



DEFINITY®
Enterprise Communications Server
Release 9
Upgrades and Additions for R9r

555-233-115
Issue 2
November 2000

Notice

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

Your Responsibility for Your System's Security

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

You and your system manager are responsible for the security of your system, such as programming and configuring your equipment to prevent unauthorized use. The system manager is also responsible for reading all installation, instruction, and system administration documents provided with this product in order to fully understand the features that can introduce risk of toll fraud and the steps that can be taken to reduce that risk. Avaya 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. Avaya will not be responsible for any charges that result from such unauthorized use.

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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 Avaya 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 **AV1USA-43023-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

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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.

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

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European Union Declaration of Conformity

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

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

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

Comments

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Acknowledgment

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Any reference within the text to Lucent Technologies Inc. or Lucent should be interpreted as references to Avaya Inc. The exception is cross references to books published prior to April 1, 2001, which may retain their original Lucent titles.

Avaya Inc. formed as a result of Lucent's planned restructuring, designs builds and delivers voice, converged voice and data, customer relationship management, messaging, multi-service networking and structured cabling products and services. Avaya Labs is the research and development arm for the company.

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What's New in Release 9r

This is a short list of what changed from Release 8.1/8.2r. For more detailed information, refer to *What's New in DEFINITY ECS Release 9*. The categories addressed are as follows:

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

Features

This list provides categorized features available with Release 9. For full descriptions, see *DEFINITY Enterprise Communications Server Release 9, Issue 2.0 Change Description*.

Platform—Enhancement/Renewal	Platform—Cost Reductions
4th memory board for G3r	Speech synthesizer renewal (TN725B, TN433, TN457)
Administration change notification—LDAP enabled DEFINITY	UDS1 circuit packs with integrated echo cancellation (TN464GP, TN2464BP)
Memory growth (si, csi)	TN771DP rearchitecture
List configuration enhancements for TN2401 (shows TN2400 connector)	Cost reduced global MCC power supply

Continued on next page

Firmware download	IP asynchronous links
Call Center—Advocate	Green to Standard
Dynamic queue positioning with separate service objective field	Station used as virtual extensions
Percentage allocation enhancements	Networking—ISDN QSIG
Separate least occupied agent customer option	Path replacement with path retention
Service level supervisor dynamic threshold adjustment	Voice messaging—path reroute for diverted calls
Call Center—ASAI/CTI	Connection release for QSIG call completion
ASAI performance measurements	Networking—IP Solutions
Feature activation of ASAI agent events	Hairpinning, shuffling
UUI on transferred calls	Interoperability protocol improvements
Call Center—Other	Increased IP endpoint capacities (1000/5000)
BSR available agent adjust by	Quality of service (QOS)
Duplicate agent login ID administration	Support of Avaya R300 Remote Office Communicator
Holiday vectoring	Native support of 46xx IP telephones
PASTE update	Support of SoftPhones R2 with integrated audio subsystem
Remote logout of agent	TN2302AP IP Media Processor circuit pack
VDN observing on agent answer	Support of CentreVu IP Agent R2
Enterprise Management Tools	Networking—Other
DEFINITY Network Administration (R3.0)	ATM WAN spare processors
DEFINITY System Administration (R1.5)—languages	Pass ASAI UUI on best service routing (BSR) interflow post transfer
DEFINITY Translation Administration (R1.0)	Mobility
Enterprise Directory Gateway	Cluster ID administration
BCS/Guestworks	Increased radio controller capacity
VIP/DID—reserve DID number for VIP guest	X-station mobility large displays

Security	X-station DEFINITY global cellular solutions
Feature activation flexibility	Telephony—Global
Installability	Administrable time-out on call timer
Customer telephone activation (CTA)	"Don't Answer" for coverage from PSA disassociated stations
Design for Simplicity	Telephony—Japan
DIA—minimum vintage tool support	IRR duplication enhancement for G3si
MST memory growth for G3si	

Hardware

Minimum required hardware

You need the following minimum required hardware to upgrade the software to Release 9r.

Equipment	Code Comcode	Notes
Basic processor carrier	J58890AP- —	Contains the following circuit packs: ■ TN573B SNI ■ TN780 tone clock ■ TN1648B SYSAM ■ TN1650B memory (4) ■ TN1655 packet interface ■ TN1657 disk drive (V9 or later) ■ TN2211 optical drive ■ UN330B duplicate interface (V3 or later; optional) ■ UN331B processor ■ UN332C MSSNet

Continued on next page

Equipment	Code Comcode	Notes
Duplex processor carrier	J58890AP- —	Contains the following circuit packs: ■ TN573B SNI ■ TN780 tone clock ■ TN1648B SYSAM ■ TN1650B memory (4) ■ TN1655 packet interface ■ TN1657 disk drive (V9 or later) ■ TN2211 optical drive ■ UN330B duplicate interface (V3 or later) ■ UN331B processor ■ UN332C MSSNet

R9r hardware

The following upgrade equipment is new to Release 9r.

Equipment	Code Comcode	Notes
Formatted removable media with R9 software	J58890TO-1	If duplicated system, you need 2
Memory circuit pack	TN1650B 106495120	This is a 4th memory circuit pack that goes in MEM4 slot. If duplicated system, you need 2
Optical drive	TN2211 107849754	If not replaced in R8. If duplicated system, you need 2
MSSNet circuit pack	UN332C 108566381	If not replaced in R8. If duplicated system, you need 2
Duplicate interface	UN330B 106495146	If not V3 or later. You need 2 for duplicated system.

Additional hardware available

The following equipment is port slot hardware introduced with Release 9r.

Equipment	Code Comcode	Notes
DS1 interface	TN2313BP 108741067	Enables firmware download
	TN464GP 108826884	Adds echo cancellation; enables firmware download
	TN2464BP 108826892	
Maintenance/Test	TN771DP	Enables firmware download
Control-LAN (C-LAN)	TN799C 108739566	Updates TN799/B; required for firmware download and Avaya R300 Remote Office Communicator
IP Media Processor	TN2302AP 108312612	Replaces the TN802/B; only one mode: IP Media Processor; enables firmware download

Discontinued hardware

Equipment	Code	Notes
IP Trunking	TN802	No longer manufactured but supported

Tools

No new tools became available with Release 9r.

Commands, screens, and fields

No new commands and screens specific to upgrades are introduced in Release 9r. However, the number of screens may have changed, and some fields may have moved to different screens.

Procedures

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

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

This upgrade has 3 parts:

- Replace the disk drive if not V9 or later. You *do not* need to power down the carrier.
- Replace the tape drive with the optical drive. You *do* need to power down the carrier, which is a service interruption for a standard reliability system.
- Add the 4th memory board. *This is a service interruption for standard, high, and critical reliability.*

This upgrade requires 2 translation saves after the software upgrade: one after the TN2211 optical drive is installed, and one at the end after the TN1650B memory circuit pack is installed.

Procedure	Steps	Notes
Check IP Softphones (R8 to R9 only)	1. Type display system-parameters customer-options and press Enter. Go to the Maximum IP Registrations by Product ID screen (last screen) and write down the number listed in the IP_Soft field. The number must be verified at the end of the upgrade.	For upgrading R8 to R9 only. For customers having IP softphones only. The maximum number of registered IP softphones may default to 1 after an upgrade. Note the number BEFORE the upgrade.
Replace Disk Drive	1. Insert the new TN1657 circuit pack into the DISK DRIVE slot.	If you type the list configuration command before you've replaced both disks, the replaced disk drive will not show the correct vintage. The vintage table is not updated until you replace both disk drives. After the second disk drive has been replaced, a minor alarm for DISK appears. This is because of the memory mismatch between the disk drive and the system.

Procedure	Steps	Notes
Add Memory and DUPINT Circuit Pack(s) (High/Critical reliability only)	1. Set the lock switch on the new DUPINT circuit pack to be in the <i>same position</i> as the DUPINT just removed. For example, If the lock switch on the old DUPINT was set to B, then set the lock switch on the new DUPINT to B.	THIS IS A CRITICAL STEP. If replacing, position the lock switches to same position as the ones you are removing <i>before</i> inserting into slot.
Add Memory and DUPINT Circuit Pack(s) (High/Critical reliability only)	1. Insert the TN1650B memory circuit pack in memory slot 4.	Adding memory to the standby SPE causes an error because the memory number between the standby and active carriers does not match. Ignore alarms. This requires an additional power down of the carrier. All calls are dropped—this is a service interruption
Set Locations	1. Type change locations and press Enter.	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.
Verify the Upgrade	Execute the following commands and verify that the information is correct: ■ list configuration software-version ■ list station ■ list trunk-group ■ list hunt-group ■ list data-module ■ list announcements (if any boards installed)	Make sure everything is working after the upgrade.
Verify Survivable Remote EPNs	1. If the system is equipped with Survivable Remote EPNs, make sure the link is still up.	Make sure the SREPN is working after the upgrade.

Procedure	Steps	Notes
Administer Customer Options	For R8 to R9 only and customers having IP softphones, go to System Parameters Customer-Options, Maximum IP Registrations by Product ID screen (last screen) and verify that the number listed in the IP_Soft field did not default to 1. If it did, get the number from field technician and type it in.	For upgrading R8 to R9 only. For customers having IP softphones only. Requires init login. The maximum number of registered IP softphones must match the pre-upgrade number.

Upgrade tips

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

- Adding a 4th memory circuit pack and an optical drive requires a non-call-preserving service interruption. See [Chapter 1, “Upgrading G3rV2/3/4 and R5/6/7/8r to R9r”](#).
- [Check IP Softphones \(R8 to R9 only\)](#)
 - In some circumstances, the number of registered IP softphones defaults to 1 after an upgrade. Before the upgrade write down the number of registered IP softphones. After the upgrade verify that the correct number is still listed.

Cautions and warnings

No new cautions and warnings were generated with Release 9r.

Product names

No products were renamed in Release 9r.

About This Book

This book is intended for use by trained installation technicians and provides procedures for upgrading existing systems to a DEFINITY® Enterprise Communications Server Release 9. This book is intended to cover software and hardware upgrades and additions to existing systems only.

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

Offer Categories

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 Avaya representative for more information.

Conventions Used in This Book

Typographic

- Information you type is shown as **save translations**.



NOTE:

To submit the command, press the Enter tab on the DSA/DNA interface or the Enter key in the numbers section of the keyboard. Do not press the Enter/Return key in the letters section.

- Variables are shown as *number*.
- Field names and information displayed on the screen are shown as login.
- Keyboard keys are shown as Enter.

Systems and circuit packs

- The word “system” is a general term encompassing all references to the DEFINITY Enterprise Communications Server models: Release 9r, Release 9si, and Release 9csi and DEFINITY ONE Release 2.
- DEFINITY Enterprise Communications Server is abbreviated as DEFINITY ECS.
- Circuit pack codes (for example, TN780 or TN2182B) are shown with the *minimum acceptable* alphabetic suffix (like the “B” in the code TN2182B).

Generally, an alphabetic suffix higher than that shown is also acceptable. However, not every *vintage* of either the minimum suffix or a higher suffix code is necessarily acceptable. With Release 9, a suffix of “P” means that firmware can be downloaded to that circuit pack.



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 9 system.

- The term “ASAI” is synonymous with the newer CallVisor ASAI.

Admonishments

Admonishments in this book have the following meanings:



CAUTION:

This sign is used to indicate possible harm to software, possible loss of data, or possible service interruptions.



WARNING:

This sign is used where there is possible harm to hardware or equipment.



DANGER:

This sign is used to indicate possible harm or injury to people.

Physical dimensions

- All physical dimensions in this book are in English units (feet [ft]) followed by metric (centimeter [cm]) in parenthesis.
- Wire gauge measurements are in AWG followed by the diameter in millimeters in parenthesis

How to Comment on This Document

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- Please fill out the reader comment card at the front of this manual and return it.
- If the reader comment card is missing, FAX your comments to 1-303-538-1741 or to your Avaya representative and mention this document's name and number (in footer).
- Email your comments to **document@avaya.com**

Resources

Related Books

The following books are useful for system-related information:

- *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity*
- *DEFINITY Enterprise Communications Server Release 9 System Description*
- *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*
- *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9si*
- *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9csi*
- *AT&T Network and Data Connectivity Reference*
- *DEFINITY Enterprise Communications Server Release 9 Installation, Upgrades, and Additions for Compact Modular Cabinets*
- *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 9 Upgrades and Additions for R9r*
- *BCS Products Security Handbook*
- *DEFINITY Wireless Business System Users Guide*
- *DEFINITY Wireless Business System Installation and Test Guide*
- *DEFINITY Wireless Business Systems System Interface*
- *Switch Administration for DEFINITY AUDIX*

Other Resources

Definity Made Easy—a Web-based tool providing procedures for upgrading to Release 9si and installing and testing multicarrier and single-carrier cabinets.

How to Order Books

In addition to this book, other description, installation and test, maintenance, and administration books are available.

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

Where To Call for Technical Support

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

	Telephone Number
DEFINITY Helpline (feature administration and system applications)	1-800-225-7585
Avaya Toll Fraud Intervention	1-800-643-2353
Avaya National Customer Care Center (ATM customers)	1-800-242-2121
Avaya Corporate	1-800-822-9009
Streamlined Implementation (for missing equipment)	1-800-772-5409
USA/Canada Technical Service Center (ATM technicians)	1-800-248-1234
NetCare® Professional Services (NPS)	1-800-237-0016
International Technical Assistance (ITAC)	1-303-804-3777
Avaya Centers of Excellence	
Asia/Pacific Regional Support Center	65-872-8686
Western Europe/Middle East/South Africa	44-1252-77-4800
Central/Eastern Europe	361-345-4334
Central/Latin America Caribbean	1-303-804-3778
Australia	61-2-9352-9090
North America (INADS Database Administration)	1-800-248-1111

Antistatic Protection

 **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

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

Upgrade Paths

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

Table 1 correlates each upgrade to an associated chapter number.

Table 1. Software and Hardware Upgrade Chapters

Description	Chapter
Upgrading G3rV2/3/4 and R5/6/7/8r to R9r	1
G3vs with Intel 386 or Risc Processor to R9r	2
Upgrading R5si/R6si to R9r EPN	3
Multicarrier G2 Universal Module to R9r EPN	4

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 (in parentheses).

Process	Minutes
Disable/enable scheduled maintenance	1
Check link status	5
Save translations	2
Save announcements (TN750/B Only)	30
Backup disk	40
Replace disk drive	5(10)
Restore disk	50
Busyout multimedia interface circuit packs	3
Remove/install UN332B and tape drive	5(10)
Power up SPE	10(20)
Unlock active SPE	10(20)
Verify interchange	2(4)
Upgrade other carrier to optical drive	2(4)

Continued on next page

Process	Minutes
Verify software version	1
Save translations and announcements	40
Restore disk	10
Add memory circuit pack(s)	10(20)
Verify interchange	2
List configuration control	1
Verify software version	2
Save translations and announcements	40
Back up disk	18
Set core dump vector	2
Reset standby 4	5
Miscellaneous	10

Security Issues

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

Login security is an attribute of the DEFINITY ECS software. Advise customers that their existing passwords expire 24 hours after the upgrade or installation. Also explain that the new passwords must conform to strict requirements.

System administrators must keep network addresses confidential. A PPN or any endpoint masquerading as a PPN on the ATM network can seize that EPN and control it if that EPN is not already connected to its proper PPN.

Access Security Gateway Feature

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

Trademarks

This document contains references to the following Avaya trademarked products:

- ACCUNET®
- AUDIX®
- Callmaster®
- CallVisor®
- CentreVu™
- CONVERSANT®
- DEFINITY®
- DEFINITY ONE™
- FORUM™
- Intuity™
- Intuity Lodging™
- MEGACOM®
- MULTIQUEST®
- OneVision™
- Quorum™
- SYSTIMAX®
- TRANSTALK™
- VOICE POWER®

The following products are trademarked by their corresponding vendor:

- 3Comm®, U.S. Robotics®, and Sportster® are registered trademarks of the 3Comm Corporation
- Audichron® is a registered trademark of Audichron Company
- LINX™ is a trademark of Illinois Tool Works, Inc.
- Windows95/98/NT is a trademark of Microsoft Corporation
- Music Mate® is a registered trademark of Harris Corporation
- PagePac® is a registered trademark of Harris Corporation, Dracon Division
- Paradyne™ and COMSPHERE™ are trademarks of the Paradyne Corporation
- 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

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

- ITU-T (Formerly CCITT)
- ECMA
- ETSI
- IPNS
- DPNSS
- National ISDN-1
- National ISDN-2
- ISO-9000
- ANSI
- FCC Part 15 and Part 68
- EN55022
- EN50081
- EN50082
- UNI 3.1
- CISPR22
- Australia AS3548 (AS/NZ3548)
- Australia AS3260
- IEC 825
- IEC 950
- UL 1459
- UL 1950
- CSA C222 Number 225
- TS001
- ILMI 3.1

LASER Product

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 μ m

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 Avaya representative for more information.

Electromagnetic Compatibility Standards

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

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



NOTE:

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

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

European Union Standards

Avaya 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 9 products:

- Global AC-powered Multicarrier Cabinet (MCC) with 25-Hz and 50-Hz ring generator
- DC powered Multicarrier Cabinet (MCC) with 25 Hz ring generator
- AC powered Enhanced Single-Carrier Cabinet (ESCC) 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

Part 68: Statement

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

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

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

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

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

Means of Connection

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

Manufacturer's Port Identifier	FIC Code	SOC/REN/ A.S. Code	Network Jacks
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 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 Avaya certified technicians.

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

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

Upgrading G3rV2/3/4 and R5/6/7/8r to R9r

1

This chapter provides the information necessary to upgrade the software from a DEFINITY G3rV2, V3, or V4 or Releases 5r, 6r, 7r, or 8r systems to a Release 9r system. The chapter also provides information on replacing and adding the following hardware:

- The TN1657 disk drive if drive is **not** Vintage 9 or later with one that is.
- The TN1656 tape drive with the TN2211 optical drive
- The UN332B MSSNET circuit pack with the UN332C MSSNET circuit pack (required for the optical drive)
- The UN330B Duplication Interface circuit packs if they are **not** Vintage 3 or later with ones that are.
- TN1650B memory circuit pack(s) if the system does not contain 4 of them.

NOTE:

After the upgrade, TAPE is replaced by REMOVABLE-MEDIA for commands. For example, **test tape** becomes **test removable-media**. References to TAPE are replaced by R-MEDIA.

The procedures for the software and hardware upgrade can be done on either a standard reliability system or a high or critical reliability system.

For more help refer to the following books:

- *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*
- *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*

Read This First

Service Interruption

The upgrade process requires 2 non-call-preserving service interruptions in a standard reliability system and 1 non-call-preserving service interruption for high or critical reliability systems. The service interruptions must be closely coordinated with the customer and the local account team.

Call Management System (CMS)

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

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

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

Software Compatibility and Translation Errors

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

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

If the message indicates errors, refer to ["No Translations After Upgrade" on page B-8 in Appendix B, "Troubleshooting an Upgrade"](#). Do not continue with the upgrade until the errors are corrected.

Usable Circuit Packs

Every circuit pack used in the Release 9 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 9 system. Replace all unusable vintage circuit packs with current vintages.

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

Survivable Remote EPNs

Check if Survivable Remote EPNs are installed and accessible.

Software Upgrade

Release 9 software and translations are saved to removable media. Although the translations automatically update to Release 9, several features require special attention because of screen changes or potential naming conflicts in the process.

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

- *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*

Announcement Backups

G3r only allows the contents of one integrated announcement board to be saved to G3r storage media. Backing up multiple announcement boards requires multiple removable media. Integrated announcement boards require administered data modules to successfully save announcements to storage media.

Required Hardware

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

Table 1-1. Required Hardware

Equipment	Description	Quantity	
		Standard	High/Critical
106495120	TN1650B Memory circuit pack(s)	1 ¹ or 2	2 ¹ or 4
105533780	TN1657 Disk Drive circuit pack V9 or later (if needed)	1	2
108566381	UN332C MSSNET circuit pack (if needed)	1	2
107849754	TN2211 optical drive (if needed)	1	2
106495146	UN330B Duplicate Interface circuit packs V3 or later (if needed)	NA	2

Table 1-1. Required Hardware

		Quantity	
106590953	Z100A1 apparatus blank faceplate	1	2
J58890TO-1 L1	Formatted removable media w/Release 9 software	2 ²	4
848445086	Carrier A strip label (if needed)	1	1
848445094	Carrier B strip label (if needed)	NA	1

1. If the system is a G3r V4 or earlier, add 2 TN1650B circuit packs to each control carrier.
2. For a maintenance update: acquired from the Technical Service Center. For a software upgrade: shipped from the factory.

Task Tables

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

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

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

√	Task Description	Page
	Check SPE	1-8
	Disable Scheduled Maintenance and Alarm Origination to INADS	1-8
	Check Link Status	1-9
	Check IP Softphones (R8 to R9 only)	1-9
	Disable TTI	1-9
	Save Translations (pre-upgrade)	1-9
	Save Announcements (if necessary—pre-upgrade)	1-10
	Back Up Disk (pre-upgrade)	1-10
	Check Disk Drive	1-10

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

√	Task Description	Page
	Replace Disk Drive	1-10
	Restore Disk	1-11
	Reconfigure the Tape (G3rV2, V3 R31.0 and Earlier)	1-12
	Check ISDN Signaling Group States	1-12
	Busyout MMI Circuit Packs (High/Critical reliability only)	1-13
	Shut Down DEFINITY LAN Gateway System	1-13
	Shut Down DEFINITY AUDIX System (if necessary)	1-13
	Check for Tape Drive and UN332B MSSNET	1-14
	Tape Drive: Lock the active SPE (High/Critical reliability only)	1-14
	Tape Drive: Check the active tone-clock (High/Critical reliability only)	1-14
	Tape Drive: Power Down the SPE	1-15
	Remove the UN332B and Tape Drive	1-15
	Install the UN332C and Optical Drive	1-15
	Verify TDM Cables and Connectors	1-18
	Optical Drive: Power Up the SPE	1-18

Continued on next page

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

√	Task Description	Page
	Optical Drive: Unlock the Active SPE (High/Critical reliability only)	1-18
	Optical Drive: Verify Interchange (High/Critical reliability only)	1-19
	Upgrade Other Carrier to Optical Drive (High/Critical reliability only)	1-19
	Affix position label(s)	1-19
	Verify software version	1-19
	Save Translations	1-20
	Save Announcements (if necessary)	1-20
	Restore Disk	1-20
	Lock the Active SPE (High/Critical reliability only)	1-21
	Check the Active Tone-Clock (High/Critical reliability only)	1-21
	Power Down the SPE	1-21
	Add Memory and DUPINT Circuit Pack(s)	1-22
	Power Up the SPE	1-22
	Unlock the Active SPE (High/Critical reliability only)	1-23
	Verify Interchange (High/Critical reliability only)	1-23
	Lock Switches to Other Carrier (High/Critical reliability only)	1-23
	Check the Active Tone-Clock (High/Critical reliability only)	1-23
	Power Down the Other SPE (High/Critical reliability only)	1-24
	Add Memory and DUPINT Circuit Pack(s) (High/Critical reliability only)	1-24
	Power Up the Other SPE (High/Critical reliability only)	1-25
	Unlock the Active SPE (High/Critical reliability only)	1-25
	Verify Interchange for Other SPE (High/Critical reliability only)	1-25
	List Configuration Control	1-26
	Verify software version	1-26
	Set Daylight Savings Rules	1-26
	Set Date and Time	1-27
	Set Locations	1-29
	Enable TTI	1-30
	Release MMI (High/Critical reliability only)	1-30

Continued on next page

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

√	Task Description	Page
	Resolve Alarms	1-31
	Check Link Status	1-31
	Check ISDN Signaling Group States	1-31
	Enable Scheduled Maintenance	1-31
	Enable Alarm Origination to INADS	1-31
	Administer Customer Options	1-31
	Check SPE status (High/Critical reliability only)	1-32
	Verify the Upgrade	1-32
	Save Translations (post-upgrade)	1-32
	Save Announcements (if necessary— post-upgrade)	1-33
	Power Up DEFINITY LAN Gateway System	1-33
	Power Up DEFINITY AUDIX System	1-33
	Back Up Disk	1-33
	Set Core Dump Vector	1-33
	Verify Survivable Remote EPNs	1-33
	Return Replaced Equipment	1-34

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

1-8

Upgrade the software and hardware

Check SPE

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

For high or critical reliability systems:

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

If the fields display something other than the above, see the appropriate maintenance sections.

