

**Lucent Technologies**  
Bell Labs Innovations



**DEFINITY<sup>®</sup>**  
**Enterprise Communications Server**  
Release 7  
Upgrades and Additions for R7r

555-230-121  
Comcode 108136003  
Issue 5  
June 1999

## 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.

## Lucent Technologies Fraud Intervention

If you *suspect that you are being victimized* by toll fraud and you need technical support or assistance, call Technical Service Center Toll Fraud Intervention Hotline at 1 800 643-2353 or contact your local Lucent representative.

## Federal Communications Commission Statement

**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 règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### Trademarks

See the preface of this document.

### Ordering Information

**Call:** Lucent Technologies BCS Publications Center  
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**Write:** Lucent Technologies BCS Publications Center  
2855 N. Franklin Road  
Indianapolis, IN 46219

**Order:** Document No. 555-230-121  
Comcode 108136003  
Issue 5, June 1999

For additional documents, refer to the section in "About This Document" entitled "Related Resources."

You can be placed on a standing order list for this and other documents you may need. Standing order will enable you to automatically receive updated versions of individual documents or document sets, billed to account information that you provide. For more information on standing orders, or to be put on a list to receive future issues of this document, contact the Lucent Technologies Publications Center.

### 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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## 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<sup>®</sup> Enterprise Communications Server Release 7. 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 7 Installation and Test for Multi-Carrier 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 terminal. Access security gateway is automatically imposed during the upgrade.

## Anti-Static 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

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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*, 555-230-109.

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

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

Description	Chapter
<a href="#">G3rV2, V3, or V4 to Release 7r with Memory Addition</a> (hardware and software)	1
<a href="#">Release G3rV4/5r/6r to Release 7r without Memory Addition</a> (software only)	2
<a href="#">Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN</a>	3
<a href="#">G3vs/si (with Intel 386 or Risc Processor) to Release 7r</a>	4
<a href="#">Multi-Carrier G2 Universal Module to Release 7r EPN</a>	5

If upgrading from a pre-Release 5vs to a DEFINITY ECS Release 7si, refer to *DEFINITY Enterprise Communications Server Release 7 Upgrades and Additions for R7si*.

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.

<b>Process</b>	<b>Minutes</b>
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
Clean tape drive and insert new tape	7
Test tape long	45
List configuration software long	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
Restore disk install (both)	12
Upgrade software	15
Configure tape	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

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- 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 7 system.

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

- The word *system*, is a general term encompassing Release 7 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 7r, Release 7, and Release 7si.
- Information in this book is applicable for Release 5 through Release 7, 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 7 System Description Pocket Reference*, 555-230-211
- *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*, 555-230-122
- *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7si*, 555-230-123
- *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Single-Carrier Cabinets*, 555-230-894
- *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets*, 555-230-112
- *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, 555-230-522
- *DEFINITY Enterprise Communications Server Release 7 Upgrades and Additions for R7si*, 555-230-120
- *DEFINITY Enterprise Communications Server Release 7 Installation for Adjuncts and Peripherals*, 555-230-125
- *AT&T Network and Data Connectivity Reference*, 555-025-201
- *BCS Products Security Handbook*, 555-025-600
- *DEFINITY Wireless Business System Users Guide*, 555-232-105
- *DEFINITY Wireless Business System Installation and Test Guide*, 555-232-102
- *DEFINITY Wireless Business Systems System Interface*, 555-232-108
- *Switch Administration for DEFINITY AUDIX*, 585-300-509
- *DEFINITY Enterprise Communications Server Release 7 Administration for Network Connectivity*, 555-233-501

## 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*, 555-000-010.

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**

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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, *DEFINITY Enterprise Communication Server Release 7 Upgrades and Additions for R7r*, 555-230-121.

## **Where to Call for Technical Support**

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

	<b>Telephone Number</b>
Streamlined Implementation (for missing equipment)	1-800-772-5409
USA/Canada Technical Service Center	1-800-248-1234
Technical Service Center (INADS Database Administration)	1-800-248-1111
Asia/Pacific Regional Support Center	65-872-8686
Western Europe/South Africa/Middle East	441-252-774-800
Business Communications Europe	441-252-391-789
Eastern/Central Europe	361-345-4334
ITAC	1-303-804-3777
Latin/Central America & Caribbean	1-303-804-3778
DEFINITY Helpline	1-800-225-7585
Lucent Technologies Toll Fraud Intervention	1-800-643-2353
Lucent Technologies Technical Service Center	1-800-242-2121
Lucent Technologies Corporate Security	1-800-822-9009

## Trademarks

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

- ACCUNET®
- AUDIX®
- Callmaster®
- CallVisor®
- CONVERSANT®
- DEFINITY®
- FORUM™
- MEGACOM®
- SYSTIMAX®
- TRANSTALK™

The following products are trademarked by their appropriate vendor:

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

## **Standards Compliance**

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The equipment presented in this book complies with the following (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 microns

**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:

- 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

The system conforms to the following:

- Electromagnetic compatibility General Immunity Standard, part 1; residential, commercial, light industry, EN50082-1, CENELEC, 1991
- Issue 1 (1984) and Issue 2 (1992), Electrostatic discharge immunity requirements (EN5504, Part 2) IEC 1000-4-2
- Radiated radio frequency field immunity requirements IEC 1000-4-3
- Electrical fast transient/burst immunity requirements IEC 1000-4-4

## **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 7 products:

- Global AC powered Multi-Carrier Cabinet (MCC)
- DC powered Multi-Carrier 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.

<b>Manufacturer's Port Identifier</b>	<b>FIC Code</b>	<b>SOC/REN/ A.S. Code</b>	<b>Network Jacks</b>
Off/On Premises Station	OL13C	9.0F	RJ2GX, RJ21X, 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<sup>®</sup> 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.

# G3rV2, V3, or V4 to Release 7r with Memory Addition

# 1

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This chapter provides the information necessary to perform a hardware and software upgrade from a DEFINITY G3rV2, V3, or V4 to a DEFINITY ECS Release 7r. Also refer to the following documents:

- *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*

## Installation Requirements

If the system does not contain 3 TN1650B Memory circuit packs and a TN1657 Disk Drive Vintage 4 (or later), use this chapter for the hardware and software upgrade to Release 7.

If the system contains 3 TN1650B Memory circuit packs and a TN1657 Disk Drive Vintage 4 (or later), skip to [Chapter 2, "Release G3rV4/5r/6r to Release 7r without Memory Addition"](#) for a software-only upgrade to Release 7.



### **CAUTION:**

*Before inserting or removing a circuit pack or other equipment from a cabinet, wear an anti-static wrist strap and attach its plug or clip to the cabinet's ground jack.*

## Task Tables

[Table 1-1](#) and [Table 1-2](#) are the high-level tasks to perform the upgrades in this chapter.

**Table 1-1. Tasks to Upgrade to Release 7r with Memory (Standard Reliability)**

√	Task Description	Page
	<a href="#">Check Software Release Letter</a>	<a href="#">1-6</a>
	<a href="#">Disable Scheduled Maintenance</a>	<a href="#">1-6</a>
	<a href="#">Configure Tape Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-7</a>
	<a href="#">Save Translations to Original Tape</a>	<a href="#">1-7</a>
	<a href="#">Backup Disk</a>	<a href="#">1-7</a>
	<a href="#">Check Link Status</a>	<a href="#">1-7</a>
	<a href="#">Disable TTI</a> <i>(Do not skip this section, translation corruption may occur!)</i>	<a href="#">1-7</a>
	<a href="#">Disable Alarm Origination to INADS</a>	<a href="#">1-8</a>
	<a href="#">List Configuration Software Long (Release 7 Tape)</a>	<a href="#">1-8</a>
	<a href="#">Save Translations to Release 7 Tape</a>	<a href="#">1-8</a>
	<a href="#">Save Announcements to Disk (TN750/B)</a>	<a href="#">1-9</a>
	<a href="#">Copy Announcements to Release 7 Tape (TN750/B)</a>	<a href="#">1-9</a>
	<a href="#">Change Disk Drive (If not TN1657 Vintage 4 or Later)</a>	<a href="#">1-9</a>
	<a href="#">Restore Disk Full</a>	<a href="#">1-10</a>
	<a href="#">Power Down PPN Cabinet</a>	<a href="#">1-10</a>
	<a href="#">Install Memory Circuit Pack</a>	<a href="#">1-10</a>
	<a href="#">Power Up the PPN Cabinet</a>	<a href="#">1-10</a>
	<a href="#">List Configuration Control</a>	<a href="#">1-11</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">1-12</a>
	<a href="#">Set Locations</a>	<a href="#">1-13</a>
	<a href="#">Set Date and Time</a>	<a href="#">1-14</a>
	<a href="#">Configure Tape 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-16</a>
	<a href="#">Enable TTI</a>	<a href="#">1-16</a>
	<a href="#">Check Link Status</a>	<a href="#">1-16</a>
	<a href="#">Enable Scheduled Maintenance</a>	<a href="#">1-16</a>
	<a href="#">Resolve Alarms</a>	<a href="#">1-17</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">1-17</a>

**Table 1-1. Tasks to Upgrade to Release 7r with Memory (Standard Reliability)**

√	Task Description	Page
	<a href="#">Save Translations</a>	<a href="#">1-17</a>
	<a href="#">Back Up Disk</a>	<a href="#">1-18</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">1-18</a>

**Table 1-2. Tasks to Upgrade to Release 7r with Memory (High or Critical Reliability)**

√	Task Description	Page
	<a href="#">Check Software Release Letter</a>	<a href="#">1-19</a>
	<a href="#">Save Translations to Disk</a>	<a href="#">1-19</a>
	<a href="#">Busyout Multimedia Interface Circuit Packs</a>	<a href="#">1-19</a>
	<a href="#">Disable Scheduled Maintenance</a>	<a href="#">1-20</a>
	<a href="#">Configure Tape spe-a Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-20</a>
	<a href="#">Configure Tape spe-b Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-20</a>
	<a href="#">Backup Disk</a>	<a href="#">1-20</a>
	<a href="#">Check Link Status</a>	<a href="#">1-21</a>
	<a href="#">Disable TTI</a> (Do not skip this section, translation corruption may occur!)	<a href="#">1-21</a>
	<a href="#">Disable Alarm Origination to INADS</a>	<a href="#">1-21</a>
	<a href="#">List Configuration Software Long (Release 7 Tape)</a>	<a href="#">1-22</a>
	<a href="#">Save Translations to Release 7 Tape (Both)</a>	<a href="#">1-22</a>
	<a href="#">Save Announcements to Disk (TN750/B)</a>	<a href="#">1-22</a>
	<a href="#">Copy Announcement to Release 7 Tape (Both)</a>	<a href="#">1-22</a>
	<a href="#">Change Disk Drives (If not TN1657 Vintage 4 or Later)</a>	<a href="#">1-23</a>
	<a href="#">Restore Disk Full (Both) (G3rV4 Only)</a>	<a href="#">1-24</a>
	<a href="#">Restore Disk Full (Both) (Release 5 or Later Only)</a>	<a href="#">1-24</a>
	<a href="#">Set Tone to Active SPE</a>	<a href="#">1-24</a>
	<a href="#">Lock to Active SPE</a>	<a href="#">1-24</a>
	<a href="#">Power Down Standby SPE</a>	<a href="#">1-24</a>

**Table 1-2. Tasks to Upgrade to Release 7r with Memory  
 (High or Critical Reliability) — Continued**

√	Task Description	Page
	<a href="#">Install Memory Circuit Pack</a>	<a href="#">1-25</a>
	<a href="#">Power Up Standby SPE</a>	<a href="#">1-25</a>
	<a href="#">Unlock Active SPE</a>	<a href="#">1-25</a>
	<a href="#">Set Tone to Upgraded SPE</a>	<a href="#">1-25</a>
	<a href="#">Lock to Upgraded SPE</a>	<a href="#">1-26</a>
	<a href="#">Power Down Standby SPE</a>	<a href="#">1-26</a>
	<a href="#">Install Memory Circuit Pack</a>	<a href="#">1-26</a>
	<a href="#">Power Up Standby SPE</a>	<a href="#">1-26</a>
	<a href="#">Unlock Active SPE</a>	<a href="#">1-27</a>
	<a href="#">List Configuration Control</a>	<a href="#">1-27</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">1-28</a>
	<a href="#">Set Locations</a>	<a href="#">1-29</a>
	<a href="#">Set Date and Time</a>	<a href="#">1-30</a>
	<a href="#">Configure Tape spe-a 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-32</a>
	<a href="#">Configure Tape spe-b 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-32</a>
	<a href="#">Restore Disk Full (Both) (G3rV2 and G3rV3 Release 31.0 and Earlier Only)</a>	<a href="#">1-32</a>
	<a href="#">Set Vector f SPE-Maint</a>	<a href="#">1-32</a>
	<a href="#">Enable TTI</a>	<a href="#">1-32</a>
	<a href="#">Check Link Status</a>	<a href="#">1-33</a>
	<a href="#">Check Link Status</a>	<a href="#">1-33</a>
	<a href="#">Resolve Alarms</a>	<a href="#">1-33</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">1-33</a>
	<a href="#">Save Translations</a>	<a href="#">1-34</a>
	<a href="#">Back Up Disk</a>	<a href="#">1-34</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">1-34</a>

## Read This First

---

### Service Interruption

This upgrade requires a non-call preserving service interruption of about 20 minutes for a standard reliability system, and about 15 minutes for high or critical reliability system. Coordinate this service interruption with the customer and the local account team.

### Software Compatibility and Translation Errors

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

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

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

### 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). Print the reports 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.

### Usable Circuit Packs

Every circuit pack used in the Release 7 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 7 system. Replace all circuit packs with unusable 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 non-United States circuit packs, refer to the ITAC's Tech Alert from your regional distributor.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
 Standard Reliability System

## Standard Reliability System

---

### Required Hardware

[Table 1-3](#) lists the equipment needed for the standard reliability Release 7 upgrade.

**Table 1-3. Required Hardware for Standard Reliability**

Equipment	Description	Quantity
106495120	TN1650B Memory circuit pack	1
105533780	Vintage 4 (or later) TN1657 Disk Drive circuit pack	1 (may already have)
J58890TF L9	Release 7 Tape	1 <sup>1</sup>

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

### Check Software Release Letter

---

1. Check the *Software Release Letter* that accompanies the Release 7 tape. 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 7 software tape, perform the following procedures.

### Disable Scheduled Maintenance

---

1. Type **change system-parameters maintenance** and press `Enter`.
2. Disable scheduled daily maintenance so it does not interfere with the upgrade.

**⇒ NOTE:**

If scheduled maintenance has begun, set the `Stop Time` field to 1 minute after the current time. If scheduled maintenance has not yet begun, change the `Start Time` field to a time after the upgrade will be finished.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*Standard Reliability System*

1-7

## **Configure Tape Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)**

---

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

### **⇒ NOTE:**

Do not issue the list configuration software long command before reconfiguring the tape.

## **Save Translations to Original Tape**

---

1. Type **save translation tape** and press `Enter`. This instructs the system to write all translation information from memory to the tape. This takes about 5 minutes.

## **Backup Disk**

---

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

## **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. Use Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

## 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* before submitting the form.



### CAUTION:

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

## List Configuration Software Long (Release 7 Tape)

---

1. Clean the tape drive with the tape drive cleaning kit.
2. Insert the new Release 7 tape.
3. Type **list configure software long** and press Enter to verify the tape contains the required Release 7 software. This takes about 2 minutes.

## Save Translations to Release 7 Tape

---

1. Type **save translation tape** and press Enter. This instructs the system to write all translation information from memory to the tape. This takes about 10 minutes.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-9

## Save Announcements to Disk (TN750/B)

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** and press Enter. This takes about 30 minutes.



### NOTE:

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

## Copy Announcements to Release 7 Tape (TN750/B)

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 **list configuration software-version** and press Enter. Check Page 2 of the form to see when the announcements were last saved. To save the current announcements, type **copy announce tape** and press Enter.



### NOTE:

The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is optional.

## Change Disk Drive (If not TN1657 Vintage 4 or Later)

1. Type **list configuration control** and press Enter to check the vintage of the disk drive. If the drive is *not* vintage 4 or later, proceed as follows. If the drive *is* vintage 4 or later, skip to ["Restore Disk Full"](#).
2. Type **busyout host-adapter <cabinet> <carrier>** and press Enter to prevent other applications from accessing the disk or tape.
3. Replace the existing TN1657 Disk Drive circuit pack in the control carrier with a TN1657 Vintage 4 or later.
4. Type **release host-adapter <cabinet> <carrier>** and press Enter to release the disk from the maintenance-busyout condition and to put it back into service.
5. Type **reset host-adapter** and press Enter to allow the disk to spin up.
6. Type **status spe** and press Enter to verify the disk is in service.



### NOTE:

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-10

## Restore Disk Full

---

1. Type **restore disk full** and press **Enter**. This instructs the system to copy the entire tape to disk and takes about 30 minutes to complete. Release 7 system software with translations and announcements 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.

## Power Down PPN Cabinet

---

1. When the `login:` prompt appears, power down the PPN cabinet. The power switch is located at the front of the cabinet, at the bottom (behind the cover panel).

## Install Memory Circuit Pack

---

1. Remove the circuit pack blank from the MEMORY 3 slot in the control carrier.
2. Install the new TN1650B Memory circuit pack into the MEMORY 3 slot.

## Power Up the PPN Cabinet

---

1. Power up the PPN cabinet by setting the power switch to the on position.
2. Verify the SPE is up and cycling by watching the yellow LED on the UN331B Processor circuit pack flash with a regular cycle. Also, verify the red LED on the new TN1650B goes out and stays out.
3. Release 7 software is now running on the SPE. After 15 minutes, if the yellow LED is not flashing *or* if the red LED has not gone out, execute the SPE-down interface tests referring to *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-11

## List Configuration Control

---

1. Login as **craft** at the login: prompt.
2. 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 Upgrade Problems"](#) to correct the problem.



**CAUTION:**

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

3. 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 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.

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 3:00   01:00
     Stop: first Sunday   on or after October 25 at 3:00
2:   Start: first Sunday   on or after April  1  at 4:00   01:00
     Stop: first Sunday   on or after October 25 at 4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>± 00:00</u>	<u>_1</u>	<u>303</u>
2	_____	- _: _	__	__
3	_____	- _: _	__	__
4	_____	- _: _	__	__
5	_____	- _: _	__	__
6	_____	- _: _	__	__
7	_____	- _: _	__	__
8	_____	- _: _	__	__
9	_____	- _: _	__	__
10	_____	- _: _	__	__
11	_____	- _: _	__	__
12	_____	- _: _	__	__
13	_____	- _: _	__	__
14	_____	- _: _	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



**NOTE:**

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. Press Enter.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-14

## Set Date and Time

---

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

```
DATE AND TIME
DATE
Day of the Week: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### Screen 1-1. Typical Date and Time Screen

3. Type the day of the week in English (Sunday through Saturday). See [Table 1-4](#) for English day of the week names.

**Table 1-4. English Day of the Week Names**

---

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

---

- The cursor is positioned on the `Month:` field. Type the current month in English (January through December). See [Table 1-5](#) for English month names. After the month is entered, press `Tab` to move to next field.

**Table 1-5. 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- Type **display time** and press `Enter` to verify date/time data.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-16

## **Configure Tape 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)**

---

1. Type **configure tape 3-mem** and press Enter. This configures the tape for a third TN1650B Memory circuit pack. This takes about 1 minute to finish.
2. Type **restore disk full** and press Enter. This copies the entire tape to disk. This takes about 30 minutes to execute.

### **⇒ NOTE:**

The system provides no user feedback on the 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 provides.

3. Type **list configuration software-versions** and press Enter. Verify the entry *3 mem* resides in the *file system* field on Page 2 of the form.

## **Enable TTI**

---

1. Type **change system-parameters features** and press Enter. Use this form 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.
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.

## **Enable Scheduled Maintenance**

---

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

## Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.

### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

5. Type **display system-parameters offer** and press Enter.
6. Set the `Offer Category` field to **A**, if not already set.
7. Set the `Activate Offer` field to **y** and press Tab. A warning lets you know that the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

10. Logoff and log back in as **craft**.

## Save Translations

1. Type **save translation** and press Enter to get upgraded translations onto disk. This takes about 10 minutes.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
Standard Reliability System

1-18

## **Back Up Disk**

---

1. Type **backup disk** and press Enter to backup all changed files. This takes about 30 minutes.
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 tape).

## **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*

## High or Critical Reliability System

### Required Hardware

[Table 1-6](#) lists the equipment needed for the Release 7 upgrade.

**Table 1-6. Required Hardware for High or Critical Reliability**

Equipment	Description	Quantity
106495120	TN1650B Memory circuit pack	2
105533780	Vintage 4 (or later) TN1657 Disk Drive circuit pack	2 (may already have)
J58890TF L9	DEFINITY ECS Release 7 Tape	2 <sup>1</sup>

1. For a maintenance update, acquire from the Technical Service Center. For an upgrade, ships from the factory.

### Check Software Release Letter

1. Check the *Software Release Letter* that accompanies the Release 7 tape(s). 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 7 software tape(s), perform the following procedures.

### Save Translations to Disk

1. Type **save translation disk** and press Enter. This instructs the system to write all translation information from memory to the disk and takes 25-50 minutes.

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

1-20

## Disable Scheduled Maintenance

1. Type **change system-parameters maintenance** and press `Enter`. Disable scheduled daily maintenance so it does not interfere with the upgrade.

### NOTE:

If scheduled maintenance has begun, set the `Stop Time` field to 1 minute after the current time. If scheduled maintenance has not yet begun, change the `Start Time` field to a time after the upgrade will be finished.

## Configure Tape spe-a Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)

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

### NOTE:

Do not issue the list configuration software long command before reconfiguring the tape.

## Configure Tape spe-b Large (G3rV2 and G3rV3 Release 31.0 and Earlier Only)

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

### NOTE:

Do not issue the list configuration software long command before reconfiguring the tape.

## Backup Disk

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
High or Critical Reliability System

1-21

## 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. On page 2, change the Terminal Translation Initialization (TTI) feature to **n**.

## 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 before submitting the form.



### CAUTION:

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

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## List Configuration Software Long (Release 7 Tape)

1. Clean the tape drives with the tape drive cleaning kit.
2. Insert the new Release 7 tape.
3. Type **list configure software long** and press Enter to verify the tape contains the required Release 7 software. This takes about 2 minutes.
4. Make note of the entire alphanumeric string of the software version. This information is used later.

## Save Translations to Release 7 Tape (Both)

1. Type **save translation tape both** and press Enter. This instructs the system to write all translation information from memory to the tape. This takes about 10 minutes.

## Save Announcements to Disk (TN750/B)

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** and press Enter. This takes about 30 minutes.



### NOTE:

The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is optional.

## Copy Announcement to Release 7 Tape (Both)

1. If the PPN contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter.
2. If recorded announcements are listed, type **copy announce spe-a tape** and press Enter, and **copy announce spe-b tape** and press Enter.



### NOTE:

The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is optional.

## Change Disk Drives (If not TN1657 Vintage 4 or Later)

---

### CAUTION:

*Replace and restore the disk drive, 1 at a time, on the standby SPE only. Never replace the active and standby disk drives at the same time. If the system crashes during the change out, there will be no boot image for the system to boot from.*

1. Type **list configuration control** and press Enter to check the vintage of the disk drive. If the drive is *not* vintage 4 or later, proceed as follows. If the drive *is* vintage 4 or later, skip to the next appropriate section.
2. Type **busyout host-adapter [a | b]** and press Enter for the standby carrier to prevent other applications from accessing the disk or tape.
3. Replace the existing TN1657 Disk Drive circuit pack in the control carrier with a TN1657 Vintage 4 or later.
4. Type **release host-adapter spe [a | b]** and press Enter for the standby carrier to release the disk from the maintenance-busyout condition and put it back into service.
5. Type **reset host-adapter spe [a | b]** and press Enter for the standby carrier to allow the disk to “spin up.”
6. Type **status spe** and press Enter to verify the disk is now in service.

### NOTE:

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
High or Critical Reliability System

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## Restore Disk Full (Both) (G3rV4 Only)

1. Type **restore disk full both** and press Enter. For both SPEs, this instructs the system to copy the entire tape to disk and takes about 30 minutes.

### ⇒ NOTE:

Until this command finishes, the system provides no feedback on the 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/ failure messages.

## Restore Disk Full (Both) (Release 5 or Later Only)

1. Type **restore disk full both** and press Enter. For both SPEs, this instructs the system to copy the entire tape to disk and takes about 30 minutes to complete.

### ⇒ 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/ failure messages the system may provide.

## Set Tone to Active SPE

1. Type **status port-network 1** and press Enter.
2. Type **set tone spe-a** or **spe-b** and press Enter if needed.

## Lock to Active SPE

1. Type **status spe** and press Enter to determine which SPE is active and which is standby.
2. Lock the active SPE on-line 1 SPE-SELECT switch at a time. To do this, set the *active* SPE to active, then set the *standby* SPE to standby.

## Power Down Standby SPE

1. Power down the standby control carrier by disconnecting the power cords (first from the left and then the right) from the power supplies on both sides of the carrier.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

1-25

## Install Memory Circuit Pack

1. Remove the circuit pack blank from the "MEMORY 3" slot of the standby control carrier.
2. Install a new TN1650B Memory circuit pack into the "MEMORY 3" slot.

## Power Up Standby SPE

1. Power up the standby control carrier by replacing the power cords (first to the right power supply and then the left).
2. Verify the standby SPE is up and cycling by watching the yellow LED on the UN331B Processor circuit pack flash with a regular cycle. Also, verify the red LED on the new TN1650 goes out and stays out.

Release 7 software is now running on the standby SPE. After 15 minutes, if the yellow LED is not flashing *or* if the red LED has not gone out, execute the SPE-down interface tests referring to *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Unlock Active SPE

1. Login as **craft**.
2. 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 Upgrade Problems"](#) to correct the problem.



**CAUTION:**

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

3. Unlock both SPEs from their current "active/standby" state 1 SPE-SELECT switch at a time (first in the *standby* control carrier, then in the *active* control carrier). Set the switch to the AUTO position.

## Set Tone to Upgraded SPE

1. Type **status port-network 1** and press Enter.
2. Type **set tone spe-a** or **spe-b** and press Enter if needed.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

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## **Lock to Upgraded SPE**

---

1. Type **status spe** and press Enter to determine which SPE is active and which is standby.
2. Lock the standby SPE on-line 1 SPE-SELECT switch at a time. To do this, set the *active* SPE to standby, then set the *standby* SPE to active.

## **Power Down Standby SPE**

---

1. Power down the standby control carrier by disconnecting the power cords (first from the left and then the right) from the power supplies on both sides of the carrier.

## **Install Memory Circuit Pack**

---

1. Remove the circuit pack blank from the "MEMORY 3" slot of the standby control carrier.
2. Install a new TN1650B Memory circuit pack into the "MEMORY 3" slot.

## **Power Up Standby SPE**

---

1. Power up the standby control carrier by replacing the power cords (first to the right power supply and then the left).
2. Verify the standby SPE is up and cycling by watching the yellow LED on the UN331B Processor circuit pack flash with a regular cycle.
3. Verify the red LED on the new TN1650 goes out. Release 7 software is now running on the standby SPE. After 15 minutes, if the yellow LED is not flashing *or* if the red LED has not gone out, execute the SPE-down interface tests referring to *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

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## Unlock Active SPE

---

1. Login as **craft**.
2. 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 Upgrade Problems"](#) to correct the problem.



### **CAUTION:**

*Do not continue with the upgrade until the translation corruption is corrected.*

3. Unlock both SPEs from their current "active/standby" state 1 SPE-SELECT switch at a time (first in the *standby* control carrier, then in the *active* control carrier). Set the switch to the AUTO position.
4. Type **status spe** and press Enter. Both SPEs must be in a fully functional state.

## 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 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.

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 3:00    01:00
    Stop: first Sunday on or after October 25 at 3:00
2:  Start: first Sunday on or after April 1 at 4:00    01:00
    Stop: first Sunday on or after October 25 at 4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	_____	- __:__	__	__
2	_____	- __:__	__	__
3	_____	- __:__	__	__
4	_____	- __:__	__	__
5	_____	- __:__	__	__
6	_____	- __:__	__	__
7	_____	- __:__	__	__
8	_____	- __:__	__	__
9	_____	- __:__	__	__
10	_____	- __:__	__	__
11	_____	- __:__	__	__
12	_____	- __:__	__	__
13	_____	- __:__	__	__
14	_____	- __:__	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.
4. Press Enter.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
High or Critical Reliability System

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## Set Date and Time

---

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

```
                                DATE AND TIME
DATE
Day of the Week: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### Screen 1-2. Typical Date and Time Screen

3. Type the day of the week in English (Sunday through Saturday). See [Table 1-7](#) for English day of the week names.

**Table 1-7. 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 1-8](#) for English month names. After the month is entered, press `Tab` to move to next field.

**Table 1-8. 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

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.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

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### **Configure Tape spe-a 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)**

---

1. Type **configure tape spe-a 3-mem** and press Enter. This instructs the system to reconfigure the tape for a third TN1650B Memory circuit pack. This commands takes about 1 minute to complete.

### **Configure Tape spe-b 3-Mem (G3rV2 and G3rV3 Release 31.0 and Earlier Only)**

---

1. Type **configure tape spe-b 3-mem** and press Enter for carrier B. This instructs the system to reconfigure the tape for a third TN1650B Memory circuit pack. This commands takes about 1 minute to complete.
2. Type **list configuration software-versions** and press Enter. Verify the entry *3 mem* resides in the *file system* field on Page 2 of the form.

### **Restore Disk Full (Both) (G3rV2 and G3rV3 Release 31.0 and Earlier Only)**

---

1. Type **restore disk full both** and press Enter. This copies the entire tape to disk and takes about 30 minutes to execute. Release 7 system software with translations and announcements is now resident on the disk.

#### **⇒ NOTE:**

Until this command finishes, the system provides no user feedback on the management terminal. Do not press Enter when the command begins executing. Doing so causes the terminal screen to clear as the command finishes, erasing any success/failure messages the system may provide.

2. Type **test stored-data long** and press Enter to verify the files on every storage device are consistent.

### **Set Vector f SPE-Maint**

---

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**

---

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

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

1-33

## 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.

## Enable Scheduled Maintenance

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

## Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.

### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the *Basic Call Setup* field on the QSIG Optional Features page to **y**.

5. Type **display system-parameters offer** and press Enter.
6. Set the *Offer Category* field to **A**, if not already set.

- 1 G3rV2, V3, or V4 to Release 7r with Memory Addition  
*High or Critical Reliability System*

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7. Set the `Activate Offer` field to **y** and press `Tab`. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

10. Logoff and log back in as **craft**.

## Save Translations

---

1. Type **save translation** and press `Enter` to get upgraded translations onto disk. This takes about 10 minutes.

## Back Up Disk

---

1. Type **backup disk** and press `Enter` to backup all changed files. This takes about 30 minutes.
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 tape).

## 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*

## Release G3rV4/5r/6r to Release 7r without Memory Addition

# 2

---

This chapter provides the information necessary to perform a software-only upgrade from a DEFINITY G3rV4/Release 5r/Release 6r to a Release 7r System. There are many configurations of DEFINITY Release G3rV4/5r/6r in the field. 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 7 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*

**⇒ NOTE:**

If the cabinet is older than Release 5, refer to *DEFINITY Communications System Generic 3r (G3r) Upgrades and Additions*, 555-230-109.

## Task Tables

[Table 2-1](#) and [Table 2-2](#) provide the high-level tasks to perform the upgrades in this chapter.

**Table 2-1. Tasks to Upgrade to Release 7r (Standard Reliability)**

√	Task Description	Page
	<a href="#">Check Software Release Letter</a>	<a href="#">2-6</a>
	<a href="#">Disable Scheduled Maintenance</a>	<a href="#">2-6</a>
	<a href="#">Check Link Status</a>	<a href="#">2-6</a>
	<a href="#">Disable TTI</a> <i>(Do not skip this section, translation corruption may occur!)</i>	<a href="#">2-7</a>
	<a href="#">Save Translations to Disk</a>	<a href="#">2-7</a>
	<a href="#">Backup Disk</a>	<a href="#">2-7</a>
	<a href="#">Disable Alarm Origination to INADS</a>	<a href="#">2-7</a>
	<a href="#">List Configuration Software Long</a>	<a href="#">2-7</a>
	<a href="#">Save Announcements to Disk (TN750/B)</a>	<a href="#">2-8</a>
	<a href="#">Copy Announcement to Release 7 Tape (TN750/B)</a>	<a href="#">2-8</a>
	<a href="#">Restore Disk</a>	<a href="#">2-8</a>
	<a href="#">Busyout MMI (TN787) Circuit Packs</a>	<a href="#">2-8</a>
	<a href="#">Upgrade Software</a>	<a href="#">2-9</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">2-10</a>
	<a href="#">Set Locations</a>	<a href="#">2-11</a>
	<a href="#">Set Date and Time</a>	<a href="#">2-12</a>
	<a href="#">Set Vector f SPE-Maint</a>	<a href="#">2-13</a>
	<a href="#">Enable TTI</a>	<a href="#">2-14</a>
	<a href="#">Check Link Status</a>	<a href="#">2-14</a>
	<a href="#">Resolve Alarms</a>	<a href="#">2-14</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">2-14</a>
	<a href="#">Save Translations</a>	<a href="#">2-15</a>
	<a href="#">Back Up Disk</a>	<a href="#">2-15</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">2-15</a>

**Table 2-2. Tasks to Upgrade to Release 7r (High or Critical Reliability)**

√	Task Description	Page
	<a href="#">Check Software Release Letter</a>	<a href="#">2-16</a>
	<a href="#">Busyout Multimedia Interface Circuit Packs</a>	<a href="#">2-16</a>
	<a href="#">Disable Scheduled Maintenance and Alarm Origination to INADS</a>	<a href="#">2-16</a>
	<a href="#">Resolve Alarms</a>	<a href="#">2-17</a>
	<a href="#">Check Link Status</a>	<a href="#">2-17</a>
	<a href="#">Save Translations to Disk</a>	<a href="#">2-17</a>
	<a href="#">Disable TTI</a> <i>(Do not skip this section, translation corruption may occur!)</i>	<a href="#">2-18</a>
	<a href="#">Save Announcements to Disk (TN750/B)</a>	<a href="#">2-18</a>
	<a href="#">Backup Disk</a>	<a href="#">2-18</a>
	<a href="#">List Configuration Software Long</a>	<a href="#">2-18</a>
	<a href="#">Save Translations to Release 7 Tape (Both)</a>	<a href="#">2-18</a>
	<a href="#">Restore Disk Install</a>	<a href="#">2-19</a>
	<a href="#">Upgrade Software</a>	<a href="#">2-19</a>
	<a href="#">Reset SPE-Standby 4</a>	<a href="#">2-19</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">2-20</a>
	<a href="#">Set Locations</a>	<a href="#">2-21</a>
	<a href="#">Set Date and Time</a>	<a href="#">2-22</a>
	<a href="#">Set Vector f SPE-Maint</a>	<a href="#">2-24</a>
	<a href="#">Enable TTI</a>	<a href="#">2-24</a>
	<a href="#">Resolve Alarms</a>	<a href="#">2-24</a>
	<a href="#">Check Link Status</a>	<a href="#">2-24</a>
	<a href="#">Enable Scheduled Maintenance and Alarm Origination</a>	<a href="#">2-24</a>
	<a href="#">Enable Customer Options</a>	<a href="#">2-25</a>
	<a href="#">Save Translations</a>	<a href="#">2-25</a>
	<a href="#">Back Up Translations/Announcements to Spare Release 7 Tape</a>	<a href="#">2-26</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">2-26</a>

## Read This First

---

### Service Interruption

The upgrade process requires a non-call preserving service interruption which occurs during a reboot with the Release 7 tapes, unless you are upgrading from Release 6.3 only. This service interruption of about 15 to 20 minutes for a simplex system 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 tape. Translation corruption will occur if incompatible software is loaded.

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

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

### Changes to Run-Tape Compatible Update or Upgrade Procedures

The specific steps for a run-tape compatible update or upgrade can change as new tapes are issued. For the most current information, refer to the Remediation Update Supplement provided with the new Release 7 tape.

- 2 Release G3rV4/5r/6r to Release 7r without Memory Addition  
*Read This First*

2-5

## Usable Circuit Packs

Every circuit pack used in the Release 7 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 7 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.

## Software Upgrade

Release 7 software and translations are saved to tape. Although the translations automatically update to Release 7, several features require special attention because of form changes or potential naming conflicts in the process.

Between customer confirmation and the actual update or upgrade, the Software Specialist and Associate should check these forms to ensure the translations are appropriate for the customer's needs. After rebooting the system, enter these translations either locally by the Software Associate or remotely at the FSAC (with possible assistance from the upgrade technician). For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*

## Required Hardware

The J58890TF L9 Tape is needed for the Release 7 upgrade. For a maintenance update, the tape is acquired from the Technical Service Center. For an upgrade, the tape ships from the factory.

- 2 Release G3rV4/5r/6r to Release 7r without Memory Addition  
Standard Reliability System

2-6

## Standard Reliability System

---

### Check Software Release Letter

---

1. Check the *Software Release Letter* that accompanies the Release 7 tape. 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 7 tape, perform the following procedures.

### Disable Scheduled Maintenance

---

1. Type **change system-parameters maintenance** and press Enter. Use this form to prevent scheduled daily maintenance from interfering with the update or upgrade.



#### NOTE:

If scheduled maintenance has begun, set the value of the *Stop Time* field to 1 minute after the current time. If scheduled maintenance has not yet begun, change the value of the *Start Time* field to a time after the upgrade will be finished.

### 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. Use Page 2 of this form to prevent activation of the Terminal Translation Initialization (TTI) feature by changing the value to **n**.

## Save Translations to Disk

---

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

## Backup Disk

---

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

## Disable Alarm Origination to INADS

---

### CAUTION:

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

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 before submitting the form.
4. Press Enter.

## List Configuration Software Long

---

1. Clean the tape drive with the tape drive cleaning kit.
2. Insert the new Release 7 tape and wait for tape to retension.
3. Type **list configure software long** and press Enter to verify the tape contains the required Release 7 software. This takes about 2 minutes.
4. Make note of the entire alphanumeric string of the software version on the new tape label. This information is used later.

## Save Announcements to Disk (TN750/B)

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** and press Enter. This takes about 30 minutes.



### NOTE:

The TN750C Announcement circuit pack stores announcements in non-volatile memory; saving the announcements is optional.

## Copy Announcement to Release 7 Tape (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 tape** and press Enter.



### NOTE:

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

## Restore Disk

1. Type **restore disk install** and press Enter. This instructs the system to copy the entire tape to disk and takes about 30 minutes to complete. Release 7 system software with translations and announcements 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.

## Busyout MMI (TN787) Circuit Packs

1. Type **display system-parameters customer option** and press Enter. Check the **Basic** field and **Enhanced** field in the MMCH options.
2. If the **Basic** field or **Enhanced** field is **y**, type **list config all** and press Enter to locate all MMI (TN787) circuit packs.
3. If there are MMI circuit packs, type **busyout board** and press Enter to remove the circuit packs from service.

