit, the "LSB" means Least Significant Bit.
  - f. In the **Line Coding:** field, enter the line coding information. This information should match the line coding of the facility. For T1, example line coding is **b8zs**. For E1, example line coding is **hdb3**.



**NOTE:**

If this data is not correct, wideband errors (multimedia call handling) may occur.

5. For T1 sites, refer to ["T1 Installations Only"](#). For E1 sites, refer to ["E1 Installations Only"](#).

## T1 Installations Only

1. The Framing Mode: field is display only and shows the hardware setting.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only and show the hardware setting.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

## E1 Installations Only

1. Type **y** or **n** in the CRC? field. The "CRC" means Cyclic Redundancy Check. This is an error detection algorithm.
2. The Line Termination: field is display only. A 75 (75 Ohms) or 120 (120 Ohms) typically displays.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

## All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be on for each active facility administered. For example, if Facility A and Facility B are administered, then the top 2 Span LEDs on the circuit pack must be on (yellow). The yellow LEDs are on only if no problems were encountered during the administration of hardware. Span LEDs associated with non-administered facilities (C and D, in this example) should be off.
3. Perform a test call, if desired.

## Administer Fiber Links on Duplex Systems

All non-duplicated Switch Node Interfaces to Switch Node Interface fiber links are automatically duplicated. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet Form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
  - Fiber Link Administration Form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.
  - Duplication-Related System-Parameters Form — An additional field appears to enable operation of PNC duplication.
1. Type **change system-parameters customer-options** and press Enter. On Page 2 of the form, set the PNC Duplication? field to **y**. Press Enter.
  2. Type **change system-parameters duplication** and press Enter. Change the Enable operation of PNC duplication? field to **y**. Press Enter.
  3. Type **status pnc** and press Enter. Verify the Duplicated ? field is **yes**.
  4. Type **list fiber** and press Enter. All administered fiber connections display.
  5. If a previously used fiber link is to be reused, type **add fiber <number>** and press Enter. If this is a new fiber link, type **add fiber next** and press Enter.
  6. The Fiber Link Administration form appears. On Page 1 of the form:
    - a. Enter the Board Location: for Endpoint-1 and Endpoint-2. This is the cabinet, carrier, and slot that identifies the physical location of an SNI or EI circuit pack that is the first endpoint of the fiber link. Repeat for the remaining endpoints.
    - b. The Board Type field is display only and shows the type of circuit pack in Endpoint-1.
    - c. In the DS1CONV Board Location: field, enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.

- d. The DS1CONV Board Type: field is display only and shows the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must match.
    - e. In the Is one endpoint remoted via a DS1 Converter Complex? field, type **y** to specify that a DS1 Converter complex is used to remote 1 endpoint. If **y** is entered, administer the A-PNC DS1 Converter Board Location on Page 1. The A-PNC DS1 Converter Board Type displays.
  7. On Page 2 of the form:
    - a. Administer the A-PNC DS1 Converter (DS1CONV) Attributes.
    - b. Enter the DS1 Converter Facilities information. In the Facility Installed? field, type **y** for all installed facilities (A, B, C, and D).
    - c. In the Bit Rate: field, type **1.544** for T1 operation or **2.048** for E1 operation.  
  
 **NOTE:**  
One bit rate applies for all facilities within the same DS1 Converter complex. The Bit Rate: field displays only under Facility A.
    - d. Enter the idle code in the Idle Code MSB (1) . . . . LSB (8) : field. The default value is **11101000**. It is recommended that the default value be used unless it becomes absolutely necessary to change it. The “MSB” means Most Significant Bit, the “LSB” means Least Significant Bit.
    - e. Enter the appropriate data in the Line Coding: field. This data should match the line coding of the facility. For T1, example line coding is **b8zs**. For E1, example line coding is **hdb3**.
    - f. Scroll to Page 3 and modify the fields as needed for the B-PNC.  
  
 **NOTE:**  
If this data is not correct, wideband errors (such as multimedia call handling) may occur.
  8. For T1 sites, refer to [“T1 Installations Only”](#). For E1 sites, refer to [“E1 Installations Only”](#).

## T1 Installations Only

1. The Framing Mode: field is display only and shows the hardware setting.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only and show the hardware setting.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

## E1 Installations Only

1. Type **y** or **n** in the CRC? field. The "CRC" means Cyclic Redundancy Check. This is an error detection algorithm.
2. The Line Termination: field is display only. A 75 (75 Ohms) or 120 (120 Ohms) typically displays.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

## All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be on for each active facility administered. For example, if Facility A and Facility B are administered, then the top 2 Span LEDs on the circuit pack must be on (yellow). The yellow LEDs are on only if no problems were encountered during the administration of hardware. Span LEDs associated with non-administered facilities (C and D, in this example) should be off.
3. Perform a test call, if desired.

## Fiber Link Administration Form

This form administers fiber links, each of which is identified by a fiber number.

**⇒ NOTE:**  
Fiber link administration only applies to R5r and later configurations.

Port networks (PNs) are connected via direct fiber link connections or through a center stage switch (CSS) to provide the interconnection of port networks required for voice/data information transfer. The CSS is composed of "switch nodes" that can be interconnected in one or two levels to provide Port Network Connectivity (PNC). The CSS provides circuit-switched connectivity for voice and data communications as well as packet-switched connectivity. Fiber link administration permits an administration of translation data associated with a switch connection (such as optical fiber, metallic cable, or DS1CONV circuit packs and DS1 facility links between two endpoints). The two fiber endpoints can be:

- An expansion interface (EI) circuit pack
- A switch node interface (SNI) circuit pack

**⇒ NOTE:**  
Only one administrative terminal can administer fiber links at a time; others can display fiber link information.

### Administration commands

Use the following commands to administer the Fiber Link Administration form.

| Action  | Object     | Qualifier <sup>1</sup>  |
|---------|------------|-------------------------|
| add     | fiber-link | link number or ['next'] |
| change  | fiber-link | link number             |
| display | fiber-link | link number             |
| list    | fiber-link | link number             |
| remove  | fiber-link | link number             |

1. Brackets [ ] indicate the qualifier is optional.  
Single quotes ( ' ' ) indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

PNCs have three different reliability configurations (one for each system reliability configuration) as follows:

| System Configuration | PNC                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------|
| Standard Reliability | Simplex Fibers                                                                                                         |
| High Reliability     | Simplex Fibers to Expansion Port Networks and Duplicated Fibers between Processor Port Networks (PPN) and Switch Nodes |
| Critical Reliability | Duplicated Fibers                                                                                                      |

Simplex PNC

For Simplex PNC, PNC Duplication is disabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the Duplication-Related System-Parameters form.

Administration of PNC Duplication

The PNC Duplication feature is enabled on the System-Parameters Customer-Options form and Operation of Duplication is enabled on the Duplication-Related System-Parameters form. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
- Fiber Link form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.
- Duplication-Related System-Parameters form — An additional field appears to enable operation of PNC duplication.

Form instructions

Page 1 of the form

Fiber Link #: 1

FIBER LINK ADMINISTRATION

Page 1 of 1

Is one endpoint remoted via a DS1 Converter Complex? ☐

ENDPOINT-1  
(A-PNC)

Board Location:

Board Type: xxx

ENDPOINT-2  
(A-PNC)

Board Location:

Board Type: xxx

Screen 6-1. Fiber Link Administration form

Basic Fiber Link Administration.

The following fields appear:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the first endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the second endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2.
- **Is one endpoint remoted via a DS1 Converter Complex?** — Enter **y** to specify that a DS1 Converter complex is used to remote one endpoint. If a **y** is entered, A-PNC DS1 Converter circuit pack Location must be administered on Page 1. A-PNC DS1 Converter circuit pack Type displays. A-PNC DS1 Converter (DS1CONV) Attributes must be administered on Page 2 of this form.



Duplicated Fiber Link Administration.

add fiber-link next

Page 1 of 3

FIBER LINK ADMINISTRATION

Fiber Link #: 1

Is one endpoint remotod via DS1 Converter Complex? yes

ENDPOINT-1  
(A-PNC)

Board Location: 01E01  
Board Type: ei  
DS1CONV Board Location: 01B01  
DS1CONV Board Type: TN574

ENDPOINT-2  
(A-PNC)

Board Location: 02A01  
Board Type: ei  
DS1CONV Board Location: 02B01  
DS1CONV Board Type: TN574

ENDPOINT-1  
(B-PNC)

Board Location: 01D01  
Board Type: ei  
DS1CONV Board Location: 01C01  
DS1CONV Board Type: TN574

ENDPOINT-2  
(B-PNC)

Board Location: 02A02  
Board Type: ei  
DS1CONV Board Location: 02C01  
DS1CONV Board Type: TN574

Screen 6-2. Fiber Link Administration form (page 1 of 3)

The following fields appear when Administration of PNC Duplication is enabled on the System-Parameters Customer-Options form:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Is one endpoint remotod via DS1 Converter Complex?** — Enter **yes** to specify that a DS1 converter complex is used to remote one endpoint. If **yes** is entered, A-PNC and B-PNC DS1 Converter (DS1CONV) Attributes must be administered on Pages 2 and 3 (respectively) of the form.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.

- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.

DS1C Converter Complex Administration for TN574 Circuit Packs.

add fiber-link next

Page 2 of 3

FIBER LINK ADMINISTRATION  
A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01DS1CONV Board Location: 02B01  
DS1CONV Board Type: TN574DS1CONV Board Type: TN574

DS1 CONVERTER FACILITIES

|                              | A       | B       | C       | D       |
|------------------------------|---------|---------|---------|---------|
| Facility Installed?          | yes     | no      | no      | no      |
| Passes Far-end Clock?        | yes     | yes     | yes     | yes     |
| Digital Data Compatible?     | yes     | yes     | yes     | yes     |
| Line Coding:                 | ami-zcs | ami-zcs | ami-zcs | ami-zcs |
| Framing Mode:                | esf     | esf     | esf     | esf     |
| DS1CONV-1 Line Compensation: | 1       | 1       | 1       | 1       |
| DS1CONV-2 Line Compensation: | 1       | 1       | 1       | 1       |

Facility A Circuit ID: 09876543

Screen 6-3. Fiber Link Administration form for TN574 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following DS1 Converter Complex fields appear on Page 2 when the Is one endpoint remotod via a DS1 Converter Complex field is **y**.

 **NOTE:**

When you administer DS1 Converter TN1654 circuit packs, different fields display.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the first endpoint of the fiber link. This is entered on Page 1 and displays on Page 2.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the first endpoint.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the second endpoint of the fiber link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the second endpoint. This field is updated via the Change Circuit-packs command.
- **Facility Installed** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex. Default is **yes** for Facility A.
- **Passes Far-end Clock** — Enter "**yes**" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far end converter circuit pack or the network (such as when the signal is converted from digital to analog and then back to digital), enter "**no**." Default is **yes** for Facility A.

This field determines whether the DS1 converter circuit pack can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter **yes** (default) in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least Facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter **no**.

- **Line Coding** — Enter the line coding format, **ami-zcs** (default), or **ami-basic**, **b8zs**, or **hdb3** in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

When ami-zcs line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ami-zcs line coding results in data corruption. The DS1CONV circuit pack protects the packet facility (one of up to four facilities dynamically allocated by the DS1CONV circuit pack) from corruption through a special escape mechanism.

When b8zs line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

 **NOTE:**

Note that although the esf framing mode and b8zs line coding are the preferable modes of operation, you should confirm that the DS1 facilities support them before selecting this line coding.

- **Framing Mode** — Enter the framing format, **esf** (default) or **d4**, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

 **NOTE:**

The D4 format is supported by the Converter circuit packs, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use is discouraged.

- **DS1CONV-1 Line Compensation** — Enter the line compensation (**1 to 5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see [Table 6-15](#)).

The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22 gauge ABAM (shielded twisted pair) cable, 24 gauge Premises Distribution System (PDS) wiring, and 26 gauge PDS wiring.

Table 6-15. Distance to DSX-1 Interface (feet)

| Equalizer Setting | 22 AWG ABAM & 24 AWG PDS | 26 AWG PDS |
|-------------------|--------------------------|------------|
| 1                 | 1 to 133                 | 0 to 90    |
| 2                 | 133 to 266               | 90 to 180  |
| 3                 | 266 to 399               | 180 to 270 |
| 4                 | 399 to 533               | 270 to 360 |
| 5                 | 533 to 655               | 360 to 450 |

 **NOTE:**  
The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

If it is a TN574 circuit pack, the default for all facilities is **1**.

- **DS1CONV-2 Line Compensation** — Enter the line compensation (**1 to 5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see [Table 6-15](#)). The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.
- **Facility A Circuit ID** — Displays when the value in Facility Installed for Facility A is **yes**. Enter up to 40 characters to identify the cabinet, carrier, and slot of the DS1 Converter circuit pack's physical location.

Similarly, Facility B Circuit ID, Facility C Circuit ID, and Facility D Circuit ID fields display for each of the DS1 Converter Facilities when **yes** is entered in the corresponding Facility Installed field.