2. Verify that the removable media (tape(s) or optical disk cartridge(s)) and disk(s) are present and in service.

Disable Scheduled Maintenance and Alarm Origination to INADS

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

or

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



CAUTION:

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

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



NOTE:

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

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

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Check Link Status

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

Check IP Softphones (R8 to R9 only)

If the customer has IP softphones, the maximum number of registered IP softphones may default to 1 after an upgrade.

1. Type **display system-parameters customer-options** and press Enter. Go to the Maximum IP Registrations by Product ID screen (last screen) and write down the number listed in the IP_Soft field. The number must be verified at the end of the upgrade.

Disable TTI



NOTE:

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



CAUTION:

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

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the TTI Enabled? field to **n** to de-activate the TTI feature. If it is already set to **n**, cancel the command.
3. Type **status tti** and press Enter. Wait until the Percent Complete field shows 100%.

Save Translations (pre-upgrade)

1. Type **save translation** and press Enter to write all translation information from memory to the disk, which takes about 2 minutes.
2. Type **list history** and press Enter. Check that there is nothing in the Qualifier field for translations.

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

1-10

Save Announcements (if necessary— pre-upgrade)



NOTE:

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

Only one announcement board can be saved per tape/optical disk cartridge.

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



NOTE:

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

Back Up Disk (pre-upgrade)

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

Check Disk Drive

1. Type **list configuration control** and press Enter to check the vintage of the disk drive. If the drive is V9 or later, go to [“Check ISDN Signaling Group States” on page 1-12](#).

Replace Disk Drive



NOTE:

Replace only if not V9 or later.



CAUTION:

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



CAUTION:

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

1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

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1. **For standard reliability**, type **busyout host-adapter** and press Enter to prevent other applications from accessing the disk or removable media. Make sure it says PASS.

For high or critical reliability, type **busyout host-adapter [a | b]** and press Enter. Make sure it says PASS.

2. Remove the existing TN1657 Disk Drive circuit pack and place it in antistatic material.
3. Insert the new TN1657 circuit pack into the DISK DRIVE slot.

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

4. **For standard reliability**, type **release host-adapter** and press Enter to allow the disk to spin up.

For high or critical reliability, type **release host-adapter [a | b]** and press Enter.

5. **For standard reliability**, type **reset host-adapter** and press Enter to release the disk from the maintenance-busyout condition and put it back into service.

For high or critical reliability, type **reset host-adapter [a | b]** and press Enter.

6. Type **status spe** and press Enter to verify that the disk is present and in service.

 NOTE:

If the disk fails to return to service, repeat Steps 1, 4, 5, and 6.

For high or critical reliability, repeat steps 1 through 6 on the active carrier.

 NOTE:

If you type the list configuration command before you've replaced both disks, the replaced disk drive will not show the correct vintage. The vintage table is not updated until you replace both disk drives.

After the second disk drive has been replaced, a minor alarm for DISK appears. This is because of the memory mismatch between the disk drive and the system.

Restore Disk

 NOTE:

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

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

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If standard reliability:

1. Type **restore disk full** and press Enter to copy the information on the removable media to disk, which takes about 10 minutes.
2. Type **list configuration software** and press Enter to verify that all copies are good.

If high or critical reliability:

1. Type **restore disk full both** and press Enter, which takes about 50 minutes.
2. Type **list configuration software long** and press Enter to verify that all copies are good.

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

 NOTE:

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

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

If standard reliability:

1. Type **configure tape large** and press Enter to reconfigure the backup removable media for the 2 (or 3) TN1650B Memory circuit packs. This command takes about 1 minute to complete.

If high or critical reliability:

1. Type **configure tape spe-a large** and press Enter to reconfigure the removable media in control carrier A for 2 (or 3) TN1650B Memory circuit packs. This command takes about 1 minute to complete.
2. Type **configure tape spe-b large** and press Enter to reconfigure the removable media in control carrier B for 2 (or 3) TN1650B Memory circuit packs. This command takes about 1 minute to complete.

Check ISDN Signaling Group States

1. Type **list signaling-group** and press Enter.
2. Type **status signaling-group** and press Enter to determine if ISDN is in service. If it is not, follow normal maintenance procedures.

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

1-13

Busyout MMI Circuit Packs (High/Critical reliability only)



CAUTION:

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

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

Shut Down DEFINITY LAN Gateway System



WARNING:

Neglecting to shut down the 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.
2. On the main menu, select **Maintenance > Reset System > Shutdown**.

Shut Down DEFINITY AUDIX System (if necessary)



WARNING:

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

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 1-34](#).



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

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Upgrade the software and hardware

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Check for Tape Drive and UN332B MSSNET

If the system already has TN2211 Optical Drive(s) and UN332C MSSNET(s):

1. Replace the original removable media in the TN2211 Optical Drive(s) with the new one(s) containing Release 9 software.
2. Go to [“Verify software version” on page 1-19](#).

For standard reliability:

1. Type **list configuration control** and press Enter. If the system has a TN1656 Tape Drive and a UN332B MSSNET, go to [“Tape Drive: Power Down the SPE” on page 1-15](#).

For high or critical reliability:

1. Type **list configuration control** and press Enter.
 - If both SPEs have a TN1656 Tape Drive and a UN332B MSSNET, go to [“Tape Drive: Lock the active SPE \(High/Critical reliability only\)” on page 1-14](#).

Tape Drive: Lock the active SPE (High/Critical reliability only)



NOTE:

Replace the circuit packs in the standby control carrier first.



CAUTION:

When working with any cabinet hardware, wear a grounded wrist strap to ground yourself against electrostatic discharge (ESD).

1. Type **status spe** and press Enter to determine which control carrier is active or observe the control carrier LEDs.
2. Move the SPE-SELECT switches on both Duplication Interface (DUPINT) circuit packs, *one at a time*, to the active carrier.

Tape Drive: Check the active tone-clock (High/Critical reliability only)

1. Type **status port-network 1** and verify that the Tone-Clock is in the same carrier as the active SPE and that the Service State field shows **in**.
2. If the Tone-Clock is *not* in the same carrier as the active SPE, type **set tone-clock [A / B]** to set the Tone-Clock to be in the active SPE.

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

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NOTE:

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

If the active Tone-Clock has not migrated to the active carrier after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r* book to resolve any problems.

Tape Drive: Power Down the SPE



CAUTION:

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



NOTE:

If there are two power supplies, power down the SPE by removing the power plug on the *right side* of the carrier then by removing the power plug on the *left side* of the carrier. If there is only one power supply, remove the one power plug on the right side.

For **standard reliability**, power down the SPE. This causes a service interruption.

For **high or critical reliability**, power down the standby SPE.

Remove the UN332B and Tape Drive

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

Install the UN332C and Optical Drive



NOTE:

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

1. Insert the UN332C circuit pack into the MSSNET slot.
2. Replace the blank faceplate next to the MSSNET circuit pack.
3. Insert the TN2211 optical drive ([Figure 1-1](#)) into the rightmost TAPE DRIVE slot. It uses only 2 slots.

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Upgrade the software and hardware

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4. Remove the blank faceplate from Memory Slot 4 and place it over the leftmost Tape Drive slot.

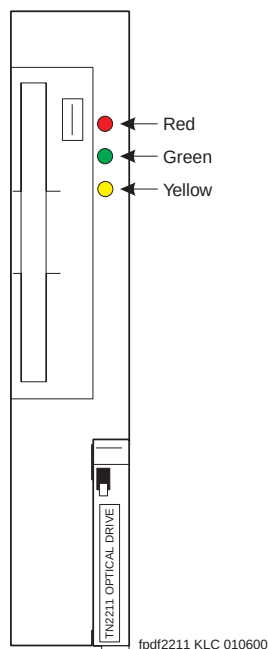


Figure 1-1. TN2211 Optical Drive

5. Place the formatted removable media, label facing left, into the optical drive. The arrow should be in the top left position when inserting the cartridge into the drive.



NOTE:

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

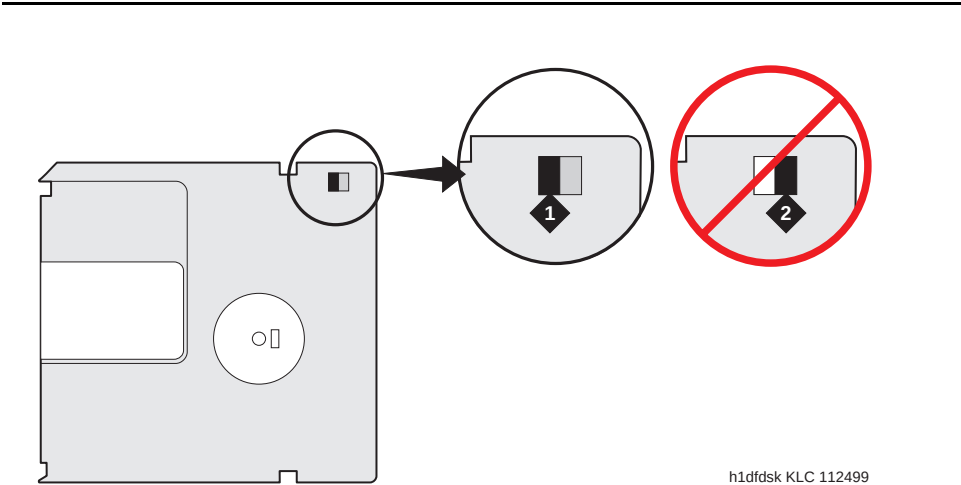


Figure Notes

1. Not Write-protected

2. Write-protected

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

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

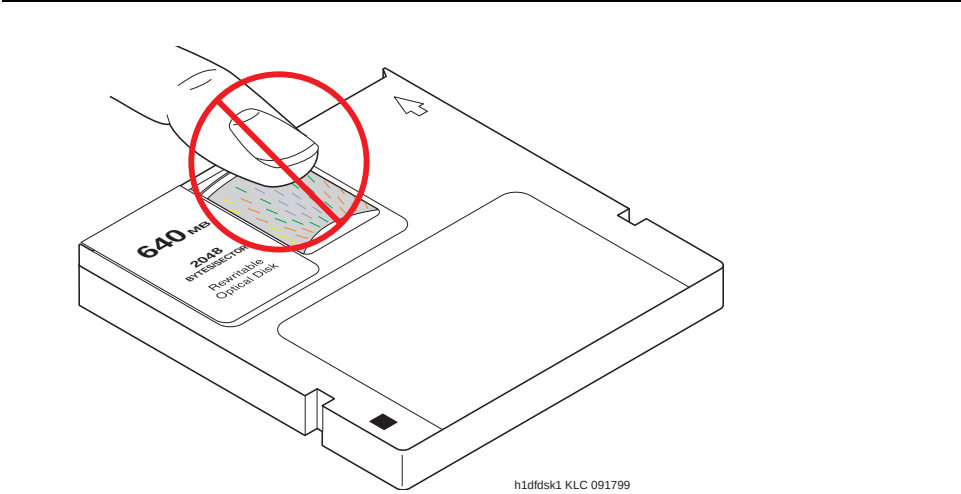


Figure 1-3. Do not touch the disk inside the cartridge.

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Verify TDM Cables and Connectors

Verify that the DEFINITY ECS has the correct TDM/LAN cables and TDM terminators installed. Using this table as a reference, visually inspect the PPN and EPN connections.

	TDM/LAN cable	TDM Terminator
MCC	WP-91716 L6 and L7 (blue labels)	ZAHF4, V2
SCC (EPN only)	WP-91716 L3	AHF110

Optical Drive: Power Up the SPE

 **NOTE:**
The SPE reboots from the disk on the initial (original) software load. This preserves the original software when transitioning to the new hardware and software.

1. If there are two power supplies, restore power to the SPE by inserting the power plug on the *right side* of the carrier then by inserting the power plug on the *left side* of the carrier. If there is only one power supply, insert the one power plug on the right side.

If high or critical reliability:

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

Optical Drive: Unlock the Active SPE (High/Critical reliability only)

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

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

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
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Optical Drive: Verify Interchange (High/Critical reliability only)

1. Type **status spe** and press Enter to make sure the active side is ready for interchange. When it is ready,
 - The Standby Refreshed field shows **yes**
 - The Standby Shadowing field shows **on**
 - The Standby Handshake field shows **up**
2. Verify that the disk and removable media are active on both SPEs.

Upgrade Other Carrier to Optical Drive (High/Critical reliability only)

1. Type **reset system interchange** and press Enter. If the MSS is busy, keep typing this command until it is accepted.
2. Wait until the interchange command successfully completes, which takes about 5 minutes.
3. Type **status spe** and press Enter to verify that the new active SPE is functional.
4. Wait until the Standby Refreshed field shows **yes**, which takes about 5 minutes.
5. Repeat the steps from [“Tape Drive: Check the active tone-clock \(High/Critical reliability only\)” on page 1-14](#) through [“Optical Drive: Verify Interchange \(High/Critical reliability only\)” on page 1-19](#).

Affix position label(s)

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

Verify software version



NOTE:

The R-Media Resident field shows the software load number. Make sure it displays a G3V9r software load number.

If standard reliability:

1. Type **list configuration software-version** and press Enter to verify that the removable media contains the Release 9 software.

If high or critical reliability:

1. Type **list configuration software-version long** and press Enter to verify that the removable media contains the Release 9 software.

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
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Save Translations



NOTE:

Use **tape** in the following command if the system originally had tape; otherwise use **removable-media**.

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

Save Announcements (if necessary)



NOTE:

Use **tape** in the following command if the system originally had tape; otherwise use **removable-media**.

Use new removable media for each announcement board.

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

Restore Disk

If standard reliability:

1. Type **restore disk full** and press **Enter** to write the new software to disk. Release 9 system software is now resident on the disk.

If high or critical reliability:

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



NOTE:

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

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
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Lock the Active SPE (High/Critical reliability only)



CAUTION:

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



NOTE:

Replace the circuit packs in the standby carrier first.

1. Type **status spe** and press **Enter** to determine which control carrier is active or observe the control carrier LEDs.
2. Move the SPE-SELECT switches on both Duplication Interface (DUPINT) circuit packs, *one at a time*, to the active carrier.

Check the Active Tone-Clock (High/Critical reliability only)

1. Type **status port-network 1** and press **Enter** to verify that the Tone-Clock and the active SPE are in the same carrier.
2. Verify that the Service State field shows **in**.
3. If the Tone-Clock and active SPE are *not* in the same carrier, type **set tone-clock [A / B]** and press **Enter**. This command sets the Tone-Clock to the same carrier as the active SPE.

If the active Tone-Clock has not migrated to the active carrier after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r* book to resolve any problems.

Power Down the SPE



CAUTION:

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



NOTE:

If there are two power supplies, power down the SPE by removing the power plug on the *right side* of the carrier then by removing the power plug on the *left side* of the carrier. If there is only one power supply, remove the one power plug on the right side.

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

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

- 1 Upgrading G3rV2/3/4 and R5/6/7/8r to R9r
Upgrade the software and hardware

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Add Memory and DUPINT Circuit Pack(s)



NOTE:

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

1. Insert the TN1650B memory circuit pack(s) in memory slot(s) 3 (if needed) and 4.



NOTE:

Adding memory to the standby SPE causes an error because the number of memory circuit packs in the standby and active carriers does not match.

2. If the UN330B DUPINT circuit pack is Vintage 3 or later, go to [“Power Up the SPE” on page 1-22.](#)
3. Remove the old UN330B DUPINT circuit pack and place it in antistatic packing material.



CAUTION:

THE FOLLOWING STEP IS CRITICAL.

4. Set the lock switch on the new DUPINT circuit pack to be in the *same position* as the DUPINT just removed. For example, If the lock switch on the old DUPINT was set to B, then set the lock switch on the new DUPINT to B.
5. Insert the new UN330B DUPINT circuit pack into the slot vacated by the old one.

Power Up the SPE

1. If there are two power supplies, restore power to the SPE by inserting the power plug on the *right side* of the carrier then by inserting the power plug on the *left side* of the carrier. If there is only one power supply, insert the one power plug on the right side.

If high or critical reliability:

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



NOTE:

The RED alarm LED on the TN1657 Disk Drive turns off because the memory mismatch no longer exists.

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Unlock the Active SPE (High/Critical reliability only)



CAUTION:

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

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

Verify Interchange (High/Critical reliability only)

After the memory circuit pack is replaced in the SPE:

1. Type **status spe** and press Enter:
 - The Standby Refreshed field shows **no**
 - The Standby Shadowing field shows **off**
 - The Standby Handshake field shows **up**
2. If the Standby Handshake field does not display **up**, wait 2 minutes and retype **status spe** and press Enter.

Lock Switches to Other Carrier (High/Critical reliability only)

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



CAUTION:

THIS AFFECTS SERVICE. The new active SPE resets (cold 1 restart).

2. Wait until the login prompt appears, then log in as **craft**.
3. Type **status spe** and press Enter to verify that the new active SPE is functional.

Check the Active Tone-Clock (High/Critical reliability only)

1. Type **status port-network 1** and press Enter to verify that the Tone-Clock and the active SPE are in the same carrier.
2. Verify that the Service State field shows **in**.

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3. If the Tone-Clock and active SPE are *not* in the same carrier, type **set tone-clock [A / B]** and press Enter. This command sets the Tone-Clock to the same carrier as the active SPE.

If the active Tone-Clock has not migrated to the active carrier after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r* book to resolve any problems.

Power Down the Other SPE (High/Critical reliability only)



CAUTION:

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



NOTE:

If there are two power supplies, power down the SPE by removing the power plug on the *right side* of the carrier then by removing the power plug on the *left side* of the carrier. If there is only one power supply, remove the one power plug on the right side.

Power down the standby SPE.

Add Memory and DUPINT Circuit Pack(s) (High/Critical reliability only)



NOTE:

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

1. Insert the TN1650B memory circuit pack(s) in memory slot(s) 3 (if needed) and 4.



NOTE:

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

2. If the UN330B DUPINT circuit pack is Vintage 3 or later, go to [“Power Up the Other SPE \(High/Critical reliability only\)” on page 1-25](#).
3. Remove the old DUPINT circuit pack and place it in antistatic packing material.

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NOTE:

THE FOLLOWING STEP IS CRITICAL.

4. Set the lock switch on the new DUPINT circuit pack to be in the *same position* as the DUPINT just removed. For example, If the lock switch on the old DUPINT was set to B, then set the lock switch on the new DUPINT to B.
5. Insert the new UN330B DUPINT circuit pack into the slot vacated by the old one.

Power Up the Other SPE (High/Critical reliability only)

1. If there are two power supplies, restore power to the SPE by inserting the power plug on the *right side* of the carrier then by inserting the power plug on the *left side* of the carrier. If there is only one power supply, insert the one power plug on the right side.

If high or critical reliability:

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



NOTE:

The RED alarm LED on the TN1657 Disk Drive turns off because the memory mismatch no longer exists.

Unlock the Active SPE (High/Critical reliability only)



CAUTION:

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

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

Verify Interchange for Other SPE (High/Critical reliability only)

1. Type **status spe** and press Enter to make sure the active side is ready for interchange. When it is ready,
 - The Standby Refreshed field shows **yes**
 - The Standby Shadowing field shows **on**

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- The Standby Handshake field shows **up**
2. Verify that the disk and removable media are present and in service on both SPEs.

List Configuration Control

1. Type **list configuration control** and press Enter to verify the system recognizes the third and fourth TN1650B Memory circuit pack(s) and all the other circuit packs replaced.

Verify software version



NOTE:

All tape-related commands and references to TAPE are replaced by removable-media or R-MEDIA on systems that originally had tape.

If standard reliability:

1. Type **list configuration software-version** and press Enter. This takes about 2 minutes.

If high or critical reliability:

1. Type **list configuration software-version long** and press Enter.
2. Verify that
 - All copies are good
 - On the System Configuration screen, page 2, 4-mem is displayed in the Memory, R-Media, and Disk fields.

Set Daylight Savings Rules

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



NOTE:

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

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

DAYLIGHT SAVINGS RULES

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

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



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

3. When done, press Enter.

Set Date and Time

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

DATE AND TIME

DATE

Day of the Week: Tuesday Month: February

Day of the Month: 8 Year: 2000

TIME

Hour: 20 Minute: 30 Second: XX Type: standard

Daylight Savings Rule: 0

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

Table 1-3. English Day of the Week Names

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

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

Table 1-4. English Month Names

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

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

Set 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	Main	+ 00:00	_1	303
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 to effect the changes.

Enable TTI

⇒

NOTE:
Do this step only if you disabled the TTI earlier.

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

Release MMI (High/Critical reliability only)

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

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Resolve Alarms

1. Type **display alarms** and press Enter to examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Check Link Status

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

Check ISDN Signaling Group States

1. Type **list signaling-group** and press Enter.
2. Type **status signaling-group** and press Enter to determine if ISDN is in service. If it is not, follow normal maintenance procedures.

Enable Scheduled Maintenance

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

Enable Alarm Origination to INADS

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



NOTE:

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to set the customer options that were purchased. Change the G3 version: field to V9.

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3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and set the Basic Call Setup field to **y**.
4. For R8 to R9 only and customers having IP softphones, go to the Maximum IP Registrations by Product ID screen (last screen) and verify that the number listed in the IP_Soft field did not default to **1**. If it did, get the number from field technician and type it in.
5. Type **change system-parameters offer-options** and press Enter.
6. If changing offers and the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
7. Press Enter to effect the changes or Cancel if there were no changes.
8. Contact the requester when done.

Check SPE status (High/Critical reliability only)

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

Verify the Upgrade

Execute the following commands and verify that the information is correct:

- list configuration software-version
- list station
- list trunk-group
- list hunt-group
- list data-module
- list announcements (if any boards installed)

Save Translations (post-upgrade)

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

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Save Announcements (if necessary— post-upgrade)

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

Power Up DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. On the main menu, select **Maintenance > Reset System > Reboot System**.

Power Up DEFINITY AUDIX System

1. To power up the AUDIX assembly, refer to [“DEFINITY AUDIX Power Procedures” on page 1-34](#).

Back Up Disk

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

If standard reliability:

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

If high or critical reliability:

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

Set Core Dump Vector

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

Verify Survivable Remote EPNs

1. If the system is equipped with Survivable Remote EPNs, make sure the link is still up.

Return Replaced Equipment

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

BCS/Material Logistics, MSL/Attended Stocking Locations

Methods and Procedures for Basic Material Returns

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.
3. Press Enter again to start the shutdown process.
4. The SHUTDOWN Completed message appears when the AUDIX is successfully shut down. This takes about 2 minutes.
5. You can now shut down the carrier or remove the AUDIX System for service.



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
 1. Re-install the AUDIX and allow it to power up automatically.
 2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but the cabinet was powered down:
 1. Reseat the AUDIX
 2. Power up the cabinet. The AUDIX reboots automatically.
 3. Check for AUDIX System errors.

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- If the AUDIX remained in the cabinet and the cabinet was *not* powered down:
 1. At the AUDIX console, hold the `ctrl` key and enter **cc**.
 2. Enter **5** at the prompt. In about 2 minutes, the AUDIX boots up.
 3. When the system initialization is complete, log in as **craft**.
 4. Check for AUDIX System errors.

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G3vs with Intel 386 or Risc Processor to R9r

2

This chapter provides the information necessary to upgrade from either a Release 5/6 system with a RISC Processor, or from a Generic 3 (G3) vs system with an Intel® 386 processor, to a Release 9r system.

The upgrade to a Release 9r system requires installing a new processor port network (PPN). 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 9r.

Some of the I/O cables from the existing system may be too short to reach from the Release 9r cabinet to the Main Distribution Frame (MDF). If so, the cables must be replaced as part of the upgrade process.

Follow this general process to upgrade the system:

- [Perform Precutover Procedures](#)
- [Remove the Present System](#)
- [Install the Release 9r Cabinets](#)—If space exists in the equipment room, you may want to install the new system first, which requires less down time.
- [Complete the Upgrade](#)

Read This First

Service Interruption

This upgrade process requires a service interruption that depends on whether the Release 9r 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 9r 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, type the **save translation** command. Afterward, check for translation errors before proceeding with the upgrade.