## Upgrade Software

---

1. Type **upgrade software G3v7r.xx.x.xxx.x** <entire alphanumeric string of target software version> and press Enter. Use the “preserve calls” option when upgrading from Release 6.3 only. This command copies the disk translations to the tape and takes about 15 minutes to complete.
2. Login as **craft** at the login: prompt.
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 Upgrade Problems”](#) to correct the problem.



**CAUTION:**

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

## 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.

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 3:00    01:00
    Stop: first Sunday on or after October 25 at 3:00
2:  Start: first Sunday on or after April 1 at 4:00    01:00
    Stop: first Sunday on or after October 25 at 4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

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LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>± 00:00</u>	<u>_1</u>	<u>303</u>
2	_____	- _: _	__	__
3	_____	- _: _	__	__
4	_____	- _: _	__	__
5	_____	- _: _	__	__
6	_____	- _: _	__	__
7	_____	- _: _	__	__
8	_____	- _: _	__	__
9	_____	- _: _	__	__
10	_____	- _: _	__	__
11	_____	- _: _	__	__
12	_____	- _: _	__	__
13	_____	- _: _	__	__
14	_____	- _: _	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



**NOTE:**

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. 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 2-1](#). The cursor is positioned on the Day of the Week: field.

```
DATE AND TIME
DATE
Day of the Week: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### Screen 2-1. Typical Date and Time Screen

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

**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

---

- The cursor is positioned on the `Month:` field. Type the current month in English (January through December). See [Table 2-4](#) for English month names. After the month is entered, press `Tab` to move to next field.

**Table 2-4. 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- Type **display time** and press `Enter` to verify date/time data.

## **Set Vector f SPE-Maint**

---

- 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

1. Type **change system-parameters features** and press Enter. Use this form 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.
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.

## Enable Scheduled Maintenance

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

## Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.



### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

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5. Type **display system-parameters offer** and press Enter.
6. Set the `Offer Category` field to **A**, if not already set.
7. Set the `Activate Offer` field to **y** and press Tab. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

10. Logoff and log back in as **craft**.

## Save Translations

---

1. Type **save translation** and press Enter to copy upgraded translations onto disk. This takes about 10 minutes.

## Back Up Disk

---

1. Type **backup disk** and press Enter to back up all changed files. This takes about 30 minutes.
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 tape).

## 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*

## High or Critical Reliability Systems

---

### Check Software Release Letter

---

1. Check the *Software Release Letter* that accompanies the Release 7 tape. 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 7 tape, perform the following procedures.

### Busyout Multimedia Interface 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. Scroll to page 2 of the form. If the MMCH option is set to **y**, continue to step 2. If not, skip to ["Disable Scheduled Maintenance"](#).
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 will drop any active connections.

### Disable Scheduled Maintenance and Alarm Origination to INADS

---



**CAUTION:**

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

1. Type **change system-parameters maintenance** and press Enter.
2. Disable scheduled daily maintenance so it does not interfere with the upgrade.



**NOTE:**

If scheduled maintenance has begun, set the value of the **Stop Time** field to 1 minute after the current time. If scheduled maintenance has not yet begun, change the value of the **Start Time** field to a time after the upgrade will be finished.

3. Note the settings in the **Alarm Origination to OSS Numbers** field for use later.

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*High or Critical Reliability Systems*

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4. Type **neither** in the Alarm Origination to OSS Numbers field.
5. Note the settings in the Cleared Alarm Notification and Restart Notification fields for use later.
6. For some releases of software, disable Cleared Alarm Notification and Restart Notification before submitting the form.
7. Press Enter.

## Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## 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.

## Save Translations to Disk

1. Type **save translation** and press Enter. This instructs the system to write all original translation information from memory to the disk and takes about 2 minutes.

## 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 Page 2 of this form to prevent activation of the Terminal Translation Initialization (TTI) feature by changing the value to **n**.

## Save Announcements to Disk (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 **save announcements** and press Enter.



### NOTE:

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

## Backup Disk

---

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

## List Configuration Software Long

---

1. Clean the tape drives with the tape drive cleaning kit.
2. Insert the Release 7 tape and wait for the tape to retension.
3. Type **list configuration software long** and press Enter to verify the tape contains the required Release 7 software. This takes about 2 minutes.
4. Make note of the entire alphanumeric string of the software version on the new tape label. This information is used later.

## Save Translations to Release 7 Tape (Both)

---

1. Type **save translation tape both** and press Enter. This instructs the system to write all translation information from memory to the tape.

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*High or Critical Reliability Systems*

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## Restore Disk Install

---

1. Type **restore disk install both** and press `Enter`. For both SPEs, this instructs the system to copy the entire tape to disk and takes about 15 minutes to complete.



### 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/ failure messages the system may provide.

## Upgrade Software

---

1. Type **upgrade software G3V7r.xx.x.xxx.x** <entire alphanumeric string of target software version> and press `Enter`. This command upgrades the standby SPE to the target software version. It takes about 15 minutes. After the standby SPE is upgraded, you are running G3V7r software on the new active SPE.

## Reset SPE-Standby 4

---

1. Type **reset spe standby 4** and press `Enter` to start the new software load on the standby SPE. This changes the standby SPE to active. This takes about 10 minutes.
2. Type **status spe** and press `Enter`. The `refresh` field must be `yes`, the `shadowing` field must be `on`, and the `handshake` field must be `up` before continuing with the upgrade. Also, the `standby side` field must be `in-service`. The heartbeat on the standby SPE flashes yellow.

## 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.

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 3:00  01:00
    Stop: first Sunday  on or after October 25 at 3:00
2:  Start: first Sunday  on or after April  1  at 4:00  01:00
    Stop: first Sunday  on or after October 25 at 4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

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LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

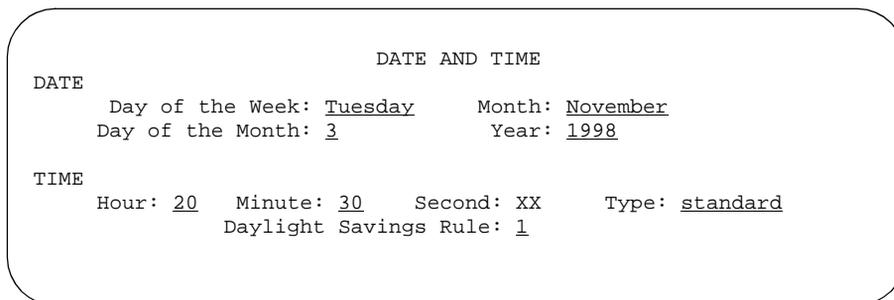
Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	_____	- __:__	__	__
2	_____	- __:__	__	__
3	_____	- __:__	__	__
4	_____	- __:__	__	__
5	_____	- __:__	__	__
6	_____	- __:__	__	__
7	_____	- __:__	__	__
8	_____	- __:__	__	__
9	_____	- __:__	__	__
10	_____	- __:__	__	__
11	_____	- __:__	__	__
12	_____	- __:__	__	__
13	_____	- __:__	__	__
14	_____	- __:__	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.
4. 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 2-1](#). The cursor is positioned on the Day of the Week: field.



### Screen 2-2. Typical Date and Time Screen

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

**Table 2-5. English Day of the Week Names**

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

---

**2** Release G3rV4/5r/6r to Release 7r without Memory Addition  
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- The cursor is positioned on the `Month:` field. Type the current month in English (January through December). See [Table 2-4](#) for English month names. After the month is entered, press `Tab` to move to next field.

**Table 2-6. 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- Type **display time** and press `Enter` to verify date/time data.
- After about 2 minutes, type **status spe**. The `standby handshake` field must be `up` before continuing with the upgrade. Do not wait for the State of Health of SPE B to be functional.

- 2 Release G3rV4/5r/6r to Release 7r without Memory Addition  
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## Set Vector f SPE-Maint

---

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

---

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

## Resolve Alarms

---

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## 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.

## Enable Scheduled Maintenance and Alarm Origination

---

1. Type **change system-parameters maintenance** and press `Enter`. Use this form to enable scheduled daily maintenance.
2. Set the Cleared Alarm Notification and Restart Notification fields to their previous settings.

## Enable Customer Options

---

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

4. Logoff and log back in as **craft**.

## Save Translations

---

1. Type **save translation** and press `Enter` to copy 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.

### NOTE:

If the new load must be returned to the previous software load, use the backup tape to go back to the old release. Boot the system from tape. Perform a full restore of the disk after rebooting.

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*High or Critical Reliability Systems*

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## **Back Up Translations/Announcements to Spare Release 7 Tape**

---

1. Remove the Release 7 system tape and install the spare Release 7 tape.
2. Type **backup disk** and press Enter. This instructs the system to backup the current information on disk to the spare Release 7 tape.

### **⇒ NOTE:**

This command takes 20 to 50 minutes to execute. 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.

3. Type **test stored-data long** and press Enter. This instructs the system to verify the consistency of the MSS files (on the disk and tape).

## **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*

# Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN

# 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 7r EPN.

The existing SCC PPN is always upgraded to an EPN. The new Multi-Carrier Cabinet always serves as the PPN. Upgrading to an EPN for a Release 7r 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 7r cabinet has already been installed. If not, refer to *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets* to install the Release 7r 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 7 Administrator's Guide* lists Release 7 features and functions and provides the commands, procedures, and forms to initialize and administer the Release 7r.

## 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 7r System**

✓	Task Description	Page
	<a href="#">Make Spare Translation Card and Mail to STS for Upgrade</a>	<a href="#">3-8</a>
	<a href="#">Busyout 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="#">3-14</a>
	<a href="#">Disconnect Power and Ground</a>	<a href="#">3-14</a>
	<a href="#">Install Emergency Transfer Ground Wire</a>	<a href="#">3-14</a>
	<a href="#">Disconnect Equipment and Cables</a>	<a href="#">3-14</a>
	<a href="#">Remove Circuit Packs</a>	<a href="#">3-15</a>
	<a href="#">Disconnect TDM/LAN Cables and ICC Cables</a>	<a href="#">3-15</a>
	<a href="#">Remove the Existing Control Cabinet</a>	<a href="#">3-15</a>
	<a href="#">Unpack and Install Expansion Control Cabinet</a>	<a href="#">3-16</a>
	<a href="#">Install Port Cabinets</a>	<a href="#">3-16</a>
	<a href="#">Install Circuit Packs</a>	<a href="#">3-16</a>
	<a href="#">Change Cabinet Address Plugs</a>	<a href="#">3-17</a>
	<a href="#">Install TDM/LAN Bus Terminators</a>	<a href="#">3-18</a>
	<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 7r</a>	<a href="#">3-22</a>
	<a href="#">Interconnect Port Networks with Fiber Optic Cabling — High Reliability Release 7r</a>	<a href="#">3-27</a>

*Continued on next page*

**Table 3-1. Tasks to Upgrade to Release 7r System — Continued**

✓	Task Description	Page
	<a href="#">Interconnect Port Networks with Fiber Cabling — Critical Reliability Release 7r</a>	<a href="#">3-34</a>
	<a href="#">Connect Power and Ground</a>	<a href="#">3-47</a>
	<a href="#">Verify Usable Circuit Pack Vintages</a>	<a href="#">3-48</a>
	<a href="#">Install System Access Ports</a>	<a href="#">3-48</a>
	<a href="#">Reseat DEFINITY LAN Gateway System</a>	<a href="#">3-48</a>
	<a href="#">Reseat DEFINITY AUDIX System</a>	<a href="#">3-48</a>
	<a href="#">Remove Emergency Transfer Ground Wire</a>	<a href="#">3-48</a>
	<a href="#">Reboot the System</a>	<a href="#">3-49</a>
	<a href="#">Restart DEFINITY LAN Gateway System</a>	<a href="#">3-49</a>
	<a href="#">Label Main Distribution Frame</a>	<a href="#">3-49</a>
	<a href="#">Reconnect Cables</a>	<a href="#">3-50</a>
	<a href="#">Power Up the EPN Cabinet</a>	<a href="#">3-50</a>
	<a href="#">Install Rear Ground Plates (Systems with Earthquake Protection)</a>	<a href="#">3-50</a>
	<a href="#">Install Cabinet Clips (Systems without Earthquake Protection)</a>	<a href="#">3-52</a>
	<a href="#">Install Cable Clamps</a>	<a href="#">3-53</a>
	<a href="#">Retranslate Port Circuits</a>	<a href="#">3-53</a>
	<a href="#">Re-record Announcements (TN750/B Only)</a>	<a href="#">3-54</a>
	<a href="#">Administer Fiber Links</a>	<a href="#">3-54</a>
	<a href="#">Enable TTI</a>	<a href="#">3-54</a>
	<a href="#">Check Link Status</a>	<a href="#">3-54</a>
	<a href="#">Resolve Alarms</a>	<a href="#">3-54</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">3-55</a>
	<a href="#">Save Translations</a>	<a href="#">3-55</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">3-56</a>

## 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 Upgrade Problems”](#) 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 7 *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 7r EPN, a Release 7r 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 7r, 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 7r 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 7r PPN.

When connecting adjuncts to an upgraded Release 7r, 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 7r tape.

## Usable Circuit Packs

Every circuit pack used in the upgraded Release 7r system must conform to the minimum usable vintage requirements for Release 7r. Those circuit packs shipped in the new Release 7r 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 7r 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 7r system.

- 3** Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Read This First*

3-6

## **Site Inspections**

For the purposes of a Release 7r 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 multi-carrier 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 7r tape. This process takes 2 weeks. The Release 7r tapes (including 1 with translations) must be on-site before the upgrade begins. For each Release 7r processor, 2 tapes (1 system tape and 1 backup tape) must always be retained on site with the system.

## Software Upgrades

After a software upgrade, several features require special attention because of form 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 7 to GD-91 software), it may be necessary to modify the Call Type field on the ARS Analysis form 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 7 Administrator’s Guide*, for information to make any required changes.

## ISDN Gateway

When upgrading to a Release 7r, 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 7 Installation and Test for Multi-Carrier Cabinets* for detailed fiber attenuator information.

## Preliminary Procedures

---

During an upgrade, STS must convert the Release 5/6si translations and write them to a Release 7r 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 7r tapes (1 with the converted translations, 2 if duplicated and the rest blank) must be on-site before the upgrade begins.

Since a new Release 7r PPN is installed during the upgrade, STS changes the PN number of the Release 5/6si PPN to be converted to a Release 7r 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 7r EPN. For example, if a Release 5/6si system with 2 PNs (a PPN and an EPN) were upgraded to a Release 7r, 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 7 tape. 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 7 tape, 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 Upgrade Problems"](#) 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 tape or card.

- 3** Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

3-10

## **Release 5/6si to Release 7r**

---

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 7r 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 7 Maintenance for R7r*
  - *DEFINITY Enterprise Communications Server Release 7 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 20-Foot Single-Mode Fiber Optic Cable	1 to 12
106455348 or 106455363 or 107731853	9823-A Lightwave Transceiver 9823-B Lightwave Transceiver 300A Lightwave Transceiver	2 to 12 <sup>1</sup> 2 to 12 <sup>1</sup> 2 to 12 <sup>2</sup>
J58890TF L9	Release 7 Tape Cartridge	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 7r system. Two tapes 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 7r system.
5. Required for the "B" port cabinet of a critical reliability Release 7r EPN.
6. Required for a critical reliability Release 7r EPN.

- 3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

3-12

## 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 7 Maintenance for R7r*.

## 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. Use Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

- 3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

3-13

## 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*, 555-230-223, 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 7 Maintenance for R7r, 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 management terminal 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.

- 3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

3-15

## 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 7r tone clock (TN2182) should replace this circuit pack. The TN2182 Tone-Clock serves to replace the tone detector circuits on the TN756. If a TN2182 is used, no TN748B is required.

## 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 7r tape), 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 7r 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](#).

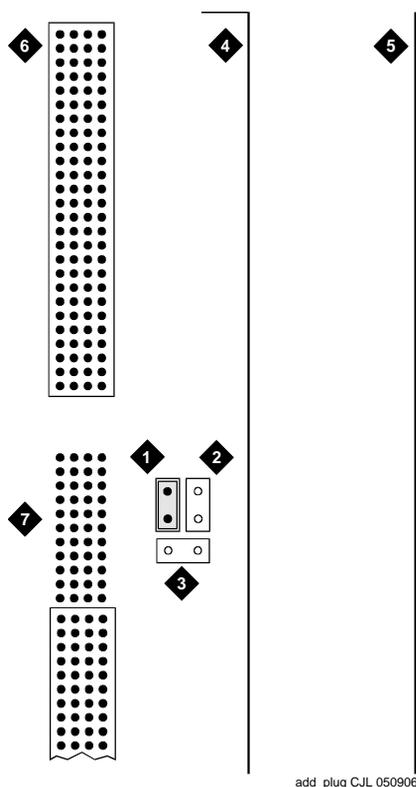
**Table 3-3. TN570 Expansion Interface Requirements**

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](#).



add\_plug CJL 050906

### Figure Notes

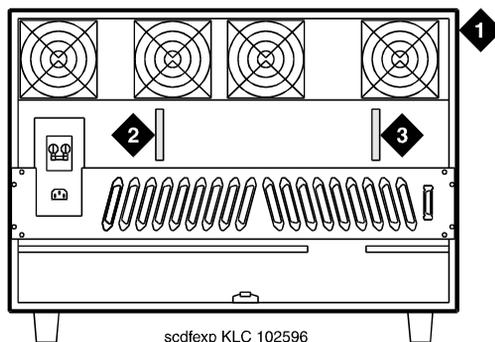
- |                                          |                          |
|------------------------------------------|--------------------------|
| 1. Address Plug (Shown Set to Carrier D) | 5. Right Edge of Cabinet |
| 2. Carrier B Jumper Location (Default)   | 6. Backplane Slot 00     |
| 3. Carrier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

**Figure 3-1. Cabinet Address Plug Location**

## Install TDM/LAN Bus Terminators

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



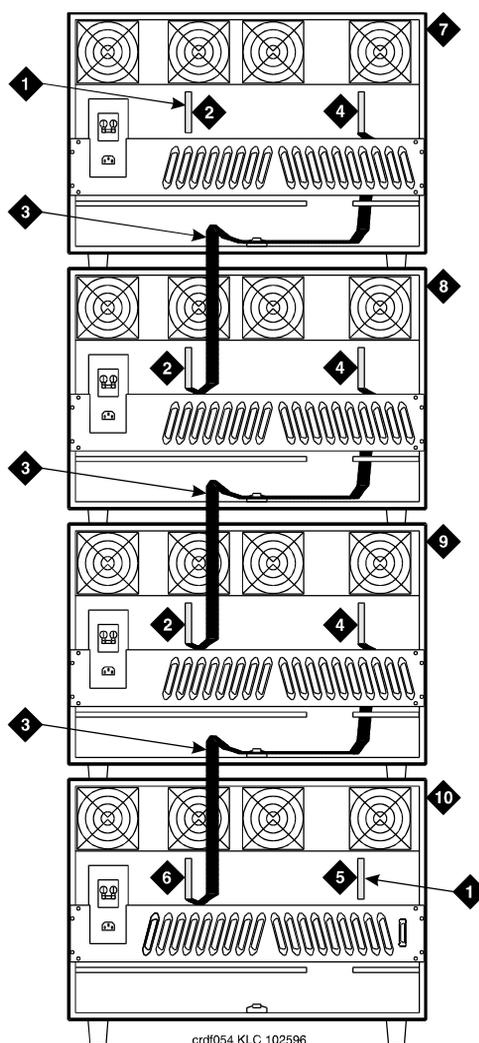
### Figure Notes

- |                                            |                                            |
|--------------------------------------------|--------------------------------------------|
| 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. J58890NExpansion 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 7r 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 ICCB	J58890H	ICCA ICCB

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

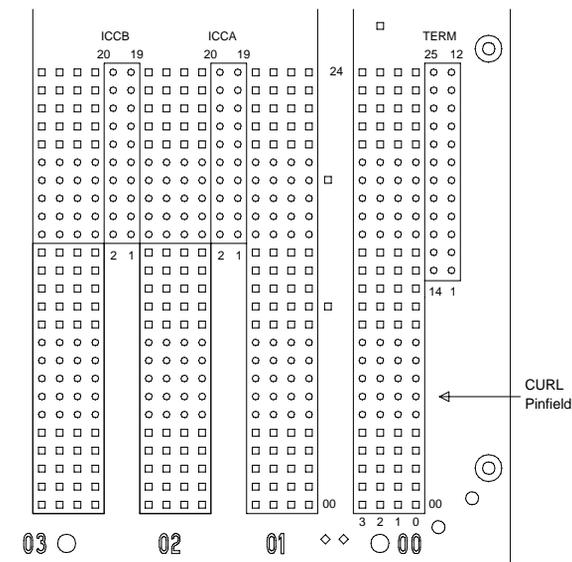


Figure 3-4. ICC Pinfield Blocks on J58890N Expansion Control Cabinet

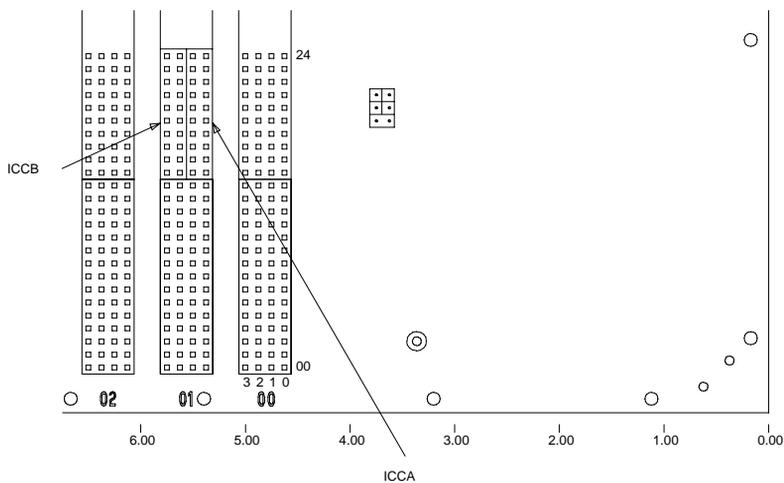


Figure 3-5. ICC Pinfield Blocks on J58890H Port Cabinet

## **Interconnect Port Networks with Fiber Optic Cabling — Standard Reliability Release 7r**

---

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 7r with 2 PNs.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 7r 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 multi-carrier PPN. See [Figure 3-6](#) and [Figure 3-7](#):

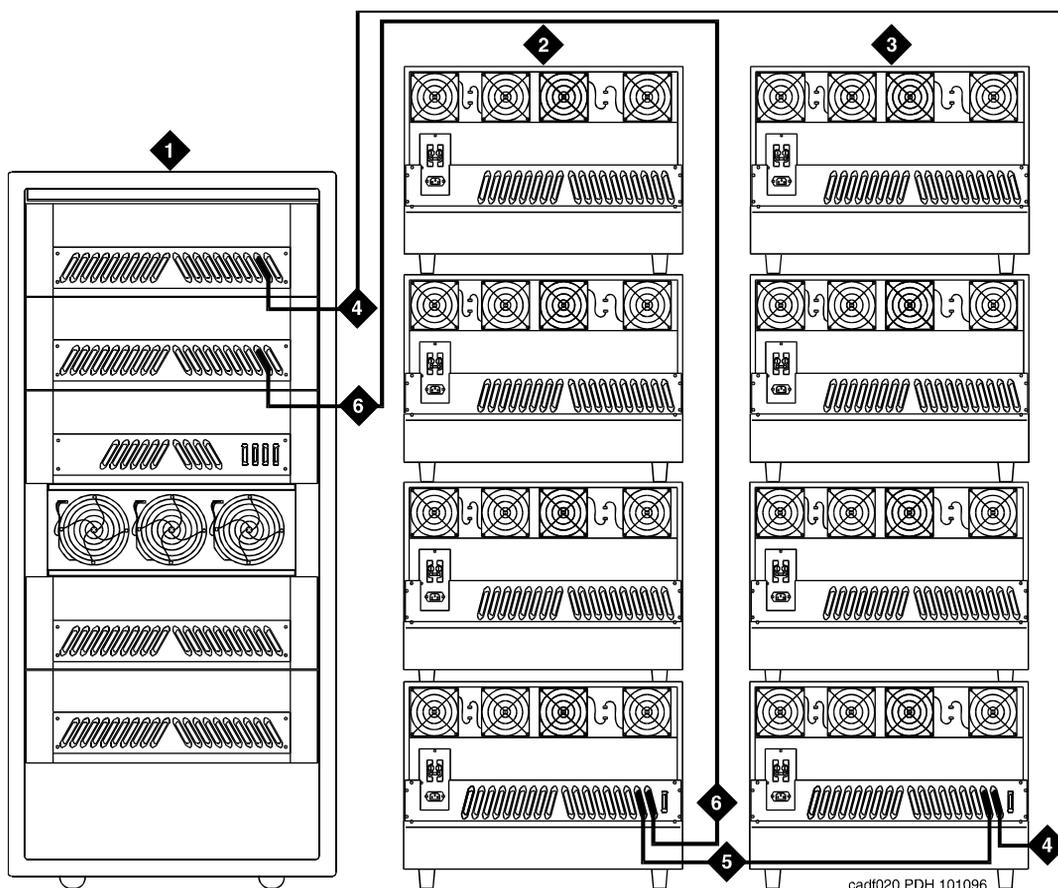
- a. Install a lightwave transceiver on the connector at slot 1B02.

### 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.

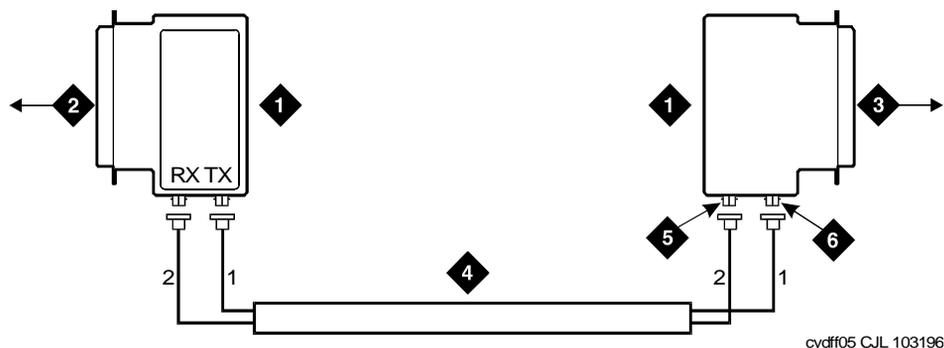


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**Figure Notes**

- |                          |                                      |
|--------------------------|--------------------------------------|
| 1. Cabinet 1 PPN         | 4. From Cabinet 3 A1 to Cabinet 1 C2 |
| 2. Cabinet Stack 2 EPN 1 | 5. From Cabinet 2 A2 to Cabinet 3 A2 |
| 3. Cabinet Stack 3 EPN 2 | 6. From Cabinet 1 B2 to Cabinet 2 A1 |

**Figure 3-6. Standard Reliability Release 7r 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 multi-carrier PPN. See [Figure 3-6](#) and [Figure 3-8](#):

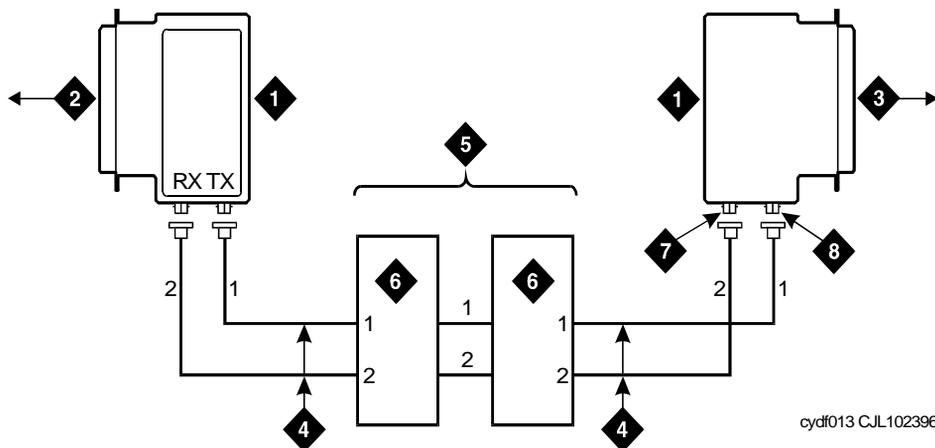
- a. Install a lightwave transceiver on the connector at slot 1B02.

**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 7r**

---

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 7r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 7r 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

3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
Release 5/6si to Release 7r

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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 multi-carrier 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 multi-carrier 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.

- 3** Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

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4. Behind control cabinet A of EPN stack 3:

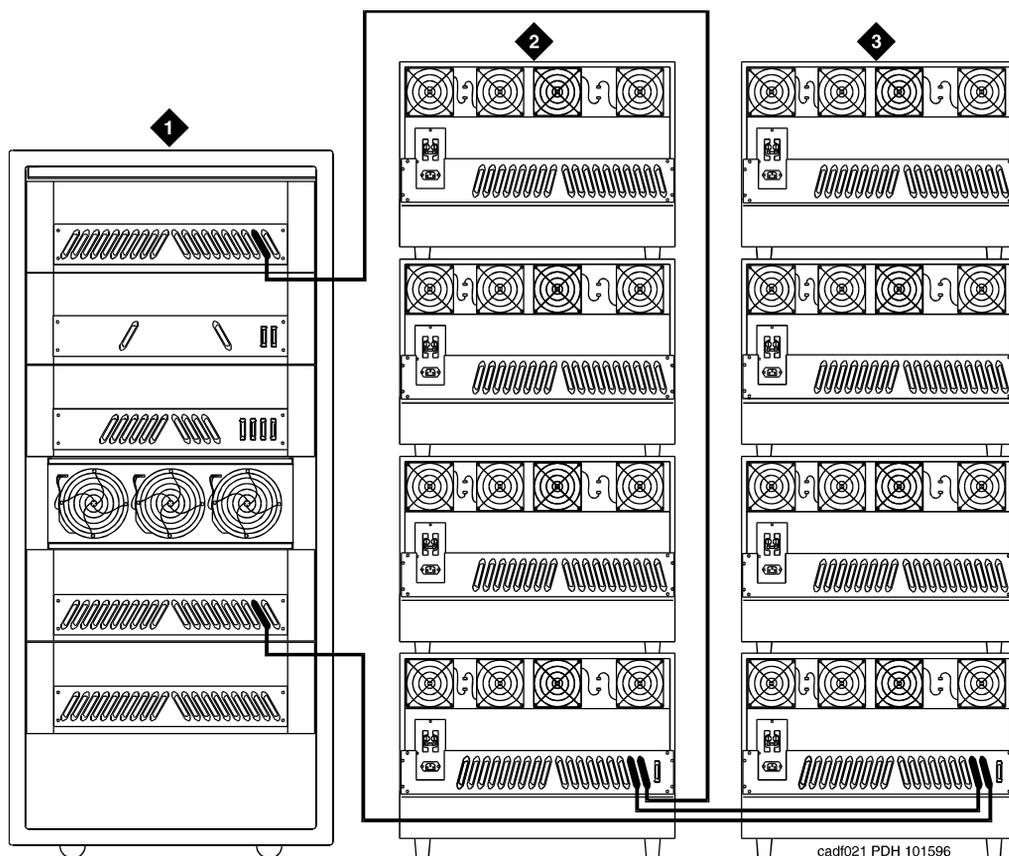
- a. Install a lightwave transceiver on the connector at slot 3A02.



**NOTE:**

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

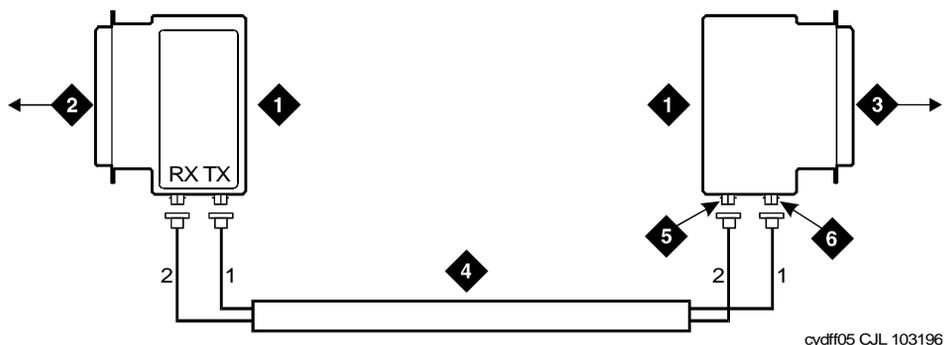
- b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 3A02.
- c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
- d. Coil the surplus fiber optic cable and attach it (with a cable tie) to a leg of an EPN cable 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 7r 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 multi-carrier 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.

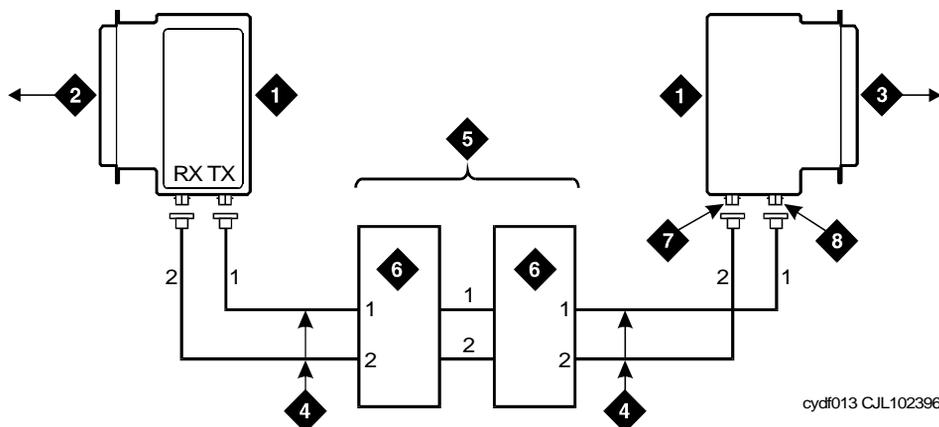
2. Behind control cabinet A of EPN stack 2:

- 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.



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**Figure Notes**

- |                                                      |                                       |
|------------------------------------------------------|---------------------------------------|
| 1. Lightwave Transceiver                             | 5. Fiber Optic Cross-Connect Facility |
| 2. To PPN Carrier B Slot 1C02                        | 6. Lightguide Interface Unit (LIU)    |
| 3. To EPN 1 Carrier A Slot 2A01<br>(Cabinet Stack 2) | 7. TX Connector                       |
| 4. Fiber Optic Cable                                 | 8. RX Connector                       |

**Figure 3-11. Fiber Optic Connections PPN to EPN1**

## **Interconnect Port Networks with Fiber Cabling — Critical Reliability Release 7r**

---

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 7r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 7r 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 multi-carrier 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.

3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
Release 5/6si to Release 7r

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- 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 multi-carrier 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

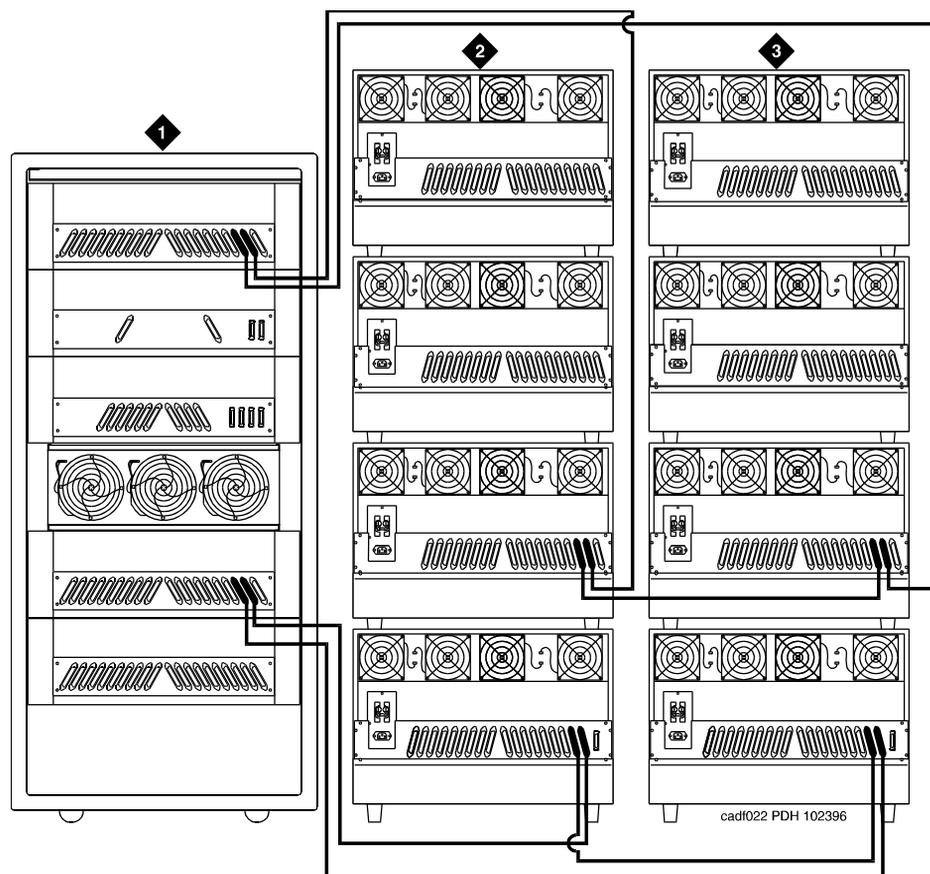
- b. Connect a fiber optic cable to the transceiver just installed.
  - c. Route the fiber cable to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
  - d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.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



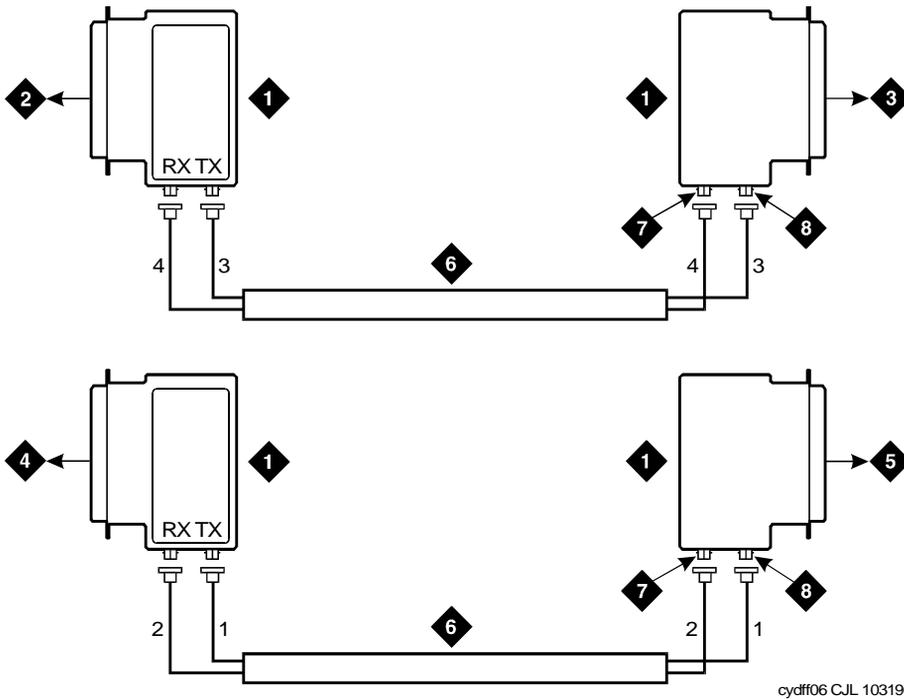
**Figure Notes**

1. Cabinet 1 PPN

3. Cabinet Stack 3 EPN 2

2. Cabinet Stack 2 EPN 1

**Figure 3-12. Critical Reliability Release 7r with 2 or 3 Port Networks**



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### Figure Notes

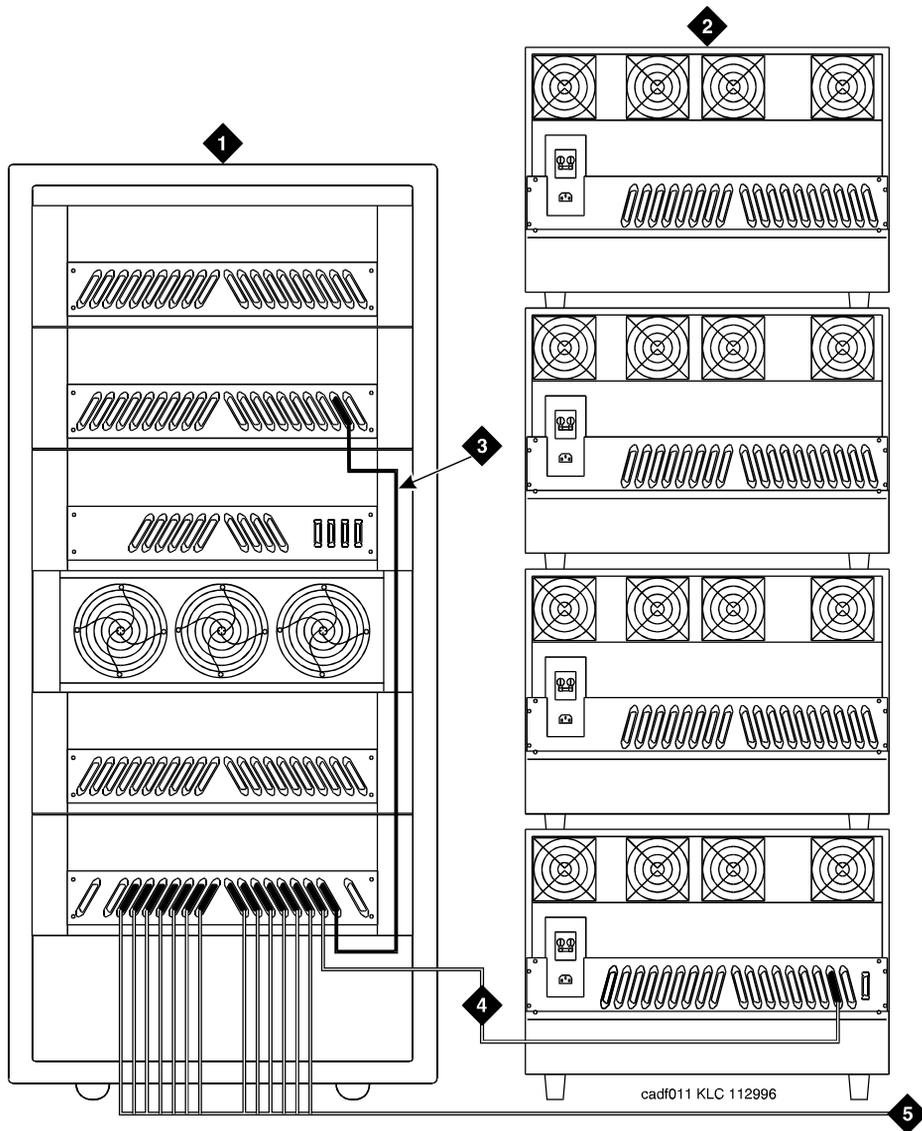
- |                                                      |                             |
|------------------------------------------------------|-----------------------------|
| 1. Lightwave Transceiver                             | 5. EPN1 Cabinet B Slot 2B02 |
| 2. To PPN Carrier D Slot 1D02                        | 6. Fiber Optic Cable        |
| 3. To EPN 1 Carrier A Slot 2A01<br>(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.



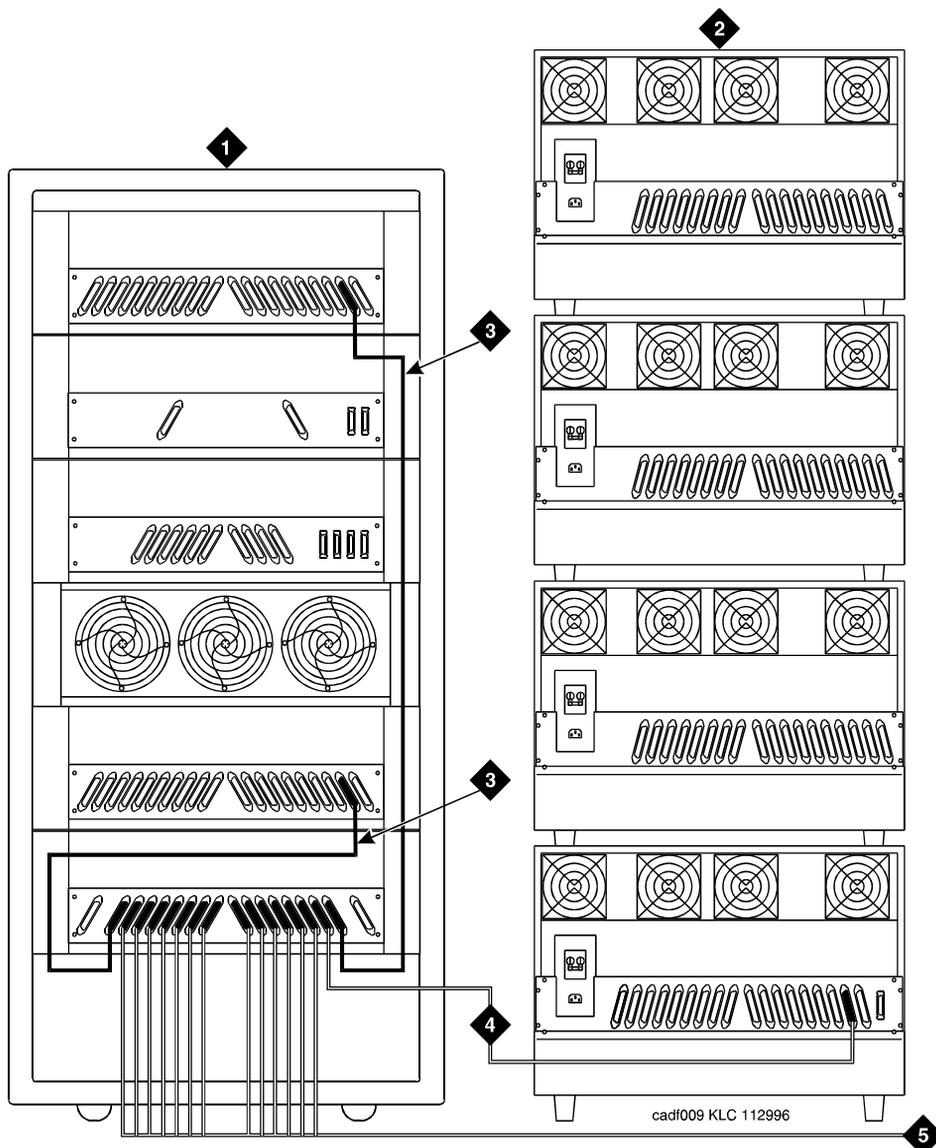
**Figure Notes**

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

3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
Release 5/6si to Release 7r

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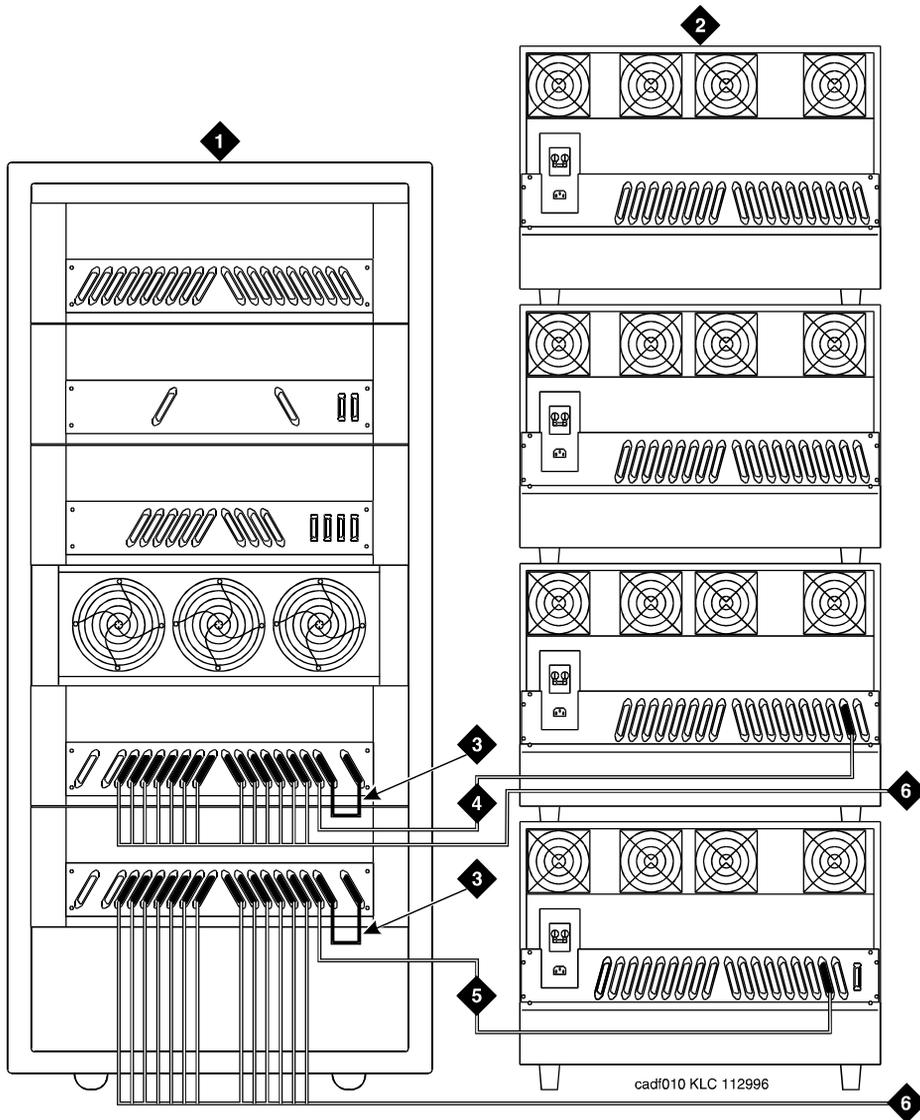
4. Behind switch node carrier D of PPN cabinet 1:
  - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
  - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
  - 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 7r 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 7r 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 7r 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 7r 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.

- 3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
*Release 5/6si to Release 7r*

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## 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 7r system tape in the tape 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 tape** and press Enter. This instructs the system to perform a reset level 4 rebooting process, loading the upgraded STS translations from the new tape. 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 7r 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 7r 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 7r 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)

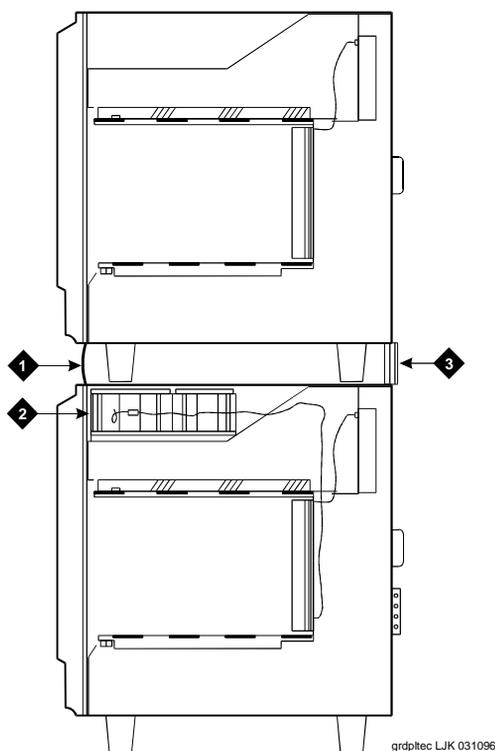
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1. Loosen the 4 screws at the bottom of the top cabinet and at the top of the cabinet underneath the top cabinet. See [Figure 3-17](#).
2. Align the mounting holes in the rear ground plate over the bottom screws in the top cabinet. See [Figure 3-17](#).
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

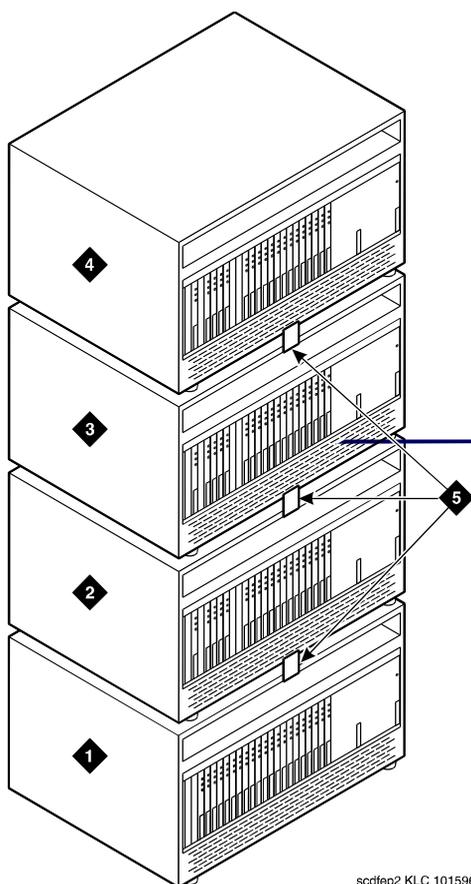
- |                                       |                      |
|---------------------------------------|----------------------|
| 1. Front Ground Plate or Cabinet Clip | 3. Rear Ground Plate |
| 2. Battery                            |                      |

**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](#).



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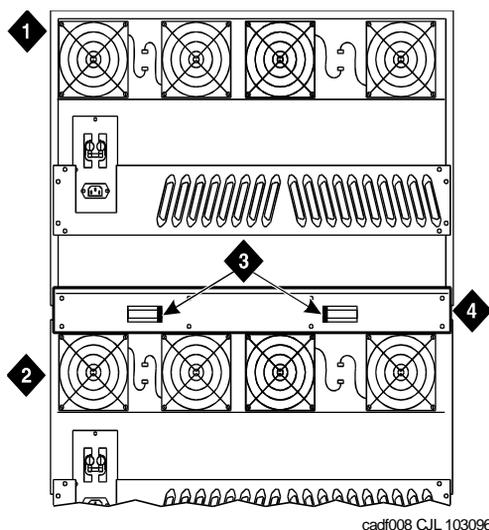
### Figure Notes

- |                                              |                  |
|----------------------------------------------|------------------|
| 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 7 Administrator's Guide*.

- 3 Release 5si/Release 5si + Memory/Release 6si to Release 7r EPN  
Release 5/6si to Release 7r

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## 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. Use this form 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.
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 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.



### NOTE:

If the customer was using Supplementary Services Protocol "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

5. Type **display system-parameters offer** and press Enter.
6. Set the `Offer Category` field to **A**, if not already set.
7. Set the `Activate Offer` field to **y** and press Tab. A warning lets you know the `Offer Category` along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

10. Logoff and log back in as **craft**.

## 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/si (with Intel 386 or Risc Processor) to Release 7r

# 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/si system with an Intel® 386 processor, to a Release 7r system.

The upgrade to a Release 7r 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 7r.

Some of the I/O cables from the existing system may be too short to reach from the Release 7r cabinet to the Main Distribution Frame (MDF). If so, the cables must be replaced as part of the upgrade process.

### 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 7r**

√	Task Description	Page
	<a href="#">Software Upgrade</a>	<a href="#">4-5</a>
	<a href="#">Save Translations and Announcements</a>	<a href="#">4-6</a>
	<a href="#">Check Link Status</a>	<a href="#">4-6</a>
	<a href="#">Disable TTI</a>	<a href="#">4-7</a>
	<a href="#">Disable Alarm Origination to INADS</a>	<a href="#">4-7</a>
	<a href="#">Shut Down DEFINITY LAN Gateway System</a>	<a href="#">4-7</a>
	<a href="#">Shut Down DEFINITY AUDIX System</a>	<a href="#">4-8</a>
	<a href="#">Power Down Present System</a>	<a href="#">4-8</a>
	<a href="#">Install Emergency Transfer Ground Wire</a>	<a href="#">4-8</a>
	<a href="#">Remove the Present System</a>	<a href="#">4-9</a>
	<a href="#">Unpack and Install the Release 7r Cabinet</a>	<a href="#">4-10</a>
	<a href="#">Remove Emergency Transfer Ground Wire</a>	<a href="#">4-10</a>
	<a href="#">Power-Up the Release 7r</a>	<a href="#">4-10</a>
	<a href="#">List Configuration Software Long</a>	<a href="#">4-10</a>
	<a href="#">Restore Disk Full</a>	<a href="#">4-11</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">4-11</a>
	<a href="#">Set Locations</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 to Release 7 Tape (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="#">4-17</a>
	<a href="#">Resolve Alarms</a>	<a href="#">4-17</a>
	<a href="#">Enable Customer Options and Alarm Origination</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>

## Read This First

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### Service Interruption

This upgrade process requires a service interruption that depends on whether the Release 7r 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 7r 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 Upgrade Problems”](#) 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 7 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 7 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 7 Maintenance for R7r*
  - *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*

## Preliminary Procedures

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### 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 7r tape. This process takes several days. The new Release 7r software tapes (including 1 with translations) must be on-site before the upgrade begins. For each Release 7r processor, 2 tapes (1 system tape and 1 backup tape) 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 7r tapes 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 7 Maintenance for R7r*.

- 4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Remove the Present System*

4-6

## Remove the Present System

- If the equipment room is large enough to allow the Release 7r cabinet to be installed while the present system is in service, skip to [“Install the Release 7r Cabinet” on page 4-10](#). Return to this section when finished.
- If the present system must be removed to make room for the Release 7r 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 Upgrade Problems”](#) 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.
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.

- 4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Remove the Present System*

4-7

## 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 Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

## 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 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, 555-230-223*, 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.

- 4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Remove the Present System*

4-8

## 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 7 Maintenance for R7r, 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/si (with Intel 386 or Risc Processor) to Release 7r  
*Remove the Present System*

4-9

## **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 7r 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 7r cabinet, retain them for connection to the Release 7r system.

- 4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Install the Release 7r Cabinet*

4-10

## **Install the Release 7r Cabinet**

---

### **Unpack and Install the Release 7r Cabinet**

---

1. Refer to the installation instructions in *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets*.



#### **CAUTION:**

*Do not power up the Release 7r system.*

2. Return to this section when the installation of the Release 7r is completed.

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

---

1. If the Release 7r 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 7r 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 7r**

---

1. Insert the new Release 7r software tape into the tape drive.
2. Power up the Release 7r 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 tape contains the required Release 7 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 tape to disk and takes about 30 minutes to complete. Release 7 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 G3v7r.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.

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 3:00   01:00
     Stop: first Sunday   on or after October 25 at 3:00
2:   Start: first Sunday   on or after April  1 at 4:00   01:00
     Stop: first Sunday   on or after October 25 at 4:00
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 _____
    
```