Duplicated DS1C Converter Complex Administration  
for TN574 Circuit Packs.

add fiber-link next

Page 3 of 3

FIBER LINK ADMINISTRATION  
B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01  
DS1CONV Board Type: TN574

DS1CONV Board Location: 02C01  
DS1CONV Board Type: TN574

DS1 CONVERTER FACILITIES

|                              | A       | B       | C       | D       |
|------------------------------|---------|---------|---------|---------|
| Facility Installed?          | yes     | no      | no      | no      |
| Passes Far-end Clock?        | yes     | yes     | yes     | yes     |
| Digital Data Compatible?     | yes     | yes     | yes     | yes     |
| Line Coding:                 | ami-zcs | ami-zcs | ami-zcs | ami-zcs |
| Framing Mode:                | esf     | esf     | esf     | esf     |
| DS1CONV-1 Line Compensation: | 1       | 1       | 1       | 1       |
| DS1CONV-2 Line Compensation: | 1       | 1       | 1       | 1       |

Facility B Circuit ID: 01112343

Screen 6-4. Fiber Link Administration form for TN574 Circuit Pack (Duplicated DS1 Converter Complex Administration) (page 3 of 3)

Page 3 appears when the Is one endpoint remoted via a DS1 Converter Complex field is "yes" and duplication is enabled.

 **NOTE:**  
When you administer DS1 Converter TN1654 circuit packs, different fields display.

For field definitions of the fields displayed on page 3 of the Fiber Link Administration form, refer back to the previous section.

DS1 Converter Complex Administration for T1 TN1654 Circuit Packs.

add fiber-link next

Page 2 of 3

FIBER LINK ADMINISTRATION  
A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01  
DS1CONV Board Type: TN1654

DS1CONV Board Location: 02B01  
DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

|                              | A        | B       | C       | D       |
|------------------------------|----------|---------|---------|---------|
| Facility Installed?          | yes      | yes     | no      | no      |
| Bit Rate:                    | 1.544    |         |         |         |
| Facility Startup Idle Code:  | 11101000 |         |         |         |
| Line Coding:                 | ami-zcs  | ami-zcs | ami-zcs | ami-zcs |
| Framing Mode:                |          |         |         |         |
| DS1CONV-1 Line Compensation: | 1        | 1       | 1       | 1       |
| DS1CONV-2 Line Compensation: | 1        | 1       | 1       | 1       |

Facility A Circuit ID: 09876543  
Facility B Circuit ID: 234567889

Screen 6-5. Fiber Link Administration form for T1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following unique fields display when administering a T1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.



**NOTE:**

Since one bit rate applies for all facilities within the same DS1 Converter complex, the Bit Rate field displays only under Facility A.

- **Facility Startup Idle Code**— Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis. This is the idle code used when a TN1654 first establishes a link on a T1/E1 facility. The initial idle code used by the TN1654 is overwritten by the center stage switch to an “all ones” pattern once framing is established on that T1/E1 facility.
- **Framing Mode** — For TN1654 with 1.544 Mbps Bit Rate, this is a display-only field.

Duplicated DS1 Converter Complex Administration for T1 TN1654 Circuit Packs.

add fiber-link next

Page 2 of 3

FIBER LINK ADMINISTRATION  
A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01

DS1CONV Board Location: 02B01

DS1CONV Board Type: TN1654

DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

|                             | A        | B    | C    | D    |
|-----------------------------|----------|------|------|------|
| Facility Installed?         | yes      | yes  | yes  | no   |
| Bit Rate:                   | 2.048    |      |      |      |
| Facility Startup Idle Code: | 11101000 |      |      |      |
| Line Coding:                | hdb3     | hdb3 | hdb3 | hdb3 |
| CRC?                        | yes      |      |      |      |
| Line Termination:           |          |      |      |      |

Facility A Circuit ID: 09876543

Facility B Circuit ID: 234567889

Facility C Circuit ID: 434566335

Screen 6-6. Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following unique fields display when administering a TN1654 DS1 Converter.

- **Bit Rate** — A display-only field for TN1654 entered on page 3 of the form. See previous section. **1.544** indicates domestic T1 operation and **2.048** indicates international E1 operation.

DS1 Converter Complex Administration for E1 TN1654 Circuit Packs .

The following unique fields display when administering a E1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.



NOTE:

Since one bit rate applies for all facilities within the same DS1 Converter complex, Bit Rate displays only under Facility A. To activate the desired Bit Rate, the toggle switch on the circuit pack must be set and it must correspond to the Bit Rate.

- **Idle Code MSB(1) ... LSB(8)** — Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis.



- **CRC** — Displays when the DS1 Converter circuit pack is TN1654 and the Bit Rate is 2.048 Mbps. Enter **yes** to receive a “yellow 2” alarm for E1 operation. Default is **no**. You can administer this field on a per circuit pack basis.
- **Line Termination** — A display-only field for DS1 Converter circuit packs that are TN1654 and have a Bit Rate of 2.048 Mbps. It identifies facility connections as CEPT 75 ohm coaxial or 120 ohm CEPT twisted pair.

**Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs.**

See the previous sections for screen layout and field definitions.

add fiber-link nextPage 3 of 3

FIBER LINK ADMINISTRATION  
B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01

DS1CONV Board Location: 02C01

DS1CONV Board Type: TN1654

DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

|                             | A        | B    | C    | D    |
|-----------------------------|----------|------|------|------|
| Facility Installed?         | yes      | yes  | yes  | no   |
| Bit Rate:                   | 2.048    |      |      |      |
| Facility Startup Idle Code: | 11101000 |      |      |      |
| Line Coding:                | hdb3     | hdb3 | hdb3 | hdb3 |
| CRC?                        | yes      |      |      |      |
| Line Termination:           |          |      |      |      |

Facility A Circuit ID: 0AABB01

Facility B Circuit ID: 0CCDD02

Facility C Circuit ID: 0EEFF03

**Screen 6-7. Fiber Line Administration form for B-PNC DS1 Converter (DS1CONV) Attributes**

A Fiber Link Administration  
Administer Fiber Links

A-20

# Troubleshooting an Upgrade

# B

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This appendix provides information to correct some problems when upgrading a system. The information in this appendix is a compilation of the most commonly reported troubles received by Tier 4 Support at Lucent Technologies. For general information on troubleshooting associated with maintenance procedures, see one of the following references:

- Chapter 5, Alarms, Errors and Troubleshooting, of the Release 8.2, Maintenance for R8r manual

This appendix may be updated with new information at each product/document release. If you have troubleshooting or error recovery information that you think would be valuable to other technicians, please FAX your comments to us at 1-303-538-1741 (United States).

This appendix is organized into three main sections, as described below:

- [New for Release 8](#) – provides information on introductions for Release 8 that might result in upgrade problems
- [Troubleshooting Guidelines](#) – provides general procedures to try before escalating a problem
- [Troubleshooting Release 8 Upgrades](#) – provides specific troubleshooting procedures for common upgrade problems

## New for Release 8

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- [ATM PNC Duplication \(ATM PNC-DUP\)](#)
- [ATM Expansion Interface \(ATM-EI\)](#)
- [Mass Storage System](#)
- [Control LAN \(C-LAN\)](#)
- [Control LAN \(C-LAN\)](#)
- [System Links \(SYS-LINK\)](#)

### ATM PNC Duplication (ATM PNC-DUP)

The PNC-DUP maintenance object tracks the health of the active and standby PNCs, controls planned and spontaneous interchanges, and manages related functions such as double call refresh and unrefresh, antithrashing, and so on. The main responsibility of PNC-DUP is to recover the system to full service in the event of a fault. In the event of multiple faults, PNC-DUP does its best to maximize service continuity.

In systems with the Critical Reliability option, the following components, which together comprise the Port Network Connectivity (PNC), are duplicated:

- ATM-Expansion Interface (ATM-EI) circuit packs in the port networks (PNs)
- Fiber-optic cables connecting the above circuit packs to the ATM Switch Interface Modules
- ATM Switch

Although not part of the PNC, Tone-Clock circuit packs are also duplicated in each PN. All systems have one Processor Port Network (PPN). ATM PNC systems can have up to 43 EPNs.

PNC duplication architecture utilizes an active/standby duplication scheme in which one complete set of PNC components supports call processing, while the duplicate PNC is held in reserve. All calls on the active PNC are simultaneously set up, or shadowed, on the standby PNC in order for it to be capable of instantly assuming active status when necessary, allowing for interchanges without service disruption (in the case of single faults).

PNC duplication does not introduce any additional types of hardware or hardware faults, and there are no tests associated with the PNC-DUP MO. Instead, its error log entries contain useful information about the occurrence and causes of interchanges in order to facilitate diagnosis of problems, which can then be addressed by using the documentation for the individual maintenance object involved.

The following PNC duplication-related commands and their output screens are fully described in Chapter 8, Maintenance Commands, of the *DEFINITY ECS Release 8 Maintenance for Release R8r* book. The associated PNC-DUP maintenance object is found in Chapter 9 of the same reference.

- status pnc

Displays information about the operational status of both PNCs including state of health, alarms, busyouts and locks, and so on.
- reset pnc  
interchange

Used to initiate a demand PNC interchange. If the standby is healthy (state of health indexes all zero), there is no effect on service. Otherwise, calls may be dropped.
- set pnc

Used to lock or unlock the active PNC, preventing interchanges. It does not interfere with double call setup.
- busyout pnc

Removes the standby PNC from service.

**ATM Expansion Interface (ATM-EI)**

---

The ATM-EI maintenance object covers the ATM circuit pack administered as an ATM-Port Network Connectivity (PNC) Expansion Interface (ATM-EI). The ATM-EI provides PNC between a DEFINITY PPN and all the EPNs through the ATM switch.

The circuit packs listed below are ATM-EI boards *if they are administered to serve the ATM Port Network Connectivity (ATM-PNC) for DEFINITY.*

| Circuit pack | Fiber       | Echo<br>cancellation |
|--------------|-------------|----------------------|
| TN2305B      | Multi mode  | Y                    |
| TN2306B      | Single mode | Y                    |

**Mass Storage System**

---

The Mass Storage System (MSS) provides non-volatile storage for system software, translation data, announcement data and program update data. As shown in the figure below, the MSS consists of a Host Adapter circuit on the UN332C MSS-Network Control circuit pack (MSSNET), a Small Computer System Interface (SCSI) bus, a TN2211 Optical Drive circuit pack or a TN1656 Tape Drive circuit pack, and the TN1657 Disk Drive circuit pack. The Disk Drive acts as the primary storage device. The TN2211 Optical Drive or TN1656 Tape Drive serves as a backup device and as a removable medium for system data.

Troubleshooting details for the Mass Storage System may be found under the **R-MEDIA** maintenance object in Chapter 9, Maintenance Object Repair Procedures, of the Release 8.2, Maintenance for R8r manual. Additional related maintenance objects associated with the Mass Storage System include **STO-DATA**, **DISK**, and **H-ADAPTR**.

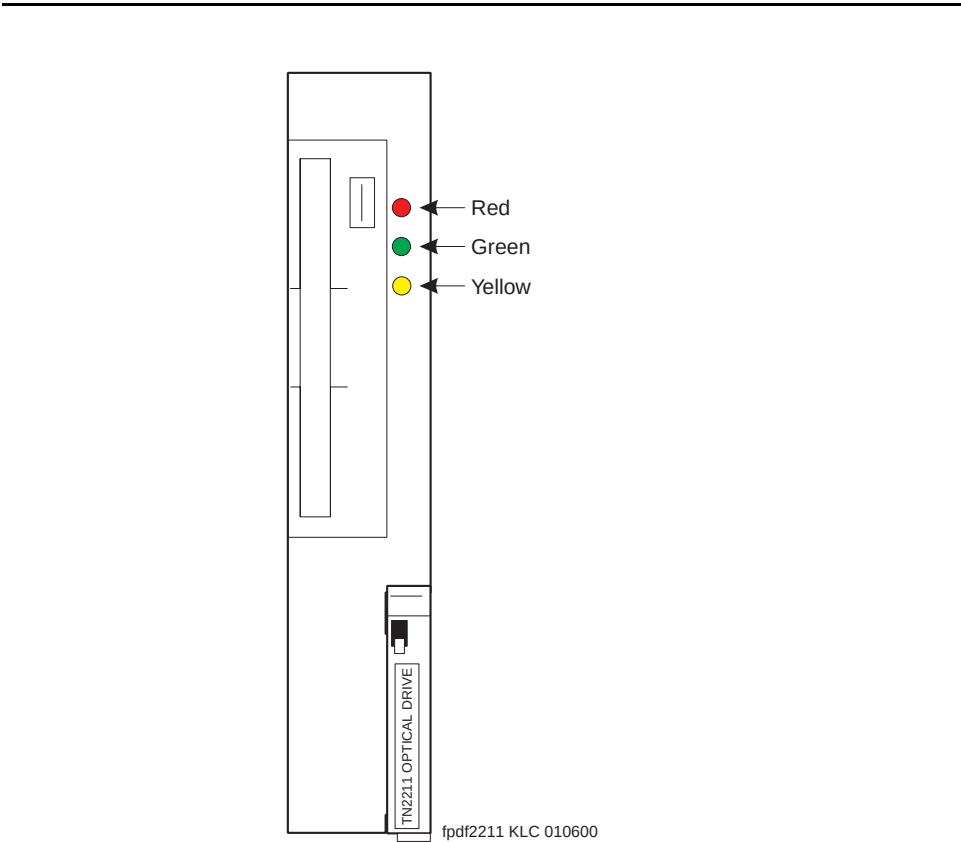


Figure B-1. TN2211 faceplate

The system is usually booted from the boot image stored on disk. The **save translation** and **save announcements** commands save to disk the memory-resident translation data and TN750-resident announcement data, respectively. The **backup disk** command copies data from the disk to the removable media for backup storage. The **restore disk** command copies data from the removable media back to disk. All MSS components reside in the SPE, or PPN control carrier (carrier A for a simplex SPE, carriers A and B for a duplicated SPE).