NOTE:

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

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

Communication Between Equipment Rooms

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

Usable Circuit Packs

Every circuit pack used in the Release 9 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 9 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-in. flat blade screwdriver
- 1/4-in. socket wrench with ratchet (optional)
- 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)
- Long-nose pliers to straighten backplane pins
- The *DEFINITY Enterprise Communications Server Documentation Library* CD for Release 9.

Task Tables

Table 2-1 provides the high-level tasks to perform the upgrade in this chapter.

Table 2-1. Tasks to Upgrade to Release 9r

√	Task Description	Page
	Software Upgrade	2-5
	Check SPE	2-6
	Disable Maintenance	2-8
	Check Link Status	2-7
	Disable TTI	2-7
	Save Translations	2-8
	Save Announcements	2-8
	Back Up Disk	2-8
	Check ISDN Signaling Group States	2-8
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Perform Precutover Procedures

Software Upgrade

This upgrade requires a Translation Upgrade Tool (TUT). Before the upgrade, you must copy the translations to a spare translation card and send it to Software Technical Support (STS) (with next-day delivery). It will be converted and written to a Release 9r removable media. This process takes several days.

The new Release 9r software removable media (including 1 with translations) must be on-site before the upgrade begins. For each Release 9r processor, 2 removable media (1 system and 1 backup) must always be retained on site with the system.

1. Type **save translation** and press Enter to write all translation information from memory to a spare 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 nonvolatile memory; saving the announcements is not needed.

2. Mail the translation card to Software Technical Support (STS) (with next-day delivery).
3. Insert the original translation card back into the present system.

⇒ NOTE:

It is important that you do not add any new translations while the spare translation card is being converted. If not possible, be sure to keep detailed records of any translation changes made during that interval. These records facilitate the reassignment of any changes on the Release 9r removable media after the upgrade.

Follow Routine Preventive Maintenance

During the upgrade, follow routine preventive maintenance procedures on the system to be upgraded. For information about the procedures and necessary equipment, refer to the "Preventive Maintenance" section in *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Remove the Present System

⇒ NOTE:

If the equipment room is large enough to allow the Release 9r cabinet to be installed while the present system is in service, skip to ["Install the Release 9r Cabinets" on page 2-10](#). Return to this section when finished.

If the present system must be removed to make room for the Release 9r cabinet, perform the following procedure.

Check SPE

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

Disable Maintenance

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

or

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



CAUTION:

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

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



NOTE:

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

Check Link Status

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

Disable TTI



NOTE:

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



CAUTION:

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

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

- 2 G3vs with Intel 386 or Risc Processor to R9r
Remove the Present System

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

Save Translations

4. Type **save translation** and press Enter to write all translation information from memory to the translation card.
5. Check for translation errors before proceeding with the upgrade. If errors are detected, refer to ["No Translations After Upgrade"](#) in [Appendix B](#), ["Troubleshooting an Upgrade"](#) to correct the problem. Do not continue with the upgrade until the errors are corrected.

Save Announcements



NOTE:

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

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



NOTE:

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

3. Remove the translation card and install the backup translation card

Back Up Disk

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

Check ISDN Signaling Group States

1. Type **list signaling-group** and press Enter.
2. Type **status signaling-group** and press Enter to determine if ISDN is in service. If it is not, follow normal maintenance procedures.

Shut Down DEFINITY LAN Gateway System



WARNING:

Neglecting to shut down the 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.
2. On the main menu, select **Maintenance > Reset System > Shutdown**.
3. Unseat the LAN Gateway assembly from its backplane connectors.

Shut Down DEFINITY AUDIX System (if necessary)



WARNING:

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

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 2-19](#).



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Power Down the SPE



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 9 Maintenance for R9r, 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 mm²) 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 Power and Ground

1. Disconnect the cabinet power cords from the rear of the cabinet.
2. Disconnect the 10 AWG (#25) (2.6 mm²) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm²) 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 9r 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 9r cabinet, retain them for connection to the Release 9r system.

Install the Release 9r Cabinets

Unpack and Install the Release 9r Multicarrier Cabinet

1. Refer to the MCC installation instructions in the *DEFINITY Made Easy* tools.



CAUTION:

Do not power up the Release 9r system.

2. Return to this section when the installation of the Release 9r is completed.

Remove Emergency Transfer Ground Wire

1. If the Release 9r is being installed while the present system is in service:
 - a. Connect a 10 AWG (#25) (2.6 mm²) wire to either pin 49 of the connecting block or 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 9r cabinet:
 - a. Disconnect the 10 AWG (#25) (2.6 mm²) wire (installed earlier) from the connecting block or pin 49 of the CAP (cable access panel).

Power-Up the Release 9r PPN

1. Insert the new Release 9r removable media into the optical drive.
2. Power up the Release 9r cabinet and allow the system to boot up completely.

Verify Software Version

1. Type **list configuration software long** and press Enter to verify the removable media contains the required Release 9 software.
2. Make note of the entire alphanumeric string of the software version. This information is used later.

Restore Disk

1. Type **restore disk full** and press Enter. This instructs the system to copy the entire removable media to disk and takes about 30 minutes to complete. Release 9 system software with translations are now resident on the disk.

NOTE:

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

2. Type **upgrade software G3V9r.xx.x.xxx.x** <entire alphanumeric string of target software version> and press Enter. This takes about 15 minutes to complete.
3. Log in as **craft**.

Set Daylight Savings Rules

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

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

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

DAYLIGHT SAVINGS RULES

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

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

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

3. Press Enter.

Set Date and Time

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

DATE AND TIME

DATE

Day of the Week: Tuesday Month: February

Day of the Month: 8 Year: 2000

TIME

Hour: 20 Minute: 30 Second: XX Type: standard

Daylight Savings Rule: 0

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

Table 2-2. English Day of the Week Names

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

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

Table 2-3. English Month Names

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

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

Set 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	Main	+ 00:00	1	303
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 to effect the changes.

Re-Record Announcements (if necessary)

1. Refer to *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide* to record announcements.
- ⇒ NOTE:

A TN750C Announcement circuit pack stores announcements in nonvolatile memory; re-recording the announcements is not needed.

Copy Announcements (if necessary)

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 announcements** and press Enter.

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Complete the Upgrade

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NOTE:

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

Complete the Upgrade

Install Remaining Hardware and Administer the System

If the present system was removed to make room for the Release 9r cabinet, skip to Step 3.

If the Release 9r cabinet was installed while the present system is in service, return to [“Remove the Present System” on page 2-6](#). Return to this section when finished.

1. Connect all new and reusable I/O cables to the Release 9r cabinet. Cross-connect at the MDF as required.
2. Remove all reusable circuit packs from the present system and install into the Release 9r cabinet. Install any new circuit packs into the Release 9r cabinet.
3. Install fiber optic cables and administer the fiber links as needed. Refer to the *DEFINITY Made Easy* CD.
4. Administer any new translations, as required.

Enable TTI



NOTE:

Do this step only if you disabled the TTI earlier.

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

Resolve Alarms

1. Type **display alarms** and press Enter to examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Check Link Status

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

Check ISDN Signaling Groups

1. Type **list signaling-group** and press Enter.
2. Type **status signaling-group** and press Enter to determine if ISDN is in service. If it is not, follow normal maintenance procedures.

Enable Scheduled Maintenance

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

Enable Alarm Origination to INADS

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



NOTE:

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to set the customer options that were purchased. Change the G3 version: field to V9.
3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and set the Basic Call Setup field to **y**.
4. Type **change system-parameters offer-options** and press Enter.

2 G3vs with Intel 386 or Risc Processor to R9r
Complete the Upgrade

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5. If changing offers and the **Activate Offer** field is **n**, set it to **y** and press **Tab**. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press **Enter** to effect the changes or **Cancel** if there were no changes.
7. Contact the requester when done.

Verify the Upgrade

Execute the following commands and verify that the information is correct:

- list configuration software-version
- list station
- list trunk-group
- list hunt-group
- list data-module
- list announcements (if any boards installed)

Save Translations

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

Save Announcements (if necessary)

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

Power Up DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. On the main menu, select **Maintenance > Reset System > Reboot System**.

Power Up DEFINITY AUDIX System

1. To power up the AUDIX assembly, refer to [“DEFINITY AUDIX Power Procedures” on page 2-19](#).

Back Up Disk

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

Set Core Dump Vector

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

Return Replaced Equipment

1. Return replaced equipment to Avaya 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.

Upgrading R5si/R6si to R9r EPN

3

This chapter provides the information necessary to upgrade the following Single Carrier Cabinet (SCC) Processor Port Network (PPN) releases to a R9:

- Release 5si
- Release 5si + memory
- Release 6si system with a TN790 RISC processor.

Upgrading these systems to a Release 9r means installing a new Release 9r PPN and converting the existing SCC PPN to an EPN. The new multicarrier cabinet always serves as the PPN. Converting an EPN to a Release 9r requires changing, and often restructuring, the expansion interface circuit packs and the hardware, including replacing the control carrier in the SCC.

This upgrade assumes that the Release 9r cabinet has already been installed. If not, refer to Multicarrier Cabinet installation procedures in *DEFINITY Made Easy* tools to install the Release 9r system. Return to this chapter when finished.

DEFINITY Enterprise Communications Server Release 9 Administrator's Guide lists Release 9 features and functions and provides the commands, procedures, and forms to initialize and administer the Release 9r.

The upgrade follows this general process:

- [Preliminary Procedures](#)
- [Dismantle SCC PPN](#)
- [Convert to SCC EPN](#)
- [Install the EPN](#)

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, type the **save translation** command. Afterward, check for translation errors before proceeding with the upgrade.

NOTE:

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

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

Communication Between Equipment Rooms

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

Contact Network Technicians

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

Relocation of Port Circuit Packs

With the possible exception of a port circuit pack in slot 01 of control cabinet A that must be moved for a TN570 Expansion Interface, an upgrade to Release 9 *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 9r EPN, a Release 9r 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 9r, 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 9r 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 9r PPN.

When connecting adjuncts to an upgraded Release 9r, 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 9r removable media.

Usable Circuit Packs

Every circuit pack used in the upgraded Release 9r system must conform to the minimum usable vintage requirements for Release 9r. Those circuit packs shipped in the new Release 9r 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 9r 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 9r system.

Site Inspections

For a Release 9r 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 7000 feet (2133 m). Order the correct transceivers according to a separate PEC.

Power and Ground

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

DC Isolator

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

Emergency Transfer Stations

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

Converting the Translations

The translations in the Release 5/6si system must be copied to a spare translation card and sent to Software Technical Support (STS) to be converted and written to a Release 9r removable media. This process takes 2 weeks. The Release 9r media (including 1 with translations) must be on-site before the upgrade begins. For each Release 9r processor, 2 media (1 system disk and 1 backup removable media) must always be retained on site with the system.

Software Upgrades

After a software upgrade, several features require special attention because of screen changes or potential naming conflicts in the upgrade process. Most of these changes and conflicts relate either to a software upgrade from standard ACD to Call Vectoring or to changes in the ARS/AAR features to compensate for increasing uncertainty in the North American numbering plan. Also, if ARS is enabled (when upgrading from IR1 Release 9 to GD-91 software), it may be necessary to modify the Call Type field on the ARS Analysis screen to “unk” for all call types except “iop” or “int.”

After the upgrade, check these screens to ensure the upgraded translations are appropriate for the customer’s needs. Refer to *DEFINITY Enterprise Communications Server Release 9 Administrator’s Guide*, for information to make any required changes.

ISDN Gateway

When upgrading to a Release 9r, 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 Avaya 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). For detailed fiber attenuator information, refer to Multicarrier Cabinet installation procedures in the *DEFINITY Made Easy* tools

Required Hardware

The equipment in [Table 3-1](#) must be on-site before the upgrade begins.

Table 3-1. Required Hardware

Equipment	Description	Quantity
J58890N	Expansion Control Cabinet	1
108187170	TN775C Maintenance circuit pack	1
108469446	TN570D Expansion Interface circuit pack	Depends on reliability type and number of PNs
107737934	TN573B Switched Node Interface circuit pack	Depends on reliability type and number of PNs
407439975 or 407598325	20-ft (6 m) Multimode Fiber Optic Cable 20-ft (6 m) Single-Mode Fiber Optic Cable	1 to 12
106455348 or 106455363 or 107731853	9823A Lightwave Transceiver (short) 9823B Lightwave Transceiver (long) 300A Lightwave Transceiver(single mode)	2 to 12 ¹ 2 to 12 ¹ 2 to 12 ²
J58890to-O L1	Release 9 Removable Media	1 or 2 ³
108773912	TN771DP Maintenance Test circuit pack	1 or 2 ⁴
846307817	Lower Rear Cover	1 ⁵
846307809	Ground Plate	1
H600-248 G1	ICC Duplication Cables	2 ⁶
846408268 846408386 846408250 846408243	Earthquake Equipment (if needed): Front Panel Ground Plate Stiffener Front Mounting Angle	1 1 1 1
106060718 106060734 106061021	Attenuators (single-mode fiber only): 5 dB 10 dB 15 dB attenuator (single-mode fiber only)	2 for each fiber connection ² 2 for each fiber connection ² 2 for each fiber connection ²

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 9r system. One removable media is required for a standard reliability system; 2 for a high or critical reliability system.

4. Depending on the number of EPNs in a critical reliability Release 9r system.

5. Required for the B port cabinet of a critical reliability Release 9r EPN.

6. Required for a critical reliability Release 9r 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)
 - A copy of *DEFINITY Enterprise Communications Server Release 9* Library CD.

Task Tables

Table 3-2 provides the high-level tasks to perform the upgrades in this chapter.

Table 3-2. Tasks to Upgrade to Release 9r System

✓	Task Description	Page
	Mail Spare Translation Card to STS	3-10
	Follow Routine Preventive Maintenance	3-10
	Label Cables	3-10
	Check SPE	3-10
	Disable Scheduled Maintenance and Alarm Origination to INADS	3-11
	Busycout MMI Circuit Packs (H/C only)	3-11
	Save Translations	3-12
	Save Announcements (if necessary)	3-12
	Check Link Status	3-12
	Disable TTI	3-12
	Shut Down DEFINITY LAN Gateway System	3-13
	Shut Down DEFINITY AUDIX System	3-13
	Power Down Existing System	3-14
	Disconnect Power and Ground	3-14

Continued on next page

Table 3-2. Tasks to Upgrade to Release 9r System — *Continued*

✓	Task Description	Page
	Install Emergency Transfer Ground Wire	3-14
	Disconnect Equipment and Cables	3-14
	Remove Circuit Packs	3-15
	Disconnect TDM/LAN Cables and ICC Cables	3-15
	Remove the Existing Control Cabinet	3-15
	Unpack and Install Expansion Control Cabinet	3-16
	Install Port Cabinets	3-16
	Install Circuit Packs	3-16
	Change Cabinet Address Plugs	3-17
	Install TDM/LAN Bus Terminators	3-19
	Connect TDM/LAN Cables and ICC Cables	3-21
	Interconnect Port Networks	3-23
	Connect Power and Ground	3-23
	Verify Usable Circuit Pack Vintages	3-23
	Install System Access Ports	3-23
	Reseat DEFINITY LAN Gateway System	3-24
	Reseat DEFINITY AUDIX System	3-24
	Remove Emergency Transfer Ground Wire	3-24
	Reboot the System	3-24
	Restart DEFINITY LAN Gateway System	3-25
	Label Main Distribution Frame	3-25
	Reconnect Cables	3-25
	Power Up the EPN Cabinet	3-26
	Install Rear Ground Plates (Systems with Earthquake Protection)	3-26
	Install Front Ground Plates (Systems with Earthquake Protection)	3-26
	Install Cabinet Clips (Systems without Earthquake Protection)	3-28
	Install Cable Clamps	3-29
	Retranslate Port Circuits	3-29

Continued on next page

Table 3-2. Tasks to Upgrade to Release 9r System — Continued

✓	Task Description	Page
	Re-record Announcements (TN750/B Only)	3-30
	Administer Fiber Links	3-30
	Enable TTI	3-30
	Check Link Status	3-30
	Resolve Alarms	3-30
	Enable Alarm Origination to INADS	3-31
	Administer Customer Options	3-31
	Save Translations	3-31
	Return Replaced Equipment	3-32

Preliminary Procedures

During an upgrade, Software Technical Support (STS) must convert the Release 5/6si translations and write them to a Release 9r or later removable media. The flashcard is sent to STS for conversion. During this time, do not add any new translations while the spare flashcard is being converted. If not possible, be sure to keep detailed records of any translation changes made during that interval. These records facilitate the reassignment of any changes after the upgrade. The new Release 9r removable media (1 with the converted translations, 2 if duplicated) must be on-site before the upgrade begins.

Because a new Release 9r PPN is installed during the upgrade, STS changes the PN number of the Release 5/6si PPN to be converted to a Release 9r EPN. To minimize the renumbering of PNs and to minimize the rewiring and relabeling of the MDF, the removalbe media conversion assigns the next PN number (after the highest numbered PN in the system) to the Release 5/6si PPN to become a Release 9r EPN. For example, if a Release 5/6si system with 2 PNs (a PPN and an EPN) were upgraded to a Release 9r, 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.

Mail Spare Translation Card to STS

A spare translation card must be acquired from 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 translations** and press Enter to copy 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).

Follow Routine Preventive Maintenance

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 9 Maintenance for R9r*.

Label Cables

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

Dismantle SCC PPN

Check SPE

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

Disable Scheduled Maintenance and Alarm Origination to INADS

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

or

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



CAUTION:

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

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



NOTE:

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

Busyout MMI Circuit Packs (H/C only)



CAUTION:

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

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

3 Upgrading R5si/R6si to R9r EPN
Convert to SCC EPN

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Save Translations

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

Save Announcements (if necessary)



NOTE:

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

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



NOTE:

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

3. Remove the translation card and install the backup flashcard.

Convert to SCC EPN

As you are wiring the PPN installation, label the MDF with the new PN number of the SCC 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 9r EPN.

Check Link Status

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

Disable TTI



NOTE:

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



CAUTION:

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

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Convert to SCC EPN

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

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

Shut Down DEFINITY LAN Gateway System



WARNING:

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

1. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway* for the procedure to log on.
2. When the main menu appears, select **Maintenance > Reset System > Shutdown.**
3. 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



CAUTION:

Powering down the PPN causes 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 9 Maintenance for R9si*, for information about preparing the system for a power down.

1. At each PPN cabinet power supply, set the main circuit breaker to OFF.
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 mm²) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm²) 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 mm²) 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 attached to the PPN.
2. Disconnect the management terminal or PC from the TERM connector.
3. Remove the ground plate(s) from between all of the PPN cabinets.
4. Remove the top and bottom rear covers from all of the PPN cabinets.

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Convert to SCC EPN

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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 the R5/6si control cabinet contains a TN756 tone-detector/generator, replace it with the new TN2182B Tone-Clock, which also eliminates the need for a TN748B.

Disconnect TDM/LAN Cables and ICC Cables

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

Remove the Existing Control Cabinet

Because the control cabinet is at the bottom of the port network, you must first 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 (567 kg). 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.

Install the EPN

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. If a stacked system, replace the port cabinets into their proper positions.



NOTE:

If the Release 5/6si SCC was duplicated, then 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 of all the circuit packs installed in the existing cabinets (provided with the Release 9r removable media), install the control circuit packs into the new expansion control cabinet.
3. Install the port circuit packs into the A cabinet using the label on the front of the carrier and the annotated list of circuit packs as a guide.



NOTE:

Because the new Release 9r expansion control carrier has 6 more port slots than the one removed, you do not need to retranslate these circuit packs.

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

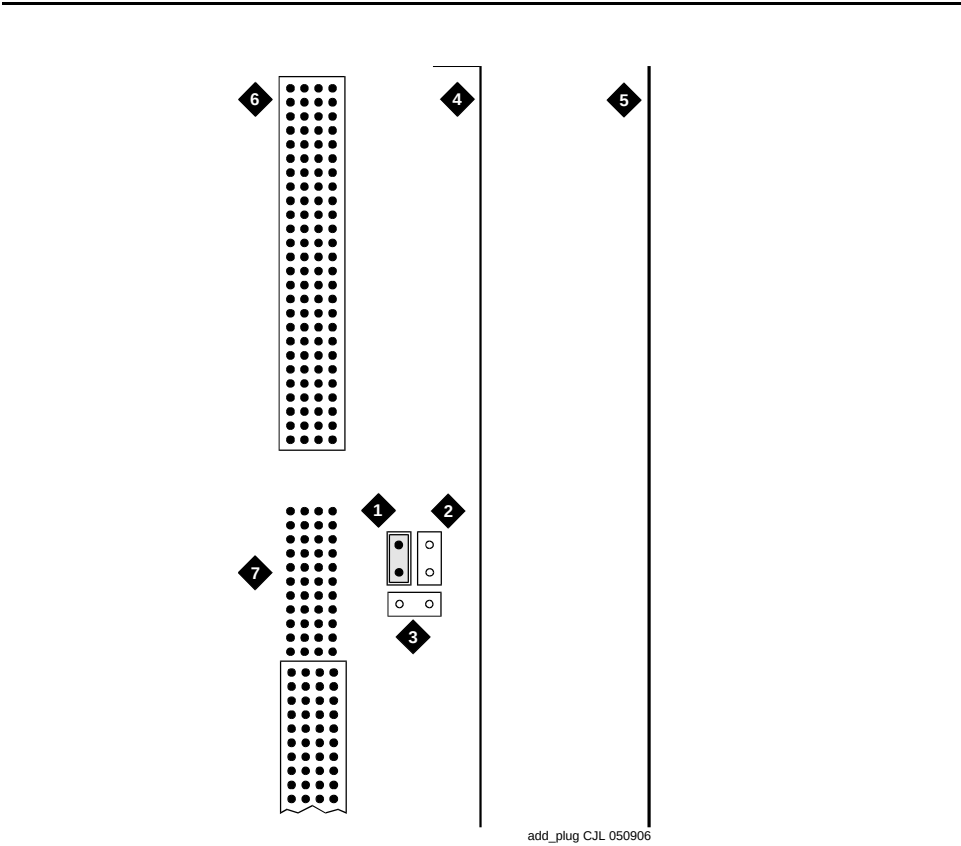
Table 3-3. TN570 Expansion Interface Requirements

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

Change Cabinet Address Plugs

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

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



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

Figure 3-1. Cabinet Address Plug Location

Install TDM/LAN Bus Terminators

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

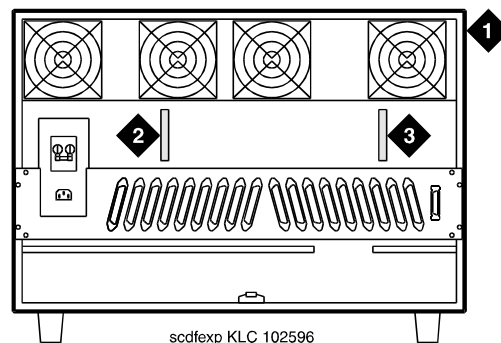


Figure Notes

1. Expansion 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 other AHF110 TDM/LAN bus terminator on the top port cabinet, at the end of the daisy chain of the bus.

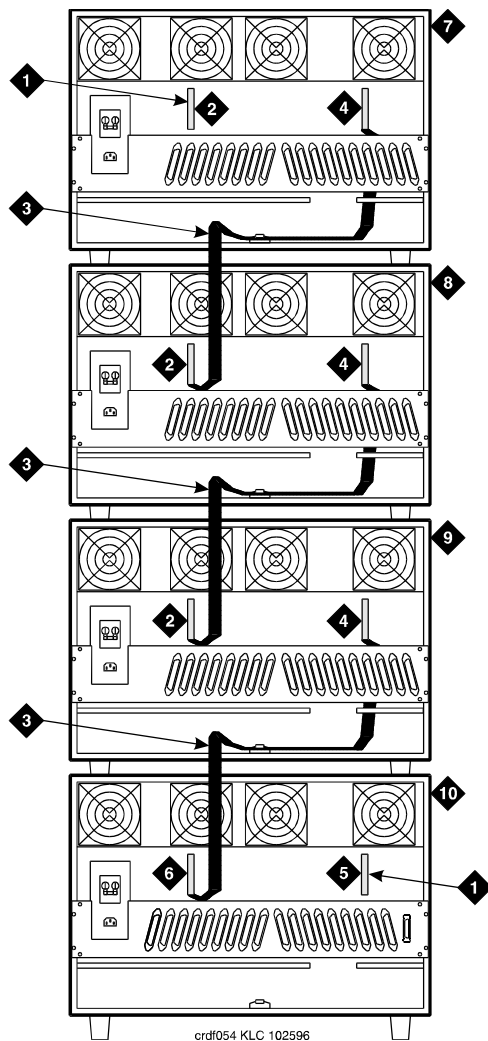


Figure Notes

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

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

Connect TDM/LAN Cables and ICC Cables

- Route and connect the TDM/LAN cables. If any of the Release 5/6si port cabinets (being upgraded to Release 9r 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.
 - Loosen the 2 left connector panel screws, then remove the other 2 connector panel screws.
 - 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.
 - Replace and tighten the connector panel screws.
- For a critical reliability system, connect the ICC cables as shown in [Table 3-4](#), [Figure 3-4](#), and [Figure 3-5](#).