4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
 Install the Release 7r Cabinet

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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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>+ 00:00</u>	<u>1</u>	<u>303</u>
2	_____	- : -	—	—
3	_____	- : -	—	—
4	_____	- : -	—	—
5	_____	- : -	—	—
6	_____	- : -	—	—
7	_____	- : -	—	—
8	_____	- : -	—	—
9	_____	- : -	—	—
10	_____	- : -	—	—
11	_____	- : -	—	—
12	_____	- : -	—	—
13	_____	- : -	—	—
14	_____	- : -	—	—

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



**NOTE:**

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. 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: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### 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** G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Install the Release 7r Cabinet*

4-14

- 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- Type **display time** and press `Enter` to verify date/time data.

- 4 G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*Install the Release 7r Cabinet*

4-15

## Re-Record Announcements (TN750/B)

---

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

### Enable TTI

---

1. Type **change system-parameters features** and press Enter. Use this form 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.
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.

## Enable Scheduled Maintenance

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

## Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.

### NOTE:

If the customer was using Supplementary Services Protocol "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to **y**.

5. Type **display system-parameters offer** and press Enter.
6. Set the `Offer Category` field to **A**, if not already set.
7. Set the `Activate Offer` field to **y** and press Tab. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.  
  
As part of the system registration process, the INADS Database Administrator enables Alarm Origination and customer options.
10. Logoff and log back in as **craft**.

## 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 tape).

## 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.

- 4** G3vs/si (with Intel 386 or Risc Processor) to Release 7r  
*DEFINITY AUDIX Power Procedures*

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# Multi-Carrier G2 Universal Module to Release 7r EPN

# 5

This chapter provides the information necessary to upgrade a DEFINITY G2 universal module to a multi-carrier EPN of a R7r system.

*DEFINITY Enterprise Communications Server Release 7 Administrator's Guide* lists Release 7 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 7 Installation and Test for Multi-Carrier Cabinets* for detailed fiber attenuator information.

## Task Tables

[Table 5-1](#), [Table 5-2](#), and [Table 5-3](#) 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 5-1. Tasks to Upgrade to Release 7r — Standard Reliability**

✓	Task Description	Page
	<a href="#">Save Translations</a>	<a href="#">5-14</a>
	<a href="#">Make Source Tape for TRACS Report</a>	<a href="#">5-14</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="#">5-18</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 7 System</a>	<a href="#">5-36</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">5-37</a>
	<a href="#">Set Locations</a>	<a href="#">5-38</a>
	<a href="#">Set Date and Time</a>	<a href="#">5-39</a>
	<a href="#">Set Additional Administration</a>	<a href="#">5-41</a>
	<a href="#">Reconnect Cables to Upgraded EPN Cabinet</a>	<a href="#">5-41</a>
	<a href="#">Power Up the EPN Cabinets</a>	<a href="#">5-42</a>
	<a href="#">Retranslate Port Circuits</a>	<a href="#">5-42</a>
	<a href="#">Enable TTI</a>	<a href="#">5-42</a>

*Continued on next page*

**Table 5-1. Tasks to Upgrade to Release 7r — Standard Reliability — Continued**

✓	Task Description	Page
	<a href="#">Check Link Status</a>	<a href="#">5-42</a>
	<a href="#">Enable Scheduled Maintenance</a>	<a href="#">5-43</a>
	<a href="#">Resolve Alarms</a>	<a href="#">5-43</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">5-43</a>
	<a href="#">Save Translations</a>	<a href="#">5-44</a>
	<a href="#">Back Up Disk</a>	<a href="#">5-44</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">5-44</a>

**Table 5-2. Tasks to Upgrade to Release 7r — High Reliability**

✓	Task Description	Page
	<a href="#">Follow Routine Preventive Maintenance</a>	<a href="#">5-46</a>
	<a href="#">Label Cables</a>	<a href="#">5-46</a>
	<a href="#">Check Link Status</a>	<a href="#">5-47</a>
	<a href="#">Disable TTI</a>	<a href="#">5-47</a>
	<a href="#">Power Down G2 System</a>	<a href="#">5-47</a>
	<a href="#">Install Power-Failure Transfer Ground Wire</a>	<a href="#">5-47</a>
	<a href="#">Disconnect Cables</a>	<a href="#">5-48</a>
	<a href="#">Remove Circuit Packs from Module Control Carrier A</a>	<a href="#">5-48</a>
	<a href="#">Remove CURL from Module Control Carrier A</a>	<a href="#">5-48</a>
	<a href="#">Remove Module Control Carrier A</a>	<a href="#">5-49</a>
	<a href="#">Unpack and Inspect Expansion Control Carrier</a>	<a href="#">5-53</a>
	<a href="#">Install New Expansion Control Carrier A</a>	<a href="#">5-53</a>
	<a href="#">Install Circuit Packs</a>	<a href="#">5-57</a>
	<a href="#">Interconnect Port Networks — High Reliability</a>	<a href="#">5-57</a>
	<a href="#">Verify Usable Circuit Pack Vintages</a>	<a href="#">5-69</a>
	<a href="#">Remove Power-Failure Ground Wire</a>	<a href="#">5-69</a>
	<a href="#">Boot the Release 7 System</a>	<a href="#">5-70</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">5-71</a>
	<a href="#">Set Locations</a>	<a href="#">5-72</a>
	<a href="#">Set Date and Time</a>	<a href="#">5-73</a>
	<a href="#">Set Additional Administration</a>	<a href="#">5-75</a>
	<a href="#">Reconnect Cables</a>	<a href="#">5-75</a>
	<a href="#">Power Up the EPN Cabinets</a>	<a href="#">5-76</a>
	<a href="#">Retranslate Port Circuits</a>	<a href="#">5-76</a>
	<a href="#">Enable TTI</a>	<a href="#">5-76</a>
	<a href="#">Check Link Status</a>	<a href="#">5-76</a>
	<a href="#">Enable TTI</a>	<a href="#">5-76</a>
	<a href="#">Resolve Alarms</a>	<a href="#">5-77</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">5-77</a>
	<a href="#">Save Translations</a>	<a href="#">5-78</a>
	<a href="#">Back Up Disk</a>	<a href="#">5-78</a>

**Table 5-3. Tasks to Upgrade to Release 7r — Critical Reliability**

✓	Task Description	Page
	<a href="#">Upgrade Cabinets</a>	<a href="#">5-79</a>
	<a href="#">Follow Routine Preventive Maintenance</a>	<a href="#">5-80</a>
	<a href="#">Label Cables</a>	<a href="#">5-80</a>
	<a href="#">Check Link Status</a>	<a href="#">5-81</a>
	<a href="#">Disable TTI</a>	<a href="#">5-81</a>
	<a href="#">Power Down G2 System</a>	<a href="#">5-81</a>
	<a href="#">Install Power-Failure Transfer Ground Wire</a>	<a href="#">5-81</a>
	<a href="#">Disconnect Cables</a>	<a href="#">5-82</a>
	<a href="#">Remove Circuit Packs from Module Control Carriers A and B</a>	<a href="#">5-82</a>
	<a href="#">Remove CURL from Module Control Carrier A</a>	<a href="#">5-82</a>
	<a href="#">Remove Module Control Carriers A and B</a>	<a href="#">5-83</a>
	<a href="#">Prepare the New A and B Position Carriers</a>	<a href="#">5-87</a>
	<a href="#">Install the New A and B Position Carriers</a>	<a href="#">5-88</a>
	<a href="#">Test the CURL</a>	<a href="#">5-94</a>
	<a href="#">Install Circuit Packs</a>	<a href="#">5-94</a>
	<a href="#">Interconnect Port Networks — Critical Reliability</a>	<a href="#">5-94</a>
	<a href="#">Verify Usable Circuit Pack Vintages</a>	<a href="#">5-109</a>
	<a href="#">Remove Power-Failure Ground Strap</a>	<a href="#">5-109</a>
	<a href="#">Boot the Release 7 System</a>	<a href="#">5-110</a>
	<a href="#">Set Daylight Savings Rules</a>	<a href="#">5-111</a>
	<a href="#">Set Locations</a>	<a href="#">5-112</a>
	<a href="#">Set Date and Time</a>	<a href="#">5-113</a>
	<a href="#">Set Additional Administration</a>	<a href="#">5-115</a>
	<a href="#">Close Upgraded EPN Cabinet and Reconnect Cables</a>	<a href="#">5-116</a>
	<a href="#">Power Up the EPN Cabinets</a>	<a href="#">5-116</a>
	<a href="#">Retranslate Port Circuits</a>	<a href="#">5-116</a>
	<a href="#">Enable TTI</a>	<a href="#">5-116</a>
	<a href="#">Check Link Status</a>	<a href="#">5-117</a>

*Continued on next page*

**Table 5-3. Tasks to Upgrade to Release 7r — Critical Reliability**  
 — *Continued*

✓	Task Description	Page
	<a href="#">Enable Scheduled Maintenance</a>	<a href="#">5-117</a>
	<a href="#">Resolve Alarms</a>	<a href="#">5-117</a>
	<a href="#">Enable Customer Options and Alarm Origination</a>	<a href="#">5-117</a>
	<a href="#">Save Translations</a>	<a href="#">5-118</a>
	<a href="#">Back Up Disk</a>	<a href="#">5-118</a>
	<a href="#">Return Replaced Equipment</a>	<a href="#">5-118</a>

## Read This First

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### 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 Upgrade Problems”](#) 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 7 *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 7 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 7 system must conform to the minimum usable vintage requirements for Release 7. Those circuit packs shipped in the new Release 7 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 7 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 7 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 7 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 7 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.

5 Multi-Carrier G2 Universal Module to Release 7r EPN  
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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 multi-carrier 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 7 upgrade has different power requirements than the G2 system. Refer to the *DEFINITY Enterprise Communications Server Release 7 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 7, 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, form changes, and potential naming conflicts in the upgrade process.

During the upgrade, the Software Specialist should implement DEFINITY ECS Release 7 translations that are appropriate for the customer's needs. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 7 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 R7 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 7 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 7 AUXILIARY connectors.

**5 Multi-Carrier G2 Universal Module to Release 7r EPN**  
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**Table 5-4. Pinouts for D6 Connector on G2 System**

<b>Terminal Number</b>	<b>Pin #</b>	<b>Color</b>	<b>Designation</b>	<b>Terminal #</b>	<b>Pin #</b>	<b>Color</b>	<b>Designation</b>
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

**5 Multi-Carrier G2 Universal Module to Release 7r EPN**  
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**Table 5-5. Pinouts for Auxiliary Connector on Release 7 Systems**

<b>Terminal Number</b>	<b>Pin #</b>	<b>Color</b>	<b>Designation</b>	<b>Terminal Number</b>	<b>Pin #</b>	<b>Color</b>	<b>Designation</b>
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 7 upgrades:

- The existing common control is always replaced by a multi-carrier PPN
- Existing traditional modules are replaced by EPNs
- Existing universal modules are upgraded to EPNs

A new multi-carrier cabinet would then always serve as the PPN. If a G2 universal module is upgraded to a DEFINITY ECS Release 7 EPN, hardware changes (including carrier replacement) are required.

## 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 or 103281788	TN776 Expansion Interface TN570 Expansion Interface	2 or 6 <sup>1</sup> 2 or 6 <sup>1,2</sup>
407439975	20-Foot Multi-mode Fiber Optic Cable	1 or 3 <sup>3</sup>
106455348 or 106455363	9823A Lightwave Transceiver 9823B Lightwave Transceiver	2 or 6 <sup>4</sup> 2 or 6 <sup>5</sup>

1. Depending on the number of Release 7 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 7 system with the optional packet bus.
  3. Depending on the number of DEFINITY ECS Release 7 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 7 Maintenance for R7si or DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*
  - *DEFINITY Enterprise Communications Server Release 7 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 7 Maintenance for R7r*.

## 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.
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. Use Page 2 of the form 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 7 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.

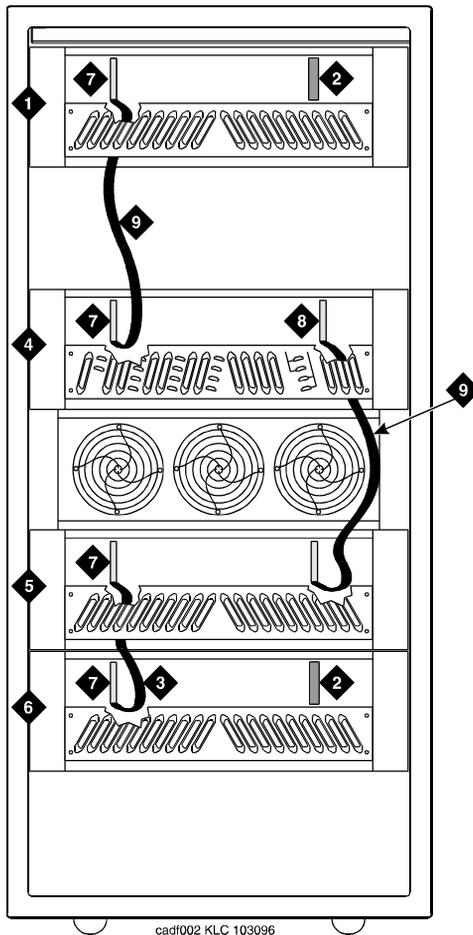
1. Disconnect 1 end of the TDM/LAN cable (between the "A" and "C" carriers) from the "A" carrier. See [Figure 5-1](#).
2. Disconnect 1 end of the TDM/LAN cable (between the "A" and "D" carriers) from the "A" carrier.



**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.



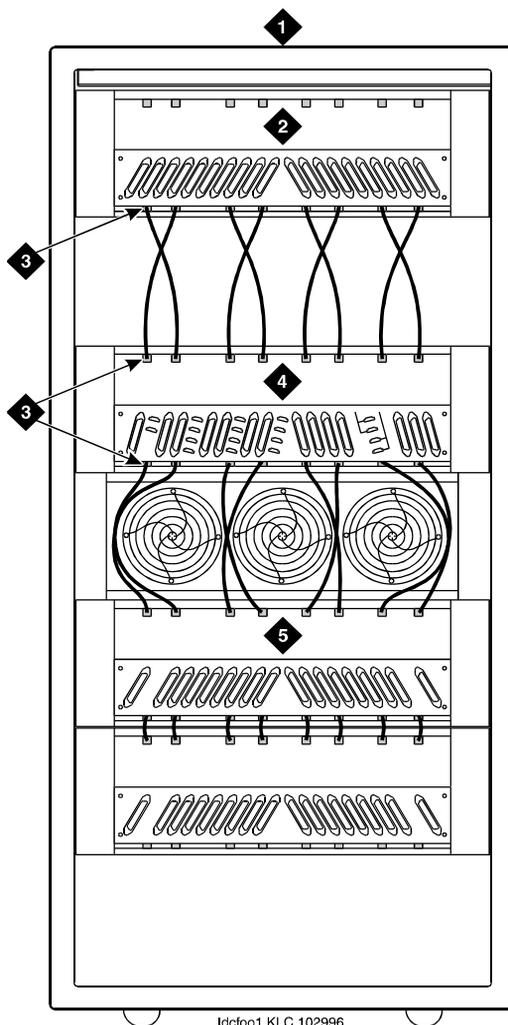
**Figure Notes**

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

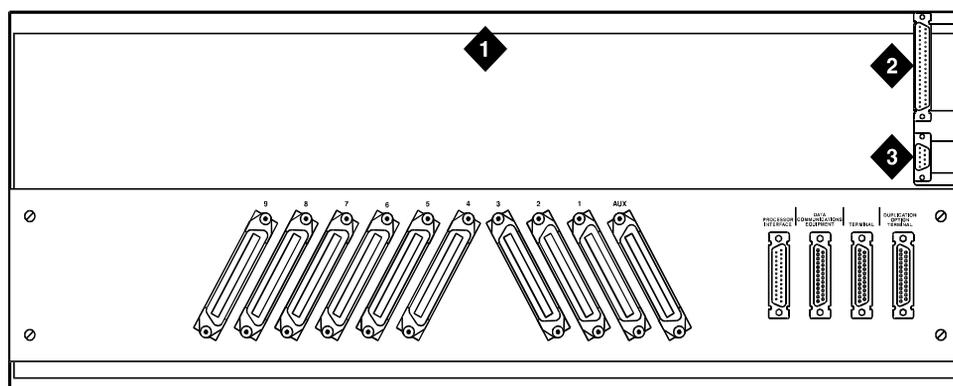
- |                                |                                          |
|--------------------------------|------------------------------------------|
| 1. Rear of Cabinet             | 4. Module Control Carrier ("A" Position) |
| 2. Port Carrier ("C" Position) | 5. Port Carrier ("D" Position)           |
| 3. Ground Jumpers              |                                          |

**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.



crdfp12 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.