The removable media circuit pack contains SCSI bus terminators, a -48V to +12V power converter, an industry standard SCSI-based removable media drive, and interface circuitry to the private bus to control the LEDs, detect the presence of the circuit pack, and identify the vintage of the hardware.

A -48V to +12V converter circuit on the TN2211 Optical Drive circuit pack provides power for both the Optical Drive and the Disk Drive. The presence of +12V on these circuit packs is monitored separately by maintenance software so that a failure of the +12V converter on the Removable Media circuit pack can be identified or ruled out as the source of the problem when the Disk Drive loses +12V power.

The Host Adapter circuit pack, Removable Media Drive circuit pack, and Disk circuit pack are treated as separate, but related, maintenance objects (H-ADAPTR, R-MEDIA, and DISK). Since the Disk circuit pack is controlled by SCSI commands which are generated by the Host Adapter, problems with the Host Adapter can prevent communications with the Disk. Whenever the Host Adapter is taken out of service by the **busy-out host-adapter** command, or due to failure of a critical Host Adapter test, the Removable Media (R-MEDIA) and Disk (DISK) maintenance objects are also placed in a maintenance busyout state.

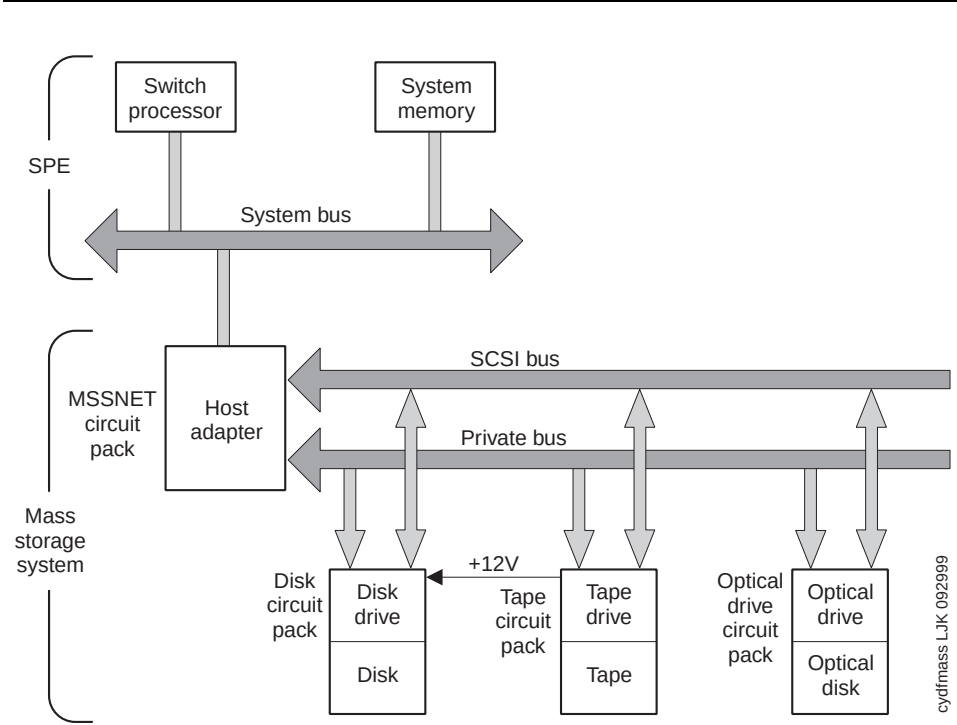


Figure B-2. Mass Storage System interactions

## Control LAN (C-LAN)

---

The TN799 Control LAN (C-LAN) packet port circuit pack provides TCP/IP connection to adjuncts applications such as CMS, Intuity, and DCS Networking. The C-LAN circuit pack has 1 10baseT Ethernet connection and up to 16 DS0 physical interfaces for PPP connections. Putting multiple C-LAN circuit packs into a -system gives additional TCP/IP capacity. In addition to the TCP/IP functionality, CLAN extends the ISDN capabilities for csi models by providing Packet bus access.

A remote socket control link (RSCL) links the C-LAN and the SPE to pass call control and other management information. Since one link serves all the ports on the circuit pack, maintenance of the RSCL is part of the C-LAN circuit pack maintenance.

The C-LAN TN799 circuit pack combines the functions of the PGATE and PI circuit packs into one circuit pack. The PGATE or PI can be used with the C-LAN to create an X.25-to-TCP/IP bridge for adjunct and DCS connectivity.

Maintenance objects associated under the Control LAN area include **CLAN-BD** (Control LAN Circuit Pack), **ETH-PT** (Control LAN Ethernet), and **PPP-PT** (Control LAN Packet/Port).

## System Links (SYS-LINK)

---

System Links are packet links that originate at the Packet Interface board and traverse various hardware components to specific endpoints. The hardware components involved on the forward and reverse routes can be different, depending upon the configuration and switch administration. Various types of links are defined by their endpoints:

|      |                                                                                                                                                   |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| EAL  | Expansion Archangel Link terminating at an Expansion Interface board. This link carries CCMS messages.                                            |
| INL  | Indirect Neighbor Link terminating at a Switch Node Interface board                                                                               |
| PACL | PNC ATM Control Link terminating at a PNC ATM EI board. This link carries ATM signaling commands from CaPro to the remote TN2238 (ATM-EI) boards. |
| PGC  | Packet Gateway Call-Control Link terminating at a Packet Gateway board                                                                            |
| PRI  | ISDN PRI D-Channel Link terminating at a Universal DS1 board                                                                                      |
| RSCL | Remote Socket Control Link terminating at a C-LAN board                                                                                           |
| RSL  | Remote Socket Link teminating at a C-LAN board                                                                                                    |
| SAP  | System (Access) Port Link terminating at a Packet Data port                                                                                       |
| X.25 | BX.25 Link terminating at a Packet Gateway port                                                                                                   |



The system links (**SYS-LINK**) maintenance object records all errors encountered on the links. Most of these events are not extraordinary unless they occur with an alarming frequency. The events are logged as they occur, leaving a “trail” to help analyze abnormal behavior exhibited by the endpoints attached to the links or the links themselves.

When a link goes down, an alarm is raised immediately. For EAL, INL, and PACL link types a MINOR alarm is raised; for all other link types a WARNING alarm is raised. Other alarming conditions that do not cause the link to go down get a WARNING alarm, regardless of the link type.

## Troubleshooting Guidelines

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Before escalating a problem, try the troubleshooting procedures listed in this appendix. Also try the general troubleshooting procedures below.

1. Check the software compatibility on the Software Release Letter. Be sure the software that you are upgrading *from* is compatible with the software that you are upgrading *to*.
2. Check the Release 8 software tape (removable media) for defects. Type **test removable-media UUCSS long** and press Enter, if you are using R8 software. If you are using R7 or prior software, type **test tape UUCSS long** and press Enter. If the tape (removable media) has errors, replace it.



### NOTE:

Do not run the **test removable-media short command**, or the **test tape short command**. This test cannot find all of the bad sectors that may be present on the tape (removable media).

3. If upgrading from G3V4 and earlier systems to a Release 8r, check the vintage of the disk drive. The disk drive *must* be TN1657 Vintage 4 or later.
4. Always use the Software Release Letter that accompanies the software tape (removable media). If the letter is not available, use the appropriate chapter in this book.

## **Removable Media Troubleshooting Guidelines**

Use the following guidelines when troubleshooting and resolving removable media (R-MEDIA) problems.

1. *Avoid saving translations or announcements* on the backup removable drive until all other removable media and Host Adapter problems have been resolved.

If there is something wrong with the Mass Storage System, an attempt to save translations or announcements could destroy a good copy of the files on the removable media.

2. In a system configured with duplicated SPEs, the tests run on the standby removable media circuit pack are identical to those run on the active removable media circuit pack. Communications between the active and standby SPEs is provided by the DUPINT circuit pack for both the control channel and memory shadowing. Therefore, problems with the DUPINT circuit pack may affect maintenance tests of the standby removable media circuit pack.
3. Check the error log for power related problems and refer to the maintenance documentation on power.
4. The data on the removable media will likely be destroyed if:
  - The optical disk is removed when the amber LED on the removable media circuit pack is on.
  - The removable media circuit pack is removed while the amber LED on the removable media circuit pack is on.
  - Power is removed from the removable media while the amber LED on the removable media circuit pack is on.

## Troubleshooting Release 8 Upgrades

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The subsections to follow present specific procedures for common upgrade problems, listed below:

- [No Translations After Upgrade](#)
- [One Side Upgrades, the Other Side Does Not \(No Shadowing\); Active Side Has Correct R8 Load](#)
- [Restore Disk Install or Restore Disk Full Fails](#)
- [Message Waiting Lamps On \(After Removing an EPN\)](#)
- [Tone Clock Does Not Function in New EPN](#)
- [Translation Corruption Detected](#)
  - [Unsuccessful Translation Read on System Restart \(If Upgrading From Pre-R7.1\)](#)
  - [Software Incompatibility](#)
- [Re-install the ISDN-PRI Links \(Only for Failed Upgrades\)](#)

### No Translations After Upgrade

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This problem usually means that the **save translation** command, performed during the upgrade, was not successful. To recover:

1. Install the backup tape (removable media) into the tape (removable media) drive. This tape (removable media) must contain the original translations before the upgrade started.
2. Verify that the software is Release 8 and that shadowing is up.
3. Copy the translations from the backup tape (removable media) to the disk. Type **copy translation disk both** and press Enter. This copies the translations from tape (removable media) to disk and takes about 30 minutes.
4. Type **reset system 3** and press Enter.
5. When the reboot is finished, the system should contain all of the translations from the backup tape (removable media).

## One Side Upgrades, the Other Side Does Not (No Shadowing); Active Side Has Correct R8 Load

This problem indicates that the software version on the standby side is incorrect.

1. Perform a “hot-swap” of the disk drives (move the standby disk to the active side and vice versa).
2. Insert the Release 8 software removable media into the active optical disk drive.
3. Type **list configure software** and press Enter to verify the removable media contains the required Release 8 software.
4. If the software version on the removable media is incorrect, type **restore disk full active** and press Enter. This copies the entire backup removable media to disk and takes about 30 minutes. Do not use the “restore disk install” command.
5. Perform a “hot-swap” of the disk drives (move the standby disk to the active side and vice versa).
6. Perform a power-down reset on the standby side *only*. Disconnect the power cords (first from the left side and then the right side) from the power supplies on both sides of the standby SPE.

## Restore Disk Install or Restore Disk Full Fails

This problem assumes that an MSS error was encountered, a restore disk full failed, or a restore disk install failed.

1. This usually indicates that a bad removable media was used. To verify:
  - a. Insert the suspect removable media into the removable media drive.
  - b. Type **test tape UUCSS long** and press Enter.



**NOTE:**

Do not run the “test tape short” command. The short test cannot find all of the bad sectors that may be present on the removable media.

- c. If the removable media has errors, replace it.
2. Insert a good Release 8 software removable media into the removable media drive.
  3. Test the removable media before starting the upgrade. Type **test removable-media UUCSS long** and press Enter, if you are using R8 software. If you are using R7 or earlier software, type **test tape UUCSS long** and press Enter.



**NOTE:**

Do not run the **test removable-media short command**, or the **test tape short command**. The short test cannot find all of the bad sectors that may be present on the tape (removable media).

## Message Waiting Lamps On (After Removing an EPN)

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All affected port-related translations were not unadministered before removing an EPN cabinet.

1. Type **clear amw all <extension>** and press Enter. This clears the message waiting lamp for the specified extension.
2. Repeat the command for each extension with a lit message waiting lamp.

## Tone Clock Does Not Function in New EPN

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1. If the existing system is pre-G3V4 and contains TN768 Tone-Clock circuit packs, remove the NETCON, PI, and tone translations before starting the upgrade. The active tone clock in 0x1c cannot be properly inserted while PI translations exist from the old carrier.
2. Add the translations again after the upgrade.

## Translation Corruption Detected

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This usually means that the translations were not successfully backed up to the translation card or that the current software version may not be compatible with the new software version.