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

Table 3-4. Intercabinet Cable Connections

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

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

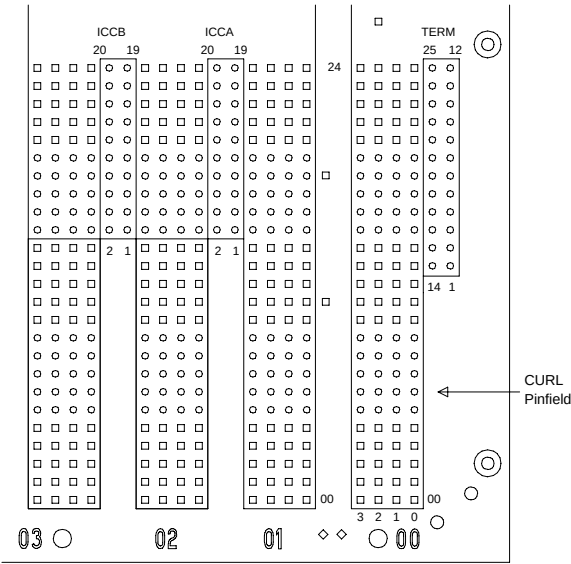


Figure 3-4. ICC Pinfield Blocks on J58890N Expansion Control Cabinet

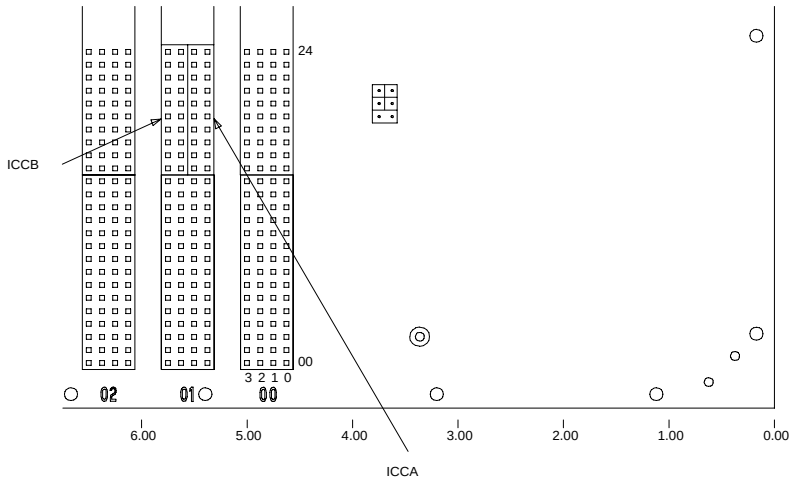


Figure 3-5. ICC Pinfield Blocks on J58890H Port Cabinet

Interconnect Port Networks

You must next install all the fiber optic cabling and then administer it. For the installation procedure, refer to [“Interconnect Port Networks with Fiber Optic Cabling” on page 3-32](#).

Connect Power and Ground

1. Reconnect the 6 AWG (#40) (4.1 mm²) cabinet ground wire to the single-point ground bar on the cabinet.
2. Reconnect the 10 AWG (#25) (2.6 mm²) 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 9r 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 or local PC
- Basic Call Management System (BCMS) terminal
- Call Detail Recording Unit (CDRU)/Centralized Attendant Service Plus (CAS+)

3 Upgrading R5si/R6si to R9r EPN
Install the EPN

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- 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 DEFINITY AUDIX assembly to its backplane connectors.

Remove Emergency Transfer Ground Wire

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

Reboot the System

1. Connect the management terminal or PC 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*.
2. Insert the new Release 9r removable media into the optical drive.
3. Behind each EPN cabinet, set the circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.

The system performs a reset level 4 rebooting process, loading blank translations from the disk. Rebooting takes 5 to 11 minutes.
5. Type **reset system 4** and press Enter. This instructs the system to perform a level 4 reboot, loading the upgraded STS translations from the new removable media. Rebooting takes 5 to 11 minutes.
6. Log in as **craft**.
7. Type **set time** and press Enter to set the current time that ensures the system is booted properly.
8. After about 2 minutes, type **status spe** and press Enter. The Standby Handshake field must show **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.

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Install the EPN

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10. If the system is high or critical reliability, type **status spe** and press Enter. The Handshake, Refresh, and Shadowing fields show **up** before continuing with the upgrade. Also, the standby side field shows **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 > Reset System > Restart System**.

Label Main Distribution Frame

1. Label the MDF with the new PN number of the Release 9r 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 Expansion Control Cabinet. Do not use these rear covers on the port cabinets.



NOTE:

The rear covers for Release 9r 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 9r 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.

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Install the EPN

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Power Up the EPN Cabinet

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

Install Rear Ground Plates (Systems with Earthquake Protection)

1. Loosen the 4 screws at the bottom of the top cabinet and at the top of the cabinet underneath the top cabinet. See [Figure 3-6](#).
2. Align the mounting holes in the rear ground plate over the bottom screws in the top cabinet. See [Figure 3-6](#).
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 3-6](#).
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.

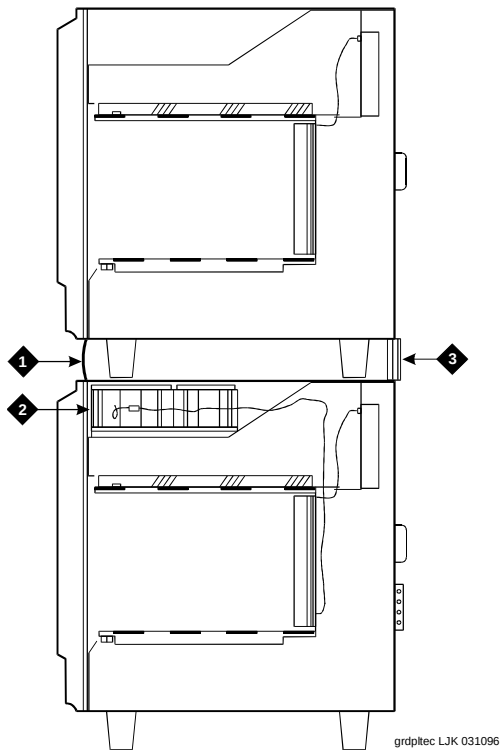


Figure Notes

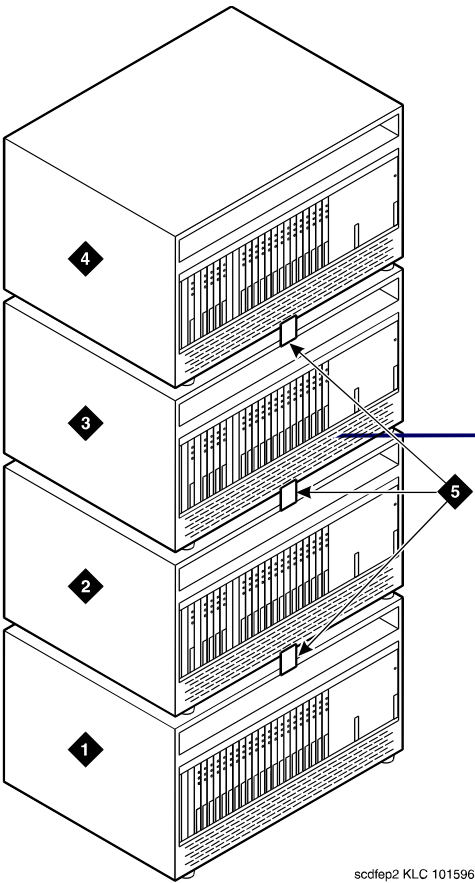
1. Front Ground Plate or Cabinet Clip
2. Battery
3. Rear Ground Plate

Figure 3-6. 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 3-7](#).



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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 3-7. Location of Cabinet Clips

Install Cable Clamps

1. Behind the cabinets, using screws provided, install 2 cable clamps on each ground plate. See [Figure 3-8](#). These clamps hold the port cables.

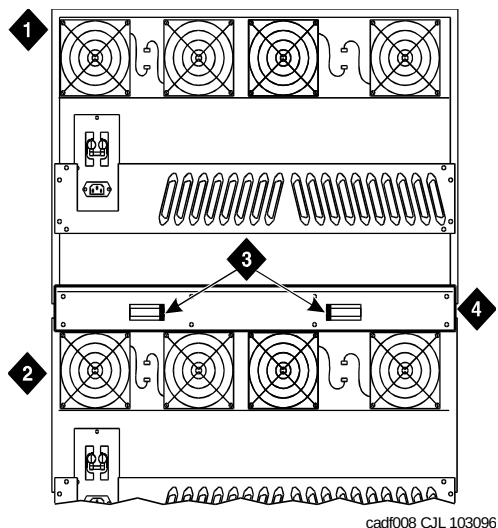


Figure Notes

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

Figure 3-8. 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. Type **list configuration all** and press **Enter** to 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 9 Administrator's Guide*.

Re-record Announcements (TN750/B Only)

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



NOTE:

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

Administer Fiber Links

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

Enable TTI

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

Check Link Status

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

Resolve Alarms

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

Enable Alarm Origination to INADS

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



NOTE:

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

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to set the customer options that were purchased. Change the G3 version: field to V9.
3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and set the Basic Call Setup field to **y**.
4. Type **change system-parameters offer-options** and press Enter.
5. If changing offers and the Activate Offer field is **n**, set it to **y** and press Tab. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press Enter to effect the changes or Cancel if there were no changes.
7. Contact the requester when done.

Save Translations

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



WARNING:

Translation corruption detected; call Avaya distributor immediately.



NOTE:

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

Return Replaced Equipment

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

BCS/Material Logistics, MSL/Attended Stocking Locations

Methods and Procedures for Basic Material Returns

Interconnect Port Networks with Fiber Optic Cabling

Follow the procedures for connecting all the port networks, depending on the type of reliability:

- [Standard Reliability](#)
- [High Reliability](#)
- [Critical Reliability](#)

Standard Reliability

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

NOTE:

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 3-10](#).

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 9r with 2 PNs.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Because a Release 9r 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 H600-348 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)

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

For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier B of the multicarrier PPN. See [Figure 3-9](#) and [Figure 3-10](#):
 - a. Install a lightwave transceiver on the connector at slot 1B02.

 **NOTE:**
Attenuators may be required for single mode fiber using a 300A Lightwave Transceiver
 - b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1B02.
 - c. Route the fiber optic cable from the lightwave transceiver to the cabinet's cable tray and down out of the cabinet to the EPN stack.
 - d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control cabinet A of EPN stack 2:
 - a. Install a lightwave transceiver on the connector at slot 2A01.
 - b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 2A01.
 - c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
 - d. Coil up the surplus length of fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

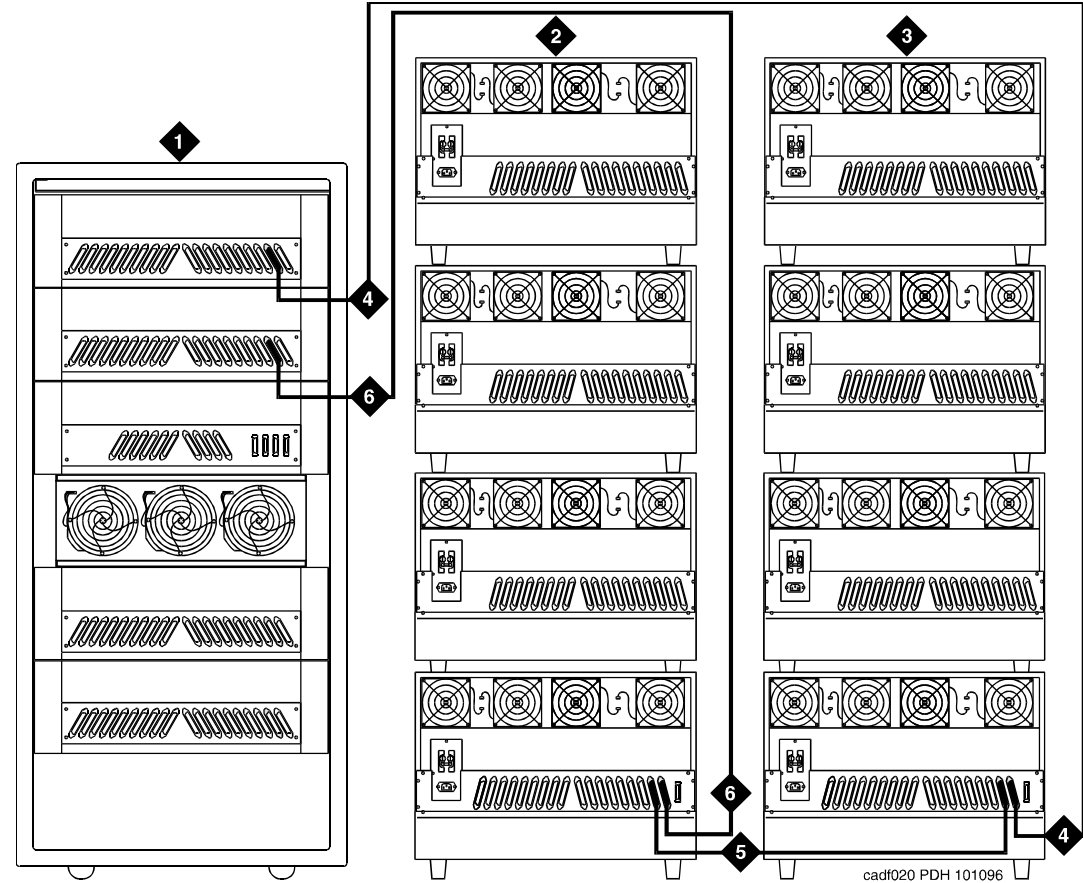


Figure Notes

1. Cabinet 1 PPN	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 3-9. Standard Reliability Release 9r with 2 or 3 Port Networks

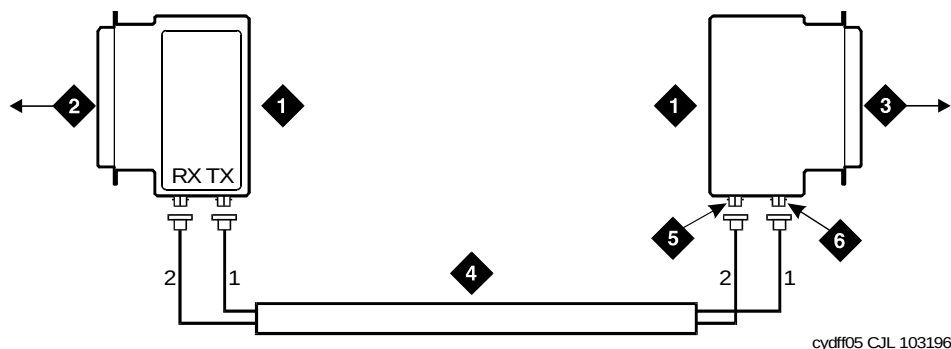


Figure Notes

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 (Cabinet Stack 2)	6. RX Connector

Figure 3-10. Typical Fiber Optic Connections

For 1 or 2 Fiber-Remoted Expansion Port Networks

1. Behind port carrier B of the multicarrier PPN. See [Figure 3-9](#) and [Figure 3-11](#):
 - a. Install a lightwave transceiver on the connector at slot 1B02.

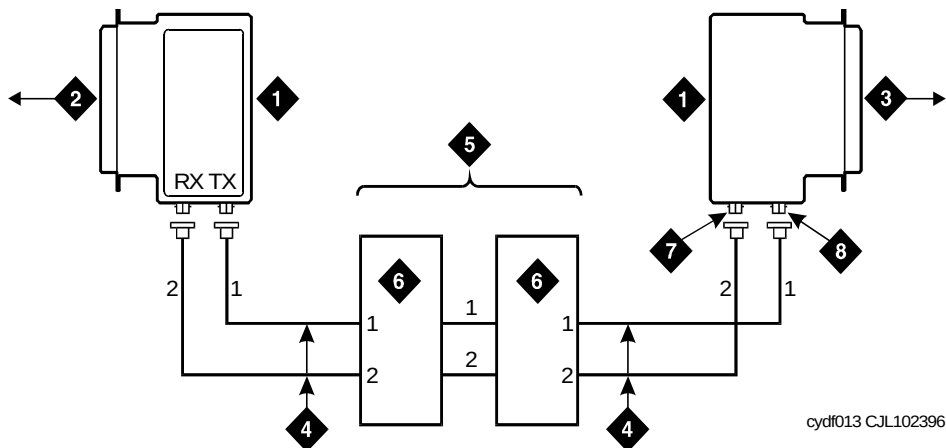


NOTE:

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 3-11. Fiber Optic Connections PPN to EPN1

High Reliability



NOTE:

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 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 9r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 9r PPN cabinet is collocated with a Single-Carrier Cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier.

Fiber-Remoted Port Networks

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

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

DS1 CONV-Remoted Port Networks

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



NOTE:

The TN1654 requires a TN573B Switch Node Interface circuit pack

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

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

For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-12](#) and [Figure 3-13](#):
 - a. Install a lightwave transceiver on the connector at slot 1C02.
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 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.

**NOTE:**

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

- b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 2A01.
- c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
- d. Coil up the surplus fiber optic cable, and place the coil either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.

For 2 Collocated Expansion Port Networks

1. Behind port carrier D of the multicarrier PPN:

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



NOTE:

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

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

2. Behind control cabinet A of EPN stack 3:

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



NOTE:

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

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

3. Behind control cabinet A of EPN stack 2:

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



NOTE:

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

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

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

➡ NOTE:

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

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

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

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

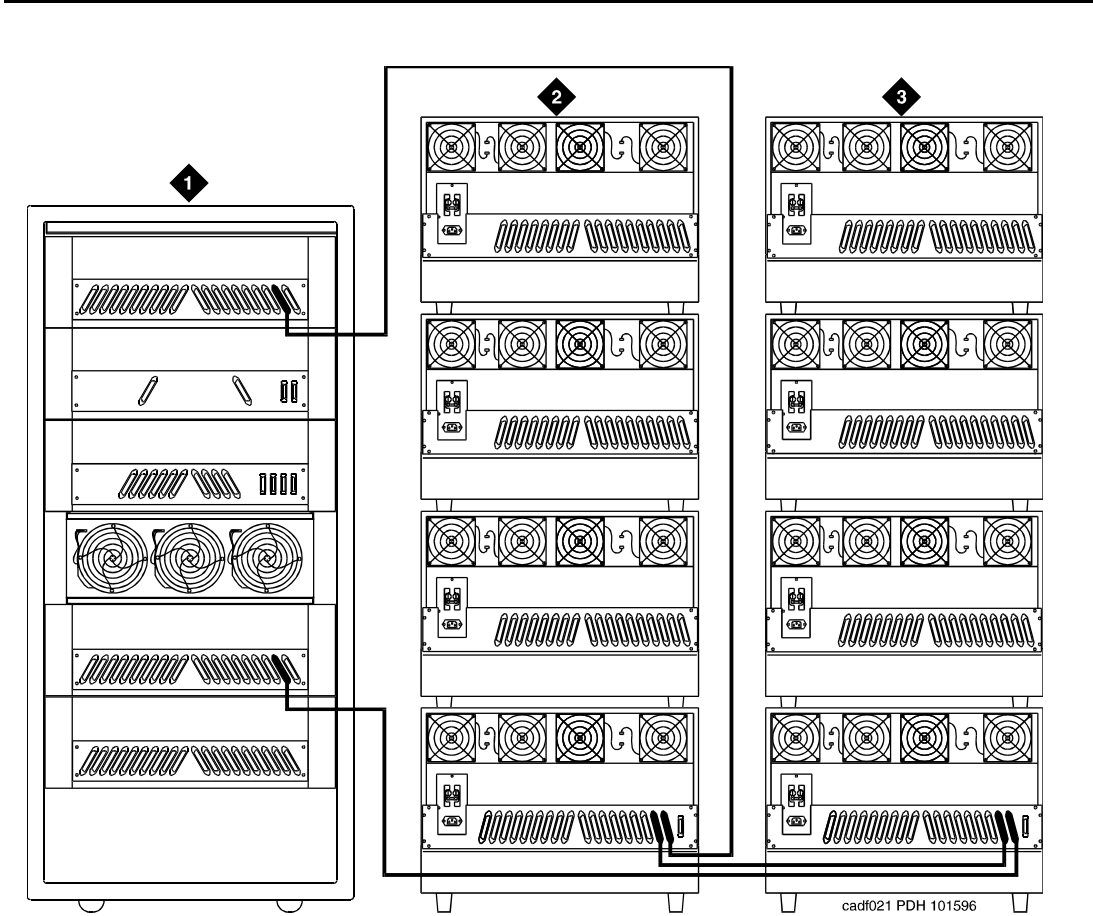


Figure Notes

1. Cabinet 1 PPN

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

Figure 3-12. High Reliability Release 9r with 2 or 3 Port Networks

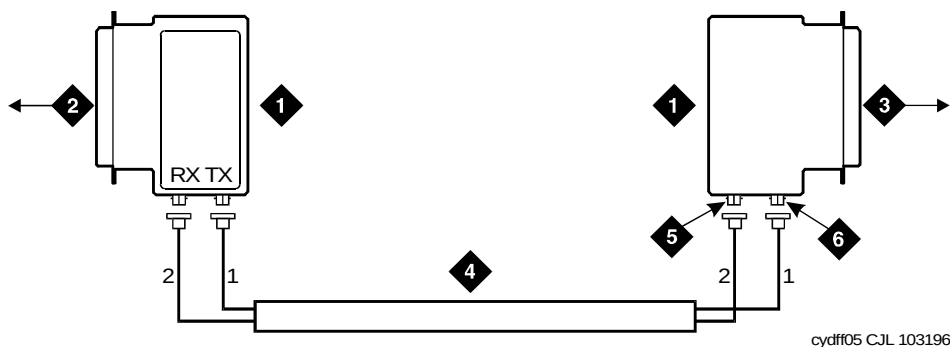


Figure Notes

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 (Cabinet Stack 2)	6. RX Connector

Figure 3-13. Fiber Optic Connections PPN to EPN1

For 1 or 2 Fiber-Remoted Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-12](#) and [Figure 3-14](#):
 - 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:
1. Install a lightwave transceiver on the connector at slot 2A01.

NOTE:

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

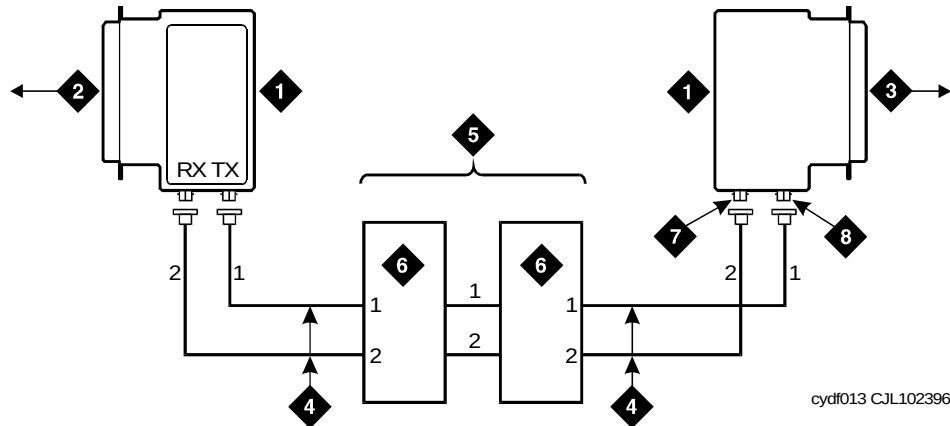
2. Connect a fiber cable to the transceiver just installed.