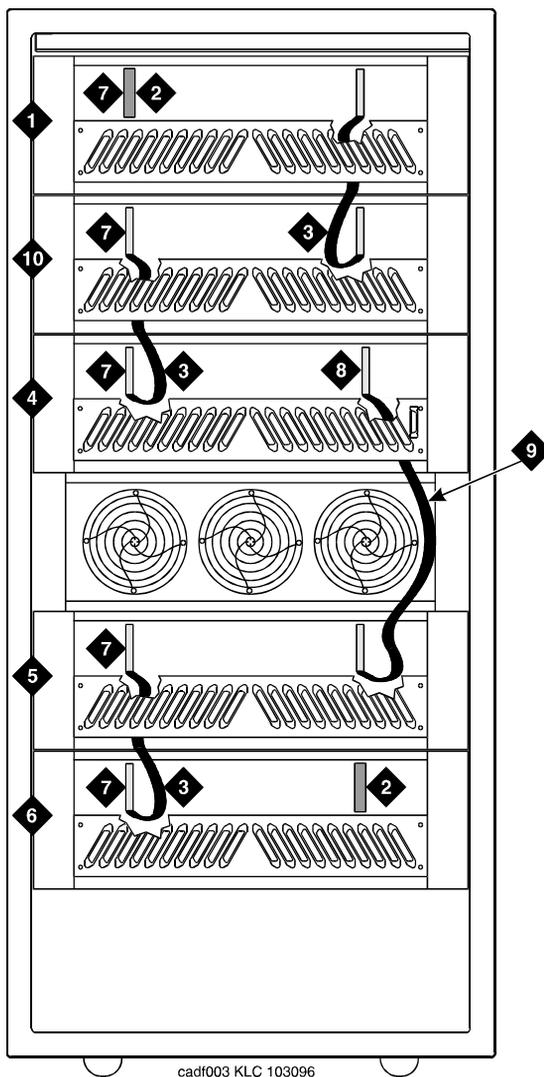
3. Connect the "P2" and "P1" cables to the "A" carrier. See [Figure 5-3](#). Snap the connector lock into place to ensure the connection is properly made.
4. Connect the 8 ground straps from the "C" carrier to the new "A" carrier. See [Figure 5-2](#).
5. Connect the 8 ground straps from the "D" carrier 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 7 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 7 carrier will contain the same power supplies as in the existing system. However, a Release 7 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 7 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 7 tape) 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 7 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 7 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:

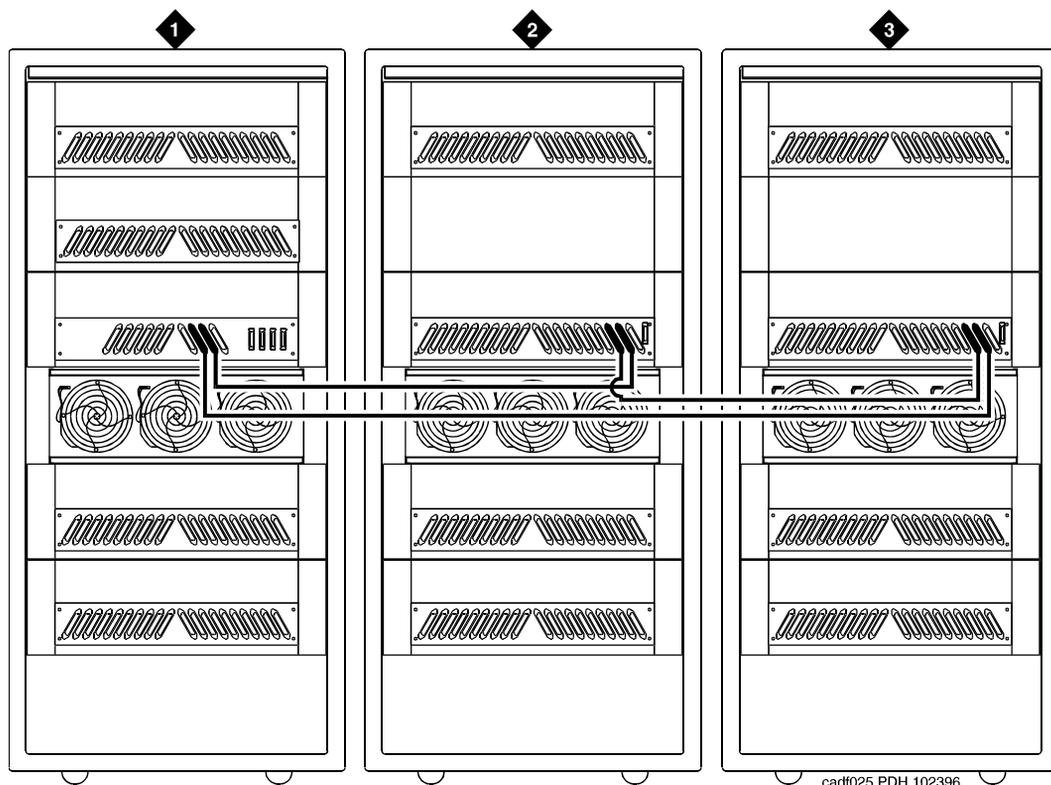
- Install a lightwave transceiver on cable connector at slot 3A02.



**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.

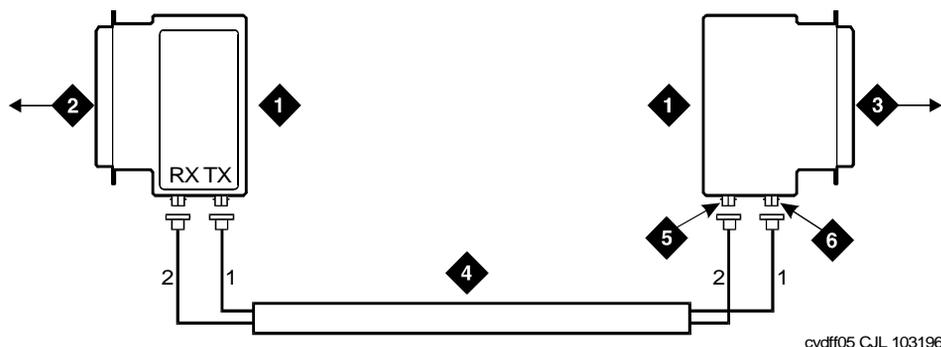


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**Figure Notes**

- 1. Cabinet 1 Processor Port Network
- 2. Cabinet 2 Expansion Port Network 1
- 3. Cabinet 3 Expansion Port Network 2

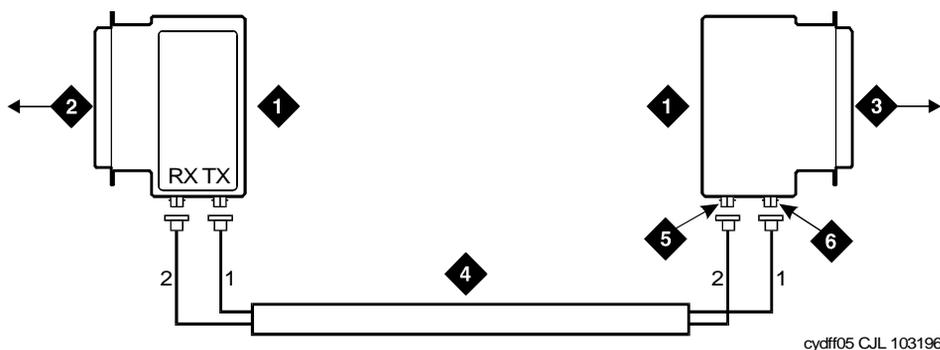
**Figure 5-5. Standard Reliability Release 7 with Two or Three Port Networks**



**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      |

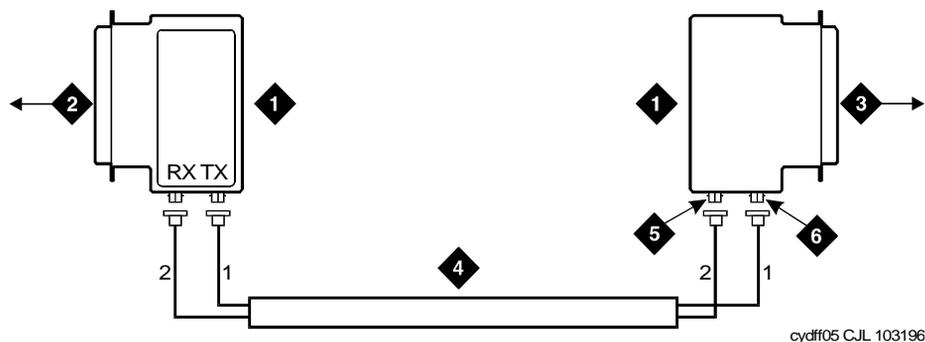
**Figure 5-6. Fiber Optic Connections PPN to EPN1**



**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**



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### 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:

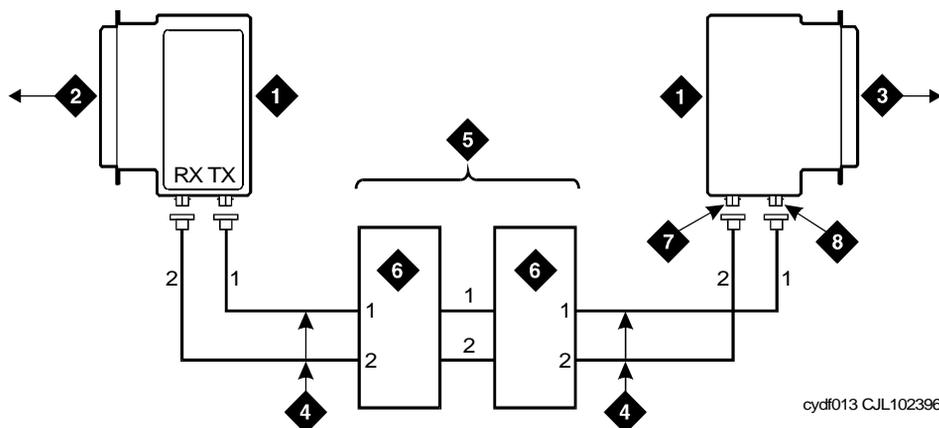
- Install a lightwave transceiver on cable connector at slot 3A02.



**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.



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**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 7 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 7 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 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 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.

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  3:00  01:00
    Stop: first Sunday  on or after October 25 at  3:00
2:  Start: first Sunday  on or after April  1  at  4:00  01:00
    Stop: first Sunday  on or after October 25 at  4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>± 00:00</u>	<u>_1</u>	<u>303</u>
2	_____	- _: _	__	__
3	_____	- _: _	__	__
4	_____	- _: _	__	__
5	_____	- _: _	__	__
6	_____	- _: _	__	__
7	_____	- _: _	__	__
8	_____	- _: _	__	__
9	_____	- _: _	__	__
10	_____	- _: _	__	__
11	_____	- _: _	__	__
12	_____	- _: _	__	__
13	_____	- _: _	__	__
14	_____	- _: _	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



**NOTE:**

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. 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 5-1](#). The cursor is positioned on the Day of the Week: field.

```
DATE AND TIME
DATE
Day of the Week: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### Screen 5-1. Typical Date and Time Screen

3. 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

---

- 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- 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 7 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 form to enable the customer's right-to-use options on the upgrade order. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, for details.
3. Type **change site-data** and press **Enter**. Use this form 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 7 Administrator's Guide*, for instructions on performing the retranslations.

## Enable TTI

---

Type **change system-parameters features** and press Enter. Use this form 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.
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.

## 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 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press **Enter**.
4. Use these forms to verify the customer options are properly set.

### **NOTE:**

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the **Basic Call Setup** field on the QSIG Optional Features page to **y**.

5. Type **display system-parameters offer** and press **Enter**.
6. Set the **Offer Category** field to **A**, if not already set.
7. Set the **Activate Offer** field to **y** and press **Tab**. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

### **NOTE:**

Certain forms have changed for Release 7. Upgraded translations may appear on a different form, fields may shift within a form, and the name assignments to particular fields may change.

## 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 tape).

## 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 (PEC 6300-05X)	Processor Port Network	1
J58890AF	Expansion Control Carrier	1
106647985	TN775B Maintenance	1
103557294 or 103281788	TN776 Expansion Interface TN570 Expansion Interface	2 or 6 <sup>1</sup> 2 or 6 <sup>1,2</sup>
J58890TF	Tape Cartridge	4
407439975	20-Foot Multi-mode Fiber Optic Cable	1 or 3 <sup>3</sup>
106455348 or 106455363	9823-A Lightwave Transceiver 9823-B Lightwave Transceiver	2 or 6 <sup>4</sup> 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 7 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 7 Maintenance for R7r*
  - *DEFINITY Enterprise Communications Server Release 7 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 7 Maintenance for R7r*.

## 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.
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. Use Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

## 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 7 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.

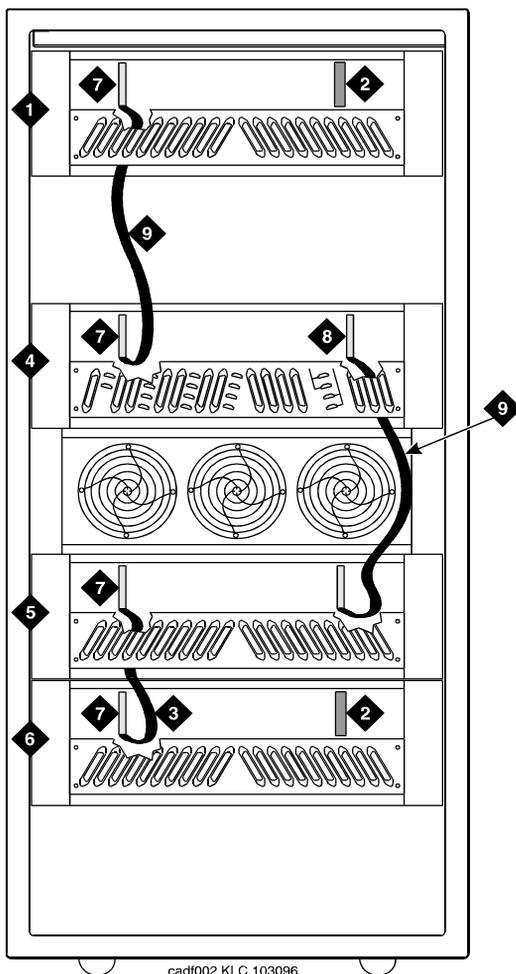
1. Disconnect both TDM/LAN cables from the "A" carrier. See [Figure 5-10](#). Leave the other end connected to the "C" carrier.



**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.

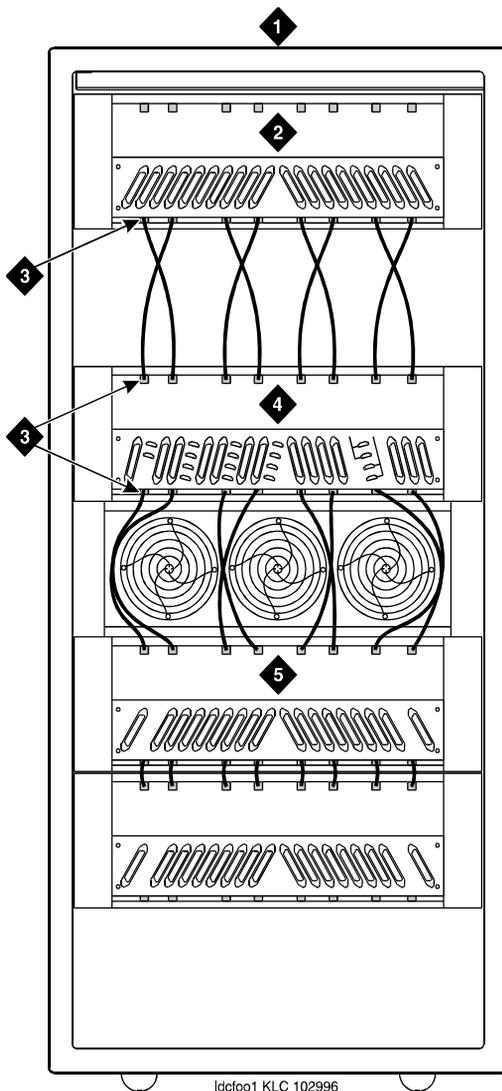


**Figure Notes**

- |                                          |                                |
|------------------------------------------|--------------------------------|
| 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.

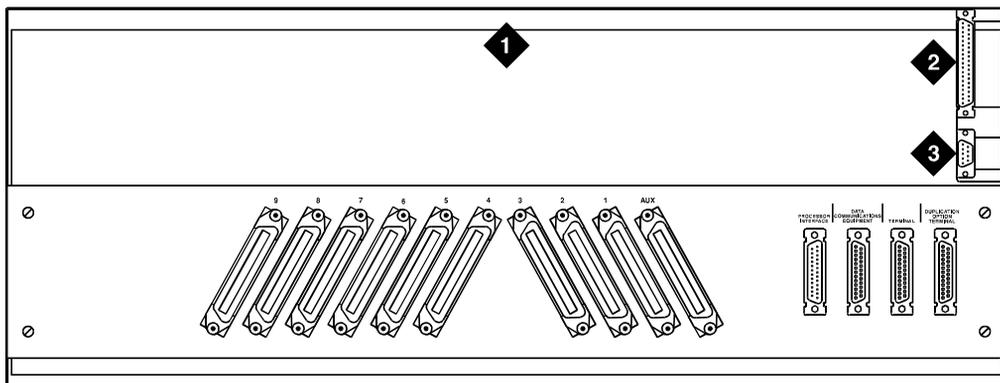


**Figure Notes**

- |                                |                                          |
|--------------------------------|------------------------------------------|
| 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.



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### Figure Notes

- |                            |                 |
|----------------------------|-----------------|
| 1. Rear of Control Carrier | 3. P1 Connector |
| 2. P2 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).



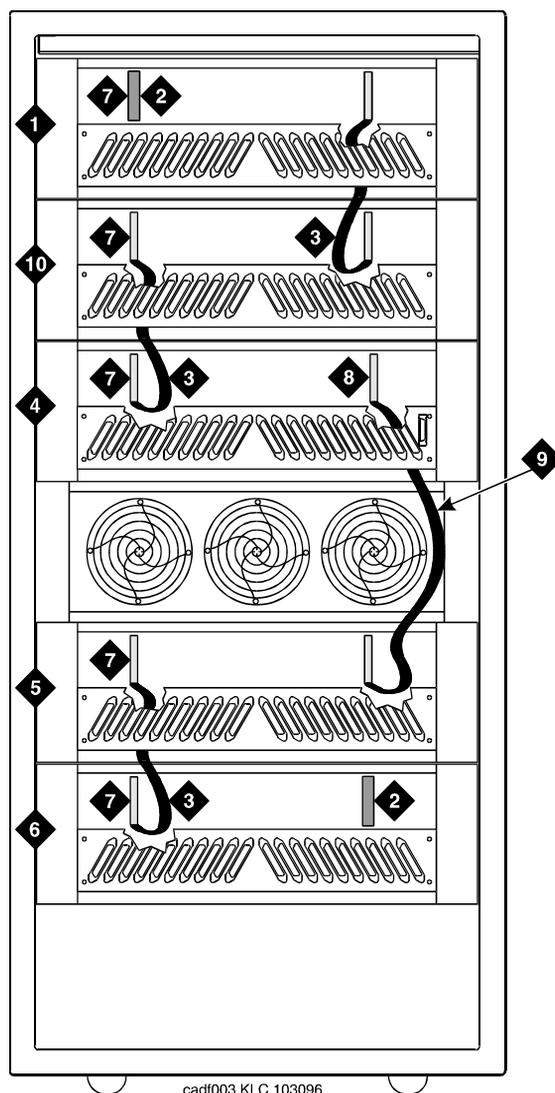
### **NOTE:**

DC-powered carriers do not use these carrier ground straps.

5 Multi-Carrier G2 Universal Module to Release 7r EPN  
High Reliability

5-54

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 7 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 7 carrier will contain the same power supplies as in the existing system. However, the new Release 7 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 7 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 7 tape) 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 7 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 7 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 7 Installation and Test for Multi-Carrier 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:

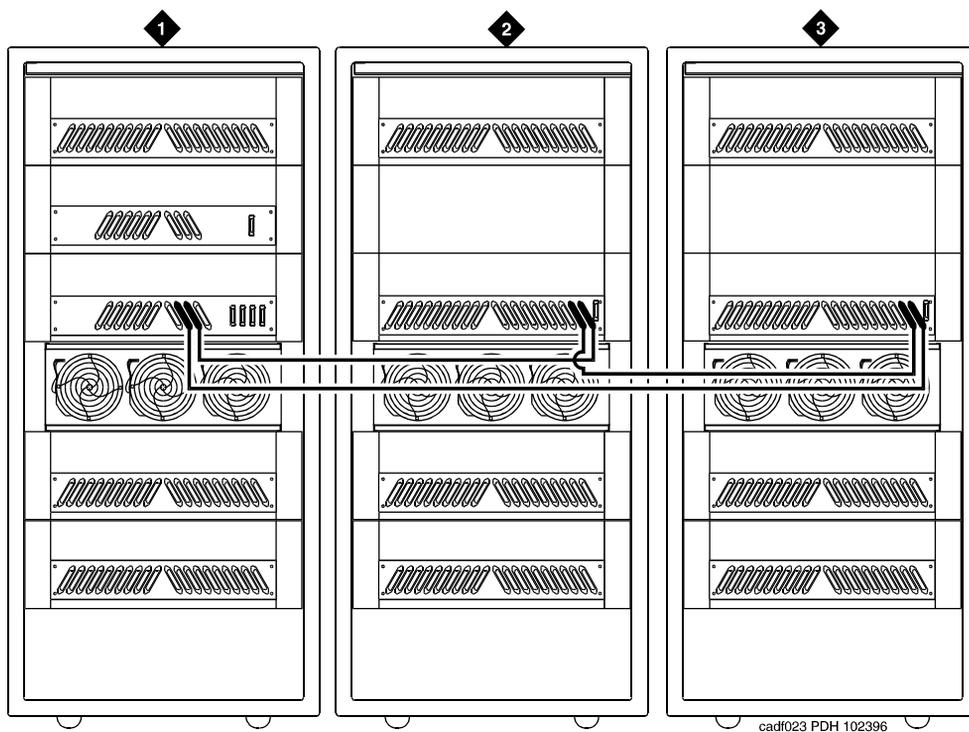
- Install a lightwave transceiver on the cable connector at slot 3A02.



**NOTE:**

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

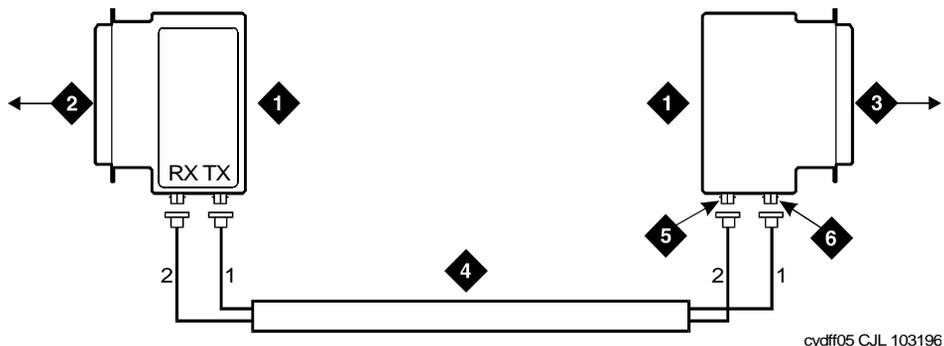
- Connect the other end of the fiber optic cable to the transceiver just installed.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall 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

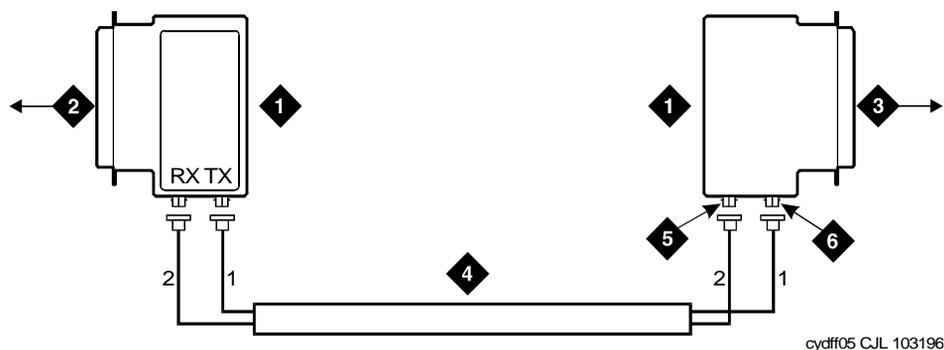
**Figure 5-14. High Reliability Release 7 with Two or Three Port Networks**



**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     |

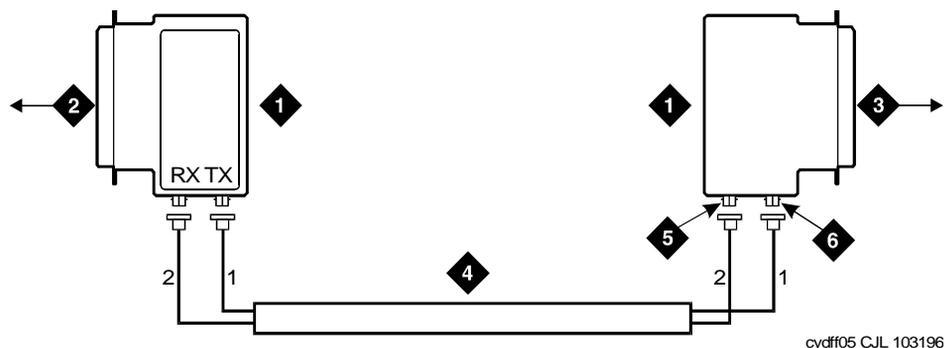
**Figure 5-15. Fiber Optic Connections PPN to EPN1**



**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.

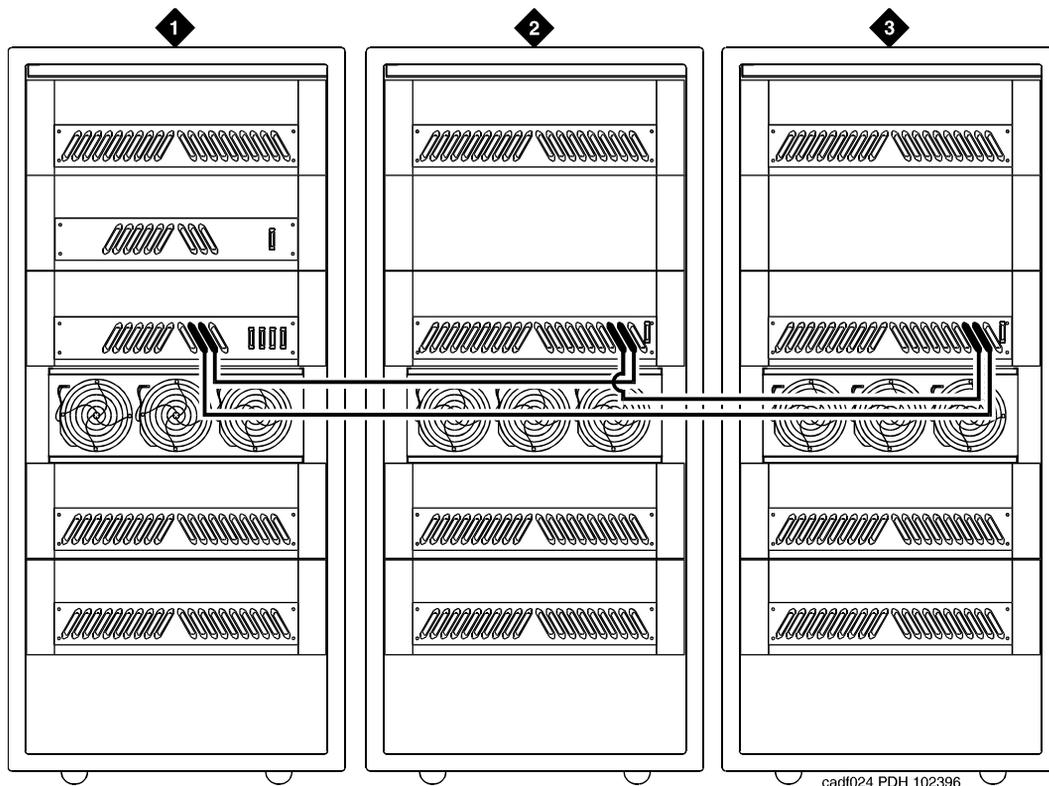
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
  - Coil up the surplus fiber cable and place it in the cable manager.
3. Behind control carrier A of EPN cabinet 2:
- Install a lightwave transceiver on the cable connector at 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.

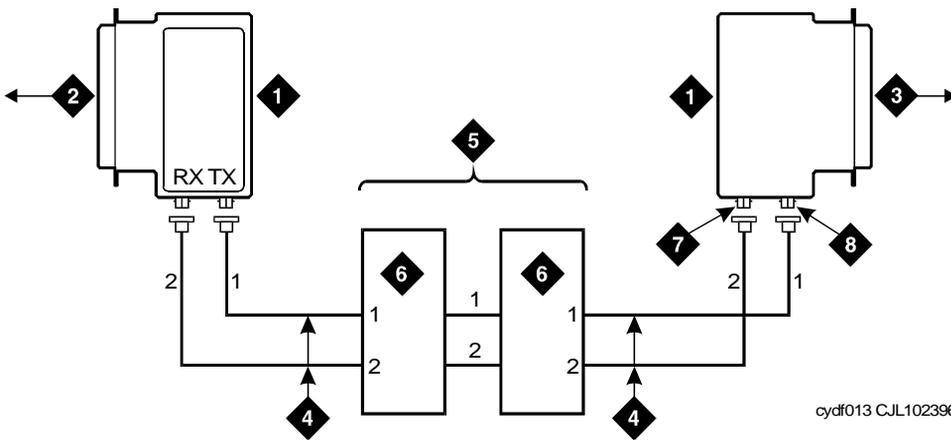


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**Figure Notes**

- 1. Cabinet 1 Processor Port Network
- 2. Cabinet 2 Expansion Port Network 1
- 3. Cabinet 3 Expansion Port Network 2

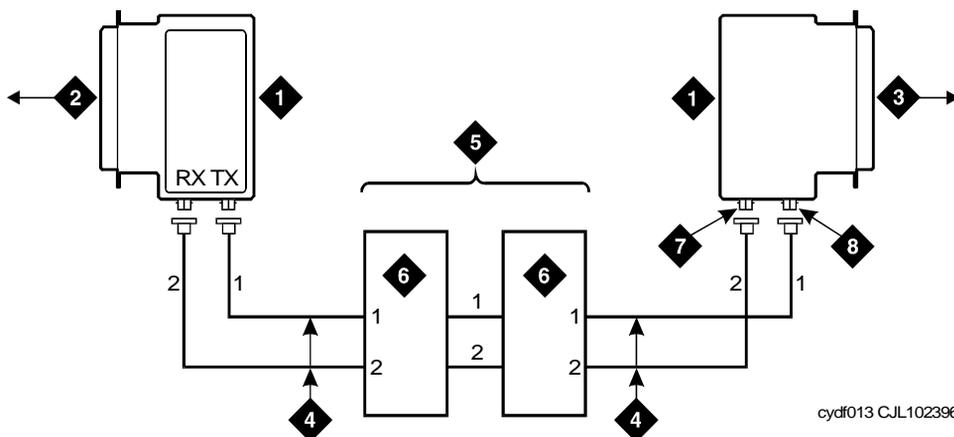
**Figure 5-18. High Reliability Release 7 with Two or Three Port Networks**



**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                            |

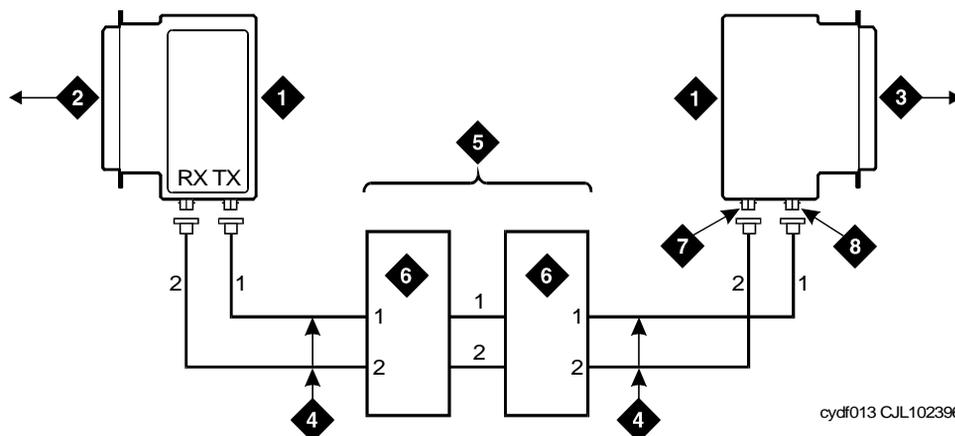