### NOTE:

The Terminal Translation Initialization (TTI) should be disabled before you save translations prior to an upgrade.

1. Repeat the upgrade with the TTI disabled.

## Unsuccessful Translation Read on System Restart (If Upgrading From Pre-R7.1)

1. Set the PPN circuit breaker to OFF.
2. Install all old circuit packs: TN790, TN777B, TN765(s), and TN778.
3. Insert the original translation card (or backup translation card) into the TN777B.
4. Set the PPN circuit breaker to ON. This should correct the translation corruption problem.
5. Contact your Lucent Technologies representative for help in repeating the upgrade.

## Software Incompatibility

If these procedures do not clear the corruption problem, then the software versions may be incompatible. You may need to upgrade to an interim software version before upgrading to the final software version.

1. Consult the remediation that came with the upgrade software.
2. Contact your Lucent Technologies representative for this information.

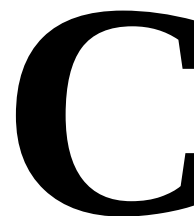
## Re-install the ISDN-PRI Links (Only for Failed Upgrades)

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If your upgrade failed and you need to re-install the ISDN-PRI links, use this procedure.

1. Type **add data-module [PI ext]** and press Enter.
2. Type the information in the fields based on the information that you entered earlier.
3. Type **change communication-interface links** and press Enter.
4. Type the information in the fields based on the information that you entered earlier with one exception. Leave the Enable field setting as it is.
5. Type **change communication-interface processor-channels** and press Enter.
6. Type the information in the fields based on the information that you entered earlier.
7. Type **change communication-interface links** and press Enter.
8. Type the information in the Enable field based on the information that you entered earlier.
9. Type **save translation** and press Enter.

## Access Security Gateway



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This appendix provides information on how to administer Access Security Gateway (ASG). ASG employs a challenge/response protocol to confirm the validity of a user and reduce the opportunity for unauthorized access. ASG authentication will be imposed for Lucent services logins as indicated below:

- init - all types of access require ASG authentication
- inads - all types of access require ASG authentication
- craft - if accessing remotely, ASG authentication is required.



**NOTE:**

Craft login sessions from a direct connect management terminal continue to rely on password authentication.

## Using the ASG Mobile

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1. Double click on the ASG Mobile V1.1 on your desktop and an ASG Mobile V1.1 Login window appears.
2. In the Tech ID field, type your login ID, which is the name of the attached file (without the ".asg"). Your login ID is the same as your Lucent login (or an abbreviated part of it).
3. Type the password twice. Note that the password is case-sensitive.



**NOTE:**

Your new password will be sent to you in a separate email.

4. Click the OK button and an ASG Mobile V1.1 Authentication window appears.
5. Use your communications package (for example, DNA, ProComm, or TerraNova) to dial the switch you need to contact.
6. Log into your communications package window as either **init**, **inads**, or **craft**. Instead of a password prompt, a seven-digit (challenge) number appears in the window of your communications package.
7. Move to the ASG Mobile V1.1 Authentication window.
8. Type the 10-digit Product ID in the Equipment ID field. The default ID is 10 zeros (0000000000).
9. Type **init**, **inads**, or **craft** in the Equipment Login field. The craft login ID is the default.
10. Type the challenge number (from your communications package window) into the Challenge field. Do not use the "-" character.
11. Type the trouble ticket number in the Ticket Number field. If there is no ticket number, you can use this field as a one-word comment field or leave it blank.
12. Click the Start button. The Activity Status field displays "Started" and the Response field displays a new seven-digit number.
13. Move to your communications package window.
14. Type the new seven-digit (response) number in the Response field. Do not use the "-" character.

DEFINITY ECS verifies the response. If correct, DEFINITY logs you on. If the response is incorrect, return to step 1. If this is the third rejection, see the maintenance book for your system.



# Glossary and Abbreviations

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## Numerics

### 800 service

A service in the United States that allows incoming calls from certain areas to an assigned number for a flat-rate charge based on usage.

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## A

### AA

Archangel. See [angel](#).

### AAC

ATM access concentrator

### AAR

See [Automatic Alternate Routing \(AAR\)](#).

### abandoned call

An incoming call in which the caller hangs up before the call is answered.

### Abbreviated Dialing (AD)

A feature that allows callers to place calls by dialing just one or two digits.

### AC

1. Alternating current.
2. See [Administered Connection \(AC\)](#).

### AAR

Automatic Alternate Routing

### ACA

See [Automatic Circuit Assurance \(ACA\)](#).

### ACB

See [Automatic Callback \(ACB\)](#).

### ACD

See [Automatic Call Distribution \(ACD\)](#).

### ACD agent

See [agent](#).

### ACU

See [Automatic calling unit \(ACU\)](#)

### ACW

See [after-call work \(ACW\) mode](#).

### access code

A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk.

**access endpoint**

Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie-trunk circuit pack that is assigned a unique extension.

**access tie trunk**

A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called access trunk.

**access trunk**

See [access tie trunk](#).

**ACCUNET**

A trademarked name for a family of digital services offered by AT&T in the United States.

**ACD**

See [Automatic Call Distribution \(ACD\)](#). ACD also refers to a work state in which an agent is on an ACD call.

**ACD work mode**

See [work mode](#).

**active-notification association**

A link that is initiated by an adjunct, allowing it to receive event reports for a specific switch entity, such as an outgoing call.

**active-notification call**

A call for which event reports are sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

**active notification domain**

VDN or ACD split extension for which event notification has been requested.

**ACU**

See [Automatic calling unit \(ACU\)](#).

**AD**

See [Abbreviated Dialing \(AD\)](#).

**ADAP**

AUDIX Data Acquisition Package

**ADC**

See [analog-to-digital converter \(ADC\)](#).

**adjunct**

A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor. See also [application](#).

**adjunct-control association**

A relationship initiated by an application via *Third Party Make Call*, the *Third Party Take Control*, or *Domain (Station) Control* capabilities to set up calls and control calls already in progress.

**adjunct-controlled call**

Call that can be controlled using an adjunct-control association. Call must have been originated via *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via *Third Party Take Control* or *Domain (Station) Control* capabilities.

**adjunct-controlled split**

An ACD split that is administered to be under adjunct control. Agents logged into such splits must do all telephony work, ACD login/ logout, and changes of work mode through the adjunct (except for auto-available adjunct-controlled splits, whose agents may not log in/out or change work mode).

**adjunct-monitored call**

An adjunct-controlled call, active-notification call, or call that provides event reporting over a domain-control association.

**Adjunct-Switch Application Interface (ASAI)**

A recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

**ADM**

Asynchronous data module

**administer**

To access and change parameters associated with the services or features of a system.

**Administered Connection (AC)**

A feature that allows the switch to automatically establish and maintain end-to-end connections between access endpoints (trunks) and/or data endpoints (data modules).

**administration group**

See [capability group](#).

**administration terminal**

A terminal that is used to administer and maintain a system. See also [terminal](#).

**Administration Without Hardware (AWOH)**

A feature that allows administration of ports without associated terminals or other hardware.

**ADU**

See [asynchronous data unit \(ADU\)](#).

**AE**

See [access endpoint](#).

**after-call work (ACW) mode**

A mode in which agents are unavailable to receive ACD calls. Agents enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call.

**AG**

ASAI Gateway

**agent**

A person who receives calls directed to a split. A member of an ACD hunt group or ACD split. Also called an ACD agent.

**agent report**

A report that provides historical traffic information for internally measured agents.

**AIM**

Asynchronous interface module

**AIOD**

Automatic Identification of Outward Dialing

**ALBO**

Automatic Line Build Out

**All trunks busy (ATB)**

The state in which no trunks are available for call handling.

**ALM-ACK**

Alarm acknowledge

**American Standard Code for Information Interchange**

See [ASCII \(American Standard Code for Information Interchange\)](#).

**AMW**

Automatic Message Waiting

**AN**

Analog

**analog**

The representation of information by continuously variable physical quantities such as amplitude, frequency, and phase. See also [digital](#).

**analog data**

Data that is transmitted over a digital facility in analog (PCM) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

**analog telephone**

A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an analog telephone.

**analog-to-digital converter (ADC)**

A device that converts an analog signal to digital form. See also [digital-to-analog converter \(DAC\)](#).

**angel**

A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch-processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds.

**ANI**

See [Automatic Number Identification \(ANI\)](#).

**ANSI**

American National Standards Institute. A United States professional/technical association supporting a variety of standards.

**answerback code**

A number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

**AOL**

Attendant-offered load

**AP**

Applications processor

**APLT**

Advanced Private-Line Termination

**appearance**

A software process that is associated with an extension and whose purpose is to supervise a call. An extension can have multiple appearances. Also called call appearance, line appearance, and occurrence. See also [call appearance](#).

**application**

An adjunct that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

**applications processor**

A micro-computer based, program controlled computer providing application services for the DEFINITY switch. The processor is used with several user-controlled applications such as traffic analysis and electronic documentation.

**application service element**

See [capability group](#).

**architecture**

The organizational structure of a system, including hardware and software.

**ARS**

See [Automatic Route Selection \(ARS\)](#).

**ASAI**

See [Adjunct-Switch Application Interface \(ASAI\)](#)

**ASCII (American Standard Code for Information Interchange)**

The standard code for representing characters in digital form. Each character is represented by an 8-bit code (including parity bit).

**association**

A communication channel between adjunct and switch for messaging purposes. An active association is one that applies to an existing call on the switch or to an extension on the call.

**asynchronous data transmission**

A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard). Also called asynchronous transmission. See also [synchronous data transmission](#).

**asynchronous data unit (ADU)**

A device that allows direct connection between RS-232C equipment and a digital switch.

**asynchronous Transfer Mode (ATM)**

A packet-like switching technology in which data is transmitted in fixed-size (53-byte) cells. ATM provides high-speed access for data communication in LAN, campus, and WAN environments.

**ATB**

See [All trunks busy \(ATB\)](#).

**ATD**

See [Attention dial \(ATD\)](#).

**attendant**

A person at a console who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also [attendant console](#).

## ATM

See [asynchronous Transfer Mode \(ATM\)](#).

## attendant console

The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called console. See also [attendant](#).

## Attention dial (ATD)

A command in the Hayes modem command set for asynchronous modems.

## Audio Information Exchange (AUDIX)

A fully integrated voice-mail system. Can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

## AUDIX

See [Audio Information Exchange \(AUDIX\)](#).

## auto-in trunk group

Trunk group for which the CO processes all of the digits for an incoming call. When a CO seizes a trunk from an auto-in trunk group, the switch automatically connects the trunk to the destination — typically an ACD split where, if no agents are available, the call goes into a queue in which callers are answered in the order in which they arrive.

## Auto-In Work mode

One of four agent work modes: the mode in which an agent is ready to process another call as soon as the current call is completed.

## Automatic Alternate Routing (AAR)

A feature that routes calls to other than the first-choice route when facilities are unavailable.\*\*\*

## Automatic Callback (ACB)

A feature that enables internal callers, upon reaching a busy extension, to have the system automatically connect and ring both parties when the called party becomes available.

## Automatic Call Distribution (ACD)

A feature that answers calls, and then, depending on administered instructions, delivers messages appropriate for the caller and routes the call to an agent when one becomes available.

## Automatic Call Distribution (ACD) split

A method of routing calls of a similar type among agents in a call center. Also, a group of extensions that are staffed by agents trained to handle a certain type of incoming call.

## Automatic calling unit (ACU)

A device that places a telephone call.

## Automatic Circuit Assurance (ACA)

A feature that tracks calls of unusual duration to facilitate troubleshooting. A high number of very short calls or a low number of very long calls may signify a faulty trunk.

## Automatic Number Identification (ANI)

Representation of the calling number, for display or for further use to access information about the caller. Available with Signaling System 7.

**automatic restoration**

A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). Restoration is done within seconds of a service disruption so that critical data applications can remain operational.

**Automatic Route Selection (ARS)**

A feature that allows the system to automatically choose the least-cost way to send a toll call.

**automatic trunk**

A trunk that does not require addressing information because the destination is predetermined. A request for service on the trunk, called a seizure, is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called automatic incoming trunk and automatic tie trunk.

**AUX**

Auxiliary

**auxiliary equipment**

Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

**auxiliary trunk**

A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

**Aux-Work mode**

A work mode in which agents are unavailable to receive ACD calls. Agents enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

**AVD**

Alternate voice/data

**AWOH**

See [Administration Without Hardware \(AWOH\)](#).

**AWG**

American Wire Gauge

**AWT**

Average work time

---

**B**

**B8ZS**

Bipolar Eight Zero Substitution.

**bandwidth**

The difference, expressed in hertz, between the defined highest and lowest frequencies in a range.

**barrier code**

A security code used with the Remote Access feature to prevent unauthorized access to the system.

**baud**

A unit of transmission rate equal to the number of signal events per second. See also [bit rate](#) and [bits per second \(bps\)](#).

**BCC**

See [Bearer capability class \(BCC\)](#).