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

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

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

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



- Figure Notes
1. Lightwave Transceiver

2. To PPN Carrier B Slot 1C02

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

4. Fiber Optic Cable

5. Fiber Optic Cross-Connect Facility

6. Lightguide Interface Unit (LIU)

7. TX Connector

8. RX Connector

Figure 3-14. Fiber Optic Connections PPN to EPN1

Critical Reliability



NOTE:

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 3-16](#).

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 9r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 9r 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).

5-dB Attenuator	106060718
10-dB Attenuator	106060734
15-dB 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).

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

For 1 or 2 Collocated Expansion Port Networks

1. Behind port carrier C of the multicarrier PPN. See [Figure 3-15](#) and [Figure 3-16](#):

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



NOTE:

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

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

2. Behind port cabinet B of EPN stack 2:

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



NOTE:

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

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

3. Behind port carrier D of the multicarrier PPN:

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



NOTE:

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

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

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

➡ NOTE:

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

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

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

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

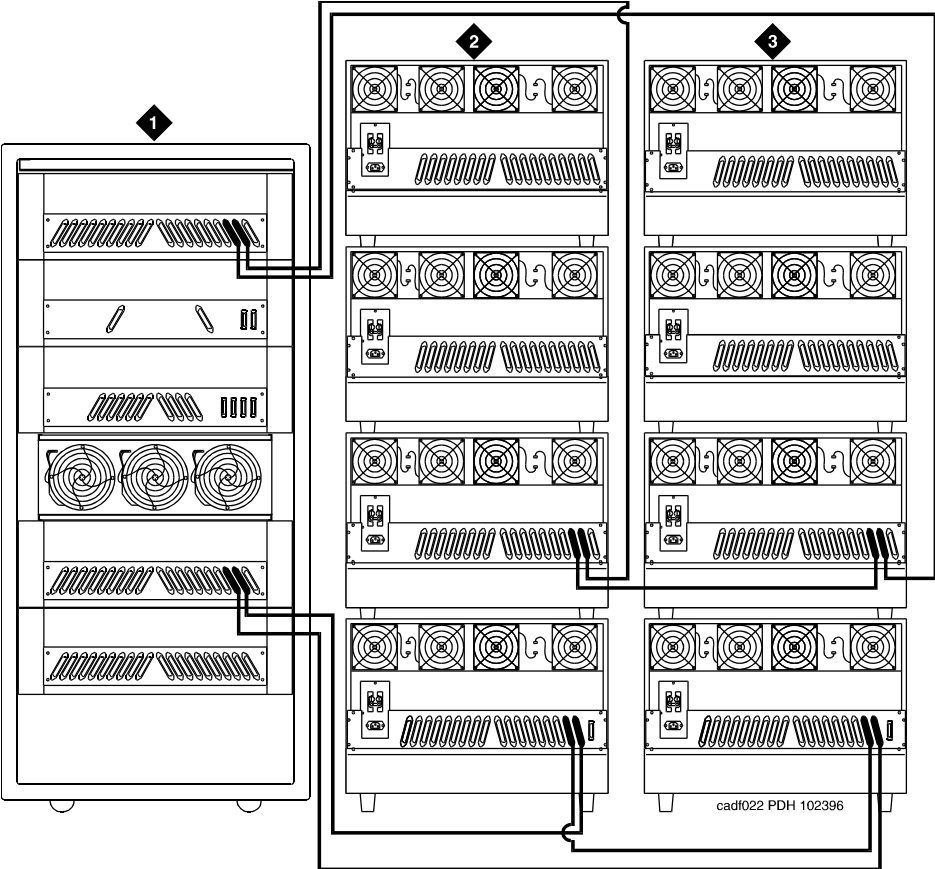


Figure Notes

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

Figure 3-15. Critical Reliability Release 9r with 2 or 3 Port Networks

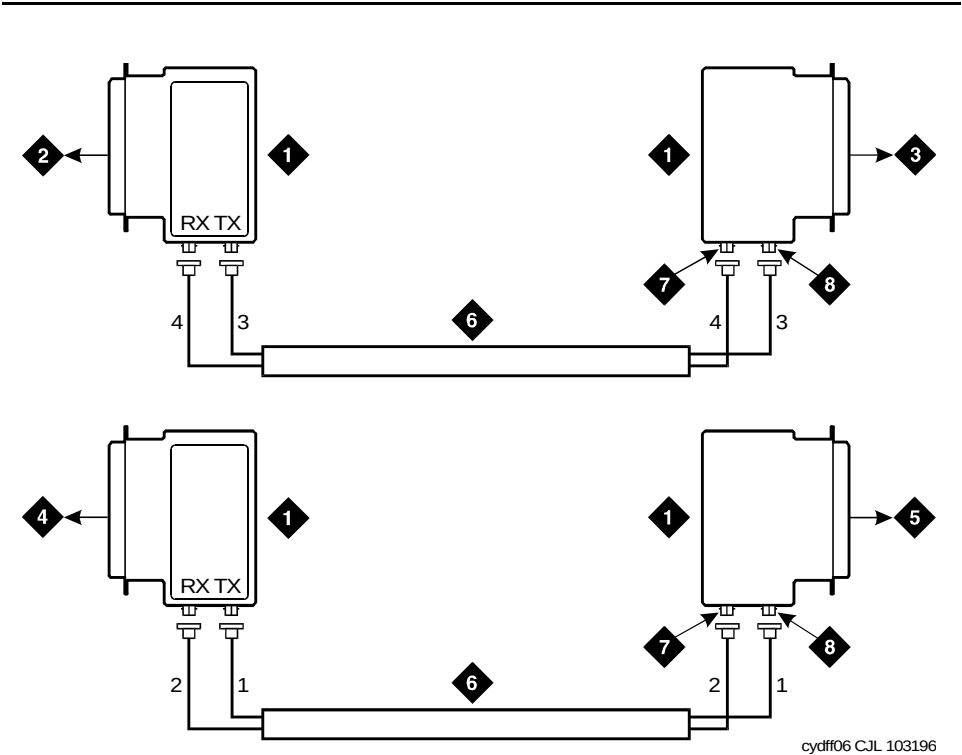


Figure Notes

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

Figure 3-16. Fiber Optic Connections PPN to EPN1

Switch-Connected Port Networks

For 1 to 15 Standard Reliability EPNs.

1. Behind the PPN cabinet. See [Figure 3-17](#):
 - 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 3-17](#):
 - 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.

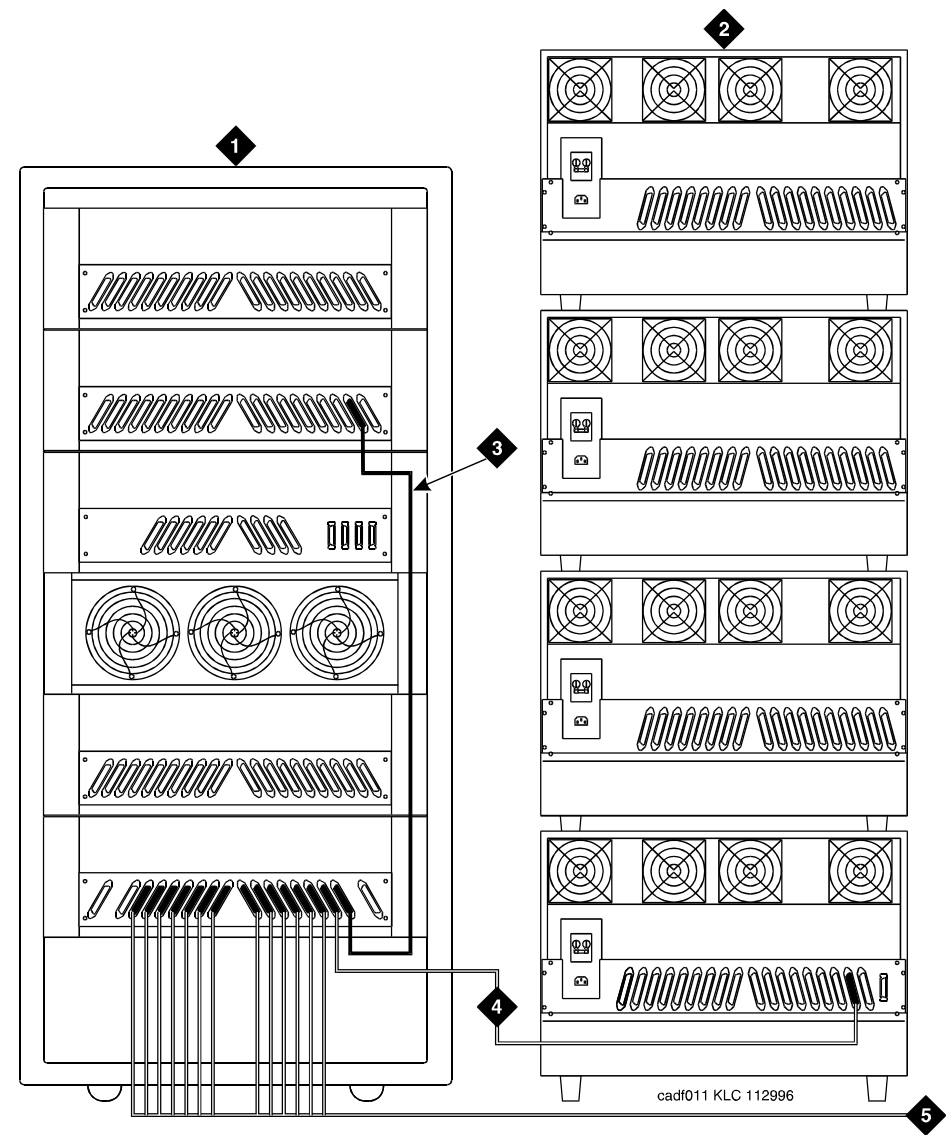


Figure Notes

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 3-17. Fiber Optic Connections Through Center Stage Switch

For 1 to 15 High Reliability EPNs.

1. Behind the PPN cabinet. See [Figure 3-18](#):
 - 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 3-18](#):
 - 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.

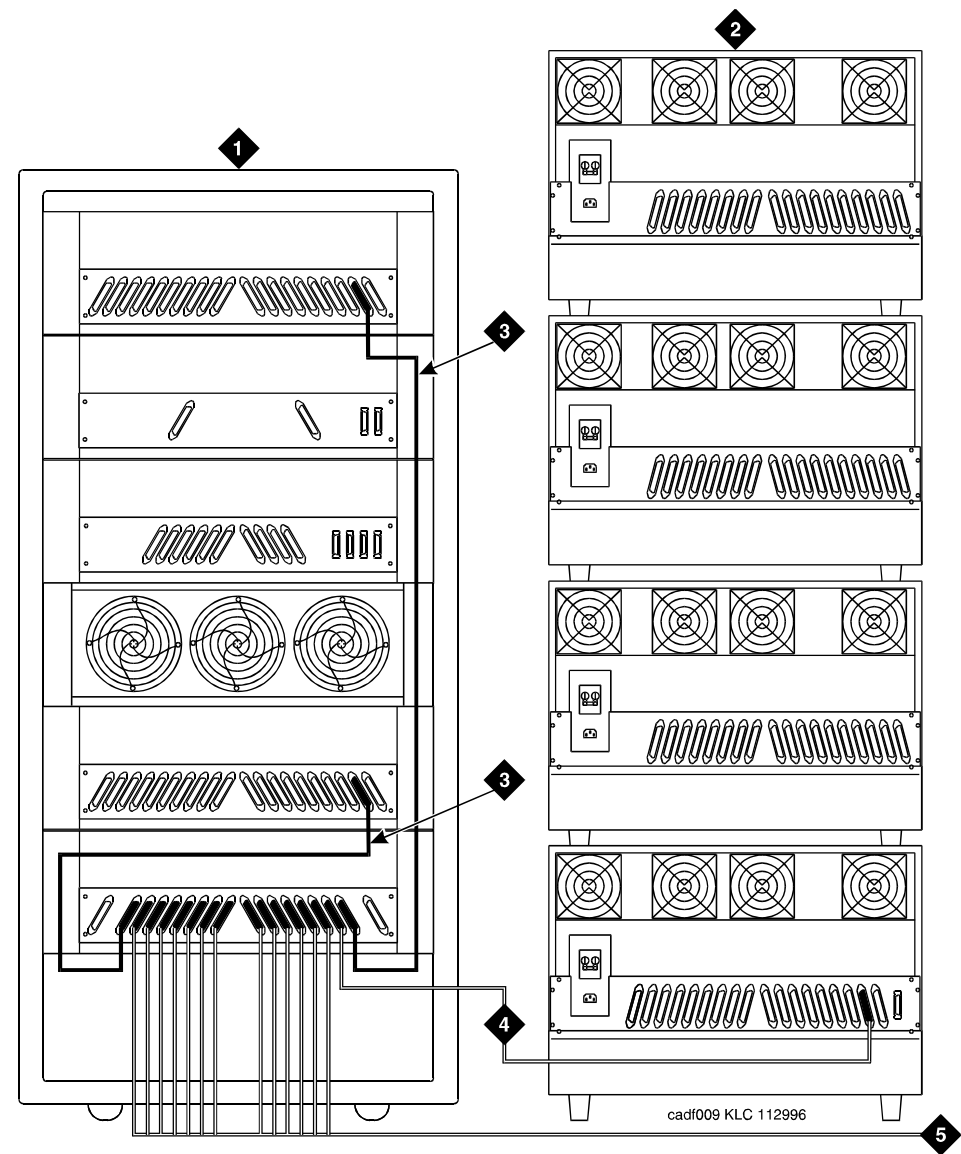


Figure Notes

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 3-18. Fiber Optic Connections Through Center Stage Switch

For 1 to 15 Critical Reliability EPNs.

1. Behind the PPN cabinet. See [Figure 3-19](#):
 - a. Install a lightwave transceiver on cable connector at slot 1E01.
 - b. Install a lightwave transceiver on cable connector at slot 1E02.
 - c. Connect the metallic intracarrier cable to the lightwave transceivers at slots 1E01 and 1E02.
 - d. Install a lightwave transceiver on cable connector at slot 1D01.
 - e. Install a lightwave transceiver on cable connector at slot 1D02.



NOTE:

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

- f. Connect the metallic intracarrier cable to the lightwave transceivers at slots 1D01 and 1D02.
2. Behind switch node carrier E of PPN cabinet 1:
 - a. For each EPN, install 1 lightwave transceiver on a cable connector with the following order of slots: 1E20, 1E03, 1E19, 1E04, 1E18, 1E05, and so forth.
 - b. Connect 1 end of each fiber optic cable to each lightwave transceiver, just installed.
 - c. Carefully attach the fiber optic cables (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.
3. Behind control cabinet A of each single-carrier EPN:
 - a. Install a lightwave transceiver on cable connector at slot A01.



NOTE:

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

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

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

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

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



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

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 9r 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 9r 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 9r 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.

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.

Multicarrier G2 Universal Module to R9r EPN

4

This chapter provides the information necessary to upgrade a DEFINITY G2 universal module to a DEFINITY ECS R9r for standard, high, and critical reliabilities.

Upgrading this system to a Release 9r means installing a new Release 9r multicarrier cabinet PPN and converting the existing PPN to an EPN. The new multicarrier cabinet always serves as the PPN. Converting an EPN for a Release 9r requires changing, and often restructuring, the expansion interface circuit packs and the hardware, including replacing the control carrier.

This upgrade assumes that the Release 9r cabinet has already been installed. If not, refer to Multicarrier Cabinets installation instructions in *DEFINITY Made Easy* tools to install the Release 9r system. Return to this chapter when finished.

DEFINITY Enterprise Communications Server Release 9 Administrator's Guide lists Release 9 features and functions and provides the commands, procedures, and forms to initialize and administer the Release 9r.

The upgrade follows this general process:

- [Perform Preliminary Procedures](#)
- [Remove Module Control Carrier\(s\)](#)
- [Install Expansion Control Carrier\(s\)](#)
- [Interconnect Port Networks](#)
- [Complete the Upgrade](#)

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). For detailed fiber attenuator information, refer to the multicarrier cabinet installation procedures in *DEFINITY Made Easy tools*.

Read This First

Service Interruption

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

Call Management System (CMS)

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

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

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

Software

If the customer plans to emulate existing G2 translations in the upgraded Release 9, 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 and copied to removable media. This process may take several days. STS must return the G2 reports and the removable media to the Project Manager before the upgrade can begin. For each G2 processor, retain 2 tapes (1 system tape and 1 backup tape) on site with the G2 system.

After the reports arrive, many features require special attention because of feature differences, screen changes, and potential naming conflicts in the upgrade process.

During the upgrade, the Software Specialist should implement DEFINITY ECS Release 9 translations that are appropriate for the customer's needs. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*

Preventing Translation Errors

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

NOTE:

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

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

Contact Network Technicians

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

Communication Between Equipment Rooms

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

Relocation of Port Circuit Packs

An upgrade to Release 9 *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 9 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 9 system must conform to the minimum usable vintage requirements for Release 9. Those circuit packs shipped in the new Release 9 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 9 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 9 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 9 supports non-United States call-processing applications, a wide variety of non-United States circuit packs can be used. Contact your Avaya representative for more information.

Site Inspections

For the purposes of a Release 9 upgrade, most G2 systems are already equipped with the correct TDM/LAN cables (WP-91716 L6 and L7) and the correct lightwave transceivers (9823A or 9823B). However, some G2 systems contain earlier versions of these components, and (based on a site inspection) these older components must be replaced.

The 2 earlier versions of the TDM/LAN cable included the WP-91112 (L1 and L2) and the WP-91716 (L1 and L2). Both of these versions had white labels. In contrast, the correct cables (WP-91716 L6 and L7) have blue labels. If a remediation site inspection reveals that the older cables reside in the system, replace the older cables under the remediation process.

Earlier versions of lightwave transceivers include the 4-series transceivers (4A through 4F). These transceivers support fiber connections up to 7,000 feet (2134 m) apart; whereas the 9823A supports connections up to 5,000 feet (1524 m), and the 9823B supports connections up to 25,000 feet (7620 m). A single mode fiber transceiver (300A) supports distances of up to 115,000 feet (21.7 miles, 35 km). If the site inspection reveals that the older 4-series transceivers reside in the system, Order the correct transceivers according to a separate PEC.

⇒ NOTE:

Using the 300A may require 5 or 10 dB attenuators. Contact your Avaya 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 5000 feet (1524 m) and 7000 feet (2134 m)).

Power and Ground

The new multicarrier PPN cabinet or any EPN cabinet added for the upgrade can be either global 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 global 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 global AC-powered PPN for a Release 9 upgrade has different power requirements than the G2 system. Refer to the *DEFINITY Enterprise Communications Server Release 9 System Description* 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.

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 R9 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 9 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 9 AUXILIARY connectors.

Table 4-1. Pinouts for D6 Connector on G2 System

Terminal Number	Pin #	Color	Designation	Terminal #	Pin #	Color	Designation
1	26	W-BL	UNIT20	2	01	BL-W	UNIT19
3	27	W-O	UNIT22	4	02	O-W	UNIT21
5	28	W-G	UNIT24	6	03	G-W	UNIT23
7	29	W-BR		8	04	BR-W	UNIT25
9	30	W-S	UNIT27	10	05	S-W	UNIT26
11	31	R-BL	UNIT29	12	06	BL-R	UNIT28
13	32	R-O	UNIT31	14	07	O-R	UNIT30
15	33	R-G	AUXCTMP	16	08	G-R	UNIT32
17	34	R-BR	EXTEQMN	18	09	BR-R	EXTEQMJ
19	35	R-S	AUXCRCT	20	10	S-R	AUXCHO
21	36	BK-BL	AUXCCB	22	11	BL-BK	AUXCFRQ
23	37	BK-O	AUXCFAN	24	12	O-BK	
25	38	BK-G	EXTPRMJ	26	13	G-BK	EXTPRMN
27	39	BK-BR	UNIT2	28	14	BR-BK	UNIT1
29	40	BK-S	UNIT4	30	15	S-BK	UNIT3
31	41	Y-BL	UNIT6	32	16	BL-Y	UNIT5
33	42	Y-O	UNIT8	34	17	O-Y	UNIT7
35	43	Y-G	UNIT10	36	18	G-Y	UNIT9
37	44	Y-BR		38	19	BR-Y	UNIT11
39	45	Y-S	UNIT13	40	20	S-Y	UNIT12
41	46	V-BL	UNIT15	42	21	BL-V	UNIT14
43	47	V-O	UNIT17	44	22	O-V	UNIT16
45	48	V-G		46	23	G-V	UNIT18
47	49	V-BR	RING0	48	24	BR-V	TIP0
49	50	V-S	RING1	50	25	S-V	TIP1

Table 4-2. Pinouts for Auxiliary Connector on Release 9 Systems

Terminal Number	Pin #	Color	Designation	Terminal Number	Pin #	Color	Designation
1	26	W-BL	AUXMJ	2	01	BL-W	GRD
3	27	W-O	AUXMN	4	02	O-W	GRD
5	28	W-G		6	03	G-W	GRD
7	29	W-BR		8	04	BR-W	GRD
9	30	W-S		10	05	S-W	GRD
11	31	R-BL		12	06	BL-R	GRD
13	32	R-O		14	07	O-R	GRD
15	33	R-G		16	08	G-R	
17	34	R-BR		18	09	BR-R	
19	35	R-S		20	10	S-R	
21	36	BK-BL	XFER48	22	11	BL-BK	GRD
23	37	BK-O	XFER48	24	12	O-BK	GRD
25	38	BK-G	XFER48	26	13	G-BK	GRD
27	39	BK-BR	XFER48	28	14	BR-BK	GRD
29	40	BK-S	XFER48	30	15	S-BK	GRD
31	41	Y-BL	XFER48	32	16	BL-Y	GRD
33	42	Y-O	XFER48	34	17	O-Y	GRD
35	43	Y-G		36	18	G-Y	
37	44	Y-BR	GRD	38	19	BR-Y	ACC48A
39	45	Y-S	GRD	40	20	S-Y	ACC48B
41	46	V-BL	GRD	42	21	BL-V	ACC48C
43	47	V-O		44	22	O-V	
45	48	V-G	EXT_ALM	46	23	G-V	EXT_ALM_RT
47	49	V-BR		48	24	BR-V	
49	50	V-S	INADS TIP	50	25	S-V	INADS RING

Perform Preliminary Procedures

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 9 upgrades:

- Replace the existing common control with a multicarrier PPN
- Replace existing traditional modules with EPNs
- Replace existing universal modules with EPNs

A new multicarrier cabinet would then always serve as the PPN. Upgrading a G2 universal module to a DEFINITY ECS Release 9 EPN requires hardware changes (including carrier replacement).

Task Tables

Table 4-3, Table 4-4, and Table 4-5 provide the high-level tasks to perform the upgrades detailed in this chapter. Refer to the appropriate page for detailed instructions for each step.