**Figure 5-19. Fiber Optic Connections PPN to EPN1**



**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 7 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 7 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 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.

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 3:00  01:00
    Stop: first Sunday  on or after October 25 at 3:00
2:  Start: first Sunday  on or after April  1  at 4:00  01:00
    Stop: first Sunday  on or after October 25 at 4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	<u>Main</u>	<u>± 00:00</u>	<u>_1</u>	<u>303</u>
2	_____	- _: _	__	__
3	_____	- _: _	__	__
4	_____	- _: _	__	__
5	_____	- _: _	__	__
6	_____	- _: _	__	__
7	_____	- _: _	__	__
8	_____	- _: _	__	__
9	_____	- _: _	__	__
10	_____	- _: _	__	__
11	_____	- _: _	__	__
12	_____	- _: _	__	__
13	_____	- _: _	__	__
14	_____	- _: _	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.



**NOTE:**

Use the name of the switch or "Local Switch" in the Name field for the first location.

4. 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 5-2](#). The cursor is positioned on the Day of the Week: field.

DATE AND TIME

DATE

Day of the Week: Tuesday      Month: November  
 Day of the Month: 3                      Year: 1998

TIME

Hour: 20    Minute: 30    Second: XX    Type: standard  
 Daylight Savings Rule: 1

### Screen 5-2. Typical Date and Time Screen

3. 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

---

- 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- 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 7 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 form to enable the Release 7 option and to assign the customer's other right-to-use options on the G2-to-DEFINITY ECS Release 7 upgrade order. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press `Enter`. Use this form 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 7 Administrator's Guide*, for instructions on performing the retranslations.

## Enable TTI

---

1. Type **change system-parameters features** and press Enter. Use this form 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.
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.

## 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 7 Maintenance for R7si*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.

### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the `Basic Call Setup` field on the QSIG Optional Features page to `y`.

5. Type **display system-parameters offer** and press Enter.
6. Set the `Offer Category` field to **A**, if not already set.
7. Set the `Activate Offer` field to **y** and press Tab. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

## 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 tape).

## 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 or 103281788	TN776 Expansion Interface TN570 Expansion Interface	4 or 12 <sup>1</sup> 4 or 12 <sup>1,2</sup>
J58890TF	Tape Cartridge	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 or 106455363	9823-A Lightwave Transceiver 9823-B Lightwave Transceiver	4 or 12 (See Note 1) 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 7 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 7 Maintenance for R7r*
  - *DEFINITY Enterprise Communications Server Release 7 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 7 Maintenance for R7r*.

## 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.
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. Use Page 2 of the form to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

## 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 7 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.

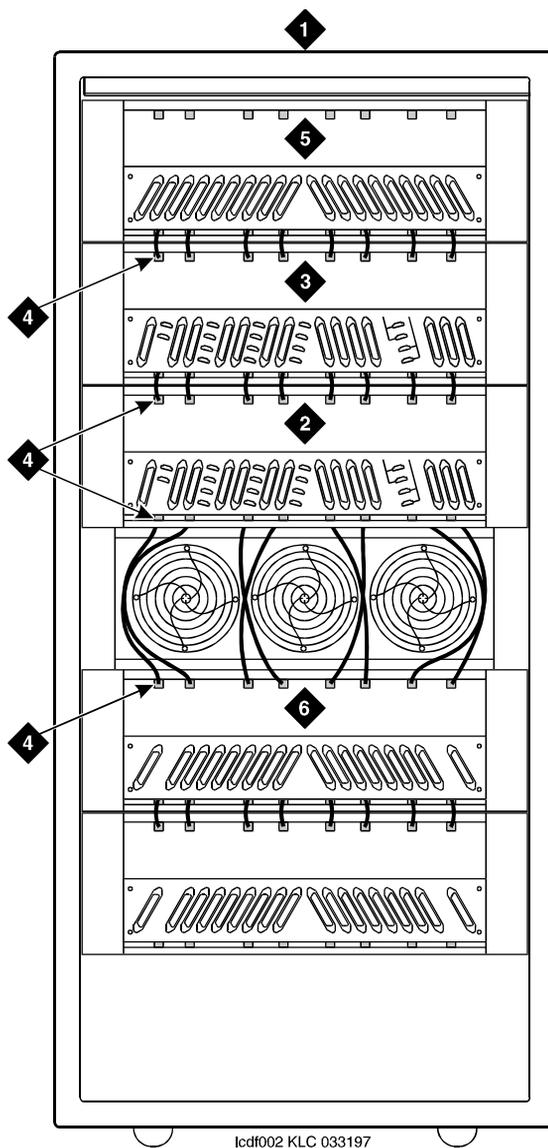


**CAUTION:**

*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.



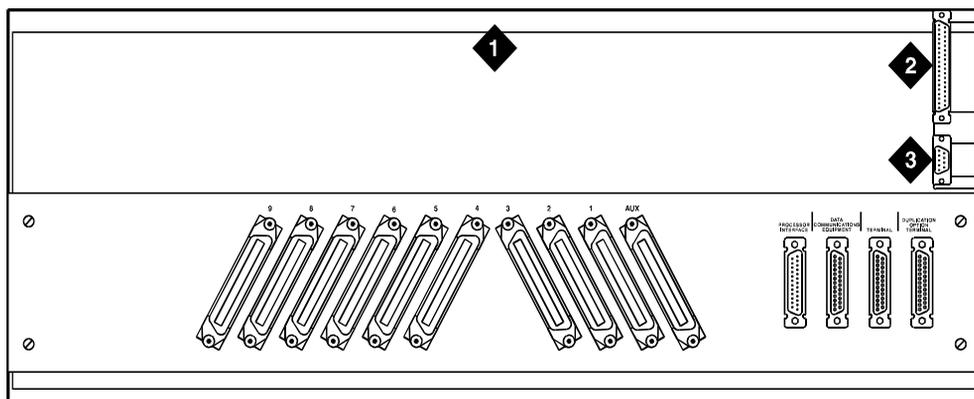


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### Figure Notes

- |                                                    |                                |
|----------------------------------------------------|--------------------------------|
| 1. Rear of Cabinet                                 | 4. Ground Jumpers              |
| 2. Module Control Carrier ("A" Position)           | 5. Port Carrier ("C" Position) |
| 3. Expansion Module Control Carrier ("B" Position) | 6. Port Carrier ("D" Position) |

Figure 5-23. Locations of Ground Jumpers



crdtp12 KLC 101596

**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.

5 Multi-Carrier G2 Universal Module to Release 7r EPN  
Critical Reliability

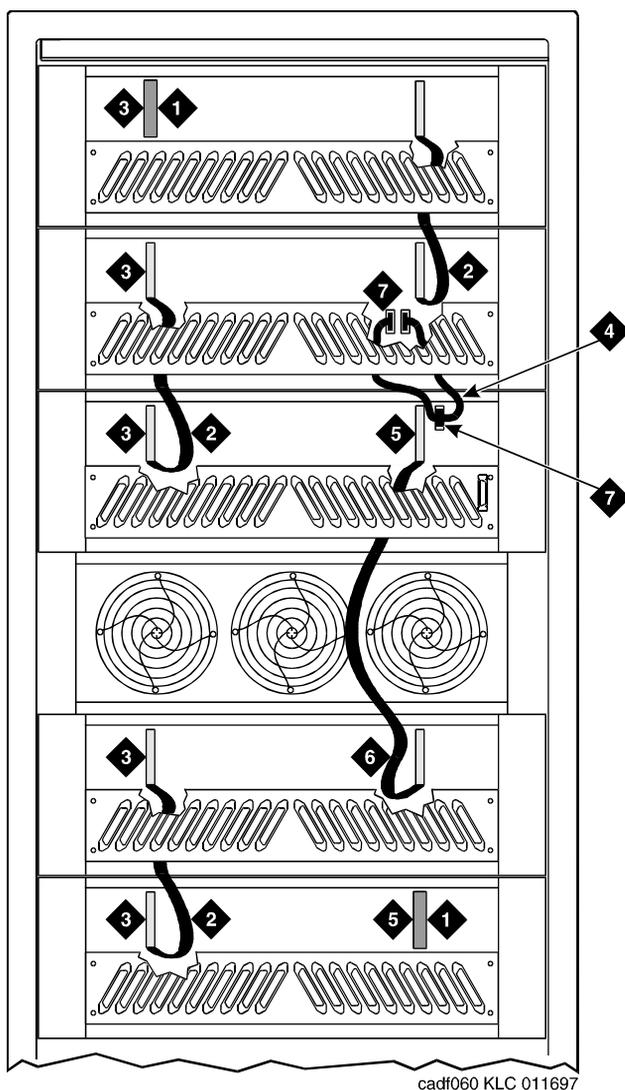
5-89

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 7 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.



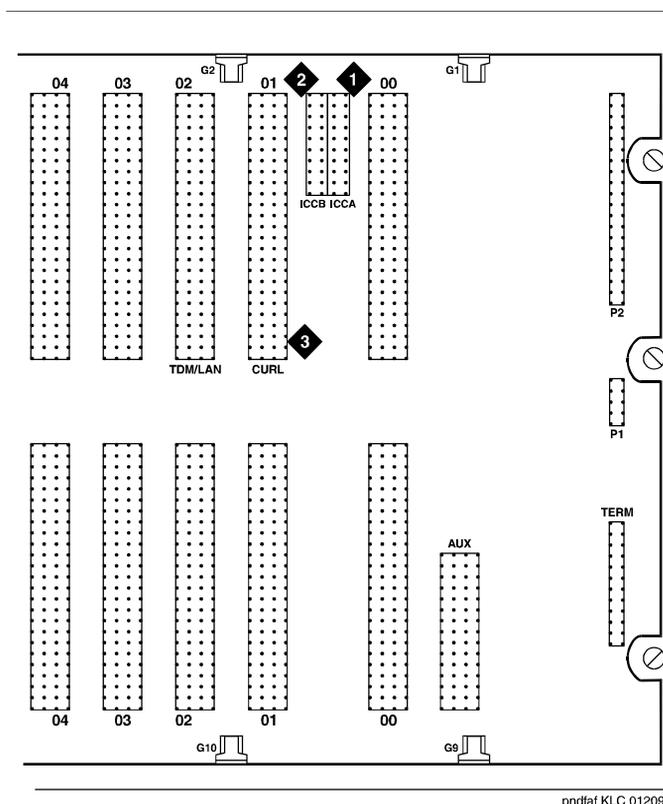
**NOTE:**

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. Intercarrier Cable Connections**

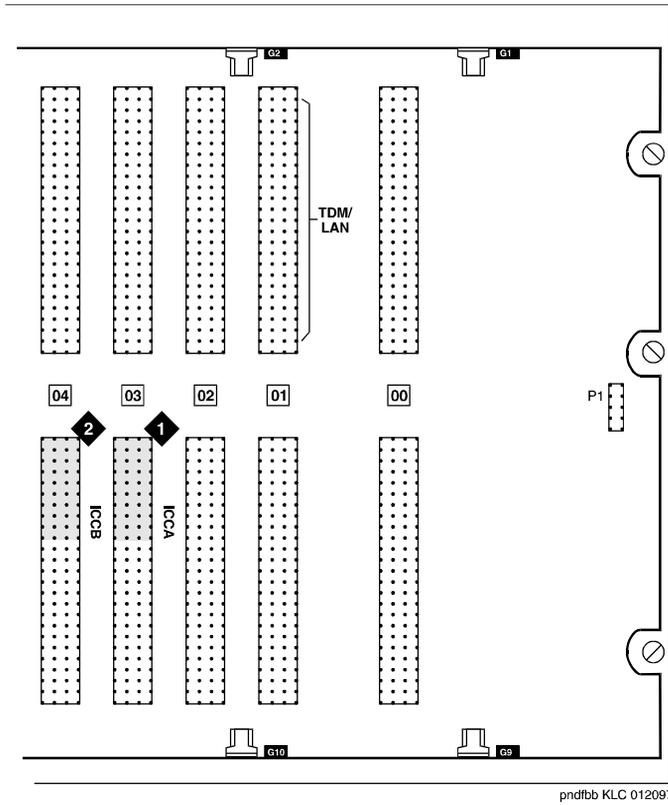
Connect ICC Cables				
	From		To	
	Carrier	Pin-Field Block	Carrier	Pin-Field Block
EPN	J58890AF	ICCA ICCB	J58890BB	ICCA ICCB



**Figure Notes**

- 1. IC CA 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 7 control circuit packs into carriers "A" and "B." Use the new decal and the annotated "list configuration all" (provided with the Release 7 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 7 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 5-100](#).

**⇒ 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 7 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

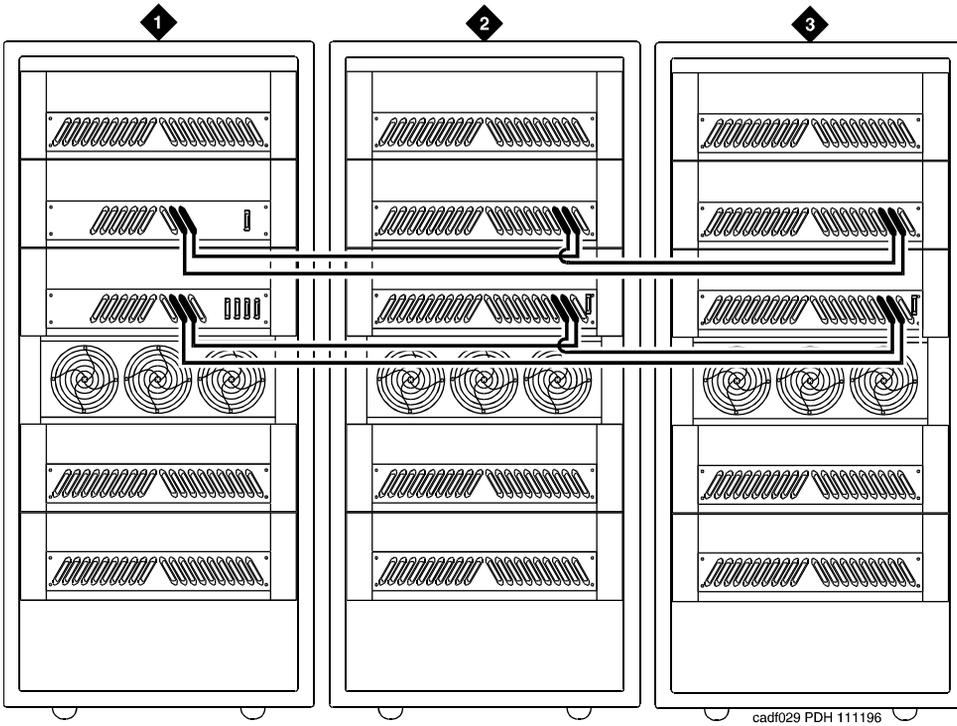
1. At control carrier A of PPN cabinet 1 (see [Figure 5-28](#) through [Figure 5-31](#)):
  - Install a lightwave transceiver on the cable connector at slot 1A01.
  - Connect a fiber optic cable to the transceiver just installed.
  - Carefully attach the fiber optic cable (with cable ties) to the wall 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.



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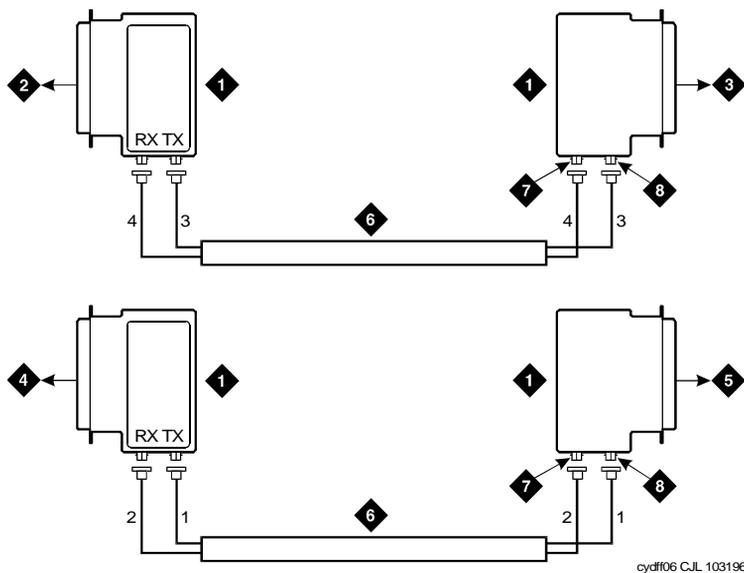
**Figure Notes**

3. Cabinet 1 PPN

5. Cabinet 3 EPN 2

4. Cabinet 2 EPN 1

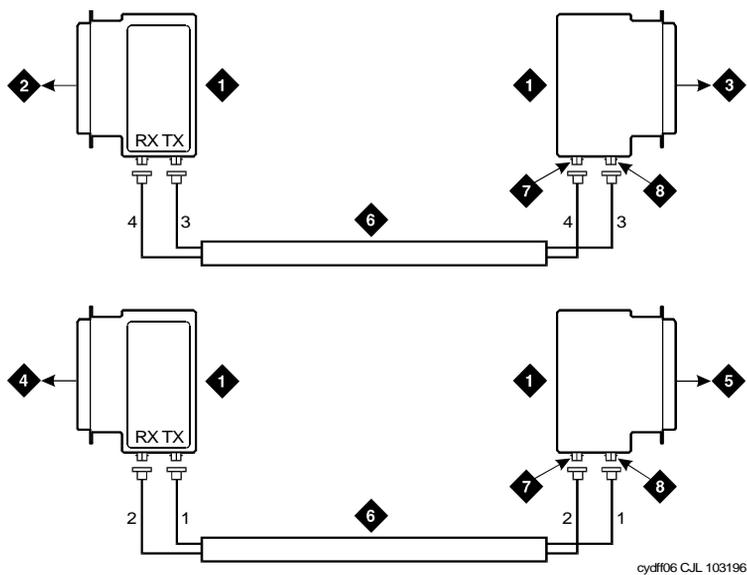
**Figure 5-28. Critical Reliability Release 7 with 2 or 3 Port Networks**



### 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

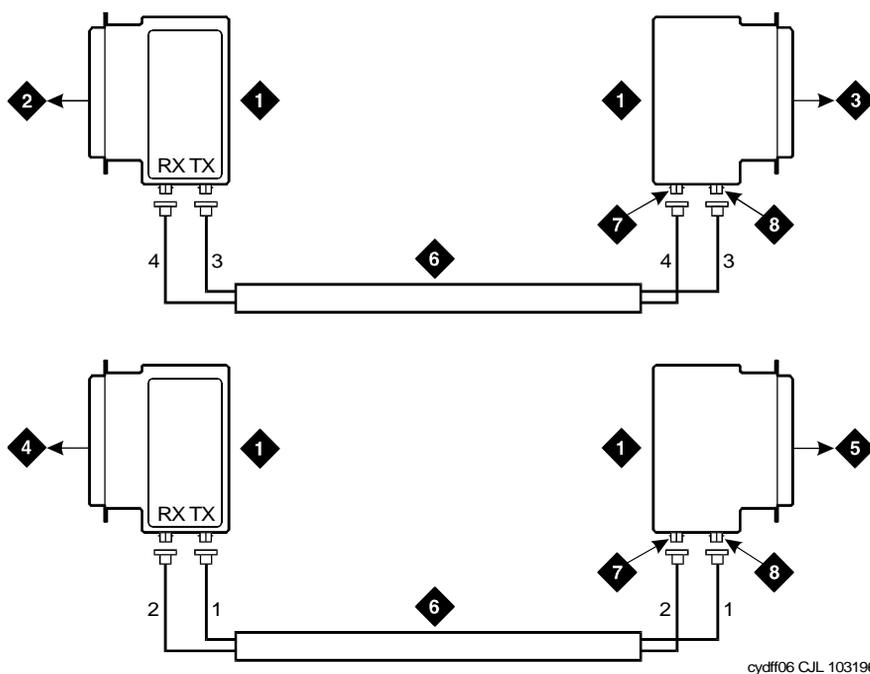


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### Figure Notes

- |                                |                                |
|--------------------------------|--------------------------------|
| 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.

5 Multi-Carrier G2 Universal Module to Release 7r EPN  
 Critical Reliability

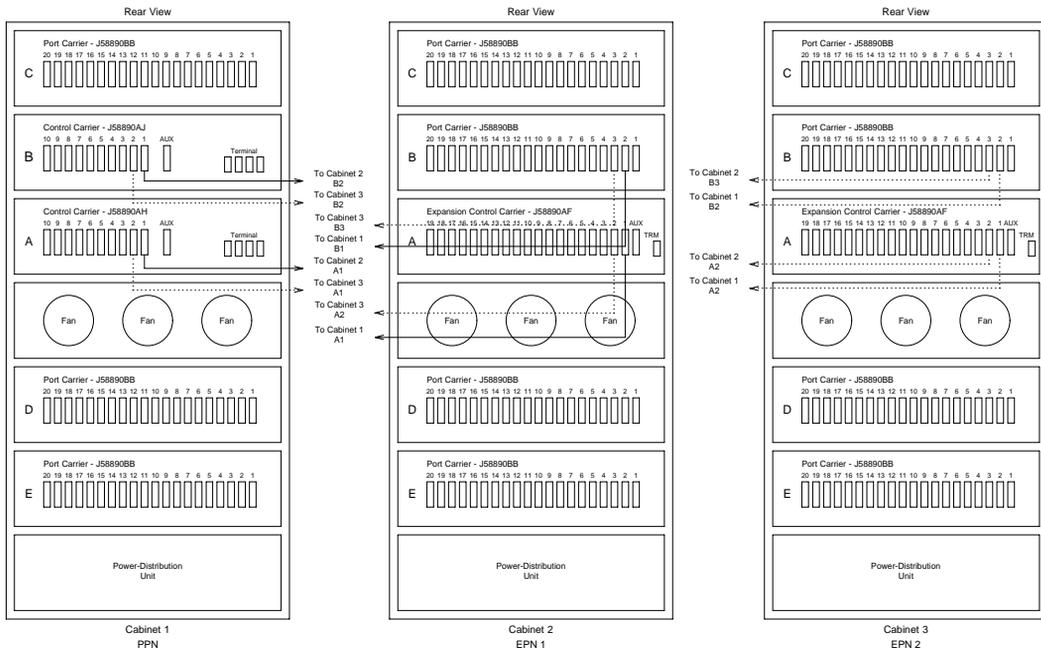
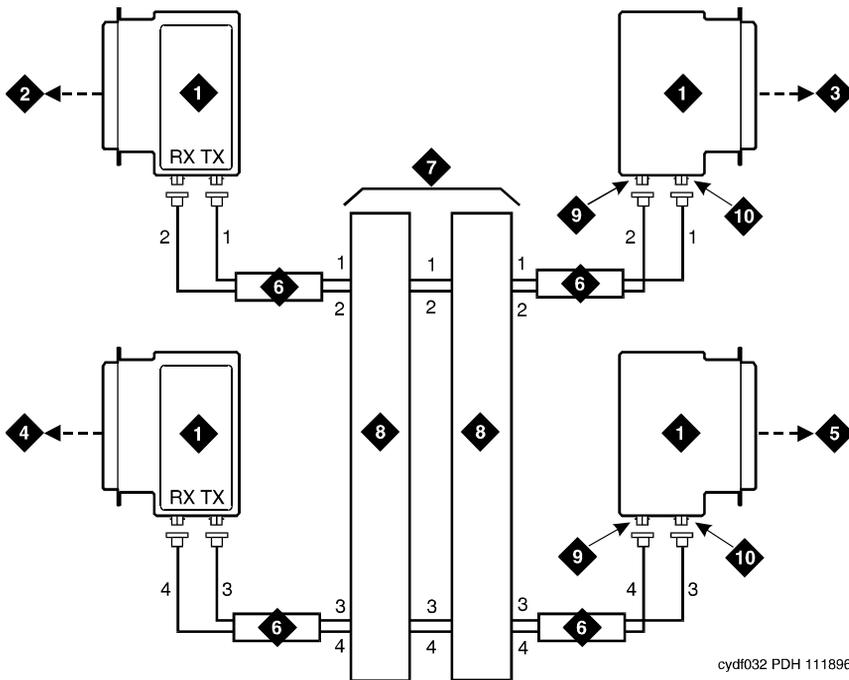


Figure 5-32. Critical Reliability Release 7 with 2 or 3 Port Networks

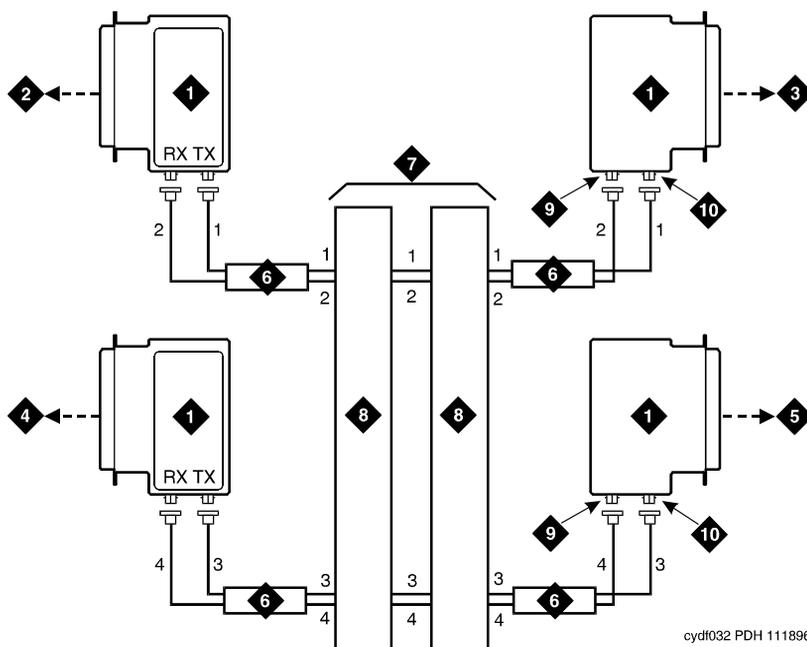


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### Figure Notes

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 1. Lightwave Transceiver       | 6. Fiber Optic Cable                 |
| 2. To PPN Carrier A Slot 1A01  | 7. Optical Cross-Connect Facility    |
| 3. To EPN1 Carrier A Slot 2A01 | 8. 100A Lightguide Interconnect Unit |
| 4. To PPN Carrier B Slot 1B01  | 9. TX Connector                      |
| 5. To EPN1 Carrier B Slot 2B02 | 10. RX Connector                     |

Figure 5-33. Fiber Optic Connections PPN to EPN1

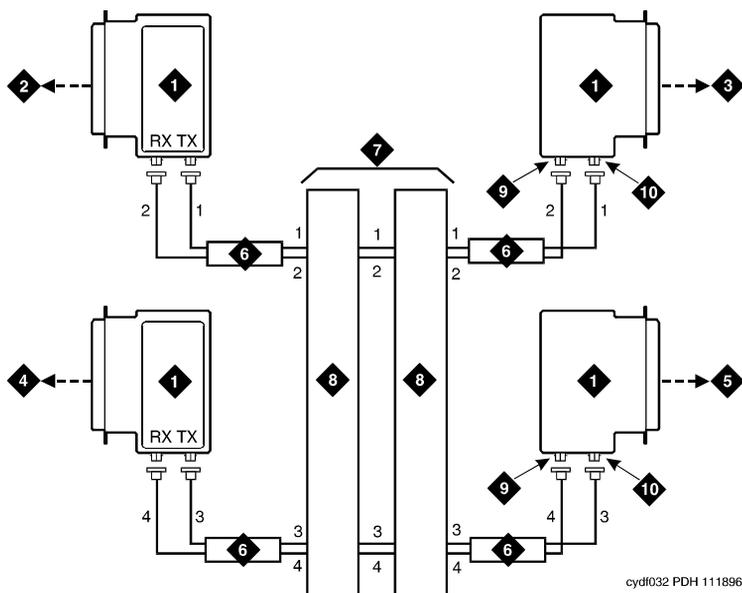


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**Figure Notes**

- |                                |                                      |
|--------------------------------|--------------------------------------|
| 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**



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### 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 7 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 7 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 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.

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  3:00  01:00
    Stop: first Sunday  on or after October 25 at  3:00
2:  Start: first Sunday  on or after April  1  at  4:00  01:00
    Stop: first Sunday  on or after October 25 at  4:00
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 Locations

After you set the daylight savings rules, you must set the locations for all switches. It is possible to have switches in different time zones.

1. Type **change locations** and press Enter.

Page 1 of 3

LOCATIONS

ARS Prefix 1 Required for 10-Digit NANP Calls? \_

Number	Name	Timezone Offset	Daylight-Savings Rule	Number Plan Area Code
1	_____	- __: __	__	__
2	_____	- __: __	__	__
3	_____	- __: __	__	__
4	_____	- __: __	__	__
5	_____	- __: __	__	__
6	_____	- __: __	__	__
7	_____	- __: __	__	__
8	_____	- __: __	__	__
9	_____	- __: __	__	__
10	_____	- __: __	__	__
11	_____	- __: __	__	__
12	_____	- __: __	__	__
13	_____	- __: __	__	__
14	_____	- __: __	__	__

2. Type **y** in the ARS Prefix 1 Required for 10-Digit NANP Calls? field.
3. Type the information in the various fields for each switch.
4. 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 5-3](#). The cursor is positioned on the Day of the Week: field.