**BCMS**

Basic Call Management System

**BCT**

See [business communications terminal \(BCT\)](#).

**Bearer capability class (BCC)**

Code that identifies the type of a call (for example, voice and different types of data).

Determination of BCC is based on the caller's characteristics for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint. Current BCCs are 0 (voice-grade data and voice), 1 (DMI mode 1, 56 kbps data transmission), 2 (DMI mode 2, synchronous/asynchronous data transmission up to 19.2 kbps) 3 (DMI mode 3, 64 kbps circuit/packet data transmission), 4 (DMI mode 0, 64 kbps synchronous data), 5 (temporary signaling connection, and 6 (wideband call, 128–1984 kbps synchronous data).

**BER**

Bit error rate

**BHCC**

Busy-hour call completions

**bit (binary digit)**

One unit of information in binary notation, having two possible values: 0 or 1.

**bits per second (bps)**

The number of binary units of information that are transmitted or received per second. See also [baud](#) and [bit rate](#).

**bit rate**

The speed at which bits are transmitted, usually expressed in bits per second. Also called data rate. See also [baud](#) and [bits per second \(bps\)](#).

**BLF**

Busy Lamp Field

**BN**

Billing number

**BOS**

Bit-oriented signaling

**BPN**

Billed-party number

**bps**

See [bits per second \(bps\)](#).

**bridge (bridging)**

The appearance of a voice terminal's extension at one or more other voice terminals.

**BRI**

The ISDN Basic Rate Interface specification.



**bridged appearance**

A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

**BTU**

British Thermal Unit

**buffer**

1. In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data.
2. In software, an area of memory that is used for temporary storage.

**bus**

A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

**business communications terminal (BCT)**

A digital data terminal used for business applications. A BCT can function via a data module as a special-purpose terminal for services provided by a processor or as a terminal for data entry and retrieval.

**BX.25**

A version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the ISO reference model.

**bypass tie trunks**

A 1-way, outgoing tie trunk from a tandem switch to a main switch in an ETN. Bypass tie trunks, provided in limited quantities, are used as a last-choice route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

**byte**

A sequence of (usually eight) bits processed together.

---

**C**

**CACR**

Cancellation of Authorization Code Request

**cabinet**

Housing for racks, shelves, or carriers that hold electronic equipment.

**cable**

Physical connection between two pieces of equipment (for example, data terminal and modem) or between a piece of equipment and a termination field.

**cable connector**

A jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

**CAG**

Coverage answer group

**call appearance**

1. For the attendant console, six buttons, labeled a–f, used to originate, receive, and hold calls. Two lights next to the button show the status of the call appearance.
2. For the voice terminal, a button labeled with an extension and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance.

**call-control capabilities**

Capabilities (*Third Party Selective Hold*, *Third Party Reconnect*, *Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets (Call Control and Domain Control).

**Call Detail Recording (CDR)**

A feature that uses software and hardware to record call data (same as CDRU).

**Call Detail Recording utility (CDRU)**

Software that collects, stores, optionally filters, and outputs call-detail records.

**Call Management System (CMS)**

An application, running on an adjunct processor, that collects information from an ACD unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and VDNs, and enables customers to partially administer the ACD feature for a communications system.

**call-reference value (CRV)**

An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, CRVs distinguish between associations.

**call vector**

A set of up to 15 vector commands to be performed for an incoming or internal call.

**callback call**

A call that automatically returns to a voice-terminal user who activated the Automatic Callback or Ringback Queuing feature.

**call-waiting ringback tone**

A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 seconds (in the United States). Call-waiting ringback tone notifies the attendant that the Attendant Call Waiting feature is activated and that the called party is aware of the waiting call. Tones in international countries may sound different.

**call work code**

A number, up to 16 digits, entered by ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

**CAMA**

Centralized Automatic Message Accounting

**carrier**

An enclosed shelf containing vertical slots that hold circuit packs.

**carried load**

The amount of traffic served by traffic-sensitive facilities during a given interval.

**CARR-POW**

Carrier Port and Power Unit for AC Powered Systems

**CAS**

Centralized Attendant Service or Call Accounting System

### CCS or hundred call seconds

A unit of call traffic. Call traffic for a facility is scanned every 100 seconds. If the facility is busy, it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter C. The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. See also [Erlang](#).

### capability

A request or indication of an operation. For example, *Third Party Make Call* is a request for setting up a call; *event report* is an indication that an event has occurred.

### capability group

Set of capabilities, determined by switch administration, that can be requested by an application. Capability groups denote association types. For example, *Call Control* is a type of association that allows certain functions (the ones in the capability group) to be performed over this type of association. Also referred to as administration groups or application service elements (ASEs).

### CA-TSC

Call-Associated Temporary Signaling Connection

### cause value

A value is returned in response to requests or in event reports when a denial or unexpected condition occurs. ASAI cause values fall into two coding standards: Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications; Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. Example: CS0/100 is coding standard 0, cause value 100.

### CBC

Call-by-call or coupled bonding conductor

### CC

Country code

### CCIS

Common-Channel Interoffice Signaling

### CCITT

CCITT (Comitte Consultatif International Telephonique et Telegraphique), now called *International Telecommunications Union* (ITU). See [International Telecommunications Union \(ITU\)](#).

### CCMS

Control-Channel Message Set

### CCS

See [CCS or hundred call seconds](#).

### CCSA

Common-Control Switching Arrangement

### CDM

Channel-division multiplexing

### CDOS

Customer-dialed and operator serviced

### CDR

See [Call Detail Recording \(CDR\)](#).

**CDRP**

Call Detail Record Poller

**CDRR**

Call Detail Recording and Reporting

**CDRU**

See [Call Detail Recording utility \(CDRU\)](#).

**CEM**

Channel-expansion multiplexing

**center-stage switch (CSS)**

The central interface between the processor port network and expansion port networks in a CSS-connected system.

**central office (CO)**

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

**central office (CO) codes**

The first three digits of a 7-digit public-network telephone number in the United States.

**central office (CO) trunk**

A telecommunications channel that provides access from the system to the public network through the local CO.

**CEPT**

European Conference of Postal and Telecommunications Rate 1

**channel**

1. A circuit-switched call.
2. A communications path for transmitting voice and data.
3. In wideband, all of the time slots (contiguous or noncontiguous) necessary to support a call. Example: an H0-channel uses six 64-kbps time slots.
4. A DS0 on a T1 or E1 facility not specifically associated with a logical circuit-switched call; analogous to a single trunk.

**channel negotiation**

The process by which the channel offered in the Channel Identification Information Element (CIIE) in the SETUP message is negotiated to be another channel acceptable to the switch that receives the SETUP message and ultimately to the switch that sent the SETUP. Negotiation is attempted only if the CIIE is encoded as *Preferred*. Channel negotiation is not attempted for wideband calls.

**CI**

Clock input

**circuit**

1. An arrangement of electrical elements through which electric current flows.
2. A channel or transmission path between two or more points.

**circuit pack**

A card on which electrical circuits are printed, and IC chips and electrical components are installed. A circuit pack is installed in a switch carrier.

**CISPR**

International Special Committee on Radio Interference

**Class of Restriction (COR)**

A feature that allows up to 64 classes of call-origination and call-termination restrictions for voice terminals, voice-terminal groups, data modules, and trunk groups. See also [Class of Service \(COS\)](#).

**Class of Service (COS)**

A feature that uses a number to specify if voice-terminal users can activate the Automatic Callback, Call Forwarding All Calls, Data Privacy, or Priority Calling features. See also [Class of Restriction \(COR\)](#).

**cm**

Centimeter

**CM**

Connection Manager

**CMDR**

Centralized Message Detail Recording

**CMS**

Call Management System

**CO**

See [central office \(CO\)](#).

**common-control switching arrangement (CCSA)**

A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

**communications system**

The software-controlled processor complex that interprets dialing pulses, tones, and keyboard characters and makes the proper connections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the connections. A communications system provides voice and data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also [switch](#).

**confirmation tone**

A tone confirming that feature activation, deactivation, or cancellation has been accepted.

**connectivity**

The connection of disparate devices within a single system.

**console**

See [attendant console](#).

**contiguous**

Adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. The first and last TDM bus, DS0, or fiber time slots are not considered contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

**control cabinet**

See [control carrier](#).

**control carrier**

A carrier in a multicarrier cabinet that contains the SPE circuit packs and, unlike an R5r control carrier, port circuit packs. Also called control cabinet in a single-carrier cabinet. See also [switch-processing element \(SPE\)](#).

**controlled station**

A station that is monitored and controlled via a domain-control association.

**COR**

See [Class of Restriction \(COR\)](#).

**COS**

See [Class of Service \(COS\)](#).

**coverage answer group**

A group of up to eight voice terminals that ring simultaneously when a call is redirected to it by Call Coverage. Any one of the group can answer the call.

**coverage call**

A call that is automatically redirected from the called party's extension to an alternate answering position when certain coverage criteria are met.

**coverage path**

The order in which calls are redirected to alternate answering positions.

**coverage point**

An extension or attendant group, VDN, or ACD split designated as an alternate answering position in a coverage path.

**covering user**

A person at a coverage point who answers a redirected call.

**CP**

Circuit pack

**CPE**

Customer-premises equipment

**CPN**

Called-party number

**CPN/BN**

Calling-party number/billing number

**CPTR**

Call-progress-tone receiver

**CRC**

Cyclical Redundancy Checking

**critical-reliability system**

A system that has the following duplicated items: control carriers, tone clocks, EI circuit packs, and cabling between port networks and center-stage switch in a CSS-connected system. See also [duplicated common control](#), and [duplication](#).

**CSA**

Canadian Safety Association

**CSCC**

Compact single-carrier cabinet

**CSCN**

Center-stage control network

**CSD**

Customer-service document

**CSM**

Centralized System Management

**CSS**

See [center-stage switch \(CSS\)](#).

**CSSO**

Customer Services Support Organization

**CSU**

Channel service unit

**CTS**

Clear to Send

**CWC**

See [call work code](#).

---

**D**

**DAC**

1. Dial access code or Direct Agent Calling
2. See [digital-to-analog converter \(DAC\)](#).

**data channel**

A communications path between two points used to transmit digital signals.

**data-communications equipment (DCE)**

The equipment (usually a modem, data module, or packet assembler/disassembler) on the network side of a communications link that makes the binary serial data from the source or transmitter compatible with the communications channel.

**data link**

The configuration of physical facilities enabling end terminals to communicate directly with each other.

**data module**

An interconnection device between a BRI or DCP interface of the switch and data terminal equipment or data communications equipment.

**data path**

The end-to-end connection used for a data communications link. A data path is the combination of all elements of an interprocessor communication in a DCS.

**data port**

A point of access to a computer that uses trunks or lines for transmitting or receiving data.

**data rate**

See [bit rate](#).

**data service unit (DSU)**

A device that transmits digital data on transmission facilities.

**data terminal**

An input/output (I/O) device that has either switched or direct access to a host computer or to a processor interface.

**data terminal equipment (DTE)**

Equipment consisting of the endpoints in a connection over a data circuit. In a connection between a data terminal and host, the terminal, the host, and their associated modems or data modules make up the DTE.

**dB**

Decibel

**dba**

Decibels in reference to amperes.

**dBrnC**

Decibels above reference noise with C filter.

**DC**

Direct current

**DCE**

Data-communications equipment

**D-channel backup**

Type of backup used with Non-Facility Associated Signaling (NFAS). A primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second D-channel, on a separate PRI facility of the NFAS D-channel group, is designated as backup for the D-channel. Failure of the primary D-channel causes automatic transfer of call-control signaling to the backup D-channel. The backup becomes the primary D-channel. When the failed channel returns to service, it becomes the backup D-channel.

**DCO**

Digital central office

**DCP**

Digital Communications Protocol

**DCS**

Distributed Communications System

**DDC**

Direct Department Calling

**DDD**

Direct Distance Dialing

**delay-dial trunk**

A trunk that allows dialing directly into a communications system (digits are received as they are dialed).

**denying a request**

Sending a negative acknowledgement (NAK), done by sending an FIE with a *return error* component (and a cause value). It should not be confused with the denial event report that applies to calls.

**designated voice terminal**

The specific voice terminal to which calls, originally directed to a certain extension, are redirected. Commonly used to mean the forwarded-to terminal when Call Forwarding All Calls is active.

**dial-repeating trunks**

A PBX tie trunk that is capable of handling PBX station-signaling information without attendant assistance.



**dial-repeating tie trunk**

A tie trunk that transmits called-party addressing information between two communications systems.

**DID**

Direct Inward Dialing

**digit conversion**

A process used to convert specific dialed numbers into other dialed numbers.

**digital**

The representation of information by discrete steps. See also [analog](#).

**digital communications protocol (DCP)**

A proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64-kbps information (I-) channels and one 8-kbps signaling (S-) channel.

**digital data endpoints**

In DEFINITY ECS, devices such as the 510D terminal or the 515-type business communications terminal (BCT).