Table 4-3. Tasks to Upgrade to Release 9r — Standard Reliability

✓	Task Description	Page
	Required Hardware	4-14
	Follow Routine Preventive Maintenance	4-16
	Label Cables	4-16
	Remove Module Control Carrier(s)	4-16
	Disable TTI	4-16
	Power Down G2 System	4-17
	Install Power-Failure Transfer Ground Wire	4-17
	Disconnect Cables	4-17
	Remove Circuit Packs from Module Control Carrier A	4-17
	Remove CURL from Module Control Carrier A	4-18
	Remove Module Control Carrier A	4-18
	Install Expansion Control Carrier(s)	4-22
	Install New Expansion Control Carrier A	4-22
	Install Circuit Packs	4-25
	Interconnect Port Networks	4-25
	Verify Usable Circuit Pack Vintages	4-25
	Remove Power-Failure Ground Wire	4-25
	Boot the Release 9 System	4-26
	Set Daylight Savings Rules	4-26
	Set Date and Time	4-27
	Set Additional Administration	4-29
	Reconnect Cables to Upgraded EPN Cabinet	4-29
	Power Up the EPN Cabinets	4-30
	Retranslate Port Circuits	4-30

Continued on next page

Table 4-3. Tasks to Upgrade to Release 9r — Standard Reliability — *Continued*

✓	Task Description	Page
	Enable TTI	4-30
	Check Link Status	4-30
	Enable Scheduled Maintenance	4-31
	Resolve Alarms	4-31
	Enable Alarm Origination to INADS	4-31
	Administer Customer Options	4-31
	Save Translations	4-32
	Back Up Disk	4-32
	Return Replaced Equipment	4-32

Table 4-4. Tasks to Upgrade to Release 9r — High Reliability

✓	Task Description	Page
	Follow Routine Preventive Maintenance	4-34
	Label Cables	4-34
	Check Link Status	4-34
	Disable TTI	4-34
	Power Down G2 System	4-35
	Install Power-Failure Transfer Ground Wire	4-35
	Disconnect Cables	4-35
	Remove Circuit Packs from Module Control Carrier A	4-35
	Remove CURL from Module Control Carrier A	4-36
	Remove Module Control Carrier A	4-36
	Unpack and Inspect Expansion Control Carrier	4-40
	Install New Expansion Control Carrier A	4-40
	Install Circuit Packs	4-44
	Interconnect Port Networks	4-44
	Verify Usable Circuit Pack Vintages	4-44
	Remove Power-Failure Ground Wire	4-44
	Boot the Release 9 System	4-45
	Set Daylight Savings Rules	4-45
	Set Date and Time	4-46
	Set Additional Administration	4-48
	Reconnect Cables	4-49
	Power Up the EPN Cabinets	4-49
	Retranslate Port Circuits	4-49
	Enable TTI	4-50
	Check Link Status	4-50
	Enable TTI	4-50
	Resolve Alarms	4-50
	Enable Alarm Origination to INADS	4-50
	Administer Customer Options	4-50
	Save Translations	4-51
	Back Up Disk	4-51

Table 4-5. Tasks to Upgrade to Release 9r — Critical Reliability

✓	Task Description	Page
	Upgrade Cabinets	4-51
	Follow Routine Preventive Maintenance	4-53
	Label Cables	4-53
	Check Link Status	4-53
	Disable TTI	4-54
	Power Down G2 System	4-54
	Install Power-Failure Transfer Ground Wire	4-54
	Disconnect Cables	4-54
	Remove Circuit Packs from Module Control Carriers A and B	4-55
	Remove CURL from Module Control Carrier A	4-55
	Remove Module Control Carriers A and B	4-55
	Prepare the New A and B Position Carriers	4-59
	Install the New A and B Position Carriers	4-60
	Test the CURL	4-66
	Install Circuit Packs	4-66
	Interconnect Port Networks	4-66
	Verify Usable Circuit Pack Vintages	4-67
	Remove Power-Failure Ground Strap	4-67
	Boot the Release 9 System	4-67
	Set Daylight Savings Rules	4-68
	Set Date and Time	4-69
	Set Additional Administration	4-71
	Close Upgraded EPN Cabinet and Reconnect Cables	4-71
	Power Up the EPN Cabinets	4-72
	Retranslate Port Circuits	4-72
	Enable TTI	4-72
	Check Link Status	4-72
	Enable Scheduled Maintenance	4-72

Continued on next page

Table 4-5. Tasks to Upgrade to Release 9r — Critical Reliability — *Continued*

✓	Task Description	Page
	Resolve Alarms	4-73
	Enable Alarm Origination to INADS	4-73
	Administer Customer Options	4-73
	Save Translations	4-74
	Back Up Disk	4-74
	Return Replaced Equipment	4-74

Standard Reliability

Required Hardware

The equipment in [Table 4-6](#) 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 Avaya representative.

Table 4-6. Required Hardware

Equipment	Description	Quantity
PEC 6300-05X	Processor Port Network	1
J58890AF-1	Expansion Control Carrier	1
108187170	TN775C Maintenance	1
103557294 or 108469446	TN776 Expansion Interface TN570 Expansion Interface	2 or 6 ¹ 2 or 6 ^{1,2}
407439975	20-ft Multimode Fiber Optic Cable	1 or 3 ³
106455348 or 106455363	9823A Lightwave Transceiver (short) 9823B Lightwave Transceiver (long)	2 or 6 ⁴ 2 or 6 ⁵

1. Depending on the number of Release 9 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 9 system with the optional packet bus.
3. Depending on the number of DEFINITY ECS Release 9 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

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Remove Module Control Carrier(s)

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- 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)
- A copy of *DEFINITY Enterprise Communications Server Release 9 Library CD*.

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 9 Maintenance for R9r*.

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.

Remove Module Control Carrier(s)

Check Link Status

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

Disable TTI



CAUTION:

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

1. Make sure the ISDN is in service. If not, attempt to busy out and release the ISDN D-channel/link. This will bring the ISDN trunks back into service.
2. Type **change system-parameters features** and press Enter. Use screen 2 to disable Terminal Translation Initialization (TTI) by changing the value to **n**.

- 4 Multicarrier G2 Universal Module to R9r EPN
Remove Module Control Carrier(s)

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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 mm²) 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.

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Remove Module Control Carrier(s)

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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 9 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 4-1](#).
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.



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 4-1. TDM/LAN Connections for Control Module (Standard Reliability)

Remove Carrier Ground Straps

1. Disconnect the top and bottom ground straps from the “A” carrier. See [Figure 4-2](#). These straps will reconnect to the new “A” carrier.

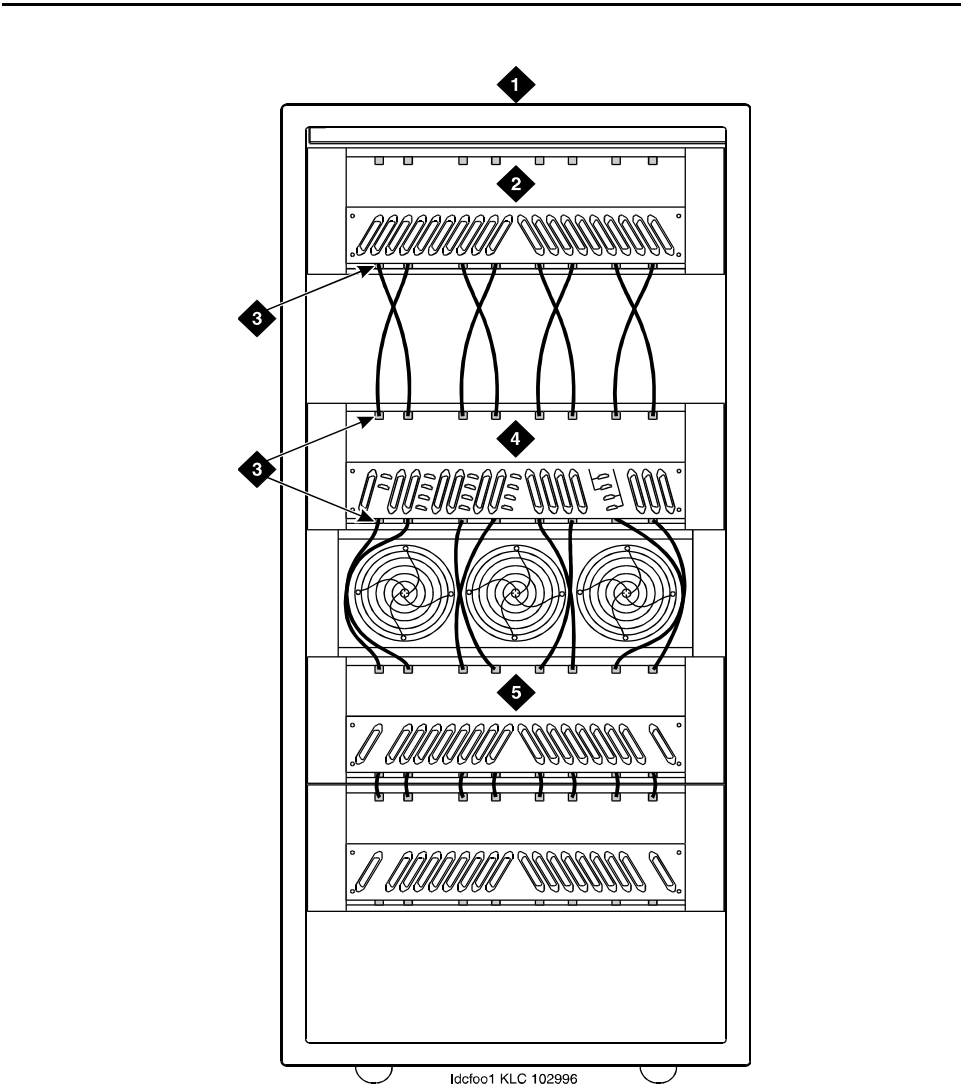


Figure Notes

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

Figure 4-2. Location of Ground Jumpers

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Remove Module Control Carrier(s)

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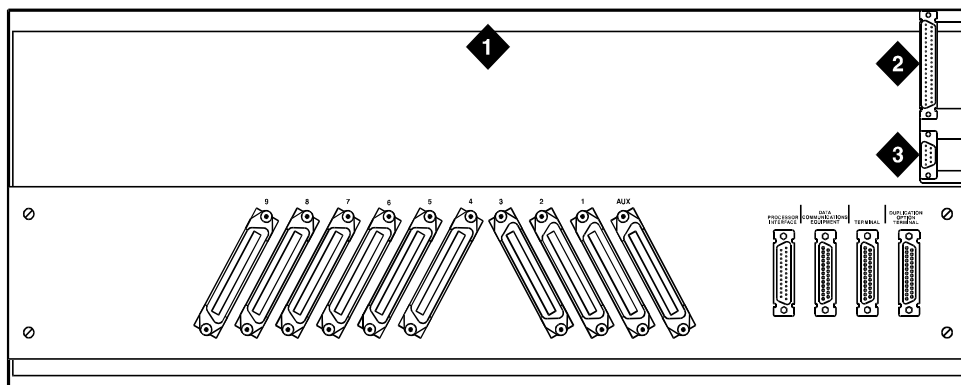
2. Disconnect the "P1" and "P2" cables from the "A" carrier. See [Figure 4-3](#).
3. Remove the fan trim plate by pulling it straight off.
4. Clean or replace the air filter (403326820) if necessary.
5. In front of the carrier, remove the 4 screws (top 2 first) holding the "A" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
6. Behind the carrier, remove the 2 screws holding the "A" carrier's rear connector panel to the cabinet frame.
7. Slide the carrier forward 1 to 2 inches. Be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



CAUTION:

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

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



crdtp12 KLC 101596

Figure Notes

1. Rear of Control Carrier	3. P1 Connector
2. P2 Connector	

Figure 4-3. Location of P1 and P2 Connectors

Install Expansion Control Carrier(s)

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 4-3](#). 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 4-2](#).
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 4-4](#) and [Table 4-7](#).

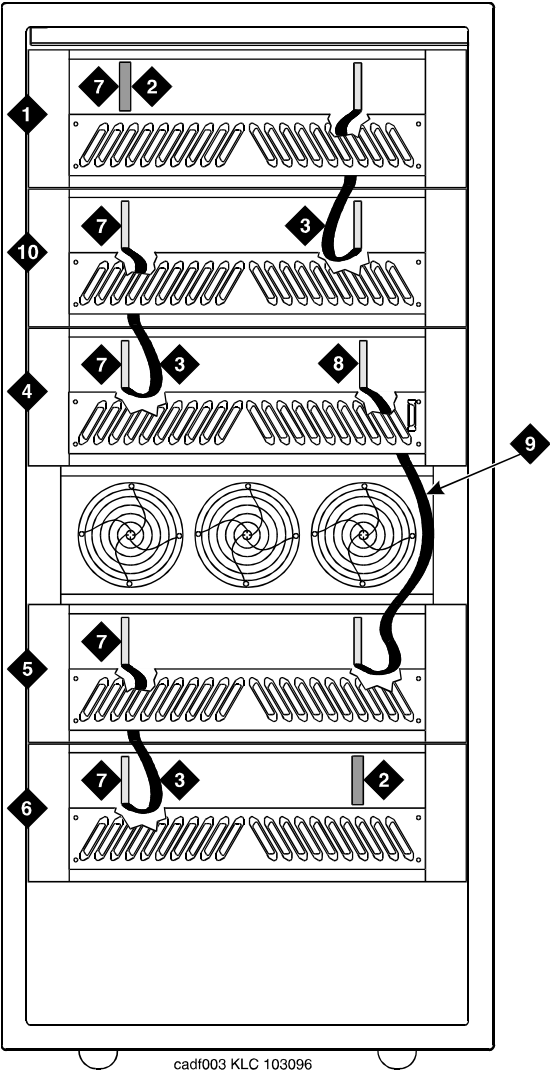


Figure Notes

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 4-4. TDM/LAN Connections for Standard Reliability Release 9 EPN

- 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.
- 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 4-7. 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 9 carrier will contain the same power supplies as in the existing system. However, a Release 9 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 9 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 9 removable media) as a guide.



NOTE:

Currently, the TN768 Tone-Clock circuit pack resides in a port slot of the universal module being upgraded. Relocate this circuit pack to the "TONE CLOCK" slot of carrier "A." Avaya 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 9 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

You must next install all the fiber optic cabling and then administer it. For the installation procedure, refer to ["Interconnect Port Networks with Fiber Optic Cabling" on page 4-74](#).

Complete the Upgrade

Verify Usable Circuit Pack Vintages

Verify that each G2 circuit pack reused in the upgrade conforms to the usable vintage requirements for a Release 9 system (see *Reference Guide for Circuit Pack Vintages and Change Notices*).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm²) ground wire from the power-failure transfer unit.

Boot the Release 9 System

1. Connect the PC to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*.
2. Insert the translation card in the TN794 faceplate.
3. At the EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading default system translations from the translation card. This takes 8 to 11 minutes.
6. Get the order number of the upgrade, and call the regional CSA to request an "init" login so that the right-to-use options can be enabled on the upgraded system.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

Set Daylight Savings Rules

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

NOTE:

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

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

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

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



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

3. When done, press Enter.

Set Date and Time

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

DATE AND TIME			
DATE			
Day of the Week: <u>Tuesday</u>		Month: <u>February</u>	
Day of the Month: <u>8</u>		Year: <u>2000</u>	
TIME			
Hour: <u>20</u>	Minute: <u>30</u>	Second: <u>XX</u>	Type: <u>standard</u>
Daylight Savings Rule: <u>0</u>			

Screen 4-1. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 4-8](#) for English day of the week names.

Table 4-8. English Day of the Week Names

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

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 4-9](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 4-9. English Month Names

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

4. The cursor is positioned on the Day of the Month : field. Type the day of month (1 through 31) and press `Tab` to move to the next field.

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Complete the Upgrade

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

Set Additional Administration

1. Type **list configuration software-version** and press Enter to compare the version number of the Release 9 software program (displayed on the terminal) with the TN786B version number (written on a label on the TN786B's faceplate). If the version numbers are not the same, change the version number on the TN786B label so that they agree.
2. Type **change system-parameters customer-options** and press Enter. Use this screen to enable the customer's right-to-use options on the upgrade order. See *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*, for details.
3. Type **change site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation card.



CAUTION:

If the terminal screen displays "translation corruption detected; call Avaya distributor immediately", an error was detected in the translations. Call your Avaya 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.

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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 9 Administrator's Guide*, for instructions on performing the retranslations.

Enable TTI

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

Check Link Status

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

Enable Scheduled Maintenance

Type **change system-parameters maintenance** and press **Enter**. Enable the scheduled daily maintenance.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Enable Alarm Origination to INADS

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



NOTE:

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press **Enter** to set the customer options that were purchased. Change the **G3 version:** field to **V9**.
3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and set the **Basic Call Setup** field to **y**.
4. Type **change system-parameters offer-options** and press **Enter**.
5. If changing offers and the **Activate Offer** field is **n**, set it to **y** and press **Tab**. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press **Enter** to effect the changes or **Cancel** if there were no changes.
7. Contact the requester when done.

Save Translations

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



WARNING:

Translation corruption detected; call Avaya distributor immediately.



NOTE:

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

Back Up Disk

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

Return Replaced Equipment

Return unused G2 equipment to Avaya 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 4-10](#) 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 Avaya representative.

Table 4-10. 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 ¹ 2 or 6 ^{1,2}
J58890TO-1 L1	Removable Media	4
407439975	20-Foot Multi-mode Fiber Optic Cable	1 or 3 ³
106455348 or 106455363	9823-A Lightwave Transceiver 9823-B Lightwave Transceiver	2 or 6 ⁴ 2 or 6 ⁵

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 9 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

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- 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 9 Maintenance for R9r*
 - *DEFINITY Enterprise Communications Server Release 9 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 9 Maintenance for R9r*.

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.

Remove Module Control Carrier(s)

Check Link Status

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

Disable TTI

**CAUTION:**

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

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

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Remove Module Control Carrier(s)

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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 mm²) 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.

- 4 Multicarrier G2 Universal Module to R9r EPN
Remove Module Control Carrier(s)

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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 9 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 4-5](#). 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.

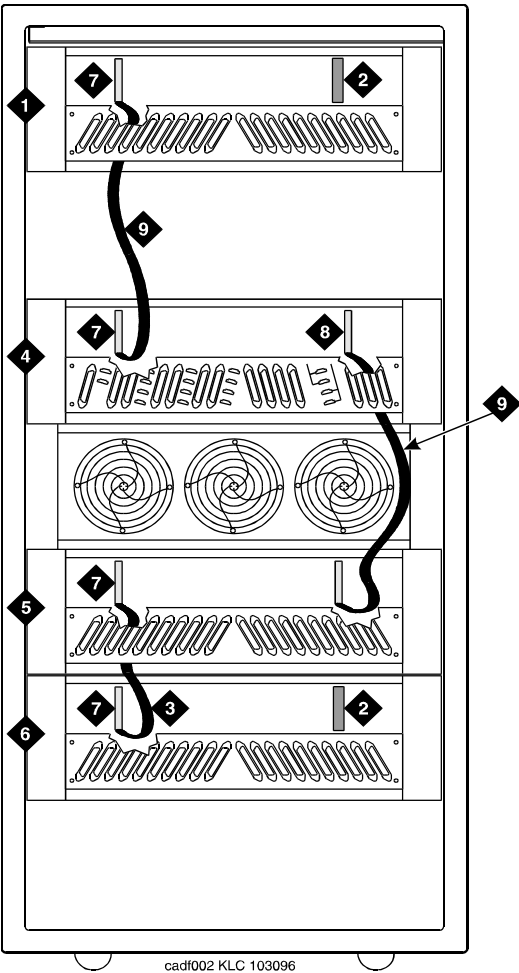


Figure Notes

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 4-5. TDM/LAN Connections for High Reliability System

3. Disconnect the 16 ground straps from the top and bottom of the “A” carrier. See [Figure 4-6](#). These straps reconnect to the new “A” carrier.

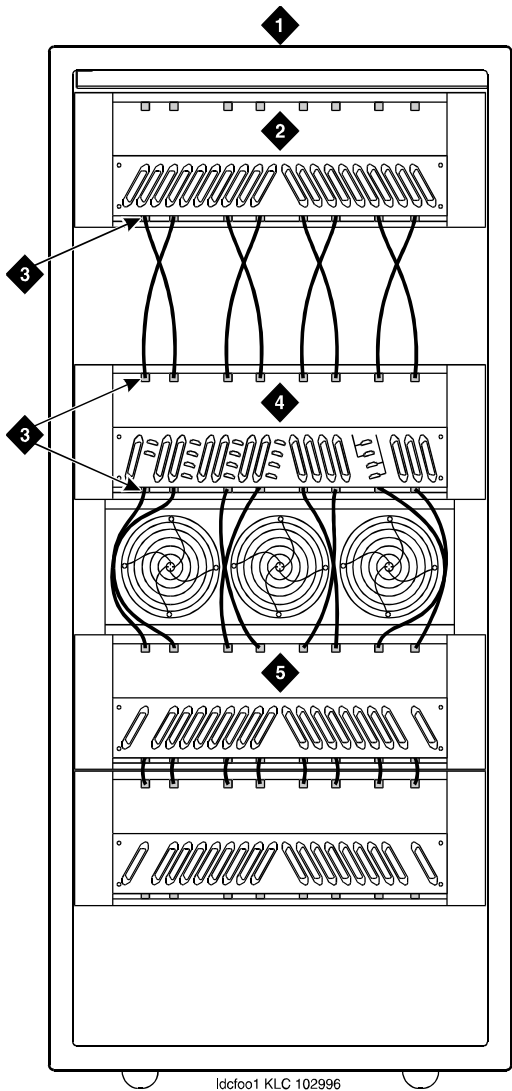


Figure Notes

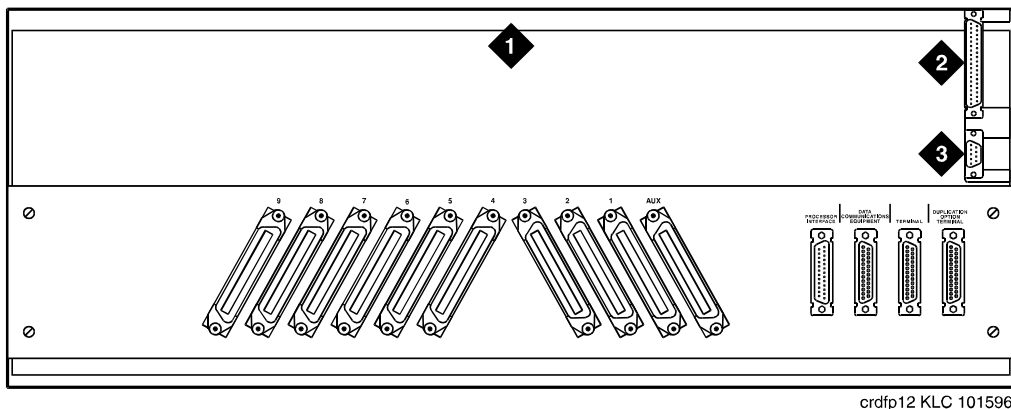
1. Rear of Cabinet	4. Module Control Carrier (“A” Position)
2. Port Carrier (“C” Position)	5. Port Carrier (“D” Position)
3. Ground Jumpers	

Figure 4-6. Locations of Ground Jumpers

4 Multicarrier G2 Universal Module to R9r EPN
Remove Module Control Carrier(s)

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4. Disconnect the "P1" and "P2" cables from the "A" carrier. See [Figure 4-7](#).
5. Slide the latch up, and disconnect the "P1" cable from the "B" carrier.



crdfp12 KLC 101596

Figure Notes

1. Rear of Control Carrier
2. P2 Connector
3. P1 Connector

Figure 4-7. 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.

Install Expansion Control Carrier(s)

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 4-7](#). 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 4-6](#). These straps were left connected to the "D" carrier.
7. Connect the 8 ground straps from the "C" carrier to the new "A" carrier. These straps were left connected to the "C" carrier.
8. For an AC-powered system, install the 2 new carrier ground straps. One strap connects ground point "1" to the A-carrier frame (right side), and the other connects ground point "8" to the A-carrier frame (left side).



NOTE:

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

9. Connect the remaining end of the TDM/LAN cable (between the "A" and "D" carriers) to the pin-field block marked "TDM" on the right side of the "A" carrier. See [Figure 4-8](#) and [Table 4-11](#). 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.

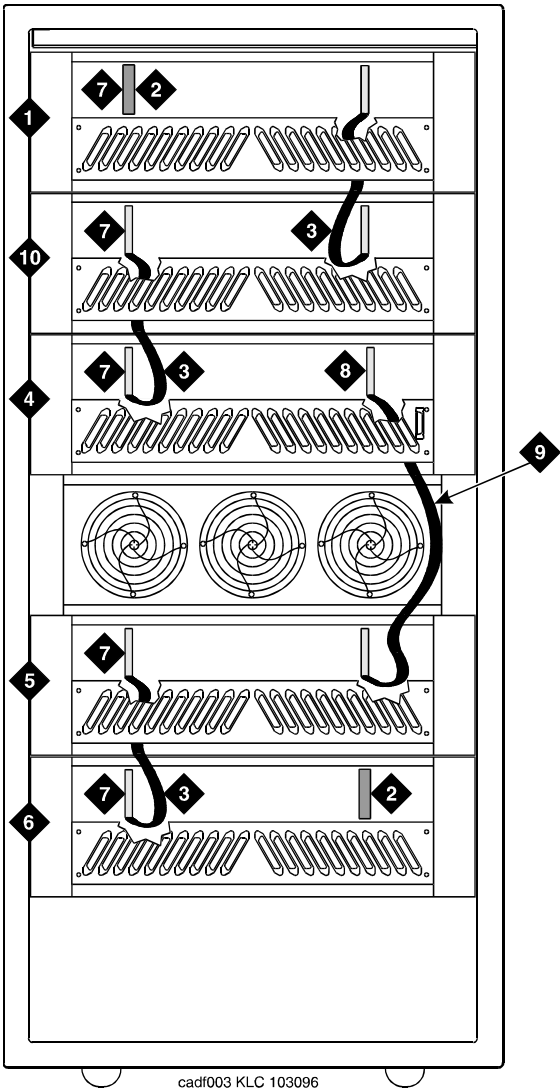


Figure Notes

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 4-8. TDM/LAN Connections for High Reliability Release 9 EPN

Table 4-11. 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 9 carrier will contain the same power supplies as in the existing system. However, the new Release 9 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 9 control circuit packs into carrier "A." Use the new label and the annotated "list configuration all" (provided with the Release 9 removable media) as a guide.