```
                                DATE AND TIME
DATE
Day of the Week: Tuesday      Month: November
Day of the Month: 3           Year: 1998

TIME
Hour: 20   Minute: 30   Second: XX   Type: standard
Daylight Savings Rule: 1
```

### Screen 5-3. Typical Date and Time Screen

3. 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

---

- 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

---

- 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.
- The cursor is positioned on the `Year:` field. Type the current year and press `TAB` to move to the next field.
- 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.
- The cursor is positioned on the `Minute:` field. Type current minute (0 through 59). Seconds cannot be set.
- Type **standard** or **daylight savings** in the `Type` field.
- Type the rule (number) in the `Daylight Savings Rule` field.
- Press `Enter` when the information is correct.
- 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 7 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 form to enable the G3 V6 option and to assign the customer's other right-to-use options on the Release 7 upgrade order. See *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press **Enter**. Use this form 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 "4"
- 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 7 Administrator's Guide*.

## Enable TTI

---

1. Type **change system-parameters features** and press **Enter**. Use this form 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.
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.

## 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 7 Maintenance for R7si* or *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.

## Enable Customer Options and Alarm Origination

1. Get the DOSS order number of the upgrade. Call the regional CSA to perform the steps in this section.
2. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).
3. Type **change system-parameters customer-options** and press Enter.
4. Use these forms to verify the customer options are properly set.

### NOTE:

If the customer was using Supplementary Services Protocol "b" or "d" on an ISDN-PRI trunk group before the upgrade, set the *Basic Call Setup* field on the QSIG Optional Features page to *y*.

5. Type **display system-parameters offer** and press Enter.
6. Set the *Offer Category* field to **A**, if not already set.

7. Set the `Activate Offer` field to **y** and press `Tab`. A warning lets you know the Offer Category along with the model determine the system capacities (limits) and allowable hardware.
8. Select the **Submit** option to submit the form.
9. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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

## 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 Upgrade Problems” 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 tape).

## 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*

# 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 7 Installation for Adjuncts and Peripherals*.

To add fiber optic cables to an existing system, refer to *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier 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 7 Installation and Test for Multi-Carrier 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 7 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 (TN2169) (TN2170) (TN566) (TN567)	DEFINITY AUDIX R3 System	Port Assembly
ED-1E546 (TN2208) (TN2170)	Call Visor ASAI over the DEFINITY (LAN) Gateway R1	Port Assembly
J58890M1 (TN801)	CallVisor ASAI/CallVisor PC/LAN over the DEFINITY LAN Gateway R2	Port 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
TN438B	Central Office Trunk	Port
TN439	Tie Trunk	Port
TN447	Central Office Trunk	Port
TN457	Speech Synthesizer	Service

*Continued on next page*

**Table 6-1. Circuit Packs and Circuit Modules — Continued**

Apparatus Code	Name	Type
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
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

*Continued on next page*

**Table 6-1. Circuit Packs and Circuit Modules — Continued**

Apparatus Code	Name	Type
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
TN794	Network Control/Packet Interface (NetPkt)	Control
TN796B	Processor	Control
TN799	Control-LAN (C-LAN)	Port
TN802	Internet Protocol (IP) Trunk	Port
TNPRI/BRI	PRI to BRI Converter	Port
TN1648/B	System Access/Maintenance	Control
TN1650B	Memory	Control
TN1654	DS1 Converter - T1, 24 Channel/E1, 32 Channel	Port
TN1655	Packet Interface	Control
TN1656	Tape Drive	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

*Continued on next page*

**Table 6-1. Circuit Packs and Circuit Modules — Continued**

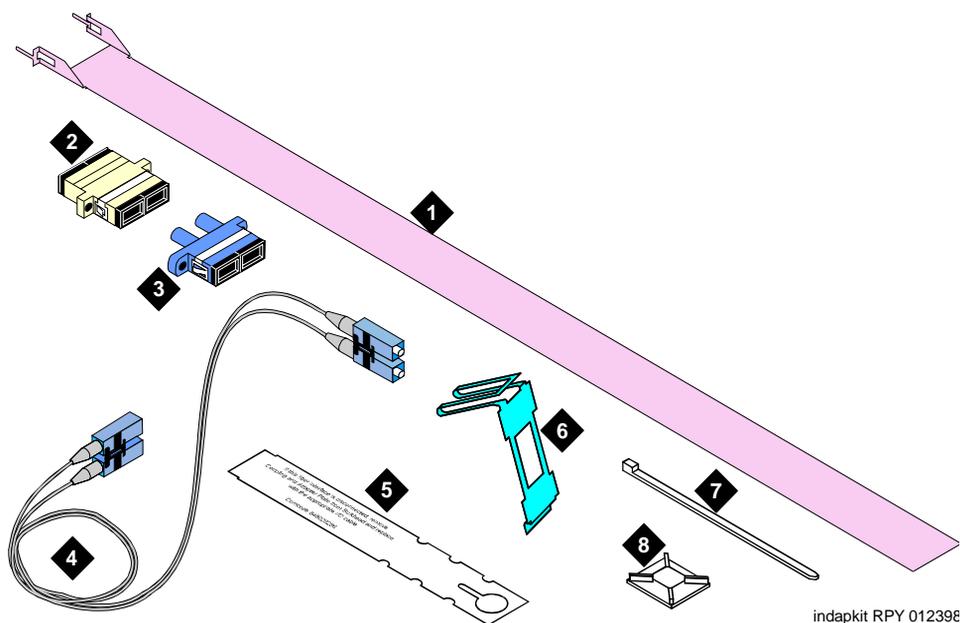
<b>Apparatus Code</b>	<b>Name</b>	<b>Type</b>
TN2149	Analog Line	Port
TN2180	Analog Line	Port
TN2181	Digital Line 2-Wire DCP	Port
TN2182/B	Tone-Clock -Tone Detector and Call Classifier	Control
TN2183	Analog Line	Port
TN2184	DIOD Trunk	Port
TN2198	ISDN-BRI 2-Wire U Interface	Port
TN2199	Central Office Trunk	Port
TN2202	Ring Generator	Power
TN2224/B	Digital Line, 24-Port, 2-Wire DCP	Port
UN330B	Duplication Interface	Control
UN331B	Processor	Control
UN332/B	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 multi-carrier 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.

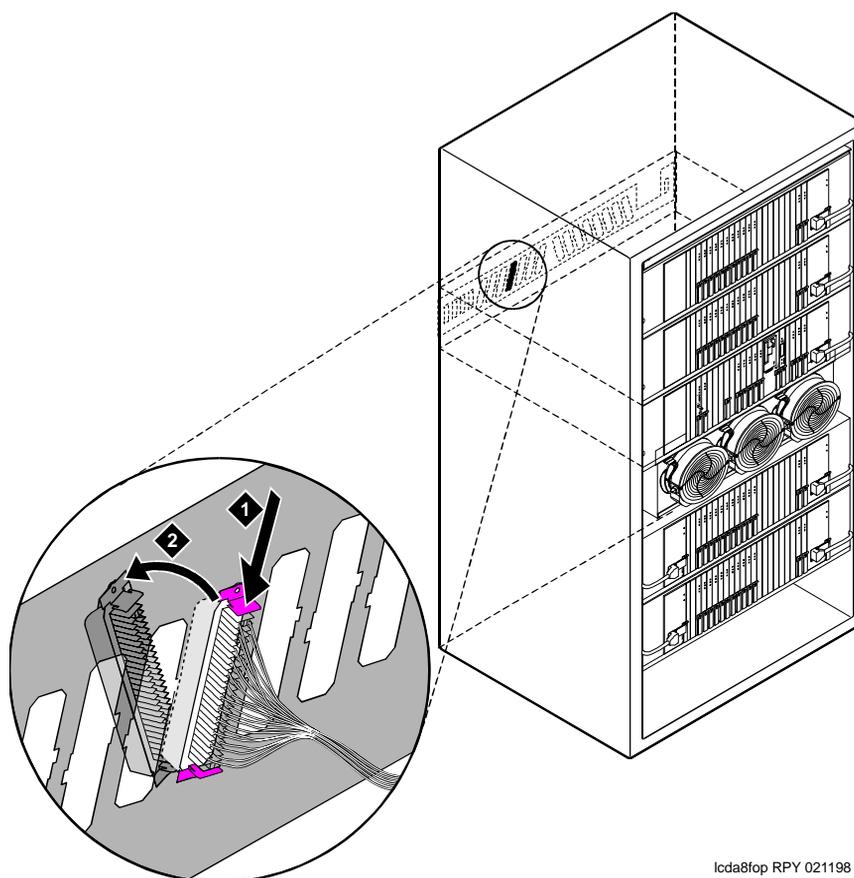


**NOTE:**

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](#).



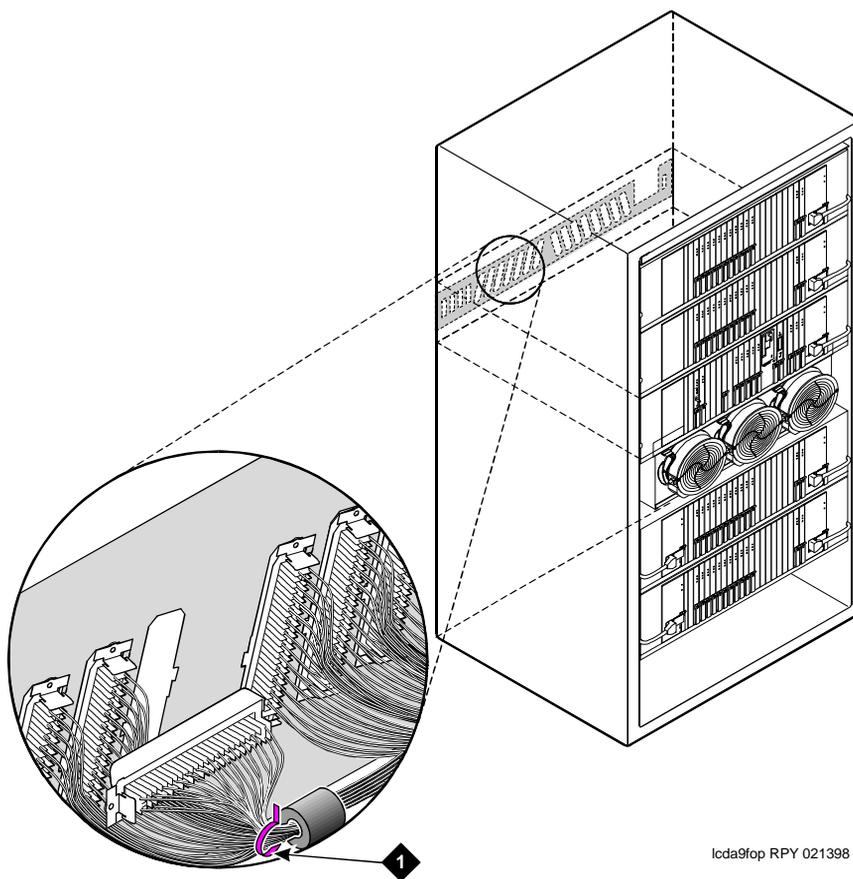
lcda8fop RPY 021198

**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](#).



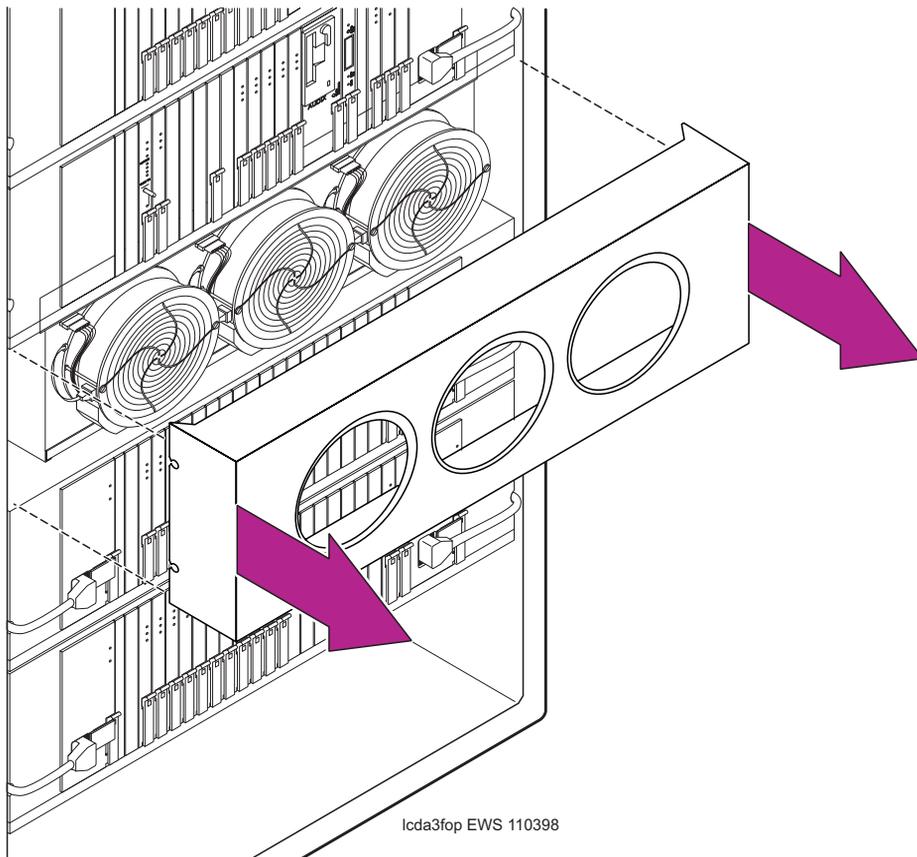
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### Figure Notes

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

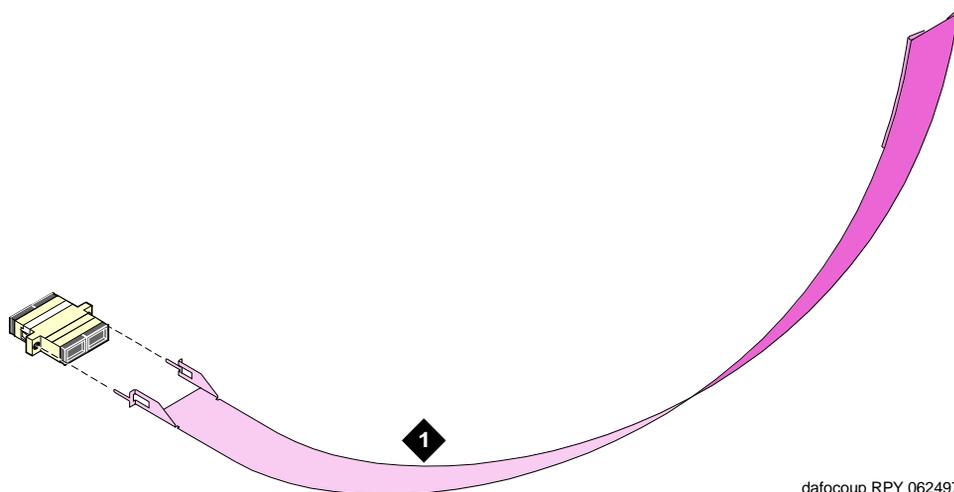
---

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

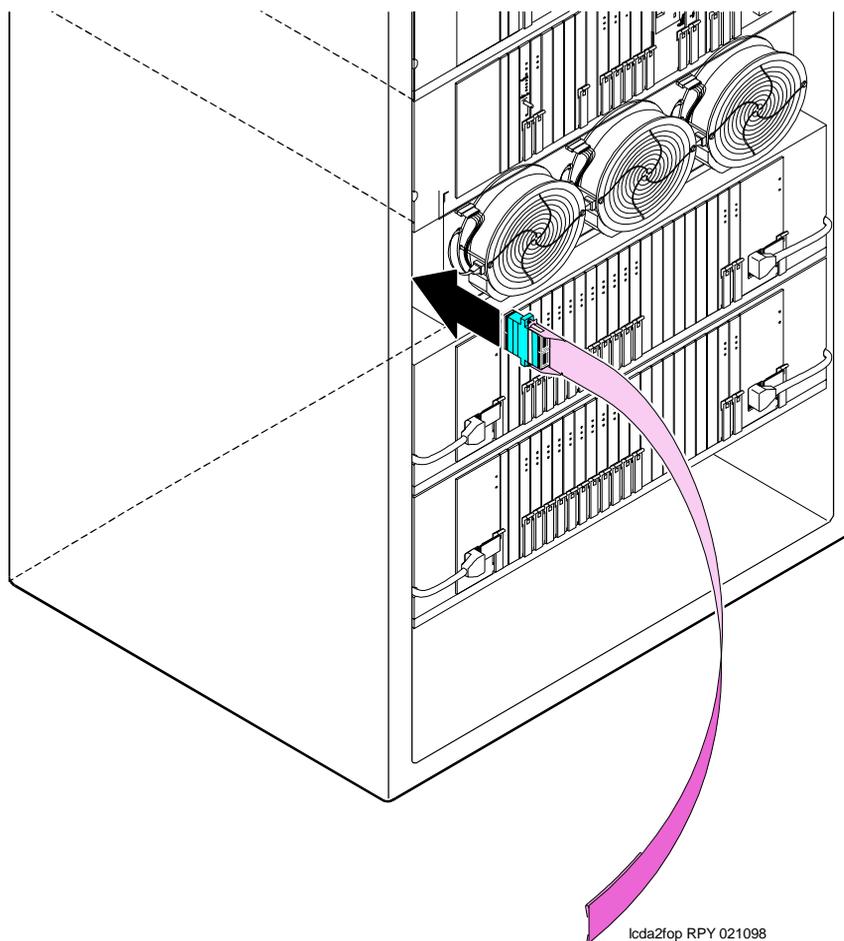
1. Pass-thru Tool

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](#).

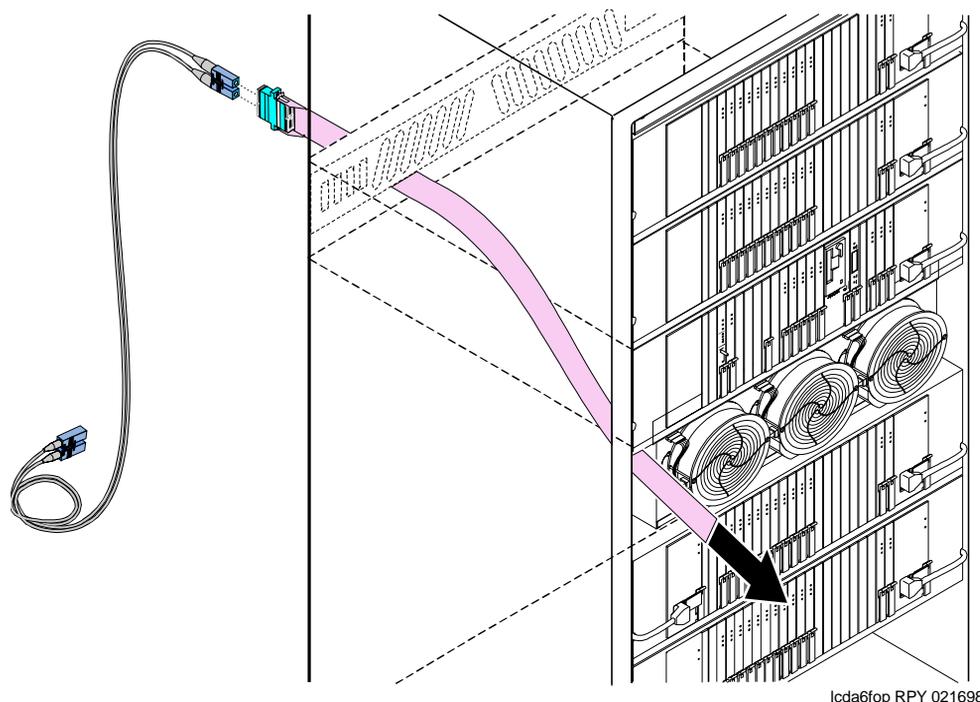


**Figure 6-6. Insert the Pass-thru Tool**

**⚠ 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.*

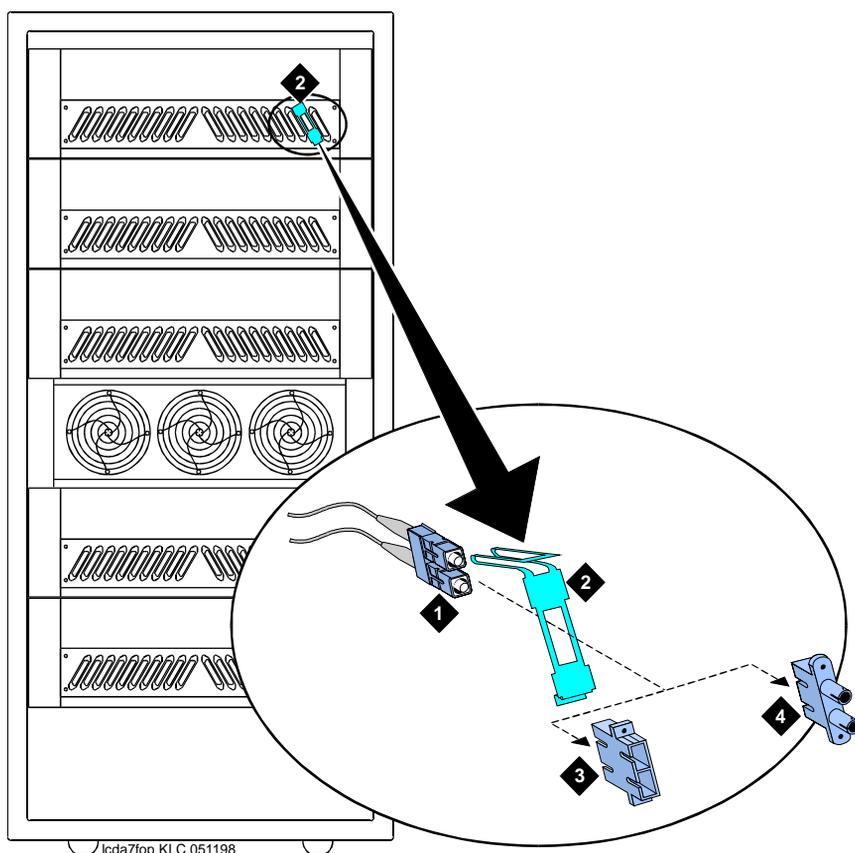
3. Attach the supplied fiber optic cable to the adapter.
4. Pull the tool (with adapter and cable attached) out through the front of the cabinet. See [Figure 6-7](#).



lca6fop RPY 021698

**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**

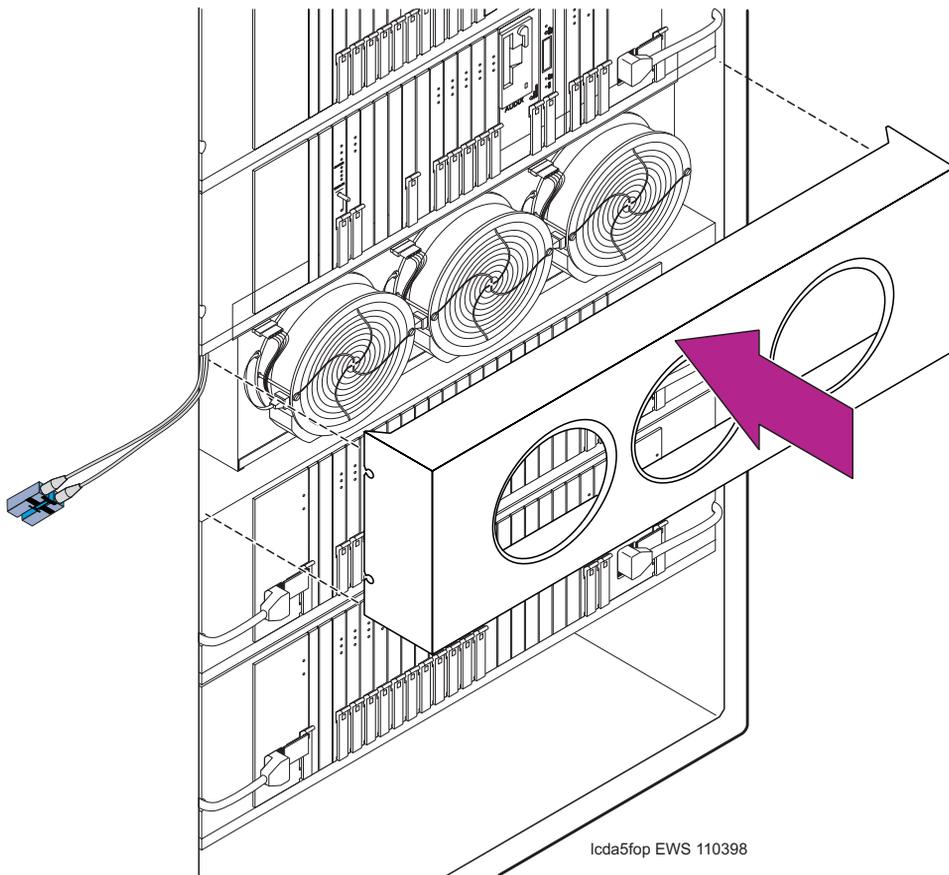




**CAUTION:**

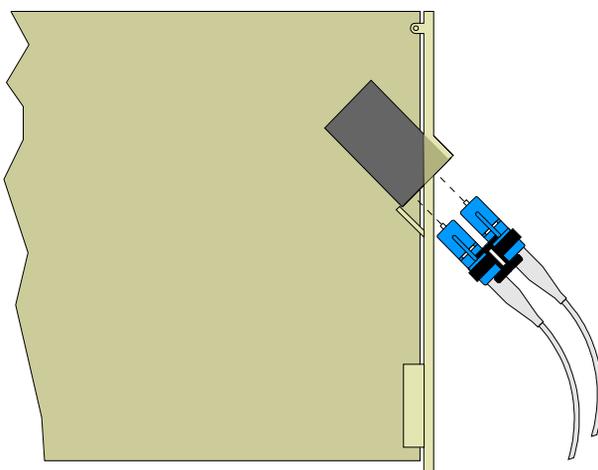
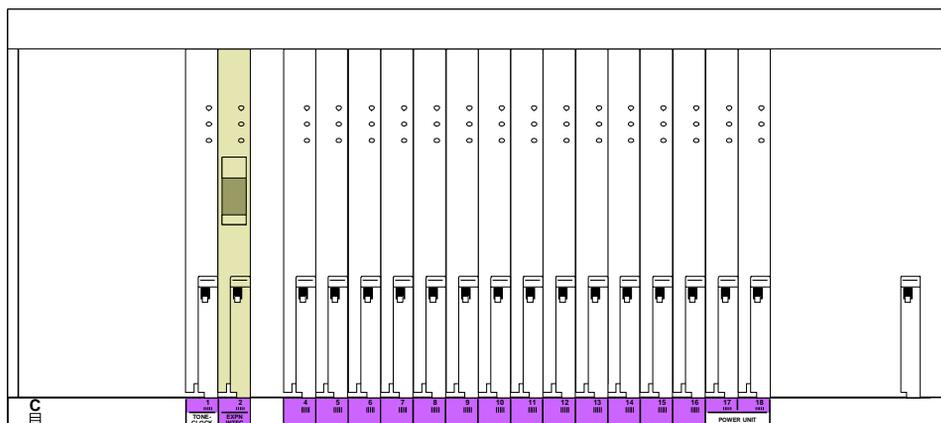
*Be careful not to crimp the fiber cable when you are performing the following step.*

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](#).



scdafo\_4 KLC 051298

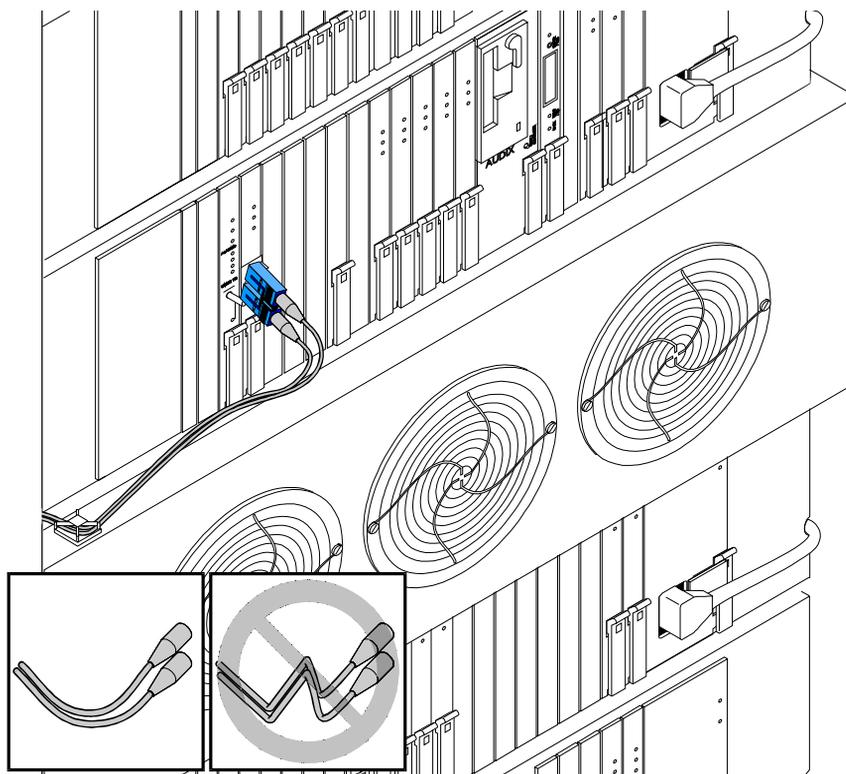
**Figure 6-11. Connect Fiber Cable to Circuit Pack**

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.



loda4fop RPY 02139E

**Figure 6-12. Dress the Cable**

15. If a circuit pack was removed to access 2 open slots (from [“Cabinet Preparation” on page 6-9](#)), replace the circuit pack into its original slot.
16. Close the front door.
17. Discard the pass-thru tool.

- 6 Adding or Removing Cabinet Hardware  
Add the Fiber Optic Cable

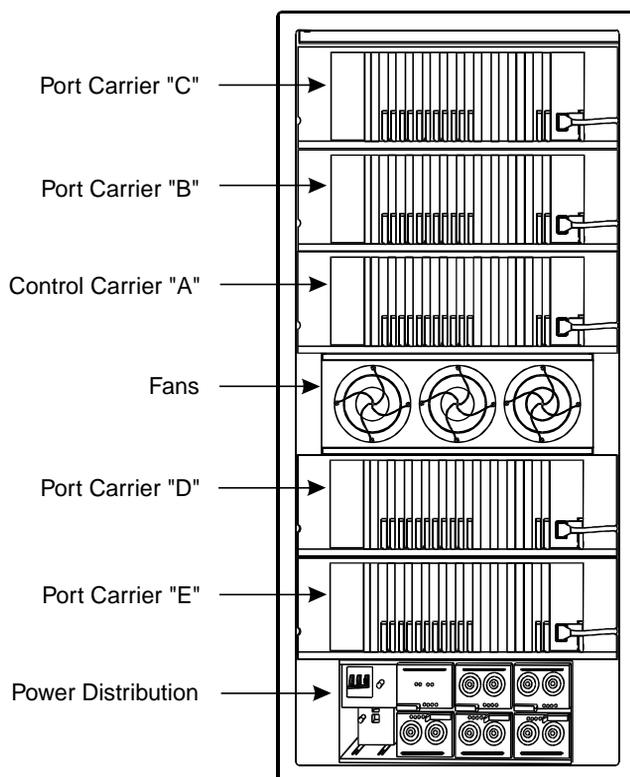
6-21

## 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, 555-230-125*.
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 Multi-Carrier 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 Multi-Carrier 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 7 Installation and Test for Multi-Carrier Cabinets*.
2. Connect the approved ground to the new cabinet as instructed in *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets*.



**NOTE:**

Do not power up the system until all power and ground connections are completed.

## Interconnect Cabling Release 7si

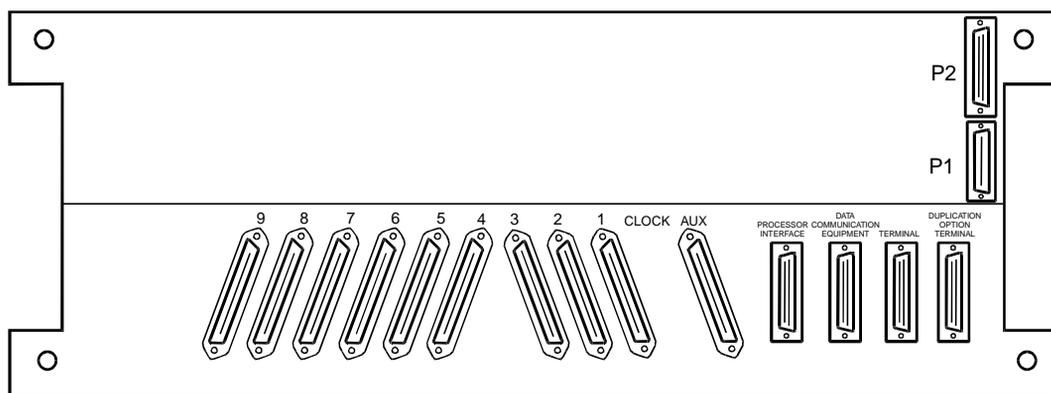
For fiber optic cabling information and comcode numbers, refer to *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets*. The fiber connections installed in this section are later administered using the fiber link administration instructions in [Appendix 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 7r

---

For more fiber optic cabling information, refer to *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multi-Carrier Cabinets*.

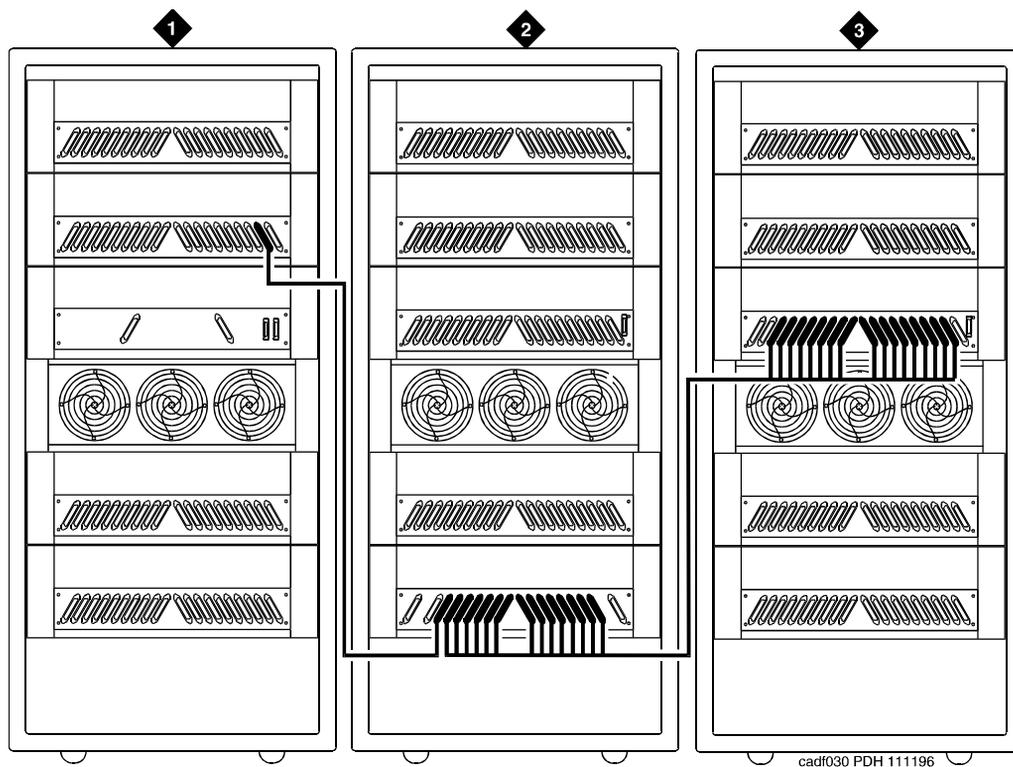
### Switch-Connect New EPN to Existing PPN and EPN (Standard Reliability)

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 7r with SNC in EPN**

## Switch-Connect New EPN to Existing PPN and EPN (High Reliability)

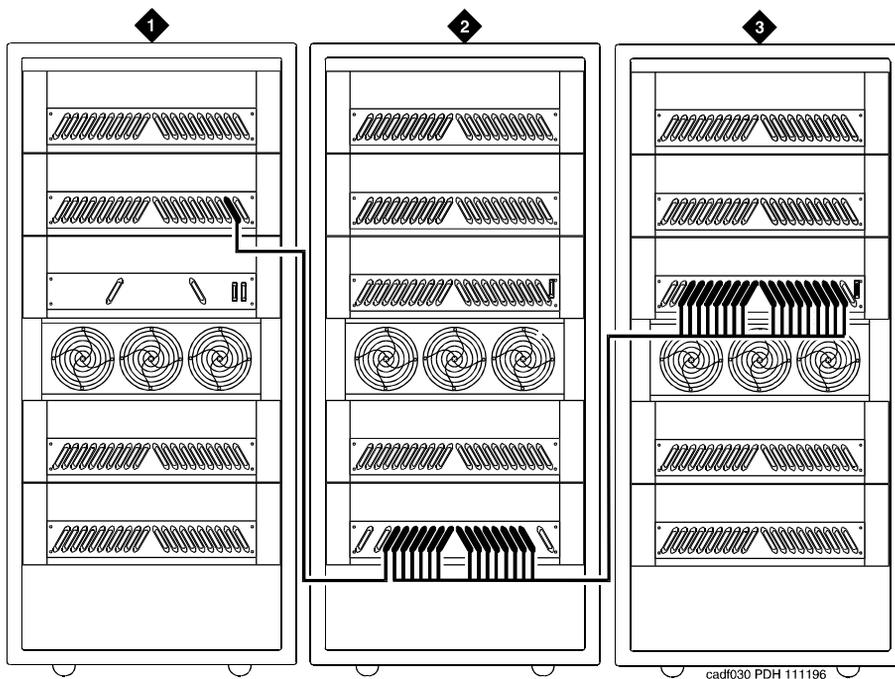
For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet is called Cabinet 2, and the EPN cabinet containing the Switch Node Carrier is called Cabinet 4.

### 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.

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 7r 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*

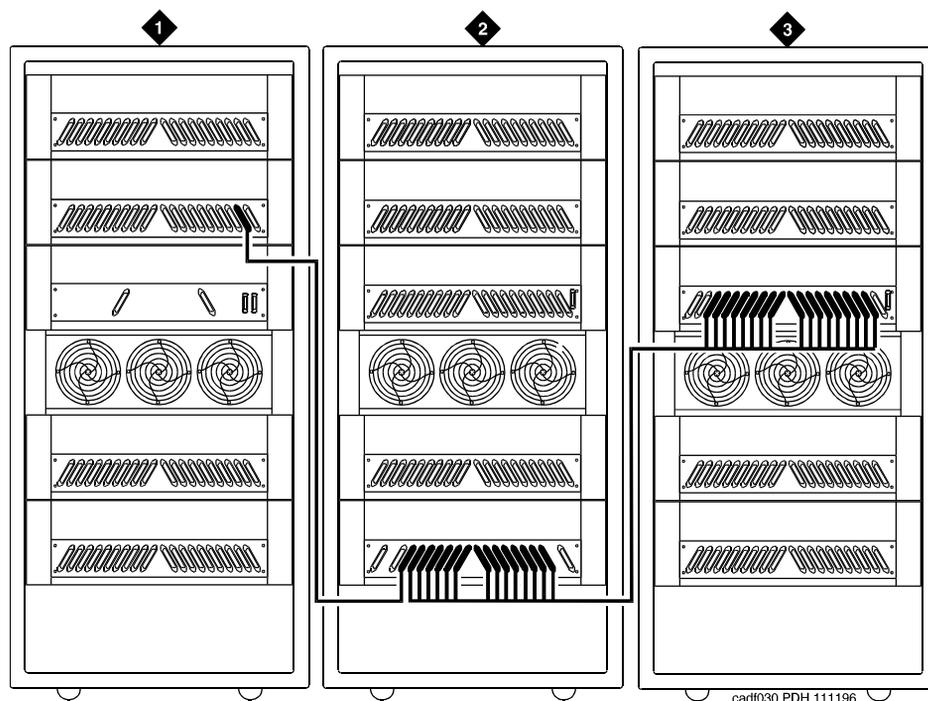
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14. At the rear of the Expansion Control Carrier in position A in Cabinet 2, install a lightwave transceiver onto Slot 1 (2A01).
15. Connect a 20-foot (6 m) fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
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 7r 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

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### 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 Page 2 of the form 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 7 Administrator's Guide* for more information.

### Unadminister Fiber Links (Simplex Systems)

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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 pages on the form 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 form. 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 form 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 Page 2 of the form.
  - 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 form 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 form appears. On Page 1 of the form:
  - 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.
  - 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.

6 Adding or Removing Cabinet Hardware  
Remove an EPN Cabinet from an Existing System

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- 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 Page 2 of the form.
- 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 form 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

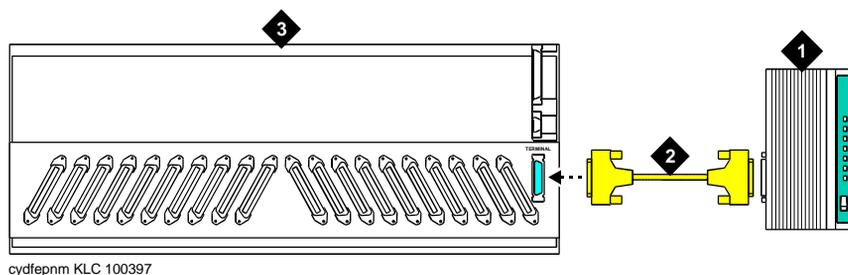
### Message Waiting Lamps On

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 839 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*, 555-025-201
- *System 75 Application Notes Network Services*, 555-209-002
- *DEFINITY ECS Release 7 Administration for Network Connectivity*, 555-233-501

## Add Circuit Packs

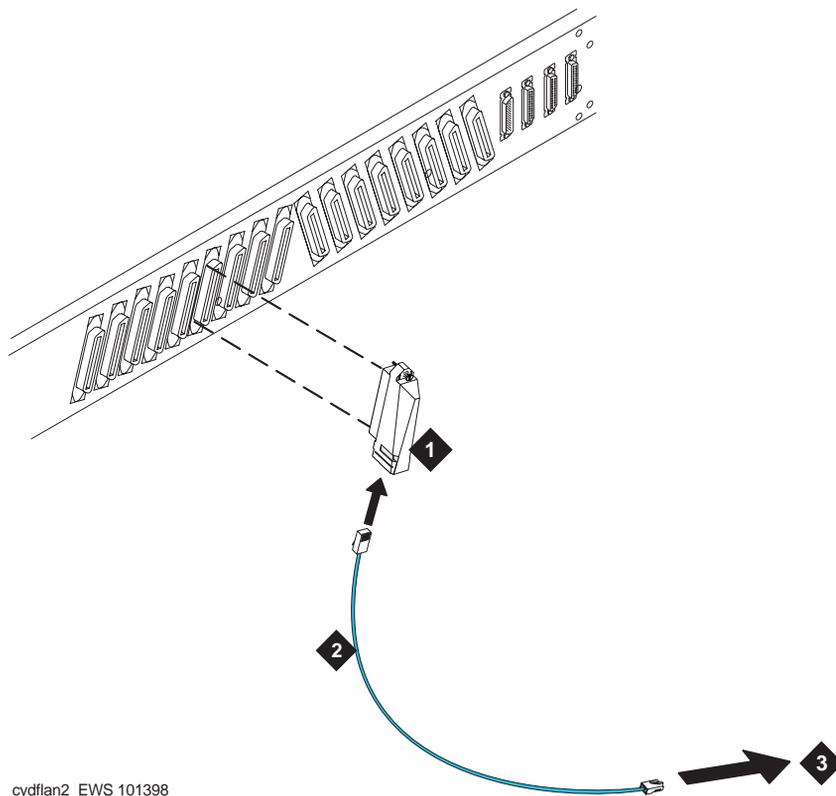
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A TN464F, TN767E, or TN760E DS1 circuit pack is required for PPP connections. A TN799 Control-LAN circuit pack is also required.

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 R7 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
2. DW8A Cable
3. Hub or 110 (Purple) Wall Field

**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 form 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*, 555-233-501.

## 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 Internet Protocol Trunk

---

The DEFINITY IP Trunk gives you the capability to send voice and fax from the DEFINITY ECS through an IP network to other DEFINITY ECSs that also have this feature, or to other PBXs equipped with the Internet Telephony Server Enterprise. It is implemented using the TN802 Internet Protocol (IP) Trunk which is a Windows NT server residing on a circuit pack inside the DEFINITY ECS.

### Prepare for Installation

---

Have the following ready before your shipment arrives on site.

- One of the following:
  - A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need A/C power outlets for the modem and monitor.
  - A laptop with Symantec pcANYWHERE<sup>®</sup> Client software

This third-party application lets Lucent support personnel control the IP trunk processor remotely, via the modem or ethernet LAN connection or COM2, during maintenance and troubleshooting.

If using a laptop, you also need cable(s) that connect between the COM2 connector on the TN802 external cable assembly and the laptop. The cable connector that terminates on the COM2 connector must be 25-pin female and there must be a null modem between the MAPD and the laptop.

- Three adjoining, unoccupied slots in the DEFINITY ECS

The IP Trunk circuit pack occupies only one slot, but it needs the two slots to its left for clearance.
- A 10/100 BaseT Ethernet connection into your local area network
- A valid, unused IP address on your network that can be assigned to the IP Trunk server. You also need the subnet mask, default gateway, domain name, and so forth from the customer network administrator.
- An analog telephone line reserved for the IP Trunk diagnostic modem
- A valid telephone number reserved for the IP Trunk diagnostic modem

It is recommended that your cabinet be protected by an uninterruptible power system (UPS).

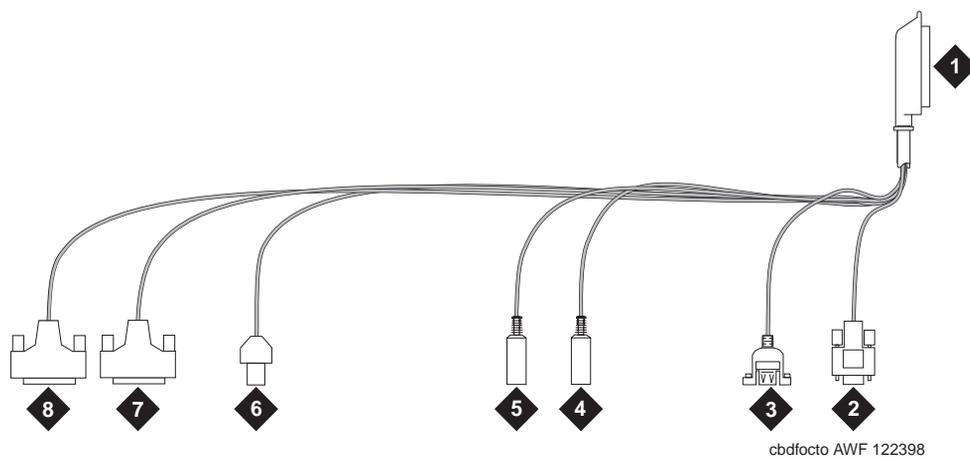
## Check your Shipment

---

When your DEFINITY IP Trunk order arrives at your site, check the contents.

1. Before you open the shipping carton, inspect it for damage. 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 Trunk ordered:
  - TN802 MAPD circuit pack
  - U.S. Robotics Inc. Sportster 33.6K external modem  
The modem lets Lucent support personnel remotely maintain and troubleshoot your system.
  - TN802 external cable assembly  
The TN802 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](#). It should be labeled at the point where the bundle enters the amphenol connector.
  - Cable from modem to TN802 external cable assembly

3. Read and follow any directions inserted into the package by the factory.



### Figure Notes

- |                               |                                   |
|-------------------------------|-----------------------------------|
| 1. To P1 on cabinet backplane | 5. To PS2 Mouse                   |
| 2. To VGA monitor             | 6. To Ethernet                    |
| 3. To USB (not used)          | 7. 25-pin male connector to Modem |
| 4. To PS2 Keyboard            | 8. 25-pin male connector to COM2  |

Figure 6-20. TN802 External Cable Assembly

### Connect a Monitor, PS2 Keyboard, and PS2 Mouse

If using a monitor, keyboard, and mouse to log onto the Windows NT Server and to configure the network software, then use this procedure.

1. Attach a VGA monitor to the VGA connector of the TN802 external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the TN802 external cable assembly.
3. Attach the mouse to the MOUSE connector of the TN802 external cable assembly.
4. Plug the monitor into an AC power receptacle, and turn it on.

## Install the TN802 MAPD Circuit Pack

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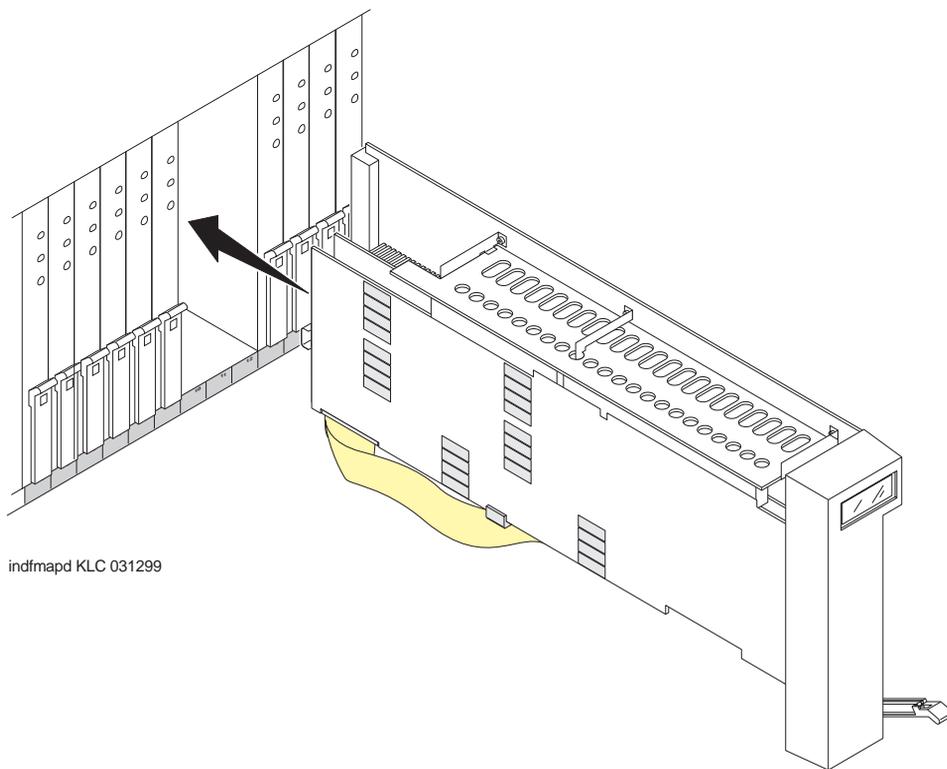


**NOTE:**

The TN802 circuit pack is hot-swappable, so you do not need to power down the carrier.

If you need to remove the TN802 circuit pack from the carrier at a later time, shut down NT first.

1. Make sure that there is room to install the TN802 circuit pack. To accommodate the width of the circuit pack, you must have at least 3 adjacent slots free.
2. Insert the TN802 circuit pack in the rightmost of the three slots you reserved for IP trunking. See [Figure 6-21](#).



indfmapd KLC 031299

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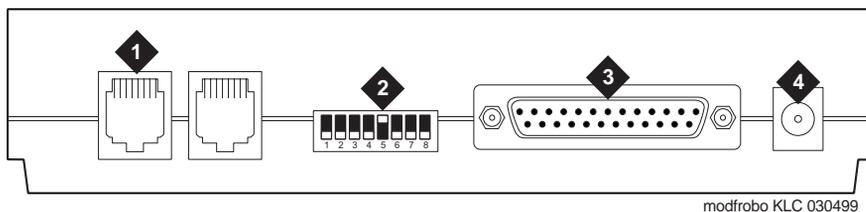
**Figure 6-21. TN802 MAPD Circuit Pack**

3. From the rear of the cabinet, connect the P1 amphenol connector on the TN802 external cable to the highest numbered connector of the 3 slots required for the TN802.

When you plug in the TN802 circuit pack and connect the cable, the IP Trunk circuit pack starts to boot and the LCD reads "PC Boot."

## Connect the Modem

1. Connect the RS232 port of the modem to the MODEM connector of the TN802 external cable assembly.
2. Connect an analog telephone line to the leftmost analog-line port on the modem.
3. Make sure that the modem's DIP switches are set as indicated in [Figure 6-22](#).
4. Plug the modem into an A/C power outlet.
5. Turn on the modem using the switch on the front of the modem.



### Figure Notes

1. Connect analog line here.
2. DIP switch rocker 5 must be up.
3. Connect MODEM connector here.
4. Connect power connector here.

Figure 6-22. External Modem Connections

## Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802 external cable assembly.

## Connect a Laptop

If using a laptop with Symantec pcANYWHERE<sup>®</sup> Client software, null modem, and the local serial port, then use this procedure.

1. Attach the 25-pin COM2 connector of the TN802 external cable assembly to the laptop through a null modem.
2. Connect the 25-pin Modem connector of the TN802 external cable assembly to the modem. This is needed for remote access only.
3. Click Add Remote Control Item in the pcANYWHERE window.
4. Choose a communication port in the Properties window.
5. Click Details and note the default settings:
  - Speed: 38,400
  - Parity: <None>
  - Flow Control: RTS/CTS
  - Started by: Carrier detect (DCD)
  - Ended by: Carrier detect (DCD)
6. Click on the new item icon and laptop connects to MAPD Host Software pcANYWHERE.

## Log onto the IP Trunk Server

1. Choose from the following:
  - If using a laptop with pcANYWHERE<sup>®</sup> Client software, click the CAD button on the tools menu bar.
  - If using a monitor, keyboard, and mouse, press the CTRL, ALT, and DELETE keys simultaneously.
2. Type **administrator** in the `User Name` field.
3. Leave the `Password` field blank, 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.

## **Connect the Modem to NT**

1. Click Start.
2. Click Settings, then Control Panel.
3. Click Modems.
4. Place a check mark in the `Don't detect my modem; I will select it from a list field`.
5. Click Next.
6. Choose U.S. Robotics Inc. in the `Manufacturer` field.
7. Choose Sportster 28800-33600 External Modem in the `Models` field.

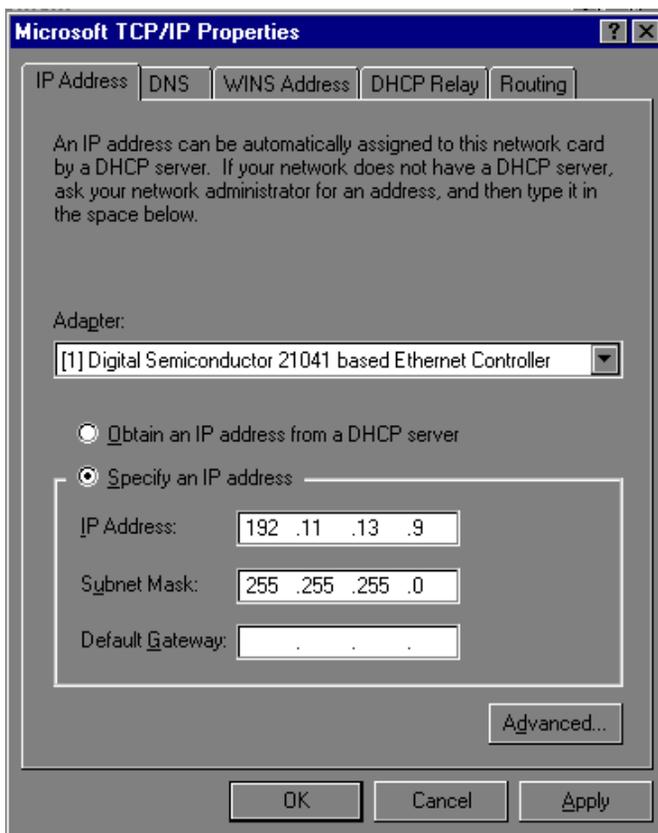
## **Assign a Server Name and Domain Name**

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 TN802 circuit pack is shipped with a generic server name and a generic domain name. You should assign replacement names that are meaningful within your network.

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Identification tab, then select Change.
5. Type the new name in the `Computer Name` box.
6. Type the name you chose for the IP-trunk domain in the `Domain` box.
7. Click OK.
8. Click OK again.
9. Click Close.
10. When prompted to reboot the computer, choose one of the following options:
  - If you have not assigned IP addresses, click No.