**digital multiplexed interface (DMI)**

An interface that provides connectivity between a communications system and a host computer or between two communications systems using DS1 24th-channel signaling. DMI provides 23 64-kbps data channels and 1 common-signaling channel over a twisted-pair connection. DMI is offered through two capabilities: bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

**digital signal level 0 (DS0)**

A single 64-kbps voice channel. A DS0 is a single 64-kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 microseconds.

**digital signal level 1 (DS1)**

A single 1.544-Mbps (United States) or 2.048-Mbps (outside the United States) digital signal carried on a T1 transmission facility. A DS1 converter complex consists of a pair, one at each end, of DS1 converter circuit packs and the associated T1/E1 facilities.

**digital terminal data module (DTDM)**

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a PDM and MPDM in that it converts RS-232C signals to DCP signals.

**digital-to-analog converter (DAC)**

A device that converts data in digital form to the corresponding analog signals. See also [analog-to-digital converter \(ADC\)](#).

**digital transmission**

A mode of transmission in which information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

**digital trunk**

A circuit that carries digital voice and/or digital data in a telecommunications channel.

**DIOD**

Direct Inward and Outward Dialing

**direct agent**

A feature, accessed only via ASAI, that allows a call to be placed in a split queue but routed only to a specific agent in that split. The call receives normal ACD call treatment (for example, announcements) and is measured as an ACD call while ensuring that a particular agent answers.

**Direct Extension Selection (DXS)**

A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group-select button and a DXS button.

**Direct Inward Dialing (DID)**

A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance.

**Direct Inward Dialing (DID) trunk**

An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

**disk drive**

An electromechanical device that stores data on and retrieves data from one or more disks.

**distributed communications system (DCS)**

A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

**DIVA**

Data In/Voice Answer

**DLC**

Data line circuit

**DLDM**

Data-line data module

**DMI**

Digital-multiplexed interface

**DND**

Do not disturb

**DNIS**

Dialed-Number Identification Service

**DOD**

Direct Outward Dialing

**domain**

VDNs, ACD splits, and stations. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The station domain is used for the domain-control associations.

**domain-control association**

A *Third Party Domain Control Request* capability initiates a unique CRV/link number combination, which is referred to as a domain-control association.

**domain-controlled split**

A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

**domain-controlled station**

A station for which a *Third\_Party\_Domain\_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

**domain-controlled station on a call**

A station that is active on a call, and which provides event reports over one or two domain-control associations.

**DOSS**

Delivery Operations Support System

**DOT**

Duplication Option Terminal

**DPM**

Dial Plan Manager

**DPR**

Dual-port RAM

**DS1**

Digital Signal Level 1

**DS1C**

Digital Signal Level-1 protocol C

**DS1 CONV**

Digital Signal Level-1 converter

**DSI**

Digital signal interface

**DSU**

Data service unit

**DTDM**

Digital-terminal data module

**DTE**

Data-terminal equipment

**DTGS**

Direct Trunk Group Select

**DTMF**

Dual-tone multifrequency

**DTS**

Disk-tape system

**duplicated common control**

Two processors ensuring continuous operation of a communications system. While one processor is online, the other functions as a backup. The backup processor goes online periodically or when a problem occurs.

**duplication**

The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

**duplication option**

A system option that duplicates the following: control carrier containing the SPE, EI circuit packs in carriers, fiber-optic cabling between port networks, and center-stage switch in a CSS-connected system.

**DWBS**

DEFINITY Wireless Business System

**DXS**

Direct extension selection

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**E**

**E1**

A digital transmission standard that carries traffic at 2.048 Mbps. The E1 facility is divided into 32 channels (DS0s) of 64 kbps information. Channel 0 is reserved for framing and synchronization information. A D-channel occupies channel 16.

**E & M**

Ear and mouth (receive and transmit)

**EA**

Expansion archangel

**EAL**

Expansion archangel link

**ear and mouth (E & M) signaling**

Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through 2-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

**EEBCDIC**

Extended Binary-Coded Decimal Interexchange Code

**ECC**

Error Correct Code

**ECMA**

European Computer Manufacturers Association

**EPF**

Electronic power feed

**EI**

Expansion interface

**EIA**

Electronic Industries Association

**EIA-232**

A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

**electronic tandem network (ETN)**

A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

**Electronics Industries Association (EIA)**

A trade association of the electronics industry that establishes electrical and functional standards.

**emergency transfer**

If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

**EMI**

Electromagnetic interference

**end-to-end signaling**

The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

**enhanced private-switched communications service (EPSCS)**

An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

**EPN**

Expansion-port network

**EPROM**

Erasable programmable read-only memory

**EPSCS**

Enhanced Private Switched Communications Services

**ERL**

Echo return loss

**Erlang**

A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also [CCS or hundred call seconds](#).

**ESF**

Extended superframe format

**ESPA**

European Standard Paging Access

**ETA**

Extended Trunk Access; also Enhanced Terminal Administration

**ETN**

Electronic tandem network

**ETSI**

European Telecommunications Standards Institute

**expansion archangel (EAA)**

A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

**expansion-archangel link (EAL)**

A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

**expansion control cabinet**

See [expansion control carrier](#).

**expansion control carrier**

A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

**expansion interface (EI)**

A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

**expansion port network (EPN)**

A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also [port network \(PN\)](#).

**extension-in**

Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

**extension-out**

The work state that agents go into when they place (originate) a non-ACD call.

**external measurements**

Those ACD measurements that are made by the External CMS adjunct.

**extension**

A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

**external call**

A connection between a communications system user and a party on the public network or on another communications system in a private network.

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## F

**FAC**

Feature Access Code

**facility**

A telecommunications transmission pathway and associated equipment.

**facility-associated signaling (FAS)**

Signaling for which a D-channel carries signaling only for those channels on the same physical interface.

**FAS**

Facility-associated signaling

**FAT**

Facility access trunk

**FAX**

Facsimile

**FCC**

Federal Communications Commission

**FEAC**

Forced Entry of Account Codes

**feature**

A specifically defined function or service provided by the system.

**feature button**

A labeled button on a telephone or attendant console used to access a specific feature.

**FEP**

Front-end processor

**FIC**

Facility interface codes

**fiber optics**

A technology using materials that transmit ultrawideband electromagnetic light-frequency ranges for high-capacity carrier systems.

**fixed**

A trunk allocation term. In the fixed allocation scheme, the time slots necessary to support a wideband call are contiguous, and the first time slot is constrained to certain starting points.

**flexible**

A trunk allocation term. In the flexible allocation scheme, the time slots of a wideband call can occupy noncontiguous positions within a single T1 or E1 facility.

**floating**

A trunk allocation term. In the floating allocation scheme, the time slots of a wideband call are contiguous, but the position of the first time slot is not fixed.

**FNPA**

Foreign Numbering-Plan Area

**foreign-exchange (FX)**

A CO other than the one providing local access to the public telephone network.

**foreign-exchange trunk**

A telecommunications channel that directly connects the system to a CO other than its local CO.

**foreign numbering-plan area code (FNPAC)**

An area code other than the local area code, that must be dialed to call outside the local geographical area.

## FRL

Facilities Restriction Level

## FX

Foreign exchange

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# G

## G3-MA

Generic 3 Management Applications

## G3-MT

Generic 3 Management Terminal

## G3r

Generic 3, RISC (Reduced Instruction Set Computer)

## generalized route selection (GRS)

An enhancement to Automatic Alternate Routing/Automatic Route Selection (AAR/ARS) that performs routing based on call attributes, such as Bearer Capability Classes (BCCs), in addition to the address and facilities restriction level (FRL), thus facilitating a Uniform Dial Plan (UDP) that is independent of the type of call being placed.

## glare

The simultaneous seizure of a 2-way trunk by two communications systems, resulting in a standoff.

## GM

Group manager

## GPTR

General-purpose tone receiver

## grade of service

The number of call attempts that fail to receive service immediately. Grade of service is also expressed as the quantity of all calls that are blocked or delayed.

## ground-start trunk

A trunk on which, for outgoing calls, the system transmits a request for services to a distant switching system by grounding the trunk ring lead. To receive the digits of the called number, that system grounds the trunk tip lead. When the system detects this ground, the digits are sent.

## GRS

Generalized Route Selection

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# H

## H0

An ISDN information transfer rate for 384-kbps data defined by CCITT and ANSI standards.

## H11

An ISDN information transfer rate for 1536-kbps data defined by CCITT and ANSI standards.



## H12

An ISDN information transfer rate for 1920-kbps data defined by CCITT and ANSI standards.

## handshaking logic

A format used to initiate a data connection between two data module devices.

## hertz (Hz)

A unit of frequency equal to one cycle per second.

## high-reliability system

A system having the following: two control carriers, duplicate expansion interface (EI) circuit packs in the PPN (in R5r with CSS), and duplicate switch node clock circuit packs in the switch node (SN) carriers. See also [duplicated common control](#), [duplication](#), [duplication option](#), and [critical-reliability system](#).

## HNPA

See [home numbering-plan area code \(HNPA\)](#).

## holding time

The total length of time in minutes and seconds that a facility is used during a call.

## home numbering-plan area code (HNPA)

The local area code. The area code does not have to be dialed to call numbers within the local geographical area.

## hop

Nondirect communication between two switch communications interfaces (SCI) where the SCI message passes automatically without intermediate processing through one or more intermediate SCIs.

## host computer

A computer, connected to a network, that processes data from data-entry devices.

## hunt group

A group of extensions that are assigned the Station Hunting feature so that a call to a busy extension reroutes to an idle extension in the group. See also [ACD work mode](#).

## Hz

See [hertz \(Hz\)](#).

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# I

## I1

The first information channel of DCP.

## I2

The second information channel of DCP.

## I2 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the radio-controller circuit packs. Each interface provides communication between the radio-controller circuit pack and up to two wireless fixed bases.

## I3 Interface

A proprietary interface used for the DEFINITY Wireless Business System for the cell antenna units. Each wireless fixed base can communicate to up to four cell antenna units.

**IAS**

Inter-PBX Attendant Service

**ICC**

Intercabinet cable or intercarrier cable

**ICD**

Inbound Call Director

**ICDOS**

International Customer-Dialed Operator Service

**ICHT**

Incoming call-handling table

**ICI**

Incoming call identifier

**ICM**

Inbound Call Management

**IDDD**

International Direct Distance Dialing

**IDF**

Intermediate distribution frame

**IE**

Information element

**immediate-start tie trunk**

A trunk on which, after making a connection with a distant switching system for an outgoing call, the system waits a nominal 65 ms before sending the digits of the called number. This allows time for the distant system to prepare to receive digits. On an incoming call, the system has less than 65 ms to prepare to receive the digits.

**IMT**

Intermachine trunk

**in**

Inch

**INADS**

Initialization and Administration System

**incoming gateway**

A PBX that routes an incoming call on a trunk *not* administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

**information exchange**

The exchange of data between users of two different systems, such as the switch and a host computer, over a LAN.

**Information Systems Network (ISN)**

A WAN and LAN with an open architecture combining host computers, minicomputers, word processors, storage devices, PCs, high-speed printers, and nonintelligent terminals into a single packet-switching system.

**INS**

ISDN Network Service

## inside call

A call placed from one telephone to another within the local communications system.

## Integrated Services Digital Network (ISDN)

A public or private network that provides end-to-end digital communications for all services to which users have access by a limited set of standard multipurpose user-network interfaces defined by the CCITT. Through internationally accepted standard interfaces, ISDN provides digital circuit-switched or packet-switched communications within the network and links to other ISDNs to provide national and international digital communications. See also [Integrated Services Digital Network Basic Rate Interface \(ISDN-BRI\)](#) and [Integrated Services Digital Network Primary Rate Interface \(ISDN-PRI\)](#).

## Integrated Services Digital Network Basic Rate Interface (ISDN-BRI)

The interface between a communications system and terminal that includes two 64-kbps B-channels for transmitting voice or data and one 16-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. ISDN-BRI also includes 48 kbps for transmitting framing and D-channel contention information, for a total interface speed of 192 kbps. ISDN-BRI serves ISDN terminals and digital terminals fitted with ISDN terminal adapters. See also [Integrated Services Digital Network \(ISDN\)](#) and [Integrated Services Digital Network Primary Rate Interface \(ISDN-PRI\)](#).

## Integrated Services Digital Network Primary Rate Interface (ISDN-PRI)

The interface between multiple communications systems that in North America includes 24 64-kbps channels, corresponding to the North American digital signal level-1 (DS1) standard rate of 1.544 Mbps. The most common arrangement of channels in ISDN-PRI is 23 64-kbps B-channels for transmitting voice and data and 1 64-kbps D-channel for transmitting associated B-channel call control and out-of-band signaling information. With nonfacility-associated signaling (NFAS), ISDN-PRI can include 24 B-channels and no D-channel. See also [Integrated Services Digital Network \(ISDN\)](#) and [Integrated Services Digital Network Basic Rate Interface \(ISDN-BRI\)](#).

## intercept tone

A tone that indicates a dialing error or denial of the service requested.

## interface

A common boundary between two systems or pieces of equipment.