NOTE:

Currently, the TN768 Tone-Clock circuit pack resides in a port slot of the universal module being upgraded. Relocate this circuit pack to the "TONE CLOCK" slot of carrier "A." Avaya 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 9 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

You must next install all the fiber optic cabling and then administer it. For the installation procedure, refer to ["Interconnect Port Networks with Fiber Optic Cabling" on page 4-74](#).

Complete the Upgrade

Verify Usable Circuit Pack Vintages

Verify that each reused circuit pack conforms to the usable vintage requirements for a Release 9 system (see Reference Guide for Circuit Pack Vintages and Change Notices).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm²) ground wire from the power-failure transfer unit.

Boot the Release 9 System

1. Connect the management terminal to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*, 585-229-202.
2. Insert the translation cards in the TN794 faceplates.
3. At each EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading the default system translations from the translation card. This takes 8 to 11 minutes.
6. Get the order number of the upgrade, and call the regional CSA to request an "init" login so the right-to-use options can be enabled on the upgraded system.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

Set Daylight Savings Rules

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

NOTE:

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

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

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

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



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

3. When done, press Enter.

Set Date and Time

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

DATE AND TIME			
DATE			
Day of the Week: <u>Tuesday</u>		Month: <u>February</u>	
Day of the Month: <u>8</u>		Year: <u>2000</u>	
TIME			
Hour: <u>20</u>	Minute: <u>30</u>	Second: <u>XX</u>	Type: <u>standard</u>
Daylight Savings Rule: <u>0</u>			

Screen 4-2. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 4-12](#) for English day of the week names.

Table 4-12. English Day of the Week Names

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

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 4-13](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 4-13. English Month Names

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

4. The cursor is positioned on the Day of the Month : field. Type the day of month (1 through 31) and press `Tab` to move to the next field.

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

Set Additional Administration

1. Type **list configuration software-version long** and press Enter to compare the version number of the DEFINITY ECS Release 9 software program with the version number (written on a label on the processor's faceplate). If the version numbers are not the same, change the version number on the processor label so that they agree.
2. Type **change system-parameters customer-options** and press Enter. Use this screen to enable the Release 9 option and to assign the customer's other right-to-use options on the G2-to-DEFINITY ECS Release 9 upgrade order. See *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **status system 1** and press Enter to verify the system is in the "active/standby" mode.
5. Type **save translation** and press Enter. This instructs the system to write all translation information from memory to the translation card.



WARNING:

If the terminal screen displays "translation corruption detected; call Avaya 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 9 Administrator's Guide*, for instructions on performing the retranslations.

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Complete the Upgrade

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Enable TTI

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

Check Link Status

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

Enable Scheduled Maintenance

Type **change system-parameters maintenance** and press Enter. Enable the scheduled daily maintenance.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Enable Alarm Origination to INADS

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



NOTE:

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press Enter to set the customer options that were purchased. Change the G3 version: field to V9.

4 Multicarrier G2 Universal Module to R9r EPN
Critical Reliability

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

Save Translations

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



WARNING:

Translation corruption detected; call Avaya distributor immediately.



NOTE:

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

Back Up Disk

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

Return Replaced Equipment

Return unused G2 equipment to Avaya 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 4-14](#) *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 Avaya representative.

Table 4-14. 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 ¹ 4 or 12 ^{1, 2}
J58890TO-1 L1	Removable Media	4
H-600-204 G1	ICC	2 ³
407439975	20-Foot Multi-mode Fiber Optic Cable	2 or 6 ⁴
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 9 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

4 Multicarrier G2 Universal Module to R9r EPN
Remove Module Control Carrier(s)

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- 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 9 Maintenance for R9r*
 - *DEFINITY Enterprise Communications Server Release 9 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 9 Maintenance for R9r*.

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.

Remove Module Control Carrier(s)

Check Link Status

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

Disable TTI



CAUTION:

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

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

Power Down G2 System

At the power distribution unit, set the main circuit breaker to OFF.

Install Power-Failure Transfer Ground Wire



CAUTION:

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

1. Connect 1 end of a 10 AWG (#25) (2.6 mm²) 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.)

4 Multicarrier G2 Universal Module to R9r EPN
Remove Module Control Carrier(s)

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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 9 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 4-10](#). 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.

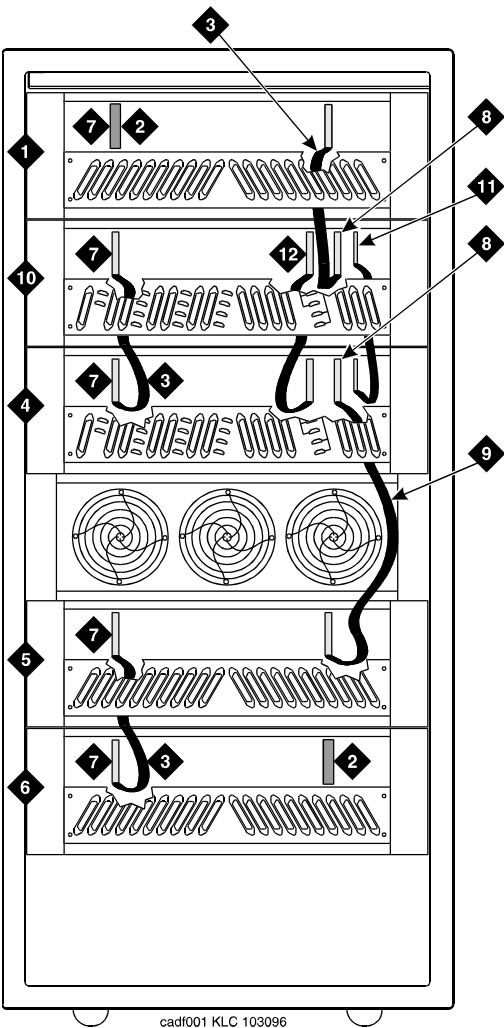
4. Remove and retain the 8 ground straps from between the "A" and "B" carriers. See [Figure 4-11](#).
5. Disconnect 1 end of the 8 ground straps from between the "A" and "D" carriers. These straps will reconnect to the new "A" carrier.
6. Disconnect 1 end of the 8 ground straps from between the "B" and "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 4-12](#). 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 4-10](#). They will not be reused.
10. Remove the fan trim plate by pulling it straight off.
11. Clean or replace the air filter (403326820) if necessary.
12. In front of carrier, remove the 4 screws (top 2 first) holding the "B" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
13. Behind the carrier, remove the 2 screws holding the "B" carrier's rear connector panel to the cabinet frame.
14. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



CAUTION:

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

15. Remove the carrier by sliding it out the front of the cabinet.
16. Repeat Steps 12 through 15 for the "A" carrier.
17. On port carrier J58890BB-1, connect the TDM cable or the TDM terminator to Slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TDM cables or the TDM terminator to Slot 01. If the port carrier has J58890BB-1 and J58890BB-2 printed on it, treat it as a J58890BB-1.



- Figure Notes
1. Port Carrier ("C" Position)

2. ZAHF4 TDM/LAN Terminator

3. TDM/LAN Cable (WP91716 L6)

4. Module Control Carrier ("A" Position)

5. Port Carrier ("D" Position)

6. Port Carrier ("E" Position)

7. Slot 21

8. Slot 01

9. TDM/LAN Cable (WP91716 L7)

10. Duplicated Module Control Carrier ("B" Position)

11. ICCA Cable (Slot 03)

12. ICCB Cable

Figure 4-9. TDM/LAN Connections for Duplicated G2 Universal Module

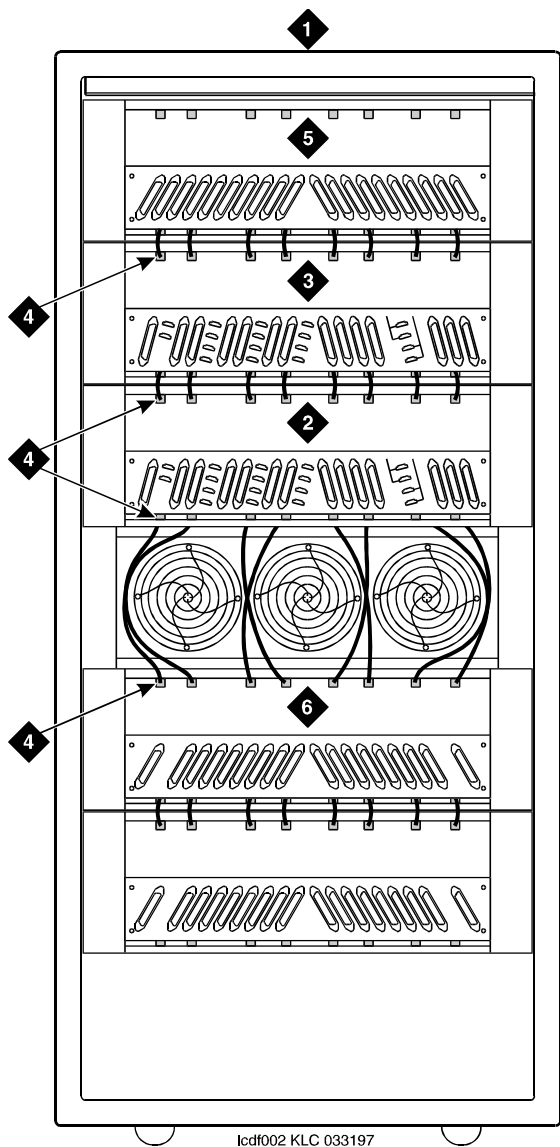


Figure Notes

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 4-10. Locations of Ground Jumpers

4 Multicarrier G2 Universal Module to R9r EPN
Install Expansion Control Carrier(s)

4-59

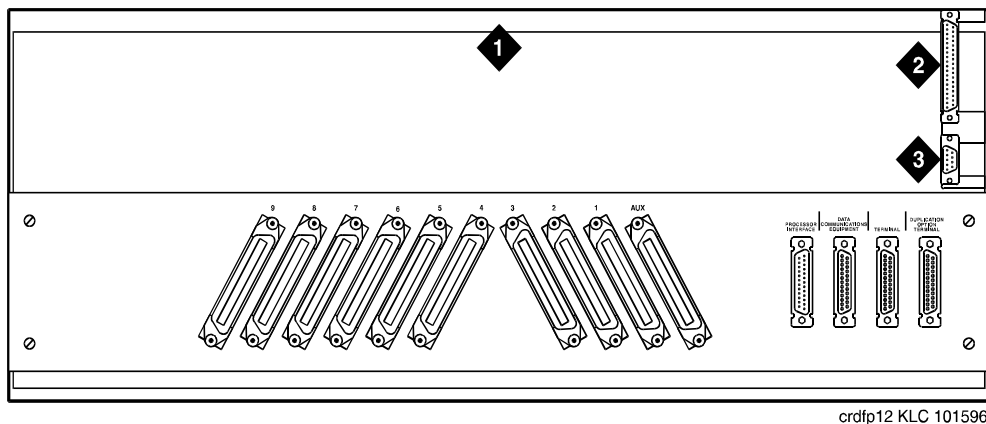


Figure Notes

1. Rear of Control Carrier	3. P1 Connector
2. P2 Connector	

Figure 4-11. Location of P1 and P2 Connectors

Install Expansion Control Carrier(s)

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 4-12](#).
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 4-11](#). These straps were left connected to the “D” carrier.
9. Connect the 8 ground straps from the “C” carrier to the new “B” carrier. These straps were left connected to the “C” carrier.
10. Install the 8 ground straps between the new “A” and “B” carriers. These straps were removed from the old carriers.
11. For an AC-powered expansion control carrier, install the 2 new carrier ground straps. One strap connects ground point “1” to the A-carrier frame (on the right side), and the other connects ground point “8” to the A-carrier frame (on the left side).



NOTE:

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

12. Connect the loose end of the TDM/LAN cable (between the “A” and “D” carriers) to the pin-field block marked “TDM” on the right side of the “A” carrier (see [Figure 4-13](#) and [Table 4-15](#)). 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 4-15. 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.

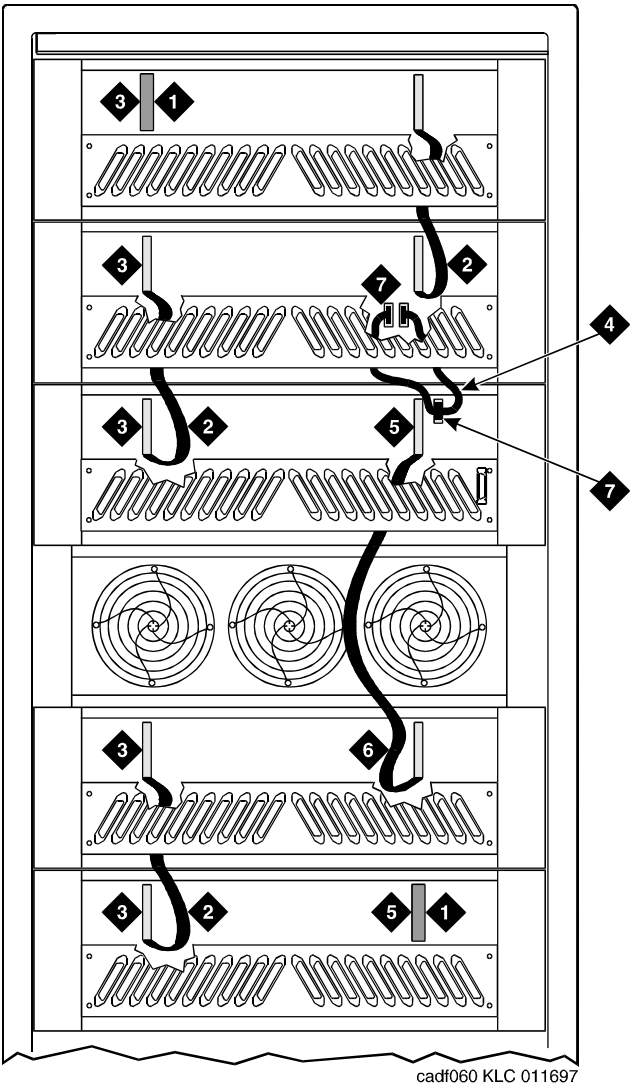


Figure Notes

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") H600-204, G1	

Figure 4-12. TDM/LAN Connections for Critical Reliability Release 9 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 4-14](#) and [Figure 4-28](#) and [Table 4-16](#)). 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 4-16. Intercarrier Cable Connections

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

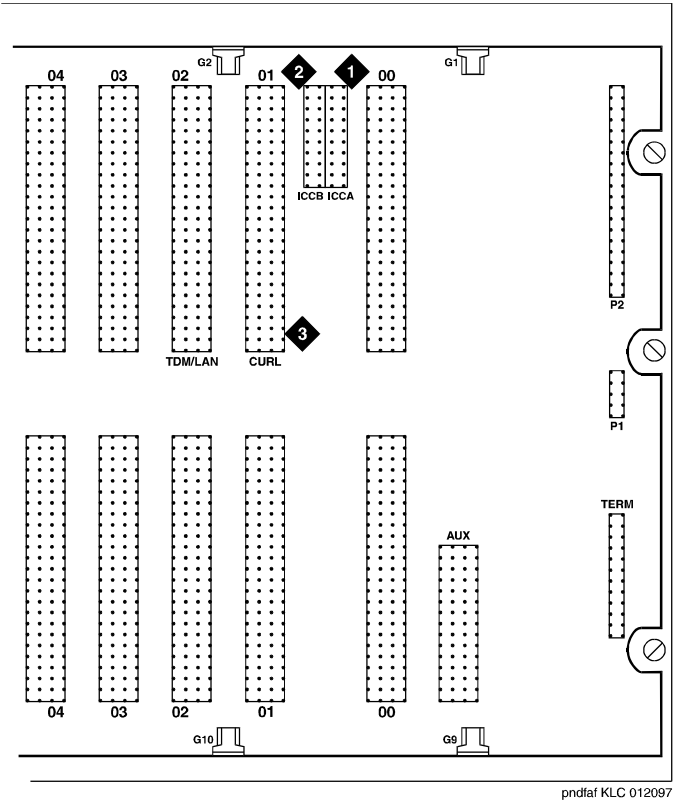


Figure Notes

1. ICCA Connectors

2. ICCB Connectors

3. CURL (Current Limiter) Connectors

Figure 4-13. ICC Connections for the Expansion Control Carrier

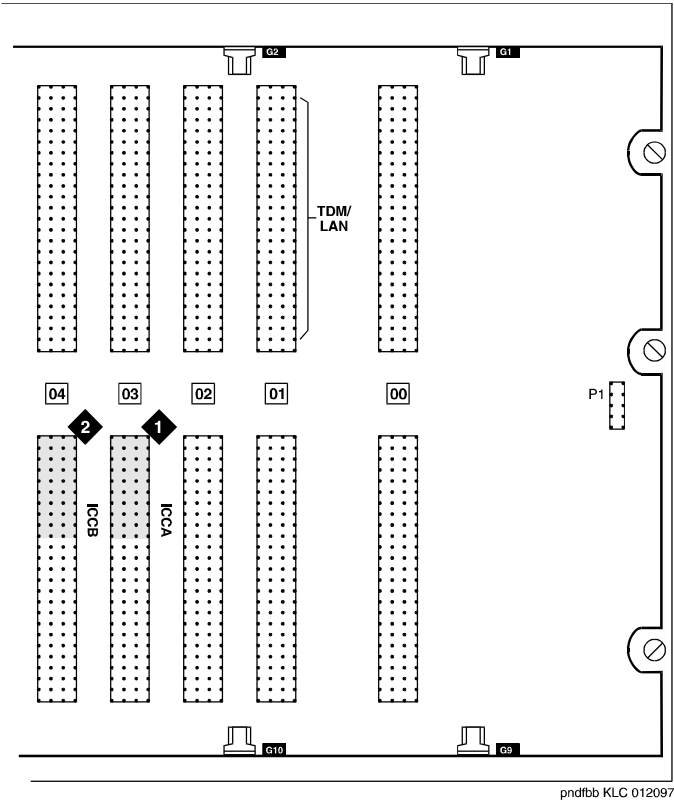


Figure Notes

1. ICCA Connectors
2. ICCB Connectors

Figure 4-14. 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 9 control circuit packs into carriers "A" and "B." Use the new decal and the annotated "list configuration all" (provided with the Release 9 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 9 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

You must next install all the fiber optic cabling and then administer it. For the installation procedure, refer to "[Interconnect Port Networks with Fiber Optic Cabling](#)" on page 4-74.

Complete the Upgrade

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 9 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 9 System

1. Connect the management terminal to the "TERMINAL" connector behind PPN control carrier "A," or install the G3-MA according to the "Set Up G3-MA" chapter of *DEFINITY Communications System Generic 3 Management Applications — Operations*, 585-229-202.
2. Insert the translation cards in the TN794 faceplates.
3. At each EPN power distribution unit, set the main circuit breaker to ON.
4. At the PPN power distribution unit, set the main circuit breaker to ON.
5. The system performs the reset level 4 rebooting process, loading the default system translations from the translation cards. This takes 8 to 11 minutes.
6. Get the order number of the upgrade and call the regional CSA to request an "init" login so the right-to-use options can be enabled.
7. To use Access Security Gateway (ASG), see [Appendix C, "Access Security Gateway"](#).

Set Daylight Savings Rules

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

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

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

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

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

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

3. When done, press Enter.

Set Date and Time

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

DATE AND TIME

DATE

Day of the Week: TuesdayMonth: February

Day of the Month: 8Year: 2000

TIME

Hour: 20Minute: 30Second: XXType: standard

Daylight Savings Rule: 0

Screen 4-3. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See [Table 4-17](#) for English day of the week names.

Table 4-17. English Day of the Week Names

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

3. The cursor is positioned on the Month : field. Type the current month in English (January through December). See [Table 4-18](#) for English month names. After the month is entered, press `Tab` to move to next field.

Table 4-18. English Month Names

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

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

Set Additional Administration

1. Type **list configuration software-version long** and press **Enter** to compare the version number of the Release 9 software program (displayed on the terminal) with the version number (written on a label on the processor's faceplate). If the version numbers are not the same, change the version number on the processor label so that they agree.
2. Type **change system-parameters customer-options** and press **Enter**. Use this screen to enable the G3 V6 option and to assign the customer's other right-to-use options on the Release 9 upgrade order. See *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*, for details on enabling these options.
3. Type **change site-data** and press **Enter**. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
4. Type **status system 1** and press **Enter** to verify that the system is in the "active/standby" mode.
5. Type **save translation** and press **Enter**. This instructs the system to write all translation information from memory to the translation cards.



WARNING:

If the terminal screen displays "translation corruption detected; call Avaya distributor immediately", an error was detected in the translations. Call your Avaya representative.

Close Upgraded EPN Cabinet and Reconnect Cables

1. At the upgraded EPN, set the main circuit breaker to OFF.



NOTE:

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

2. Temporarily disconnect the lightwave transceivers and fiber optic cables from the appropriate carriers.
3. Replace the back doors or back panels previously removed.
4. At the EPN cabinet, reconnect the lightwave transceivers, fiber optic cables, and the connector cables associated with the carrier being replaced.
5. Install the front door on the EPN cabinet.

Power Up the EPN Cabinets

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

Retranslate Port Circuits

If port circuit packs were relocated in order to put:

- A critical port circuit pack, requiring longer nominal battery holdover (such as a DS1 or an Announcement circuit pack), in a port slot
- A TN736, TN752, or TN755 power supply in port slots "18" and "19"
- A TN776 or TN570 Expansion Interface in port slot "1"
- A TN776 or TN570 in port slot "2" (for a second directly connected EPN)

of the new expansion control carrier, verify that they were retranslated during the off-site software upgrade. If not, they must be retranslated now. Refer to *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Enable TTI

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

Check Link Status

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

Enable Scheduled Maintenance

Type **change system-parameters maintenance** and press Enter. Enable the scheduled daily maintenance.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9si* or *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Enable Alarm Origination to INADS

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



NOTE:

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

Administer Customer Options



NOTE:

This procedure requires an init login.

1. Log in as **init**.
2. Type **change system-parameters customer-options** and press **Enter** to set the customer options that were purchased. Change the **G3 version:** field to **V9**.
3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and set the **Basic Call Setup** field to **y**.
4. Type **change system-parameters offer-options** and press **Enter**.
5. If changing offers and the **Activate Offer** field is **n**, set it to **y** and press **Tab**. A warning message lets you know whether you need to save translations and reboot to make the change permanent.
6. Press **Enter** to effect the changes or **Cancel** if there were no changes.
7. Contact the requester when done.

Save Translations

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



WARNING:

Translation corruption detected; call Avaya distributor immediately.



NOTE:

The **save translation** command cannot function if the translation corruption message appears. See [“Troubleshooting an Upgrade” on page B-1.](#)

Back Up Disk

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

Return Replaced Equipment

Return replaced equipment to Avaya according to the requirements outlined in:

BCS/Material Logistics, MSL/Attended Stocking Locations

Methods and Procedures for Basic Material Returns

Interconnect Port Networks with Fiber Optic Cabling

Three reliabilities:

- [“Standard Reliability” on page 4-74](#)
- [“High Reliability” on page 4-83](#)
- [“Critical Reliability” on page 4-94](#)

Standard 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. 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 4-16](#).



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 9 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 4-15](#), [Figure 4-16](#), and [Figure 4-17](#)):

- 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 4-18](#).
 - 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.