  - If you have assigned IP addresses, click Yes to restart Windows NT so that the new names take effect.

## Assign an IP-Address

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Protocols tab in the Network window.
5. Select TCP/IP Protocol from the list.
6. Click the Properties option in the Network window.

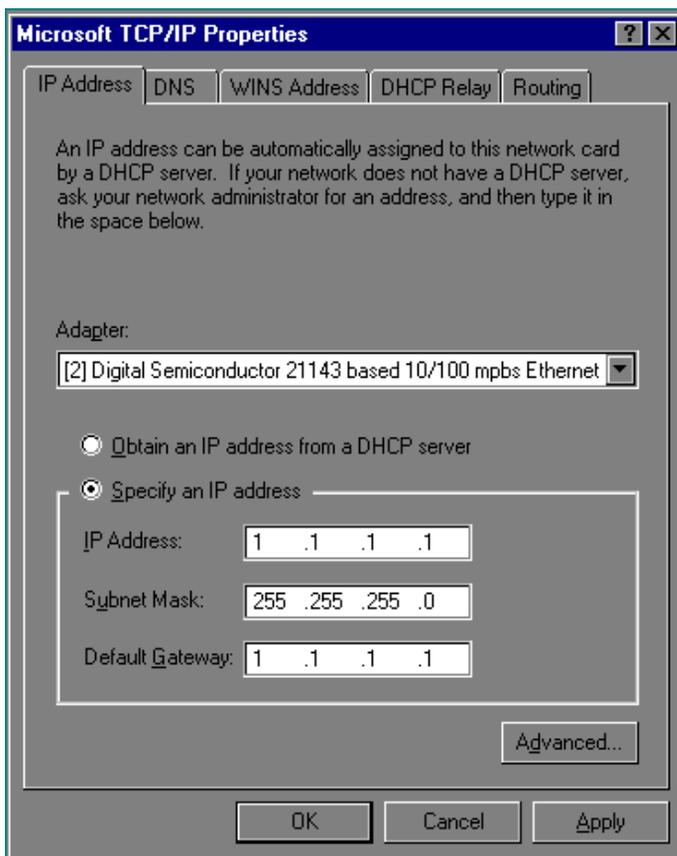


7. Click the Specify an IP address option.
8. Verify that there are 2 DEC Ethernet Adapters listed in the Adapter drop down menu.

**CAUTION:**

*Do not change any settings on the first adapter.*

- Click on the second DEC Ethernet Adapter option in the Adapter drop down menu.



- Type a valid IP address for the IP Trunk server in the IP Address: field.
- Type the appropriate subnet mask in the Subnet Mask: field.
- If you use gateways, type the IP address of the default gateway for the IP Trunk server in the Default Gateway: field.
- Click OK.
- If Windows NT responds with the "At least one of the adapter cards has an empty primary WINS address. Do you want to continue?" message, click Yes.
- Click the Bindings tab to make the changes.  
 NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (marked a red circle with a line through it), review the network-configuration steps above for omissions or errors.
- Click Close.
- Click Start in the lower left corner of the monitor, then click Restart.

## Check Network Services

When the server restarts, make sure that the required network services have started correctly. If the network services do not start correctly, an error box appears. Also, check the NT Event Log.

1. Select the My Computer option from the Windows NT desktop.
2. Select the Control Panel option in the My Computer window.
3. Select the Network option in the Control Panel window.
4. Select the Services option in the Network window.
5. Make sure that the following services are listed:
  - Computer Browser
  - Microsoft Internet Information Server 2.0
  - NetBIOS Interface
  - RPC Configuration
  - Server
  - Workstation
6. Click the Protocols tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
7. Click OK.

## Test the External Connection to the LAN

You test external IP connections by pinging the IP trunk server and pinging a known computer connected to your network.

1. Click Start in the Windows task bar, followed by the Programs option, then the Command Prompt option.
2. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is your IP address).
  - If everything is configured correctly, the system replies with the following:  
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
  - If you receive no reply, 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 replies with the following:  
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
  - If you receive no reply, verify the IP-address information and check the connectivity including the cabling.
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 replies with the following:  
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms TTL=###
  - If you receive no reply, 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 Internal Connection to the LAN

You test internal IP connections by pinging the IP trunk server and pinging the processor on the TN802 circuit pack.

1. Click Start in the Windows task bar, followed by the Programs option, then the MS DOS Command Prompt option.
2. At the command prompt, type **ping 192.11.13.9** (which is the IP address of the internal IP trunk server).
  - If everything is configured correctly, the system replies with the following:  
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
  - If you receive no reply, 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 replies with the following:  
Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
  - If you receive no reply, verify the IP-address information and check the connectivity including the cabling on the IP Trunk circuit pack.
4. Type **exit** and press Enter.

## **Test the Modem**

---

1. Check for dial tone.
2. Contact Lucent Technologies Customer Support, and ask a representative to dial into your DEFINITY IP Trunk server.

## **Set up Network-Trust Relationships**

---

After all DEFINITY IP Trunk servers are in their own domain, establish trust relationships between domains to allow for remote administration. To establish trust relationships, refer to your Windows NT Server 4.0 documentation.

## **Configure IP Trunk Service**

---

1. Click Start.
2. Click Settings, then Control Panel.
3. Double click on Services.
4. Highlight IP Trunk Service.
5. Click the Startup... button.
6. Click the Automatic button in the `Startup Type` field.
7. Click OK.
8. Click the Start button and the LCD on the TN802 circuit pack reads "IP TRK\*."

## **Administer the IP Trunk**

---

The TN802 circuit pack is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (preinstalled on the TN802 hard disk) and DEFINITY ECS switch administration software to prepare the IP Trunk for use. Refer to the *DEFINITY ECS Administrator's Guide* for more information.

## 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 form.

<b>EXAMPLE:</b>	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 7 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 multi-carrier 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` 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`.

6 Adding or Removing Cabinet Hardware  
*Add a Control Carrier (Add Duplication)*

6-59

4. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check Page 2 of this form 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, 555-230-223*, 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 6-117](#).



### **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.

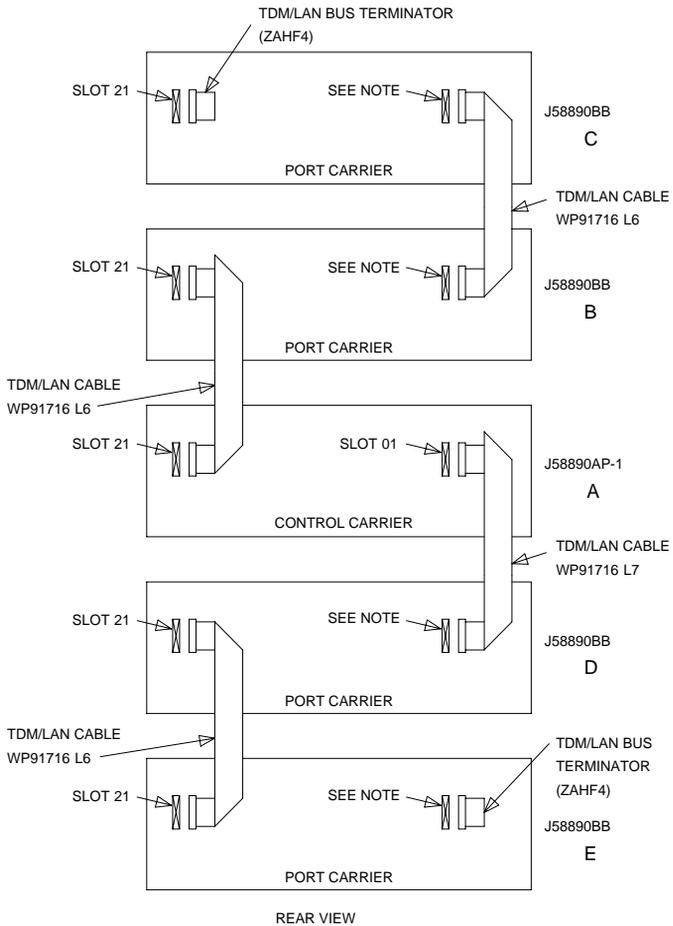
2. Disconnect 1 end of the TDM/LAN cable (between the "B" and "C" carriers) from the "B" carrier (See [Figure 6-23](#)).
3. Disconnect 1 end of the TDM/LAN cable (between the "B" and "A" carriers) from the "B" carrier (See [Figure 6-23](#)).
4. Disconnect 1 end of the 8 ground straps (between the "B" and "C" carriers) from the "B" carrier (See [Figure 6-24](#)). 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 6-24](#)). 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:**

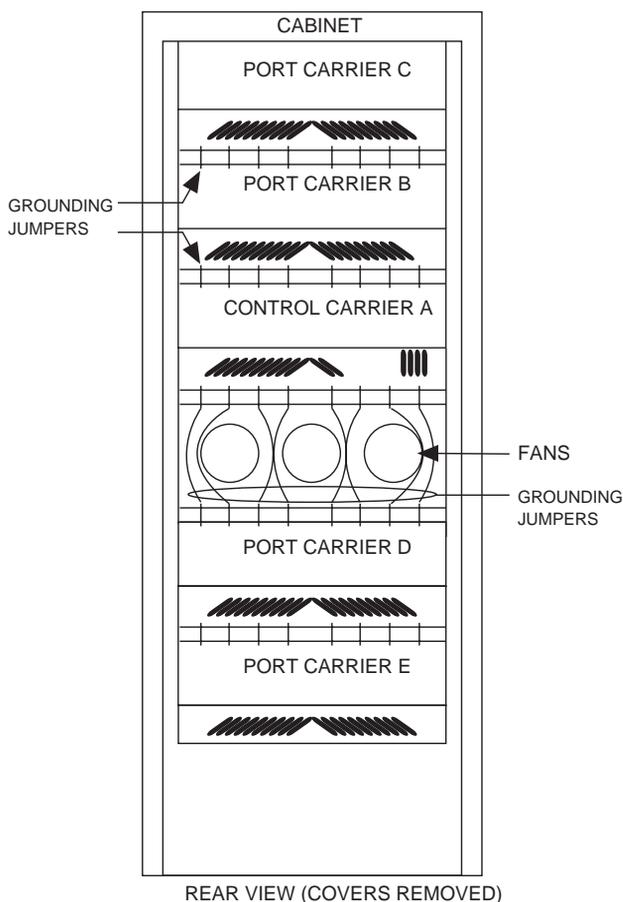
*Cables and wiring harnesses can be damaged if they catch on the framework and if too much pressure is applied in removing the carrier.*

10. Remove the carrier by sliding it out the front of the cabinet.



NOTE:  
ON PORT CARRIER J58890BB-1, CONNECT THE TDM/LAN CABLE OR TDM/LAN TERMINATOR TO SLOT 02. ON PORT CARRIERS J58890BB-2 AND -3, CONNECT THE TDM/LAN CABLES TO SLOT 01.

Figure 6-23. TDM/LAN Connections for Standard-Reliability PPN



**Figure 6-24. Locations of Grounding Jumpers**

### Prepare New Control Carrier B

1. Visually inspect the new carrier for any damage. Verify that the backplane pins are not bent.
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.*

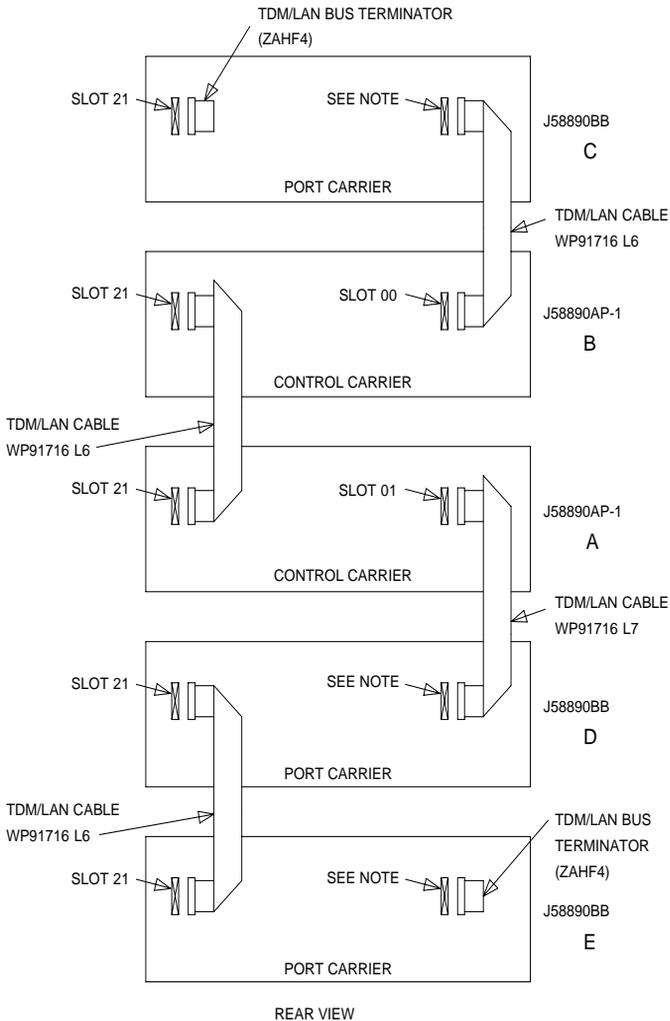
3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier. These are frame ground screws.
4. Connect the “P1” (small) connector to the “B” carrier. To get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. 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 6-24](#)). 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 6-24](#)). These straps were left connected to the “A” carrier when the old “B” carrier was removed.
7. For an AC-powered control carrier, install the 2 new carrier-ground straps. One strap connects ground point “1” to the B-carrier frame (on the right side), and the other connects ground point “8” to the B-carrier frame (on the left side).



### NOTE:

DC-powered carriers do not use these carrier-ground straps.

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 6-25](#) and [Table 6-4](#)). The other end remained connected to the “C” carrier when the old carrier was removed.
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 6-25](#) and [Table 6-4](#)). The other end remained connected to the “A” carrier when the old carrier was removed.



NOTE:  
 ON PORT CARRIER J58890BB-1, CONNECT THE TDM/LAN CABLE OR TDM/LAN TERMINATOR TO SLOTT 02. ON PORT CARRIERS J58890BB-2 AND -3, CONNECT THE TDM/LAN CABLES TO SLOTT 01.

**Figure 6-25. TDM/LAN Connections for High-Reliability PPN**

**Table 6-4. TDM/LAN 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	Control	21	02

10. 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 6-26](#). 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.*

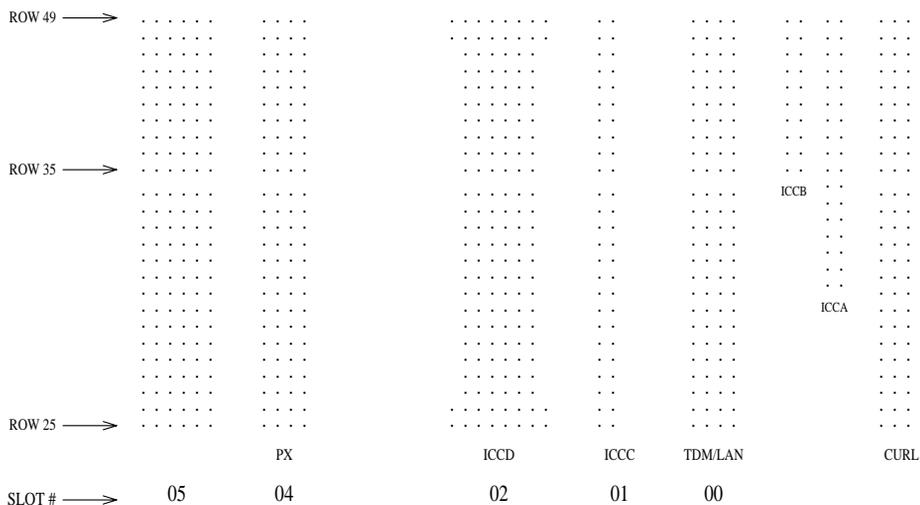
**NOTE:**

With a connector in each hand, flex the wires within the cable's sheath to form a usable C-shaped cable.

11. 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 6-26](#).
12. 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 6-26](#).

**NOTE:**

The duplication cable's connectors are keyed to ensure proper positioning on the pin-field block.



**Figure 6-26. ICC Connections for R7r Control Carrier**

13. Install the front trim plate on the “B” carrier.
14. 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.
15. 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 R7r 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 R7r system, install a new TN771C 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.

- 6 Adding or Removing Cabinet Hardware  
*Add a Control Carrier (Add Duplication)*

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## **Relocate Port Carrier B**

---

Refer to [Add a Switch Node Carrier \(High or Critical Reliability\)](#) to relocate the removed port carrier.

## **Connect Management Terminal**

---

1. Behind control carrier "A," disconnect the management terminal 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. If new tapes were made off-site at the FSAC or STS, insert them in the tape drives. Otherwise, make software modifications and then go to Step 8.
5. Type the **reset system 4 tape** and press `Enter` command to copy the translations from tape to memory.
6. Remove the translated tapes and move the write-protect slide to record.
7. Re-insert the write-enabled tapes into the drives.
8. Clear any alarms.
9. Type **save translation [both] tape** and press `Enter` if translation changes were made in Step 8.
10. Type **restore disk [both] full** and press `Enter` to copy the translations from tape to disk.
11. 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.

- 6 Adding or Removing Cabinet Hardware  
Add a Control Carrier (Add Duplication)

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## Enable SPE Duplication

1. If not also duplicating switch node carriers, refer to Duplication-Related System Parameters in *DEFINITY Enterprise Communications Server Release 7 Administrator's Guide*, to enable Switch Processing Element (SPE) duplication.

## Enable PNC Duplication

1. For a critical-reliability R7r system, type **change system-parameters customer-options** and press Enter. Use this form 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 7 Maintenance for R7r*.
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 R7r with Center Stage Switch (CSS), a switch node carrier is added either to an empty "E" carrier position of an existing multi-carrier 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` 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 Page 2 of this form 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 6-117](#).



### **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.

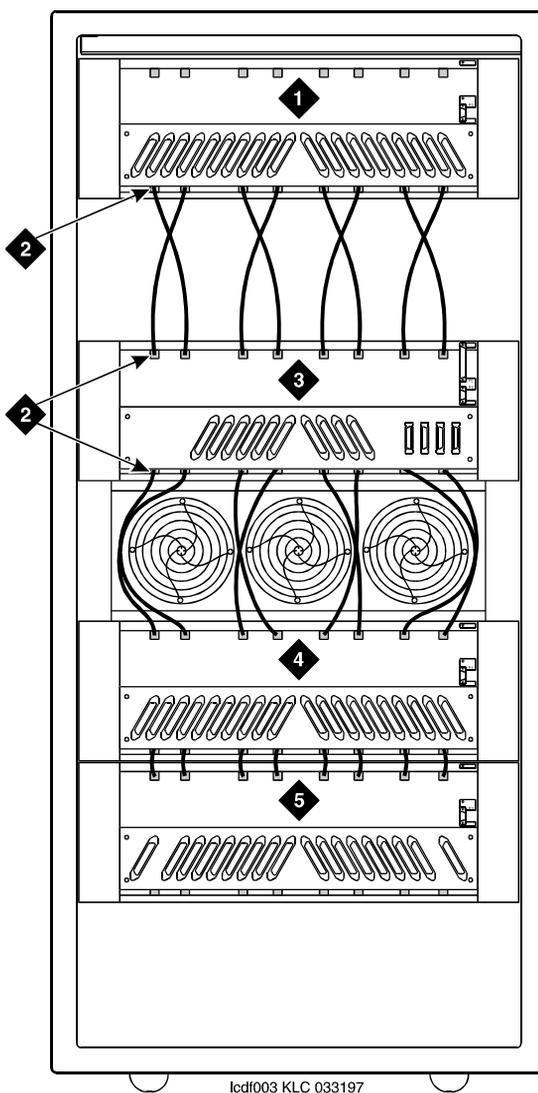
1. If a switch node carrier is being installed in the "D" position of an EPN, remove the TDM/LAN cable from between the "D" and "A" carriers.  
For other EPNs or the PPN, disconnect 1 end of the TDM/LAN cable (between the "D" and "A" carriers) from the "D" carrier.
2. Remove the ZAHF4 TDM/LAN bus terminator 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 6-27](#)). These straps will be reconnected to the new "D" carrier.
4. Disconnect 1 end of the 8 ground straps (between the "D" and "A" carriers) from the "D" carrier (See [Figure 6-27](#)). These straps will be reconnected to the new "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) |                                       |

**Figure 6-27. Locations of Grounding Jumpers**



## 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.*

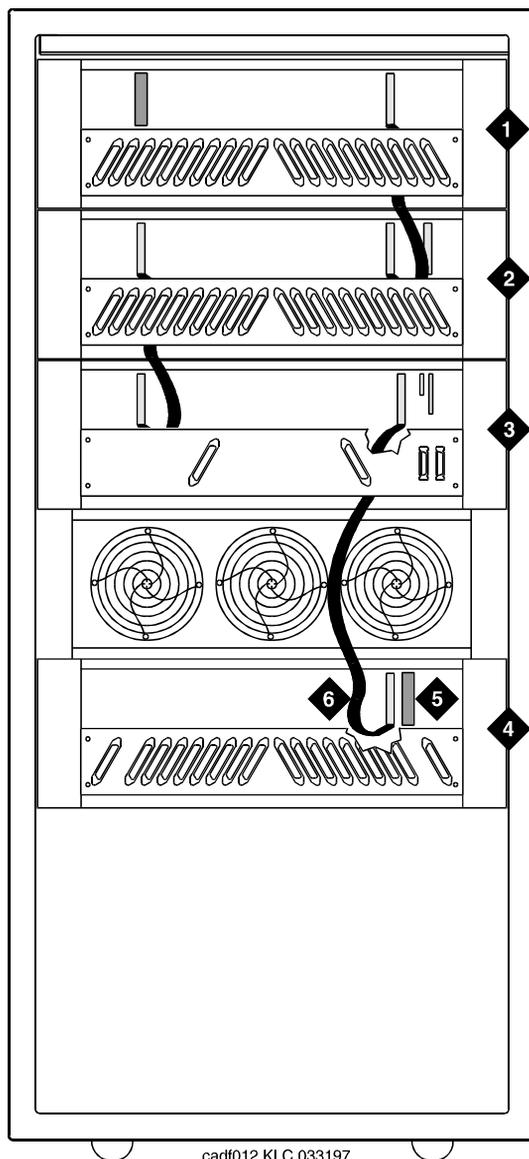
3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier.
4. Connect the "P1" (small) connector to the "D" carrier. If necessary, to get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from the "A" carrier to the new "D" carrier. See [Figure 6-27](#). These straps were left connected to the "A" carrier 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 6-27](#). These straps were left connected to the "E" carrier when the old "D" carrier was removed.
7. For an AC-powered system, install the 2 new carrier-ground straps. One strap connects ground point "1" to the "D" carrier frame (on the right side), and the other connects ground point "8" to the "D" carrier frame (on the left side).



### NOTE:

DC-powered carriers do not use these carrier-ground straps.

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 6-29](#) and [Table 6-5](#).



**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 6-29. TDM/LAN Connections for Standard Reliability R7r EPN**

**6** Adding or Removing Cabinet Hardware  
*Add a Switch Node Carrier (Standard Reliability)*

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**Table 6-5. TDM/LAN Connections**

<b>“J” Number</b>	<b>Carrier Type</b>	<b>LHS Slot</b>	<b>RHS Slot</b>
J58890B-1	Port	21	02
J58890B-2	Port	21	01
J58890B-3	Port	21	01
J58890AP	Control	21	02

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 6-29](#).

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.

**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 6-30](#)):
  - 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 6-30](#)):
  - 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.

6 Adding or Removing Cabinet Hardware  
 Add a Switch Node Carrier (Standard Reliability)

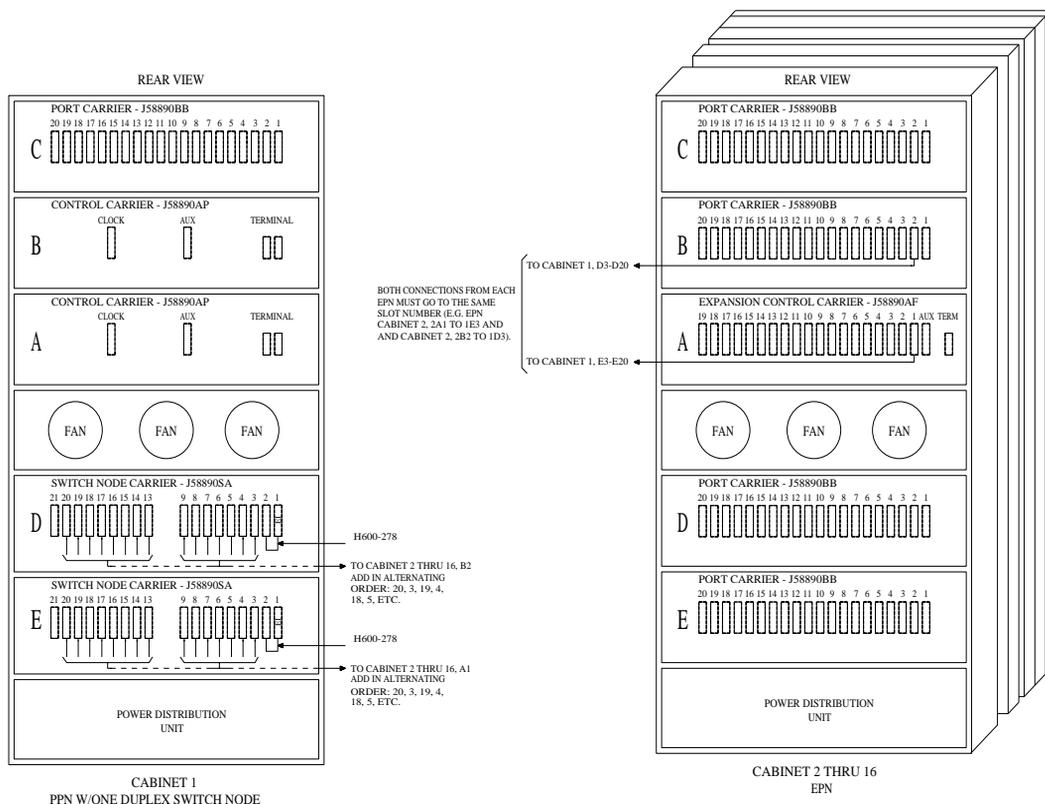


Figure 6-30. Critical-Reliability Fiber-Optic Connections through Center Stage Switch

**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. If a new tape was made off-site at the FSAC or STS, insert it in the tape drive. Otherwise, make software modifications and then go to step 7.
4. Type **reset system 4 tape** and press Enter to copy the translations from tape to memory.
5. Remove the translated tapes and move the write-protect switch to record.
6. Re-insert the write-enabled tapes into the drives.
7. Clear any alarms.
8. Type **save translation tape** and press Enter if translation changes were made in Step 7 above.
9. Type **restore disk full** and press Enter to copy the translations from tape to disk.
10. 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 7 Maintenance for R7r*.
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.

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 a Switch Node Carrier (High or Critical Reliability)

---

To upgrade to a high or critical reliability R7r, a second switch node carrier is added either to an empty "E" carrier position of an existing multi-carrier port network or to the "D" carrier position (as the duplicate switch node carrier) of an existing multi-carrier 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 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 Page 2 of this form 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.

## 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 6-117](#).



### **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 multi-carrier 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.

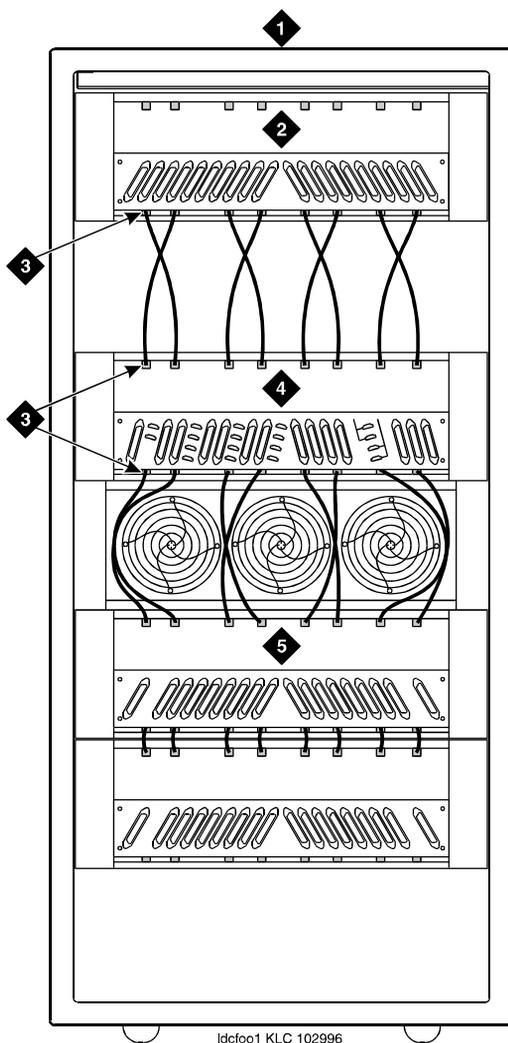
1. If a switch node carrier is being installed in the “D” position of an EPN, remove the TDM/LAN cable from between the “D” and “A” carriers.  
For other EPNs or the PPN, disconnect 1 end of the TDM/LAN cable (between the “D” and “A” carriers) from the “D” carrier.
2. Remove the ZAHF4 TDM/LAN bus terminator 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 6-27](#)). These straps will be reconnected to the new “D” carrier.
4. Disconnect 1 end of the 8 ground straps (between the “D” and “A” carriers) from the “D” carrier (See [Figure 6-27](#)). These straps will be reconnected to the new “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)
- 2. Ground Jumpers
- 3. Control Carrier ("A" Position)
- 4. Switch Node Carrier ("D" Position)
- 5. Switch Node Carrier ("E" Position)

**Figure 6-31. Locations of Grounding Jumpers**



## 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 the “E” carrier to the new “D” carrier. See [Figure 6-32](#). These straps were left connected to the “E” carrier when the old “D” carrier was removed.
6. Connect the 8 ground straps from the “A” carrier to the new “D” carrier. See [Figure 6-32](#). These straps were left connected to the “A” carrier when the old “D” carrier was removed.
7. For an AC-powered switch node carrier, install the 2 new carrier-ground straps. One strap connects ground point “1” to the D-carrier frame (on the right side), and the other connects ground point “8” to the D-carrier frame (on the left side).



### NOTE:

DC-powered carriers do not use these carrier-ground straps.

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 6-33](#) and [Table 6-6](#).
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 6-33](#) and [Table 6-6](#). The other end remained connected to the “A” carrier when the old carrier was removed.

6 Adding or Removing Cabinet Hardware  
 Add a Switch Node Carrier (High or Critical Reliability)

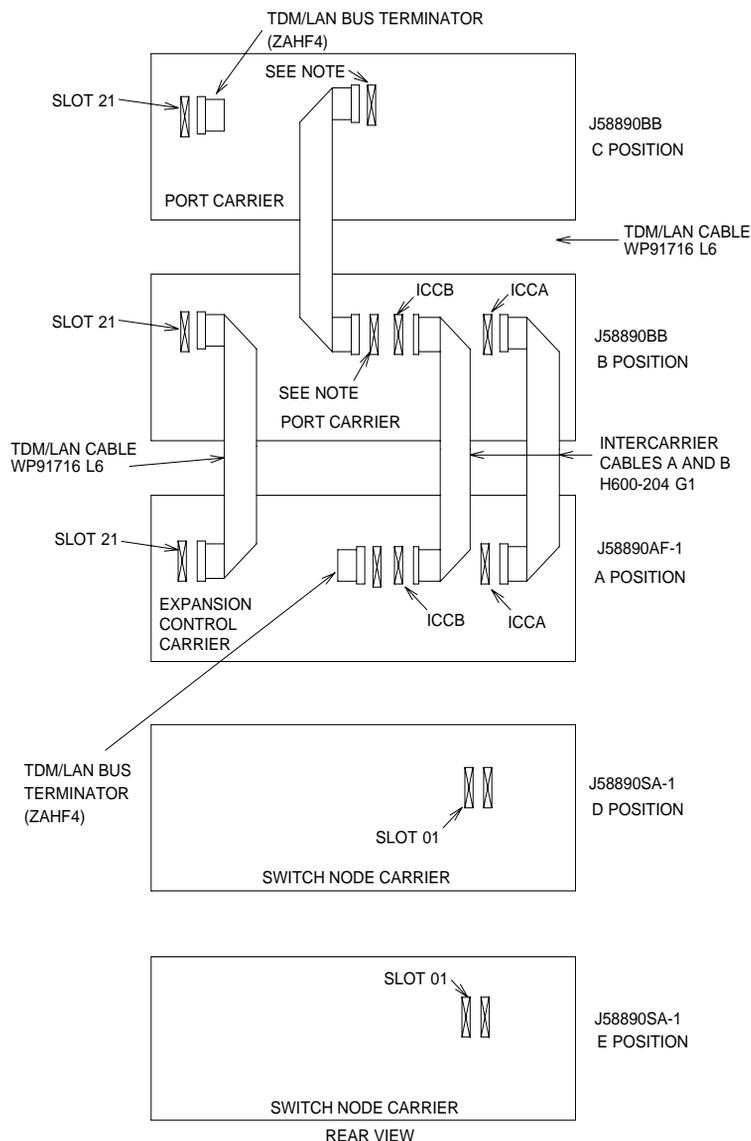
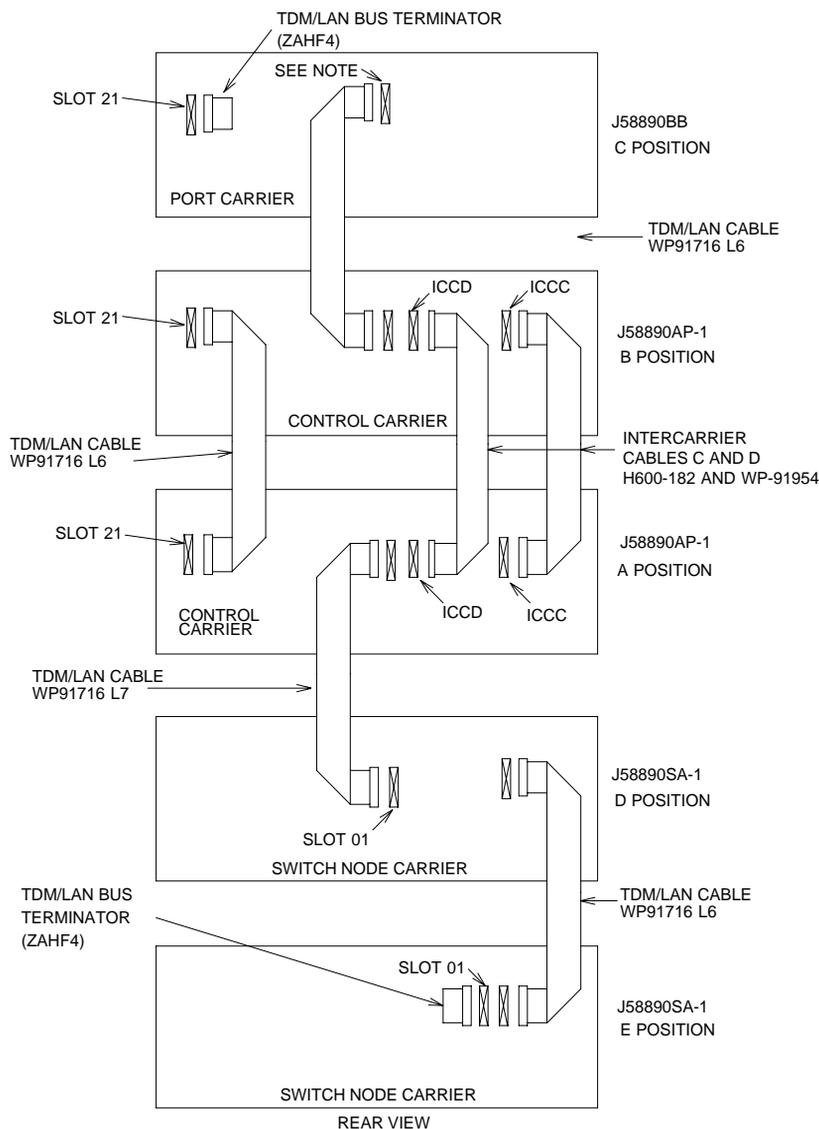


Figure 6-33. TDM/LAN Connections for Critical Reliability R7r EPN

6 Adding or Removing Cabinet Hardware  
 Add a Switch Node Carrier (High or Critical Reliability)



NOTE:  
 ON PORT CARRIER J68890BB-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 1.

Figure 6-34. TDM/LAN Connections for Critical Reliability R7r PPN

**Table 6-6. TDM/LAN Connections**

<b>"J" Number</b>	<b>Carrier Type</b>	<b>LHS Slot</b>	<b>RHS Slot</b>
J58890B-1	Port	21	02
J58890B-2	Port	21	01
J58890B-3	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 6-34](#).

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**

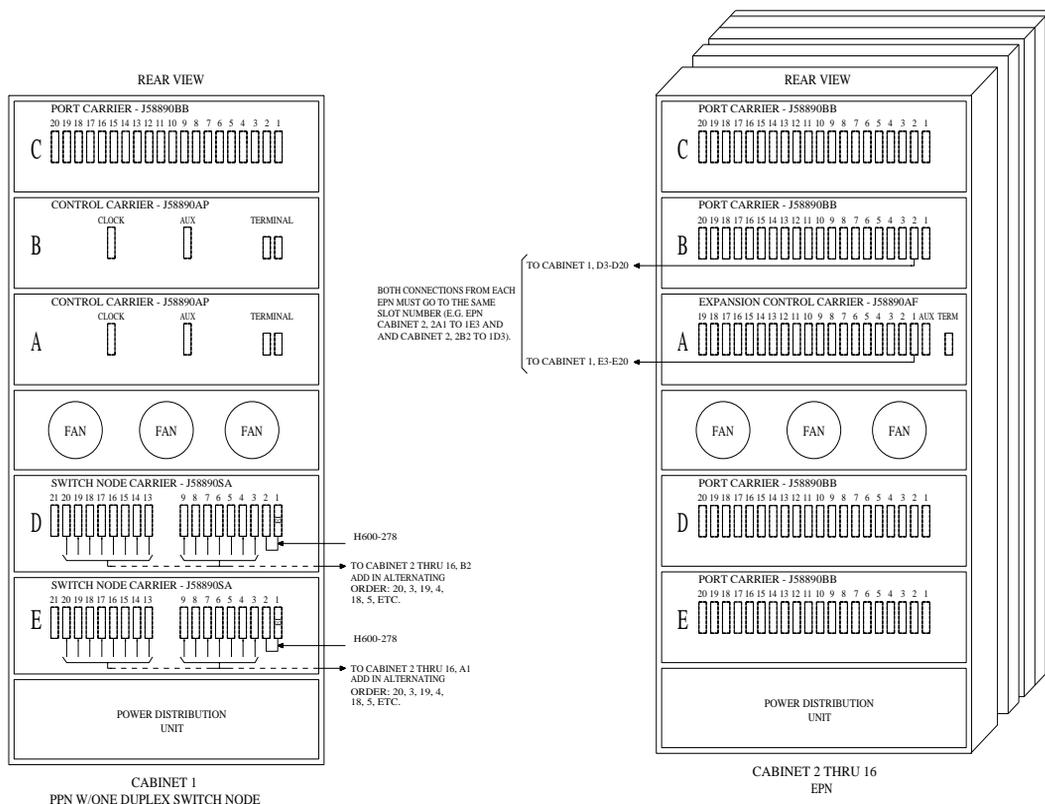
1. Install the new circuit packs into carrier "D." Use the decal and the upgrade configuration document (provided with the equipment) as a guide.
2. Install circuit pack blanks in slots not equipped with circuit packs.

## Interconnect Port Networks

---

1. Behind the PPN cabinet (See [Figure 6-30](#)):
  - 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 6-30](#)):
  - 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 6-30](#)):
  - 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.

6 Adding or Removing Cabinet Hardware  