## internal call

A connection between two users within a system.

## International Telecommunications Union (ITU)

Formerly known as International Telegraph and Telephone Consultative Committee (CCITT), ITU is an international organization that sets universal standards for data communications, including ISDN. ITU members are from telecommunications companies and organizations around the world. See also [BX.25](#).

## International Telegraph and Telephone Consultative Committee

See [International Telecommunications Union \(ITU\)](#).

## interflow

The ability for calls to forward to other splits on the same PBX or a different PBX using the Call Forward All Calls feature.

## intraflow

The ability for calls to redirect to other splits on the same PBX on a conditional or unconditional basis using call coverage busy, don't answer, or all criteria.

**internal measurements**

BCMS measurements that are made by the system. ACD measurements that are made external to the system (via External CMS) are referred to as external measurements.

**in-use lamp**

A red light on a multiappearance voice terminal that lights to show which call appearance will be selected when the handset is lifted or which call appearance is active when a user is off-hook.

**INWATS**

Inward Wide Area Telephone Service

**IO**

Information outlet

**ISDN**

See [Integrated Services Digital Network \(ISDN\)](#).

**ISDN Gateway (IG)**

A feature allowing integration of the switch and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

**ISDN trunk**

A trunk administered for use with ISDN-PRI. Also called ISDN facility.

**ISDN-PRI terminal adapter**

An interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility.

**IS/DTT**

Integrated Services/digital tie trunk

**ISN**

Information Systems Network

**ISO**

International Standards Organization

**ISV**

Independent software vendor

**ITP**

Installation test procedure

**ITU**

International Telecommunications Union

**IXC**

Interexchange carrier code

---

# K

- kHz**  
Kilohertz
- kbps**  
Kilobits per second
- kbyte**  
Kilobyte
- kg**  
Kilogram

---

# L

- LAN**  
Local area network
- LAP-D**  
Link Access Procedure on the D-channel
- LAPD**  
Link Access Procedure data
- LATA**  
Local access and transport area
- lb**  
Pound
- LBO**  
Line buildout
- LDN**  
Listed directory number
- LDS**  
Long-distance service
- LEC**  
Local exchange carrier
- LED**  
See [light-emitting diode \(LED\)](#).

**light-emitting diode (LED)**  
A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features.

**lightwave transceiver**  
Hardware that provides an interface to fiber-optic cable from port circuit packs and DS1 converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

**line**

A transmission path between a communications system or CO switching system and a voice terminal or other terminal.

**line appearance**

See [appearance](#).

**line buildout**

A selectable output attenuation is generally required of DTE equipment because T1 circuits require the last span to lose 15–22.5 dB.

**line port**

Hardware that provides the access point to a communications system for each circuit associated with a telephone or data terminal.

**link**

A transmitter-receiver channel that connects two systems.

**link-access procedure on the D-channel (LAPD)**

A link-layer protocol on the ISDN-BRI and ISDN-PRI data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

**LINL**

Local indirect neighbor link

**local area network (LAN)**

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

**logical link**

The communications path between a processor and a BRI terminal.

**loop-start trunk**

A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

**LSU**

Local storage unit

**LWC**

Leave Word Calling

---

**M**

**MAC**

Medium access

**MADU**

Modular asynchronous data unit

**main distribution frame (MDF)**

A device that mounts to the wall inside the system equipment room. The MDF provides a connection point from outside telephone lines to the PBX switch and to the inside telephone stations.

**main-satellite-tributary**

A private network configuration that can either stand alone or access an ETN. A main switch provides interconnection, via tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A tributary switch is connected to the main switch via tie trunks, but has its own attendant positions and LDN.

**maintenance**

Activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

**management terminal**

The terminal that is used by the system administrator to administer the switch. The terminal may also be used to access the BCMS feature.

**major alarm**

An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

**Manual-In work mode**

One of four agent work modes: the mode in which an agent is ready to process another call manually. See [Auto-In Work mode](#) for a contrast.

**MAP**

Maintenance action process

**MAPD**

Multiapplication platform for DEFINITY

**MA-UII**

Message-Associated User-to-User Signaling

**Mbps**

Megabits per second

**M-Bus**

Memory bus

**Mbyte**

Megabyte

**MCC**

Multicarrier cabinet

**MCS**

Message Center Service

**MCT**

Malicious Call Trace

**MCU**

Multipoint control unit

**MDF**

Main distribution frame

**MDM**

Modular data module

**MDR**

Message detail record

**MEM**

Memory

**memory**

A device into which information can be copied and held, and from which information can later be obtained.

**memory shadowing link**

An operating-system condition that provides a method for memory-resident programs to be more quickly accessed, allowing a system to reboot faster.

**message center**

An answering service that supplies agents to and stores messages for later retrieval.

**message center agent**

A member of a message-center hunt group who takes and retrieves messages for voice-terminal users.

**MET**

Multibutton electronic telephone

**MF**

Multifrequency

**MFB**

Multifunction board

**MFC**

Multifrequency code

**MHz**

Megahertz

**MIM**

Management information message

**minor alarm**

An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

**MIPS**

Million instructions per second

**MIS**

Management information system

**MISCID**

Miscellaneous identification



**MMCS**

Multimedia Call Server

**MMCH**

Multimedia call handling

**MMI**

Multimedia interface

**MMS**

Material Management Services

**MO**

Maintenance object

**modem**

A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

**modem pooling**

A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

**modular processor data module (MPDM)**

A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS-232C, RS-449, and V.35) to customer-provided data terminal equipment (DTE). See also [processor data module \(PDM\)](#).

**modular trunk data module (MTDM)**

A trunk data module that can be configured to provide several kinds of interfaces (RS-232, RS-449, and V.35) to customer-provided data terminal equipment.

**modulator-demodulator**

See [modem](#).

**monitored call**

See [active-notification call](#).

**MOS**

Message-oriented signaling

**MPDM**

Modular processor data module

**MS**

Message server

**ms**

Millisecond

**MS/T**

Main satellite/tributary

**MSA**

Message servicing adjunct

**MSG**

Message service

**MSL**

Material stocking location

**MSM**

Modular System Management

**MSS**

Mass storage system

**MSSNET**

Mass storage/network control

**MT**

Management terminal

**MTDM**

Modular trunk data module

**MTP**

Maintenance tape processor

**MTT**

Multitasking terminal

**multiappearance voice terminal**

A terminal equipped with several call-appearance buttons for the same extension, allowing the user to handle more than one call on that same extension at the same time.

**Multicarrier cabinet**

A structure that holds one to five carriers. See also [single-carrier cabinet](#).

**Multifrequency Compelled (MFC) Release 2 (R2) signaling**

A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. R2 designates signaling used in the United States and in countries outside the United States.

**multiplexer**

A device used to combine a number of individual channels into a single common bit stream for transmission.

**multiplexing**

A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also [time-division multiplexing \(TDM\)](#).

**multirate**

The new N x DS0 service (see N x DS0).

**MWL**

Message-waiting lamp

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## N

### N+1

Method of determining redundant backup requirements. Example: if four rectifier modules are required for a DC-powered single-carrier cabinet, a fifth rectifier module is installed for backup.

### N x DS0

N x DS0, equivalently referred to as N x 64 kbps, is an emerging standard for wideband calls separate from H0, H11, and H12 ISDN channels. The emerging N x DS0 ISDN multirate circuit mode bearer service will provide circuit-switched calls with data-rate multiples of 64 kbps up to 1536 kbps on a T1 facility or up to 1920 kbps on an E1 facility. In the switch, N x DS0 channels will range up to 1984 kbps using NFAS E1 interfaces.

### NANP

North American Numbering Plan

### narrowband

A circuit-switched call at a data rate up to and including 64 kbps. All nonwideband switch calls are considered narrowband.

### native terminal support

A predefined terminal type exists in switch software, eliminating the need to alias the terminal (that is, manually map call appearances and feature buttons onto some other natively supported terminal type).

### NAU

Network access unit

### NCA/TSC

Noncall-associated/temporary-signaling connection

### NCOSS

Network Control Operations Support Center

### NCSO

National Customer Support Organization

### NEC

National Engineering Center

### NEMA

National Electrical Manufacturer's Association

### NETCON

Network-control circuit pack

### network

A series of points, nodes, or stations connected by communications channels.

### network-specific facility (NSF)

An information element in an ISDN-PRI message that specifies which public-network service is used. NSF applies only when Call-by-Call Service Selection is used to access a public-network service.

### network interface

A common boundary between two systems in an interconnected group of systems.

**NFAS**

See [Nonfacility-associated signaling \(NFAS\)](#).

**NI**

Network interface

**NID**

Network Inward Dialing

**NM**

Network management

**NN**

National number

**node**

A switching or control point for a network. Nodes are either tandem (they receive signals and pass them on) or terminal (they originate or terminate a transmission path).

**Nonfacility-associated signaling (NFAS)**

A method that allows multiple T1 and/or E1 facilities to share a single D-channel to form an ISDN-PRI. If D-channel backup is not used, one facility is configured with a D-channel, and the other facilities that share the D-channel are configured without D-channels. If D-channel backup is used, two facilities are configured to have D-channels (one D-channel on each facility), and the other facilities that share the D-channels are configured without D-channels.

**NPA**

Numbering-plan area

**NPE**

Network processing element

**NQC**

Number of queued calls

**NSE**

Night-service extension

**NSU**

Network sharing unit

**null modem cable**

Special wiring of an RS-232-C cable such that a computer can talk to another computer (or to a printer) without a modem.

**NXX**

Public-network office code

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**O**

**OA**

Operator assisted

**occurrence**

See [appearance](#).

## OCM

Outbound Call Management

## offered load

The traffic that would be generated by all the requests for service occurring within a monitored interval, usually one hour.

## ONS

On-premises station

## OPS

Off-premises station

## OPX

Off-premises extension

## OQT

Oldest queued time

## OSHA

Occupational Safety and Health Act

## OSI

Open Systems Interconnect

## OSS

Operations Support System

## OSSI

Operational Support System Interface

## OTDR

Optical time-domain reflectometer

## othersplit

The work state that indicates that an agent is currently active on another split's call, or in ACW for another split.

## OTQ

Outgoing trunk queuing

## outgoing gateway

A PBX that routes an incoming call on a trunk administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

---

# P

## PACCON

Packet control

## packet

A group of bits (including a message element, which is the data, and a control information element (IE), which is the header) used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also [packet bus](#) and [packet switching](#).

**packet bus**

A wide-bandwidth bus that transmits packets.

**packet switching**

A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called packets, each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet. On completion of the transmission, the channel is made available for the transfer of other packets. See also [BX.25](#) and [packet](#).

**PAD**

Packet assembly/disassembly

**paging trunk**

A telecommunications channel used to access an amplifier for loudspeaker paging.

**party/extension active on call**

A party is on the call if he or she is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

**PBX**

Private branch exchange

**PC**

See [personal computer \(PC\)](#).

**PCM**

See [pulse-code modulation \(PCM\)](#).

**PCOL**

Personal central-office line

**PCOLG**

Personal central-office line group

**PCS**

Permanent switched calls

**PDM**

See [processor data module \(PDM\)](#).

**PDS**

Premises Distribution System

**PE**

Processing element

**PEC**

Price element code

**PEI**

Processor element interchange

**personal computer (PC)**

A personally controllable microcomputer.

**PGATE**

Packet gateway

**PGN**

Partitioned group number

**PI**

Processor interface

**PIB**

Processor interface board

**pickup group**

A group of individuals authorized to answer any call directed to an extension within the group.

**PIDB**

Product image database

**PKTINT**

Packet interface

**PL**

Private line

**PLS**

Premises Lightwave System

**PMS**

Property Management System

**PN**

Port network

**PNA**

Private network access

**POE**

Processor occupancy evaluation

**POP**

Point of presence

**port**

A data- or voice-transmission access point on a device that is used for communicating with other devices.

**port carrier**

A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a port cabinet in a single-carrier cabinet.

**port network (PN)**

A cabinet containing a TDM bus and packet bus to which the following components are connected: port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in DEFINITY ECS. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also [expansion port network \(EPN\)](#) and [processor port network \(PPN\)](#).

**port-network connectivity**

The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

**PPM**

1. Parts per million
2. Periodic pulse metering

**PPN**

See [processor port network \(PPN\)](#).

**PRI**

See [Primary Rate Interface \(PRI\)](#).

**primary extension**

The main extension associated with the physical voice or data terminal.

**Primary Rate Interface (PRI)**

A standard ISDN frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64-kbps B-channels (voice or data) and one 64-kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

**PRI endpoint (PE)**

The wideband switching capability introduces PRI endpoints on switch line-side interfaces. A PRI endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension. Endpoint applications have call-control capabilities over PRI endpoints.

**principal**

A terminal that has its primary extension bridged on one or more other terminals.

**principal (user)**

A person to whom a telephone is assigned and who has message-center coverage.

**private network**

A network used exclusively for the telecommunications needs of a particular customer.

**private network office code (RNX)**

The first three digits of a 7-digit private network number.