 Add a Switch Node Carrier (High or Critical Reliability)



**Figure 6-35. 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 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. If new tapes were made off-site at the FSAC or STS, insert them in the tape drives. Otherwise, make software modifications and then go to Step 8.
5. Type **reset system 4 tape** and press Enter to copy the translations from tape to memory.
6. Remove the translated tapes and move the write-protect switch to record.
7. Re-insert the write-enabled tapes into the drives.
8. Clear any alarms.
9. Type **save translation [both] tape** and press Enter if translation changes were made in Step 8 above.
10. Type **restore disk [both] full** and press Enter to copy the translations from tape to disk.
11. 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 Page 2 of the form, 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 7 Maintenance for R7r*.
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.



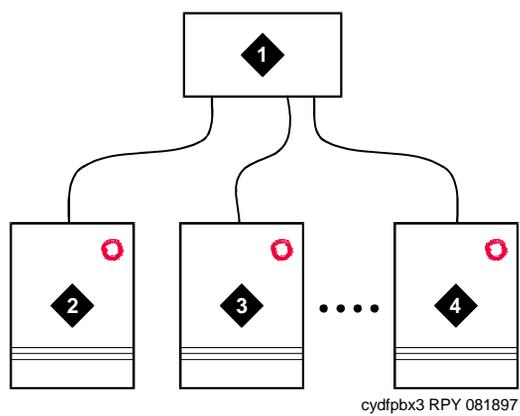
### **WARNING:**

*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 6-36](#) shows 1 switch node used as a center stage switch for 11 EPNs.

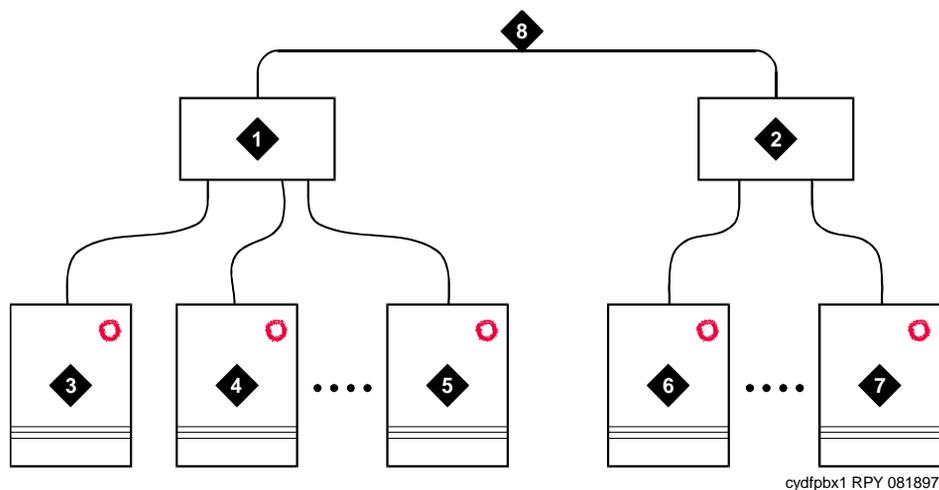


### Figure Notes

- |                  |                   |
|------------------|-------------------|
| 1. Switch Node 1 | 3. EPN Cabinet 1  |
| 2. PPN Cabinet   | 4. EPN Cabinet 11 |

**Figure 6-36. Single Switch Node CSS**

Figure 6-37 shows 2 SNs used as a CSS for up to 23 EPNs. Use this configuration when high inter-SN traffic is expected.



**Figure Notes**

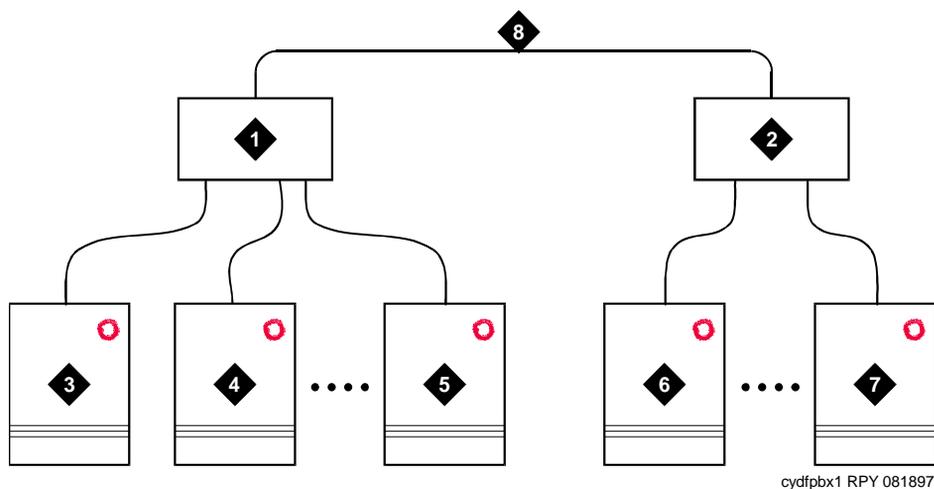
- |                       |                                   |
|-----------------------|-----------------------------------|
| 1. Switch Node (SN) 1 | 5. EPN Cabinet 11                 |
| 2. Switch Node 2      | 6. EPN Cabinet 12                 |
| 3. PPN Cabinet        | 7. EPN Cabinet 23                 |
| 4. EPN Cabinet 1      | 8. Inter-SN Connection (4 fibers) |

**Figure 6-37. 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 SN is simply the sum of the traffic that links to locales located in the other SN.

Figure 6-38 shows 2 SNs used as a CSS for up to 29 EPNs. Use this configuration when low inter-SN traffic is expected.



### Figure Notes

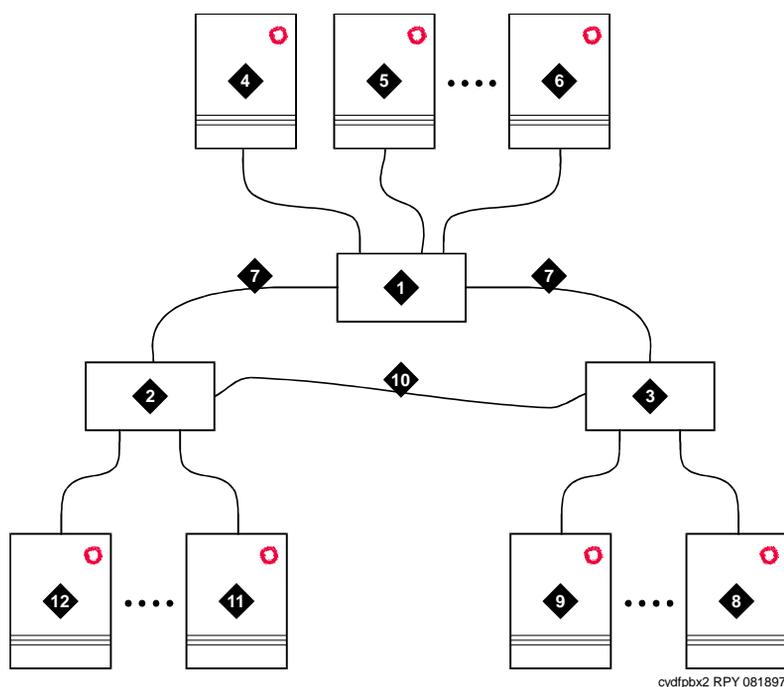
- |                       |                                  |
|-----------------------|----------------------------------|
| 1. Switch Node (SN) 1 | 5. EPN Cabinet 14                |
| 2. Switch Node 2      | 6. EPN Cabinet 15                |
| 3. PPN Cabinet        | 7. EPN Cabinet 29                |
| 4. EPN Cabinet 1      | 8. Inter-SN Connection (1 fiber) |

Figure 6-38. 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 6-39](#) shows 3 SNs used as a CSS for up to 31 EPNs. Use this configuration when high inter-SN traffic is expected.



### Figure Notes

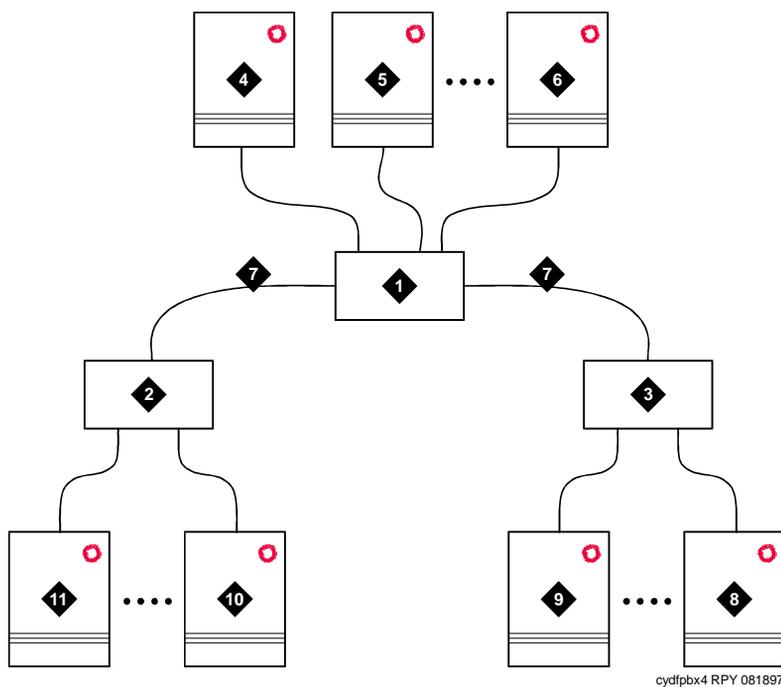
- |                       |                                    |
|-----------------------|------------------------------------|
| 1. Switch Node (SN) 1 | 7. Inter-SN Connections (3 fibers) |
| 2. Switch Node 2      | 8. EPN Cabinet 10                  |
| 3. Switch Node 3      | 9. EPN Cabinet 20                  |
| 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 6-39. 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 6-40](#) shows 3 SNs used as a CSS for up to 43 EPNs. Use this configuration when low inter-SN traffic is expected.



cydfpbx4 RPY 081897

### 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 6-40. 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 ["Install Memory Circuit Pack" on page 1-10](#) 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, "G3rV2, V3, or V4 to Release 7r with Memory Addition"](#) 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 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 Page 2 of this form 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 6-117](#).



### **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 6-41](#).
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 6-42](#) and [Figure 6-43](#)).
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 6-44](#), [Figure 6-45](#), [Figure 6-46](#), or [Figure 6-47](#) and [Table 6-7](#).

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 7 Maintenance for R7r*, 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 7 Administrator's Guide*.

## Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 7 Maintenance for R7r*.
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.

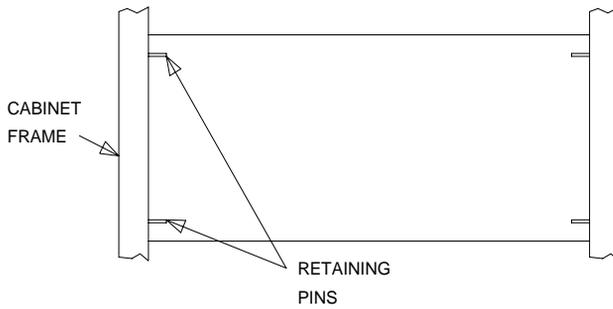
If Page 2 of this form shows that recorded announcements were saved, these announcements can be restored using the restore announcements command. Type **restore announcements [disk | tape]** and press Enter.

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 system tape(s).
5. Update backup tape(s), if required.

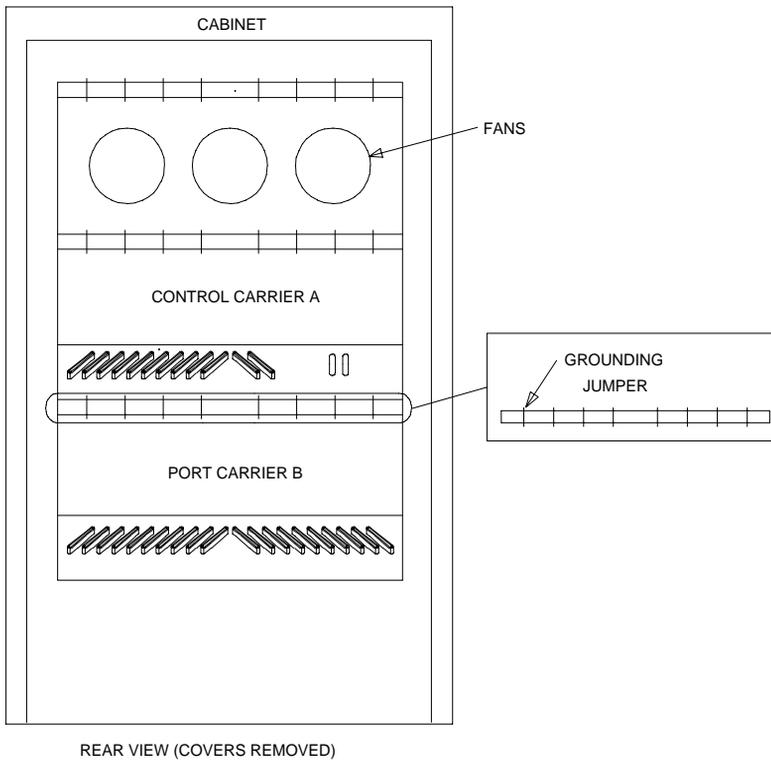
## Update Port-Assignment Records

---

1. Update the customer's port-assignment records.



**Figure 6-41. Blank Carrier Panel (Rear View)**



**Figure 6-42. Locations of Grounding Jumpers (Small Cabinet)**

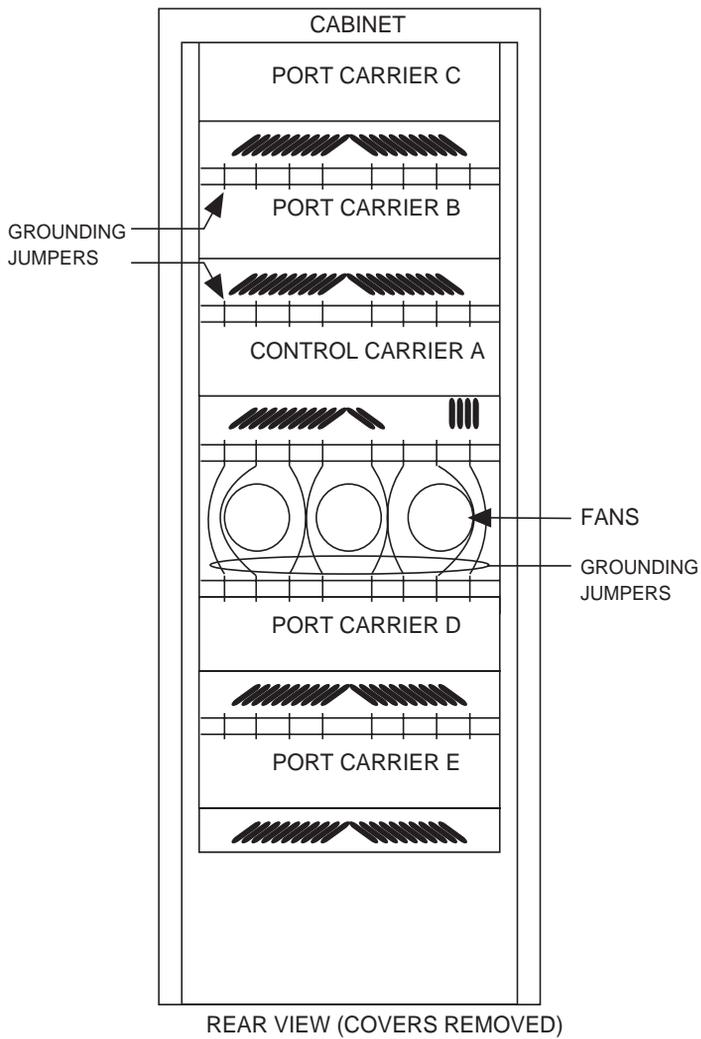
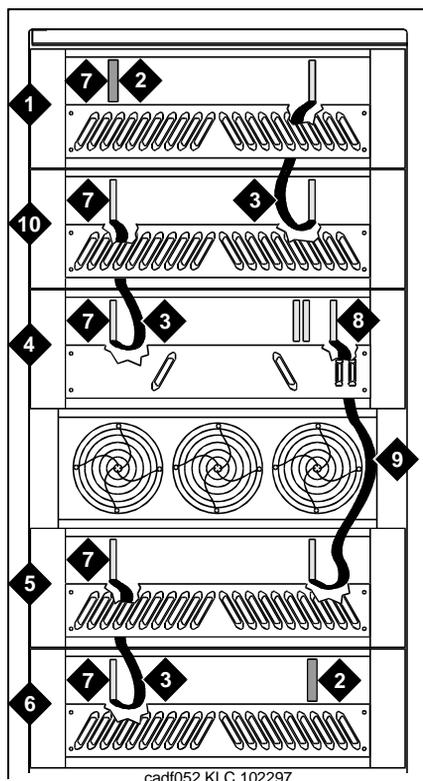


Figure 6-43. Locations of Grounding Jumpers



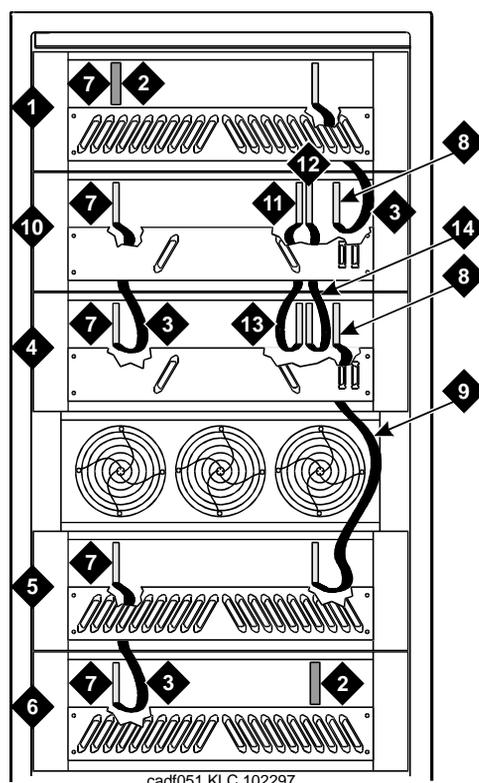
**Figure Notes**

- |                                   |                                 |
|-----------------------------------|---------------------------------|
| 1. Port Carrier (“C” Position)    | 7. Slot 21                      |
| 2. ZAHF4 TDM/LAN Terminator       | 8. Slot 00                      |
| 3. TDM/LAN Cable (WP91716L6)      | 9. TDM/LAN Cable (WP91716L7)    |
| 4. Process Carrier (“A” Position) | 10. Port Carrier (“B” Position) |
| 5. Port Carrier (“D” Position)    | 11. Slot TDM/LAN2 (20)          |
| 6. Port Carrier (“E” Position)    |                                 |

**Figure 6-44. TDM/LAN Bus Connections for Standard Reliability R7r 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.



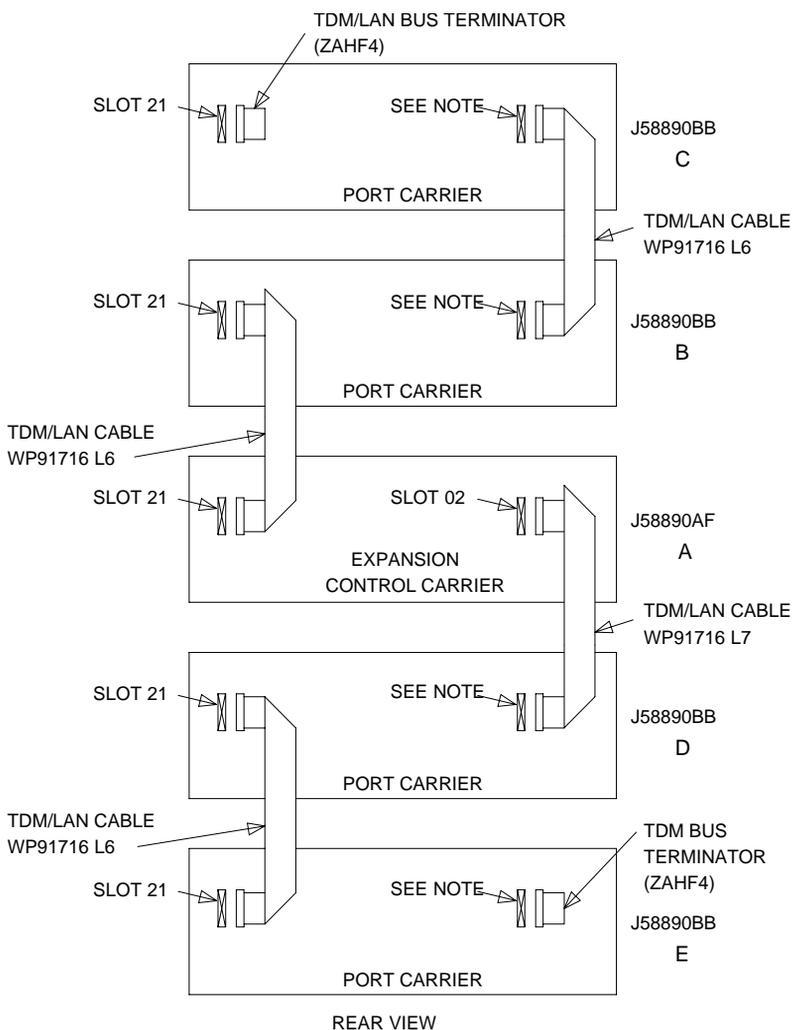
**Figure Notes**

- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| 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. ICCD Connector                  |
| 6. Port Carrier ("E" Position)    | 13. Intercarrier Cable D (WP-91954) |
| 7. Slot 21                        | 14. Intercarrier Cable C (H600-182) |

**Figure 6-45. TDM/LAN Bus Connections for Critical-Reliability PPN**

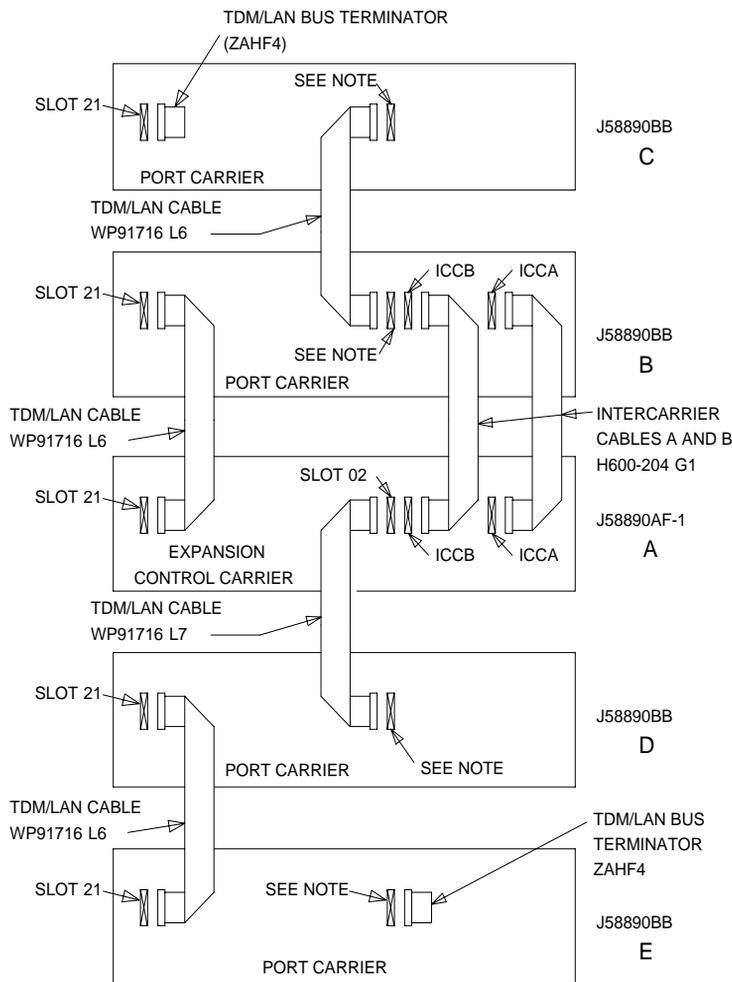
**NOTE:**

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 6-46. 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 6-47. TDM/LAN Bus Connections for Critical-Reliability EPN**

**Table 6-7. TDM/LAN Cable Connections**

<b>"J" Number</b>	<b>Carrier Type</b>	<b>LHS Slot</b>	<b>RHS Slot</b>
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 DS-1 circuit pack. Use this device with the 700A DS-1 loopback jack when testing the DS-1 span.

### Checking for required components

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The integrated channel service unit (ICSU) package contains:

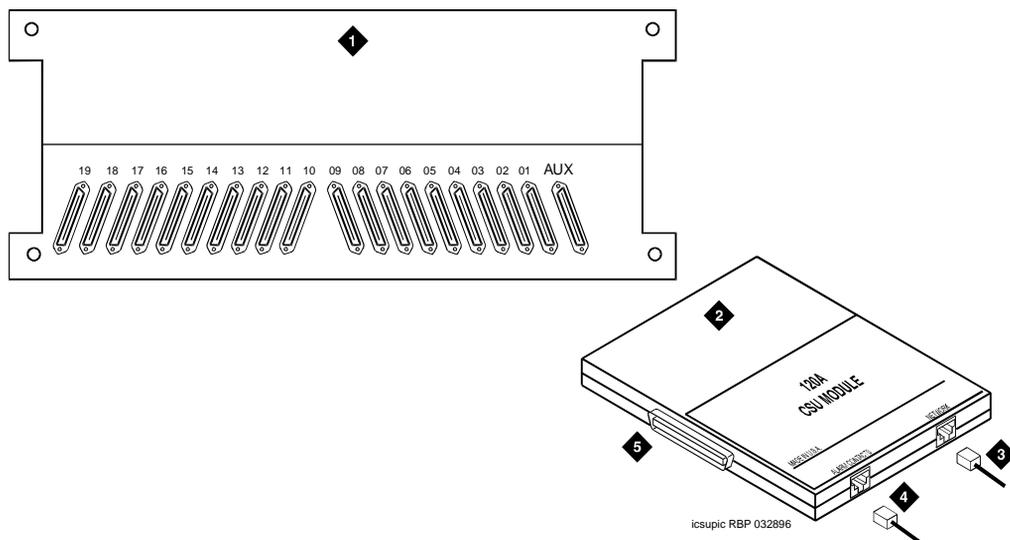
- 120A CSU module
- Cable H700-383  
4-pair modular cord  
Group 2, 50-Foot (15.2 m) cable (standard)
- Cord DW8A-DE  
4-pair modular cord to alarm contacts
- DS-1 circuit pack

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 6-48](#).



1. Rear of carrier containing DS-1 circuit pack
2. 120A CSU
3. 4-pair cord to network interface (H700-383)
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. To 25-pair connector on rear of carrier containing DS-1 circuit pack

**Figure 6-48. 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 DS-1 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 DS-1 circuit pack from its slot.
2. Install a 4C retainer in the 50-pin plug associated with the DS-1 circuit pack slot.
3. Plug the 120A's 25-pair connector directly into the plug associated with the DS-1 circuit pack slot.
4. Secure the 4C retainer around the 120A.

5. Attach the supplied H700-383 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 DS-1 line.
  - Avoid mixing wires of different gauges in a DS-1 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 DS-1 circuit-pack form of the system administration console, set the line compensation field to 0-133 feet (40.6 m).
  9. Reset the 120A by reseating the DS-1 circuit pack.  
  
When you reinsert the DS-1 circuit pack after installing a 120A CSU the 120A resets. The DS-1 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*, 555-230-193.

[Table 6-8](#) provides the H700-383 cable pinouts. [Table 6-9](#) provides the cable lengths for each cable group number.

**Table 6-8. H700-383 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

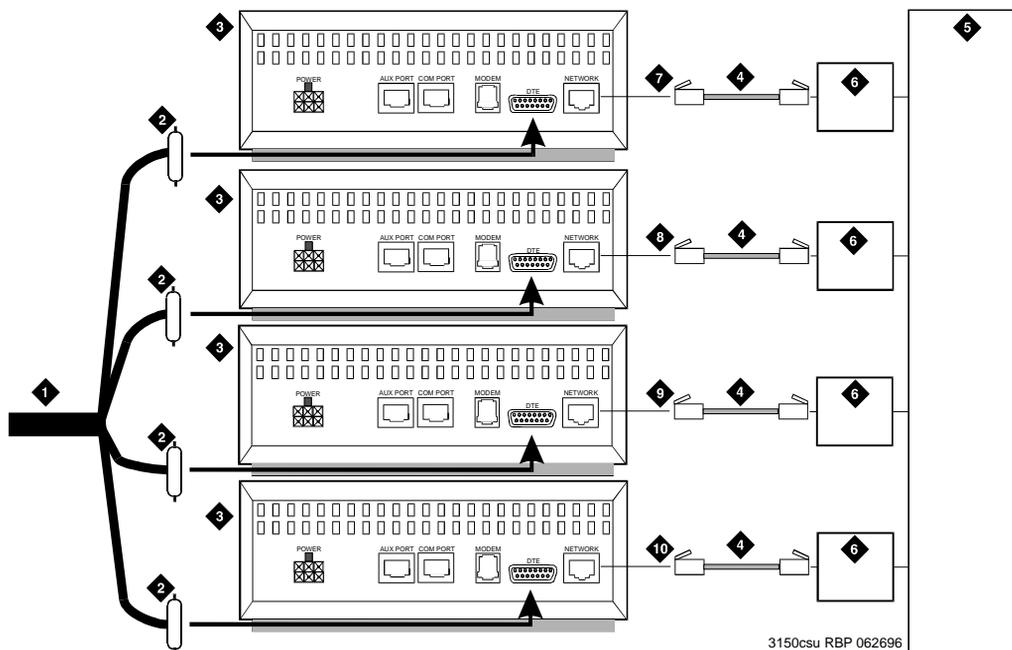
**Table 6-9. H700-383 cable Lengths by Group Number**

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

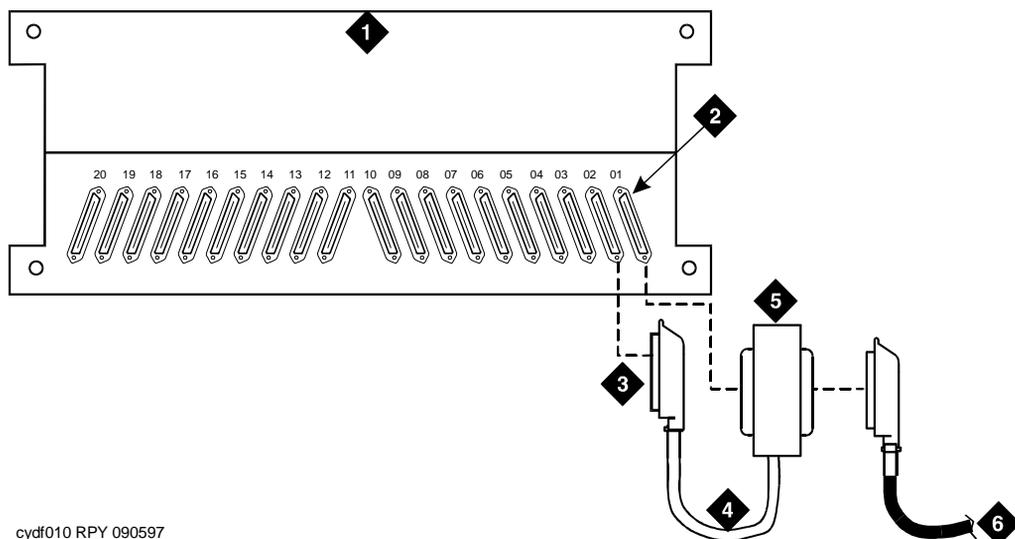
1. Install the CSU as shown in [Figure 6-49](#). For some installations (such as a DS-1 converter), use a Y-cable to connect the DEFINITY System to the quad cable. [Table 6-10](#) shows the Y-cable lengths. Be sure to label all cables.

[Figure 6-49](#) shows a typical connection from the H700-348 Quad cable to the CSU, through the H700-307 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 H700-348 quad cable may require an adapter cable.



- |                                                     |                             |             |
|-----------------------------------------------------|-----------------------------|-------------|
| 1. H700-348 quad cable                              | 5. Network interface        | 9. Cable C  |
| 2. 15-pin male "D" connectors (to DTE jacks on CSU) | 6. Smart jack (if provided) | 10. Cable D |
| 3. Channel service unit (CSU)                       | 7. Cable A                  |             |
| 4. H700-307 cable (RJ-48C to RJ-48C)                | 8. Cable B                  |             |

**Figure 6-49. 3150/3170 Channel Service Unit Connections**



cydf010 RPY 090597

1. Port carrier
2. DS-1 converter connector
3. 50-pair female connector to DEFINITY System
4. 14-Inch (35.57 cm) "Y" cable
5. 50-Pin Male/50-pin female double-headed connector cable
6. Quad cable (with 50-pin male connector) connects to the channel service unit.

**Figure 6-50. DS-1 Converter Connections Using Double-Headed cable**

**Table 6-10. "Y" cable Lengths (DS-1 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

**6** Adding or Removing Cabinet Hardware  
*Installing a 3150/3170 Channel Service Unit*

6-124

## 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 7 Installation and Test for Multi-Carrier 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 7 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*, 555-230-601, 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 7r, 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

Page 1 of 1

FIBER LINK ADMINISTRATION

Fiber Link #: 1

Is one endpoint remotored via a DS1 Converter Complex? \_\_\_\_

ENDPOINT-1 (A-PNC)	ENDPOINT-2 (A-PNC)
Board Location: ____	Board Location: ____
Board Type: xxx	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 remotored 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 remoted via DS1 Converter Complex? yes

      ENDPOINT-1                                     ENDPOINT-2
      (A-PNC)                                         (A-PNC)
Board Location: 01E01                               Board Location: 02A01
Board Type: ei                                       Board Type: ei
DS1CONV Board Location: 01B01                       DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574                           DS1CONV Board Type: TN574

      ENDPOINT-1                                     ENDPOINT-2
      (B-PNC)                                         (B-PNC)
Board Location: 01D01                               Board Location: 02A02
Board Type: ei                                       Board Type: ei
DS1CONV Board Location: 01C01                       DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574                           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 remoted 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: 01B01                DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574                    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 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 remoted 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 6-11](#)).

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 6-11. Distance to DSX-1 Interface (feet)**

<b>Equalizer Setting</b>	<b>22 AWG ABAM &amp; 24 AWG PDS</b>	<b>26 AWG PDS</b>
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 6-11](#)). 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 Location: 02C01
DS1CONV Board Type: TN574             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 Location: 02B01
DS1CONV Board Type: TN1654                          DS1CONV Board Type: TN1654

                DS1 CONVERTER FACILITIES

          Facility Installed?   A         B         C         D
                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 next

Page 3 of 3

FIBER LINK ADMINISTRATION  
B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01  
DS1CONV Board Type: TN1654

DS1CONV Board Location: 02C01  
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**

## Troubleshooting Upgrade Problems

# 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.

This appendix may be updated with new information at each product/document release. If you have troubleshooting or error recovery information that you feel would be valuable to other technicians, please FAX your comments to us at 1-303-538-1741 (United States).

### Problem Escalation

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 7 software tape for defects. Type **test tape <cabinet> <carrier> long** and press Enter. If the tape has errors, replace it.

**⇒ NOTE:**

Do not use the "test tape short" command. This test cannot find all of the bad sectors that may be present on the tape.

3. If upgrading from G3V4 and earlier systems to a Release 7r, 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. If the letter is not available, use the appropriate chapter in this book.

## Troubleshooting Release 7r Upgrades

### No Translations After Upgrade

This problem usually means that the **save translation** command, performed during the upgrade, was not successful. To recover:

1. Install the backup tape into the tape drive. This tape must contain the original translations before the upgrade started.
2. Verify that the software is Release 7 and that shadowing is up.
3. Copy the translations from the backup tape to the disk. Type **copy translation disk both** and press Enter. This copies the translations from tape 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.

### One Side Upgrades, the Other Side Does Not (No Shadowing); Active Side Has Correct R7 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 7 software tape into the active tape drive.
3. Type **list configure software** and press Enter to verify the tape contains the required Release 7 software.
4. If the software version on the disk is incorrect, type **restore disk full active** and press Enter. This copies the entire backup tape 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 tape was used. To verify:
  - a. Clean the tape drive with the tape drive cleaning kit and insert the suspect tape into the tape drive.
  - b. Type **test tape < cabinet> < carrier> 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 tape.

- c. If the tape has errors, replace it.
2. Insert a good Release 7 software tape into the tape drive.
3. Test the tape before starting the upgrade. Type **test tape < cabinet> < carrier> 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 tape.

## Message Waiting Lamps On (After Removing an EPN)

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.

**B** Troubleshooting Upgrade Problems  
*Troubleshooting Release 7r Upgrades*

*B-4*

## Access Security Gateway

# C

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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

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### 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.

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**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 activate 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 (Comite 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.

**CEPT1**

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

**CMC**

Compact Modular Cabinet

**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 multi-carrier 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 or Customer Software Administrator

**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](#).

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**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.

**dBnC**

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 Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.
- Digital Communications Protocol. The DCP protocol supports 2 information-bearing channels, and thus two telephones/data modules. The I1 channel is the DCP channel assigned on the first page of the 8411 station form. The I2 channel is the DCP channel assigned on the analog adjunct page of the 8411 station form or on the data module page.

### **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

**deduplicated 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.

**EBCDIC**

Extended Binary-Coded Decimal Interexchange Code

**ECC**

Error Correct Code

**ECMA**

European Computer Manufacturers Association

**EFP**

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

---

**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 \(Hz\)](#).

---

## 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

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**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

---

**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

---

## 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.

### OTL

Originating Test Line

### 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.

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## 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.

---

**Q**

**QPPCN**

Quality Protection Plan Change Notice

**QSIG**

A set of open standards for Enterprise Networking. QSIG is a protocol defining message exchanges (signalling) at the "Q" reference point between two PBXs.

**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 \(ROSE\)](#).

---

**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 reports.

**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

**UUI**

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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