**PROCR**

Processor

**processor carrier**

See [control carrier](#).

**processor data module (PDM)**

A device that provides an RS-232C DCE interface for connecting to data terminals, applications processors (APs), and host computers, and provides a DCP interface for connection to a communications system. See also [modular processor data module \(MPDM\)](#).

**processor port network (PPN)**

A port network controlled by a switch-processing element that is directly connected to that PN's TDM bus and LAN bus. See also [port network \(PN\)](#).

**processor port network (PPN) control carrier**

A carrier containing the maintenance circuit pack, tone/clock circuit pack, and SPE circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

**Property Management System (PMS)**

A stand-alone computer used by lodging and health-services organizations for services such as reservations, housekeeping, and billing.



**protocol**

A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

**PSC**

Premises service consultant

**PSDN**

Packet-switch public data network

**PT**

Personal terminal

**PTC**

Positive temperature coefficient

**PTT**

Postal Telephone and Telegraph

**public network**

The network that can be openly accessed by all customers for local and long-distance calling.

**pulse-code modulation (PCM)**

An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

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**Q**

**QPPCN**

Quality Protection Plan Change Notice

**quadrant**

A group of six contiguous DS0s in fixed locations on an ISDN-PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN-PRI facility (30B + D).

**queue**

An ordered sequence of calls waiting to be processed.

**queuing**

The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

---

**R**

**RAM**

See [random-access memory \(RAM\)](#).

**random-access memory (RAM)**

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

**RBS**

Robbed-bit signaling

**RC**

Radio controller

**RCL**

Restricted call list

**read-only memory (ROM)**

A storage arrangement primarily for information-retrieval applications.

**recall dial tone**

Tones signalling that the system has completed a function (such as holding a call) and is ready to accept dialing.

**redirection criteria**

Information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

**Redirection on No Answer**

An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

**remote home numbering-plan area code (RHNPA)**

A foreign numbering-plan area code that is treated as a home area code by the Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed CO code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

**Remote Operations Service Element (ROSE)**

A CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

**REN**

Ringer equivalency number

**reorder tone**

A tone to signal that at least one of the facilities, such as a trunk or a digit transmitter, needed for the call was not available.

**report scheduler**

Software that is used in conjunction with the system printer to schedule the days of the week and time of day that the desired reports are to be printed.

**RFP**

Request for proposal

**RHNPA**

See [remote home numbering-plan area code \(RHNPA\)](#).

**RINL**

Remote indirect neighbor link

**RISC**

Reduced-instruction-set computer

**RLT**

Release-link trunk

## RMATS

Remote Maintenance, Administration, and Traffic System

## RNX

Route-number index (private network office code)

## ROM

See [read-only memory \(ROM\)](#).

## RPN

Routing-plan number

## RS-232C

A physical interface specified by the Electronic Industries Association (EIA). RS-232C transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet.

## RS-449

Recommended Standard 449

## RSC

Regional Support Center

## ROSE

See [Remote Operations Service Element \(ROSE\)](#).

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# S

## S1

The first logical signalling channel of DCP. The channel is used to provide signaling information for DCP's I1 channel.

## S2

The second logical signaling channel of DCP. The channel is used to provide signaling information for DCP's I2 channel.

## SABM

Set Asynchronous Balance Mode

## SAC

Send All Calls

## SAKI

See [sanity and control interface \(SAKI\)](#).

## sanity and control interface (SAKI)

A custom VLSI microchip located on each port circuit pack. The SAKI provides address recognition, buffering, and synchronization between the angel and the five control time slots that make up the control channel. The SAKI also scans and collects status information for the angel on its port circuit pack and, when polled, transmits this information to the archangel.

## SAT

System access terminal

## SCC

1. See [single-carrier cabinet](#).
2. Serial communications controller

**SCD**

Switch-control driver

**SCI**

Switch communications interface

**SCO**

System control office

**SCOTCH**

Switch Conferencing for TDM Bus in Concentration Highway

**SCSI**

See [small computer system interface \(SCSI\)](#).

**SDDN**

Software-Defined Data Network

**SDI**

Switched Digital International

**SDLC**

Synchronous data-link control

**SDN**

Software-defined network

**SFRL**

Single-frequency return loss

**SID**

Station-identification number

**simplex system**

A system that has no redundant hardware.

**simulated bridged appearance**

The same as a temporary bridged appearance; allows the terminal user (usually the principal) to bridge onto a call that had been answered by another party on his or her behalf.

**single-carrier cabinet**

A combined cabinet and carrier unit that contains one carrier. See also [Multicarrier cabinet](#).

**single-line voice terminal**

A voice terminal served by a single-line tip and ring circuit (models 500, 2500, 7101A, 7103A).

**SIT**

Special-information tones

**small computer system interface (SCSI)**

An ANSI bus standard that provides a high-level command interface between host computers and peripheral devices.

**SMDR**

Station Message Detail Recording

**SN**

Switch Node

**SNA**

Systems Network Architecture

**SNC**

Switch Node Clock

**SNI**

Switch Node Interface

**SNMP**

Simple Network Management Protocol

**software**

A set of computer programs that perform one or more tasks.

**SPE**

Switch Processing Element

**SPID**

Service Profile Identifier

**split**

See [ACD work mode](#).

**split condition**

A condition whereby a caller is temporarily separated from a connection with an attendant. A split condition automatically occurs when the attendant, active on a call, presses the start button.

**split number**

The split's identity to the switch and BCMS.

**split report**

A report that provides historical traffic information for internally measured splits.

**split (agent) status report**

A report that provides real-time status and measurement data for internally measured agents and the split to which they are assigned.

**SSI**

Standard serial interface

**SSM**

Single-site management

**SSV**

Station service

**ST3**

Stratum 3 clock board

**staffed**

Indicates that an agent position is logged in. A staffed agent functions in one of four work modes: Auto-In, Manual-In, ACW, or AUX-Work.

**STARLAN**

Star-Based Local Area Network

**Station Message Detail Recording (SMDR)**

An obsolete term now called CDR — a switch feature that uses software and hardware to record call data. See [Call Detail Recording \(CDR\)](#).

**standard serial interface (SSI)**

A communications protocol developed for use with 500-type business communications terminals (BCTs) and 400-series printers.

**status lamp**

A green light that shows the status of a call appearance or a feature button by the state of the light (lit, flashing, fluttering, broken flutter, or unlit).

**stroke counts**

A method used by ACD agents to record up to nine customer-defined events per call when CMS is active.

**SVN**

Security-violation notification

**switch**

Any kind of telephone switching system. See also [communications system](#).

**switchhook**

The buttons located under the receiver on a voice terminal.

**switch-node (SN) carrier**

A carrier containing a single switch node, power units, and, optionally, one or two DS1 converter circuit packs. An SN carrier is located in a center-stage switch.

**switch-node (SN) clock**

The circuit pack in an SN carrier that provides clock and maintenance alarm functions and environmental monitors.

**switch-node interface (SNI)**

The basic building block of a switch node. An SNI circuit pack controls the routing of circuit, packet, and control messages.

**switch-node link (SNL)**

The hardware that provides a bridge between two or more switch nodes. The SNL consists of the two SNI circuit packs residing on the switch nodes and the hardware connecting the SNIs. This hardware can include lightwave transceivers that convert the SNI's electrical signals to light signals, the copper wire that connects the SNIs to the lightwave transceivers, a full-duplex fiber-optic cable, DS1 converter circuit cards and DS1 facilities if a company does not have rights to lay cable, and appropriate connectors.

**switch-processing element (SPE)**

A complex of circuit packs (processor, memory, disk controller, and bus-interface cards) mounted in a PPN control carrier. The SPE serves as the control element for that PPN and, optionally, for one or more EPNs.

**SXS**

Step-by-step

**synchronous data transmission**

A method of sending data in which discrete signal elements are sent at a fixed and continuous rate and specified times. See also [association](#).

**SYSAM**

System Access and Administration

**system administrator**

The person who maintains overall customer responsibility for system administration. Generally, all administration functions are performed from the Management Terminal. The switch requires a special login, referred to as the system administrator login, to gain access to system-administration capabilities.

**system printer**

An optional printer that may be used to print scheduled reports via the report scheduler.

**system report**

A report that provides historical traffic information for internally measured splits.

**system-status report**

A report that provides real-time status information for internally measured splits.

**system manager**

A person responsible for specifying and administering features and services for a system.

**system reload**

A process that allows stored data to be written from a tape into the system memory (normally after a power outage).

---

## T

### T1

A digital transmission standard that in North America carries traffic at the DS1 rate of 1.544 Mbps. A T1 facility is divided into 24 channels (DS0s) of 64 kbps. These 24 channels, with an overall digital rate of 1.536 Mbps, and an 8-kbps framing and synchronization channel make up the 1.544-Mbps transmission. When a D-channel is present, it occupies channel 24. T1 facilities are also used in Japan and some Middle-Eastern countries.

### TAAS

Trunk Answer from Any Station

### TABS

Telemetry asynchronous block serial

### TAC

Trunk-access code

### tandem switch

A switch within an electronic tandem network (ETN) that provides the logic to determine the best route for a network call, possibly modifies the digits outpulsed, and allows or denies certain calls to certain users.

### tandem through

The switched connection of an incoming trunk to an outgoing trunk without human intervention.

### tandem tie-trunk network (TTTN)

A private network that interconnects several customer switching systems.

### TC

Technical consultant

### TCM

Traveling class mark

### TDM

See [time-division multiplexing \(TDM\)](#).

### TDR

Time-of-day routing

## TEG

Terminating extension group

## terminal

A device that sends and receives data within a system. See also [administration terminal](#).

## tie trunk

A telecommunications channel that directly connects two private switching systems.

## time-division multiplex (TDM) bus

A bus that is time-shared regularly by preallocating short time slots to each transmitter. In a PBX, all port circuits are connected to the TDM bus, permitting any port to send a signal to any other port.

## time-division multiplexing (TDM)

Multiplexing that divides a transmission channel into successive time slots. See also [multiplexing](#).

## time interval

The period of time, either one hour or one-half hour, that BCMS measurements are collected for a report.

## time slice

See [time interval](#).

## time slot

64 kbps of digital information structured as eight bits every 125 microseconds. In the switch, a time slot refers to either a DS0 on a T1 or E1 facility or a 64-kbps unit on the TDM bus or fiber connection between port networks.

## time slot sequence integrity

The situation whereby the N octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

## to control

An application can invoke *Third Party Call Control* capabilities using either an adjunct-control or domain-control association.

## to monitor

An application can receive *event reports* on an active-notification, adjunct-control, or domain-control association.

## TOD

Time of day

## tone ringer

A device with a speaker, used in electronic voice terminals to alert the user.

## TOP

Task-oriented protocol

## trunk

A dedicated telecommunications channel between two communications systems or COs.

## trunk allocation

The manner in which trunks are selected to form wideband channels.

## trunk-data module

A device that connects off-premises private-line trunk facilities and DEFINITY ECS. The trunk-data module converts between the RS-232C and the DCP, and can connect to DDD modems as the DCP member of a modem pool.



**trunk group**

Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or COs.

**TSC**

Technical Service Center

**TTI**

Terminal translation initialization

**TTR**

Touch-tone receiver

**TTT**

Terminating trunk transmission

**TTTN**

See [tandem tie-trunk network \(TTTN\)](#).

**TTY**

Teletypewriter

---

**U**

**UAP**

Usage-allocation plan

**UART**

Universal asynchronous transmitter

**UCD**

Uniform call distribution

**UCL**

Unrestricted call list

**UDP**

See [Uniform Dial Plan \(UDP\)](#).

**UL**

Underwriter Laboratories

**UM**

User manager

**Uniform Dial Plan (UDP)**

A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multiswitch configuration such as a DCS or main-satellite-tributary system.

**UNMA**

Unified Network Management Architecture

**UNP**

Uniform numbering plan

**UPS**

Uninterruptible power supply

## USOP

User service-order profile

## UUCP

UNIX-to-UNIX Communications Protocol

## UII

User-to-user information

---

# V

## VAR

Value-added reseller

## VDN

See [vector directory number \(VDN\)](#).

## vector directory number (VDN)

An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

## vector-controlled split

A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

## VIS

Voice Information System

## VLSI

Very-large-scale integration

## VM

Voltmeter

## VNI

Virtual nodepoint identifier

## voice terminal

A single-line or multiappearance telephone.

---

# W

## WATS

See [Wide Area Telecommunications Service \(WATS\)](#).

## WCC

World-Class Core

## WCR

World-Class Routing

## WCTD

World-Class Tone Detection

## **WFB**

Wireless fixed base

## **Wide Area Telecommunications Service (WATS)**

A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

## **wideband**

A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

## **wideband access endpoint**

Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

## **wink-start tie trunk**

A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

## **work mode**

One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

## **work state**

An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

## **write operation**

The process of putting information onto a storage medium, such as a hard disk.

## **WSA**

Waiting session accept

## **WSS**

Wireless Subscriber System

---

## **Z**

## **ZCS**

Zero Code Suppression



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