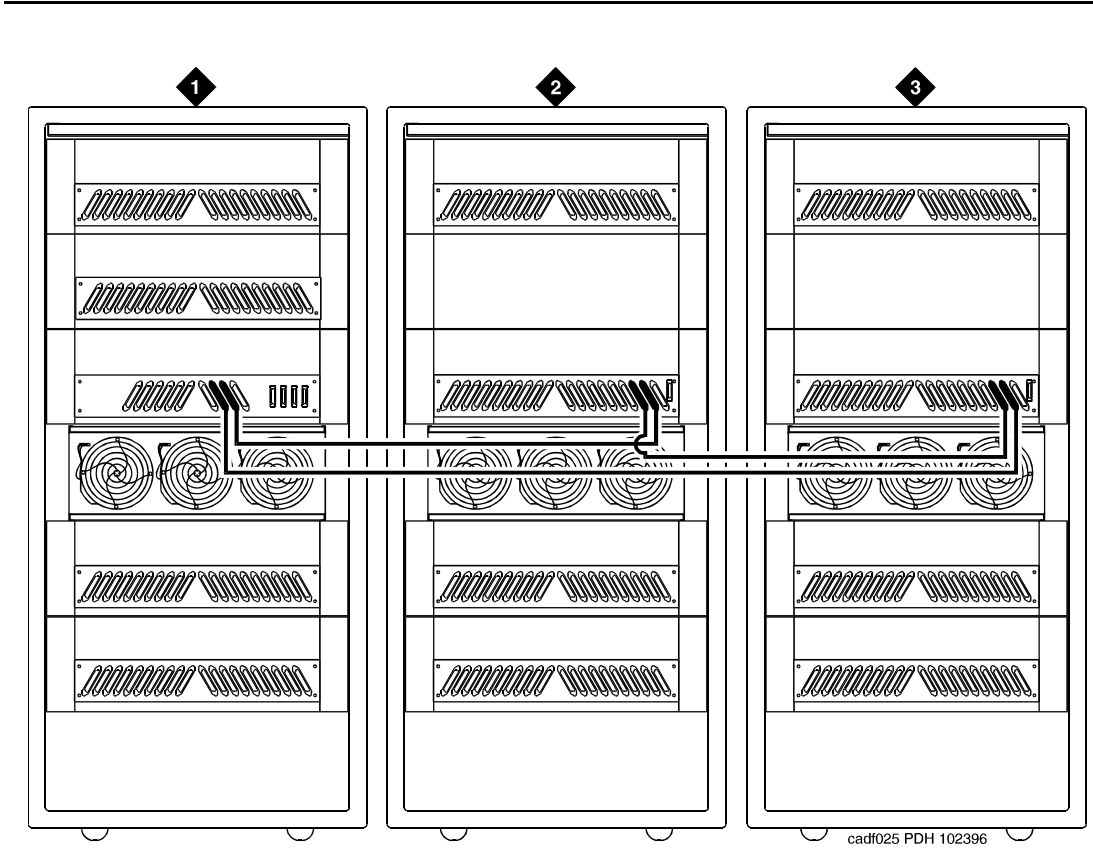


Figure Notes

1. Cabinet 1 Processor Port Network

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

Figure 4-15. Standard Reliability Release 9 with Two or Three Port Networks



1. Lightwave Transceiver
2. To PPN Carrier A Slot 1A01
3. To EPN 1 Carrier A Slot 2A01
4. Fiber Optic Cable
5. TX Connector
6. RX Connector

cydff05 CJL 103196

1. Lightwave Transceiver
2. To PPN Carrier A Slot 1A02
3. To EPN 1 Carrier A Slot 3A01
4. Fiber Optic Cable
5. TX Connector
6. RX Connector

Figure 4-17. Collocated Fiber Optic Connections PPN to EPN2

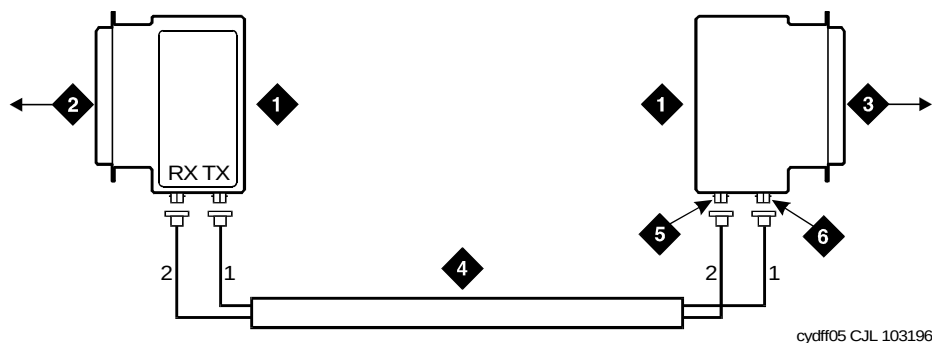


Figure Notes

1. Lightwave Transceiver	4. Fiber Optic Cable
2. To PPN Carrier A Slot 2A02	5. TX Connector
3. To EPN 1 Carrier A Slot 3A02	6. RX Connector

Figure 4-18. 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 4-15](#) through [Figure 4-19](#).

- Install a lightwave transceiver on the cable connector at slot 1A01.



NOTE:

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

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

- Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on cable connector at slot 2A01.



NOTE:

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

- Connect a fiber optic cable to the transceiver just installed.

- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

For Two Fiber-Remoted Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on cable connector at slot 1A02.



NOTE:

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

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

2. Behind control carrier A of EPN cabinet 3:

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



NOTE:

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

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

3. Behind control carrier A of EPN cabinet 2:

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



NOTE:

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

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

4. Behind control carrier A of EPN cabinet 3:

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



NOTE:

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

- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

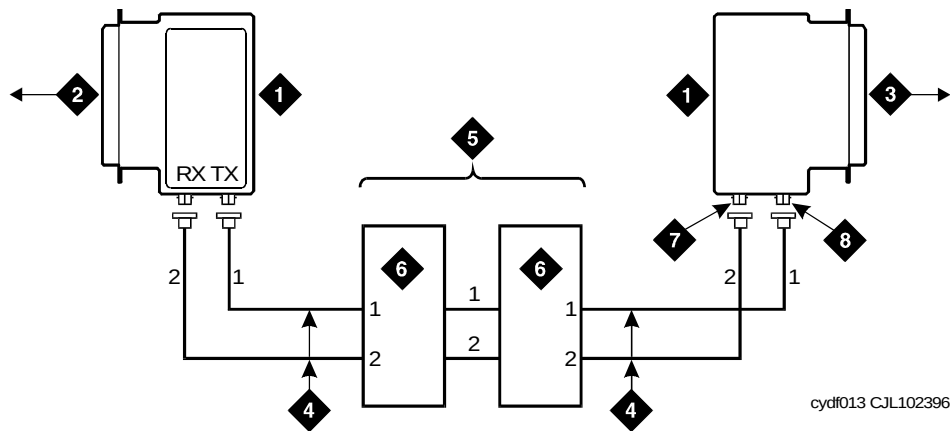


Figure Notes

1. Lightwave Transceiver	5. Optical Cross-Connect Facility
2. To EPN1 Carrier A Slot 2A02	6. 100A Lightguide Interconnect Unit
3. To EPN2 Carrier A Slot 3A02	7. TX Connector
4. Fiber Optic Cable	8. RX Connector

Figure 4-19. Fiber Optic Connections EPN1 to EPN2

High Reliability

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PNs up to 4900 ft (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PNs up to 25,000 ft (7,620 m) apart. A 300A fiber optic lightwave transceiver can interconnect PNs up to 115,000 ft (21.7 mi, 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 4-22](#).

**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 9 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 9 Installation and Test for Multicarrier Cabinets*, for additional guidelines about fiber routing.

If a “DEFINITY style” PPN cabinet is collocated with either a small cabinet, medium cabinet, or single-carrier cabinet stack, the preferred routing is to run the cables *down* the cable tray and out the bottom of the PPN cabinet. The cables are then run to the EPN cabinet and up the outside of the rear panels to the desired carrier level.

Fiber-Remoted Port Networks

For a high reliability system with 1 fiber-remoted expansion port network, 2 fiber optic cables, 2 lightwave transceivers, and 2 lightguide interconnect units (provided by the PSC) are required.

For a high reliability system with 2 fiber-remoted expansion port networks, 6 fiber optic cables, 6 lightwave transceivers, and 6 lightguide interconnect units (provided by the PSC) are required.

For fiber-remoted cabinets, route the cables down the cable tray and out the bottom of the cabinet to the cross-connect field where the lightguide interconnect units are located.

In either case, use cable ties to secure the cable against the walls of the cable tray at the cable tie positions built into the trays.

For Either 1 or 2 Collocated Expansion Port Networks

1. At control carrier A of PPN cabinet 1 (see [Figure 4-21](#) through [Figure 4-24](#)):

- 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:

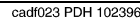
- Install a lightwave transceiver on the cable connector at slot 3A02.



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.



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

Figure 4-20. High Reliability Release 9 with Two or Three Port Networks

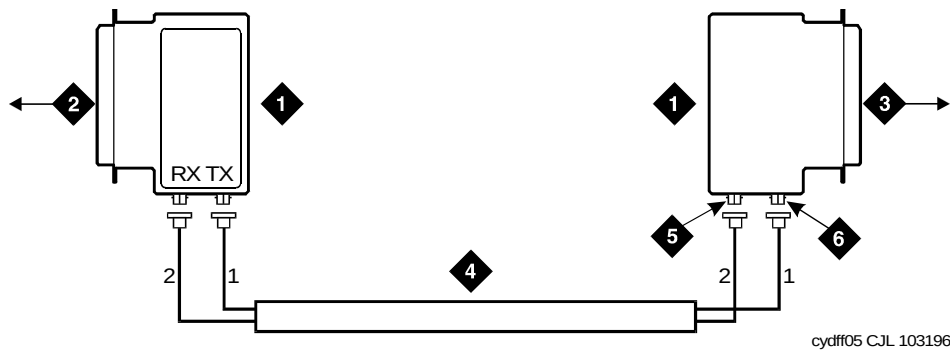


Figure Notes

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 4-21. Fiber Optic Connections PPN to EPN1

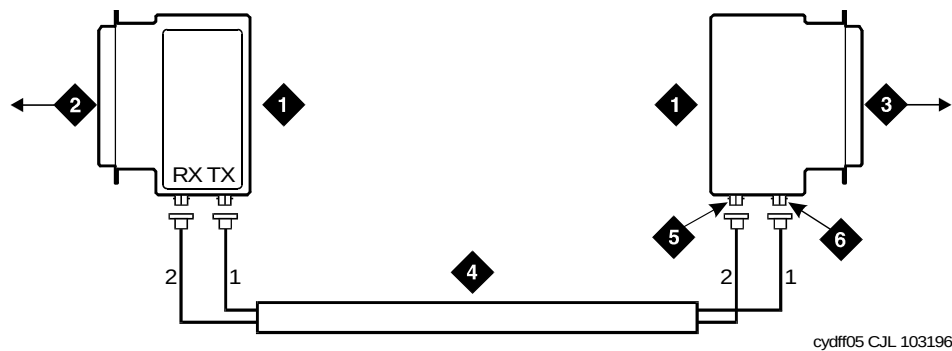


Figure Notes

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 4-22. Fiber Optic Connections PPN to EPN2

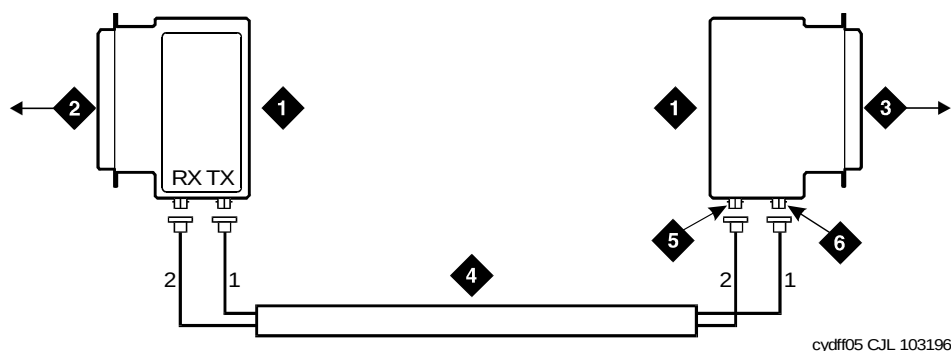


Figure Notes

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 4-23. 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 4-25](#) through [Figure 4-9](#)):
 - 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 cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on the cable connector at slot 2A01.



NOTE:

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

- Connect the fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

For 2 Fiber-Remoted Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1:

- Install a lightwave transceiver on the cable connector at slot 1A02.



NOTE:

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

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

2. Behind control carrier A of EPN cabinet 3:

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



NOTE:

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

- Connect the remaining end of the fiber cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

3. Behind control carrier A of EPN cabinet 2:

- Install a lightwave transceiver on the cable connector at slot 2A02.
- Connect a fiber optic cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

4. Behind control carrier A of EPN cabinet 3:

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



NOTE:

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

- Connect the remaining end of the cable to the transceiver just installed.
- Route the cable to the cable tray and down, out of the cabinet, through the cable manager to the PDS cross-connect facility.
- Connect the fiber cable to the lightguide interconnect unit provided.
- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- Coil up the surplus fiber cable and place it in the cable manager.

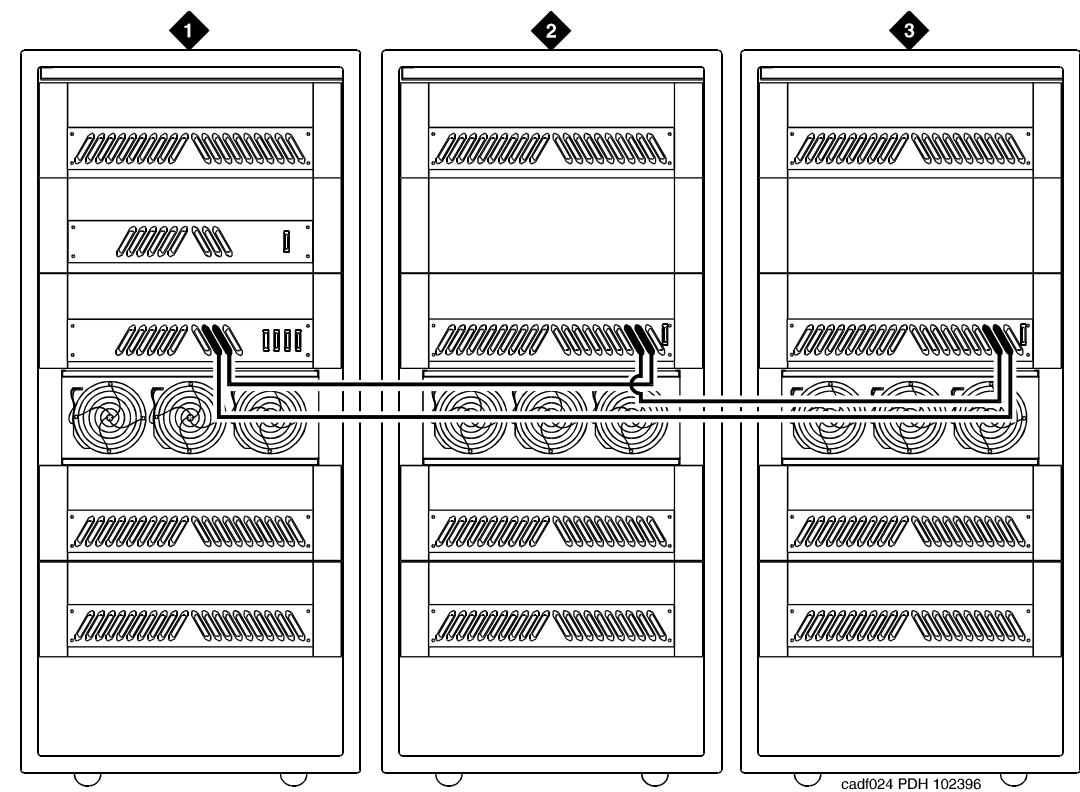


Figure Notes

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

Figure 4-24. High Reliability Release 9 with Two or Three Port Networks

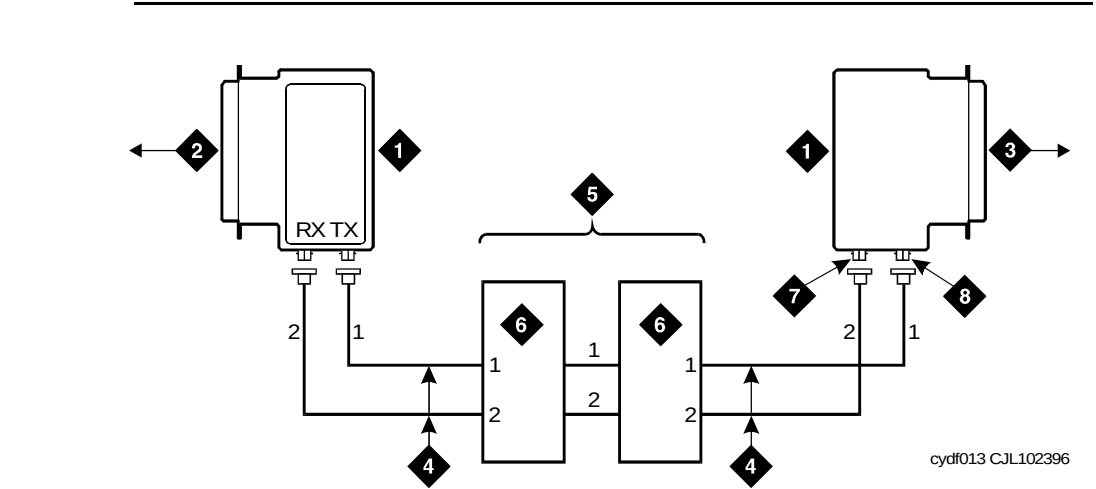


Figure Notes

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 4-25. Fiber Optic Connections PPN to EPN1

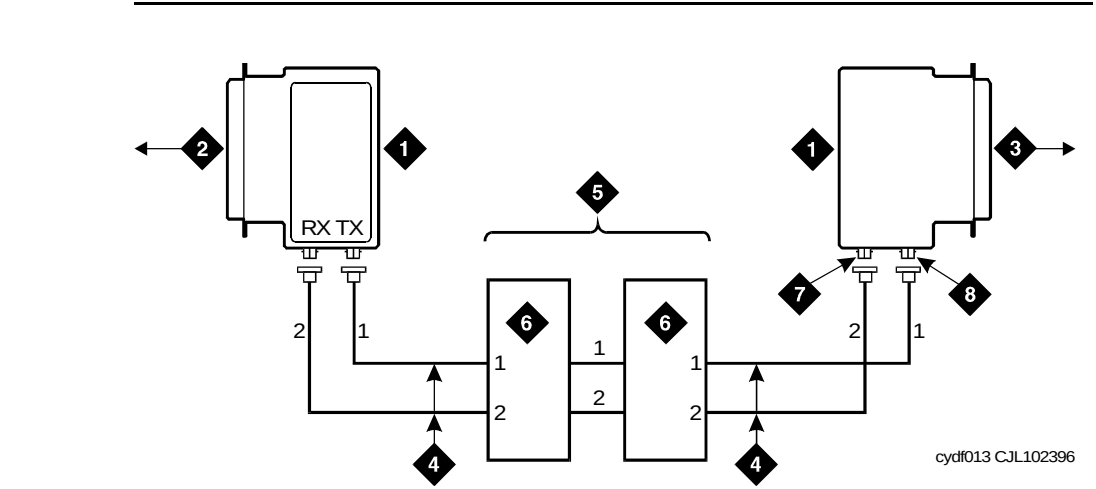


Figure Notes

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 4-26. Fiber Optic Connections PPN to EPN2

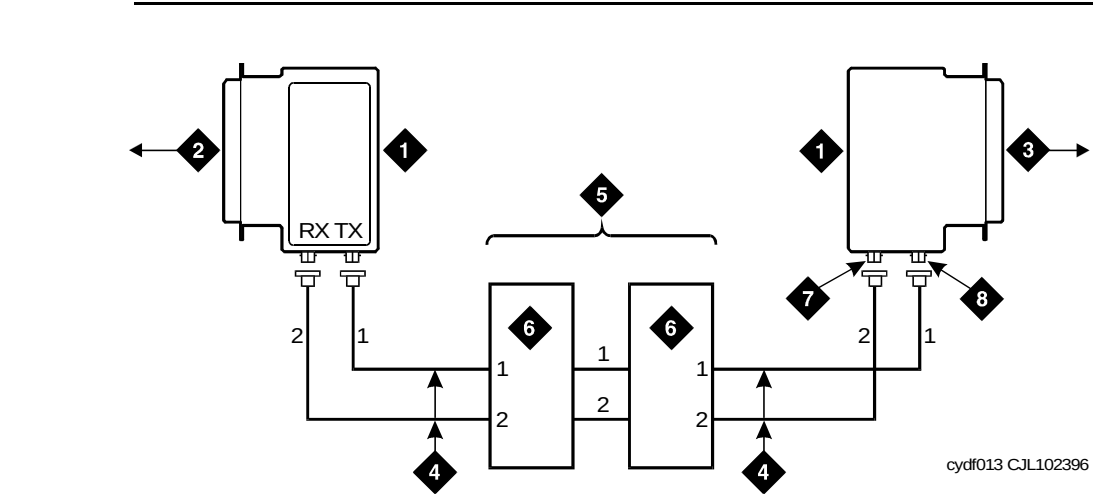


Figure Notes

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 4-27. Fiber Optic Connections EPN1 to EPN2

Critical Reliability

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PN's up to 4,900 feet (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PN's 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 4-29 on page 4-99](#).

**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 9 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 4-28](#) through [Figure 4-31](#)):
 - Install a lightwave transceiver on the cable connector at slot 1A01.
 - Connect a fiber optic cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.

2. Behind control carrier A of EPN cabinet 2:
 - Install a lightwave transceiver on the cable connector at slot 2A01.
 - Connect the other end of the fiber cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
 - At the top of the cabinet, coil the surplus fiber optic cable and attach it to the wall of the cable tray.
3. Behind control carrier B of PPN cabinet 1:
 - Install a lightwave transceiver on the cable connector at slot 1B01.
 - Connect a fiber optic cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 2:
 - Install a lightwave transceiver on the cable connector at slot 2B02.
 - Connect the other end of the fiber cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
 - At the top of the cabinet, coil the surplus fiber optic cable and attach it to the wall of the cable tray.

For 2 Collocated Expansion Port Networks

1. Behind control carrier A of PPN cabinet 1:
 - Install a lightwave transceiver on the cable connector at slot 1A02.
 - Connect a fiber optic cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control carrier A of EPN cabinet 3:
 - Install a lightwave transceiver on the cable connector at slot 3A01.
 - Connect the other end of the fiber cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
 - At the top of the cabinet, coil up the surplus fiber optic cable and attach it to the wall of the cable tray.

3. Behind control carrier B of PPN cabinet 1:
 - Install a lightwave transceiver on the cable connector at slot 1B02.
 - Connect a fiber optic cable to the transceiver just installed.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
4. Behind port carrier B of EPN cabinet 3:
 - Install a lightwave transceiver on cable connector at slot 3B02.
 - Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3B02.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
 - At the top of the cabinet, coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.
5. Behind control carrier A of EPN cabinet 2:
 - Install a lightwave transceiver on cable connector at slot 2A02.
 - Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2A02.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
6. Behind control carrier A of EPN cabinet 3:
 - Install a lightwave transceiver on cable connector at slot 3A02.
 - Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3A02.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
 - At the top of the cabinet, coil the surplus fiber optic cable, and carefully attach the coil to the wall of the cable tray.
7. Behind port carrier B of EPN cabinet 2:
 - Install a lightwave transceiver on cable connector at slot 2B03.
 - Connect 1 end of the fiber optic cable to the lightwave transceiver, just installed, at slot 2B03.
 - Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
8. Behind port carrier B of EPN cabinet 3:
 - Install a lightwave transceiver on cable connector at slot 3B03.
 - Connect the other end of the fiber optic cable to the lightwave transceiver, just installed, at slot 3B03.

- Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
- At the top of the cabinet, coil the surplus fiber optic cable, and carefully attach the coil to the wall of the cable tray.

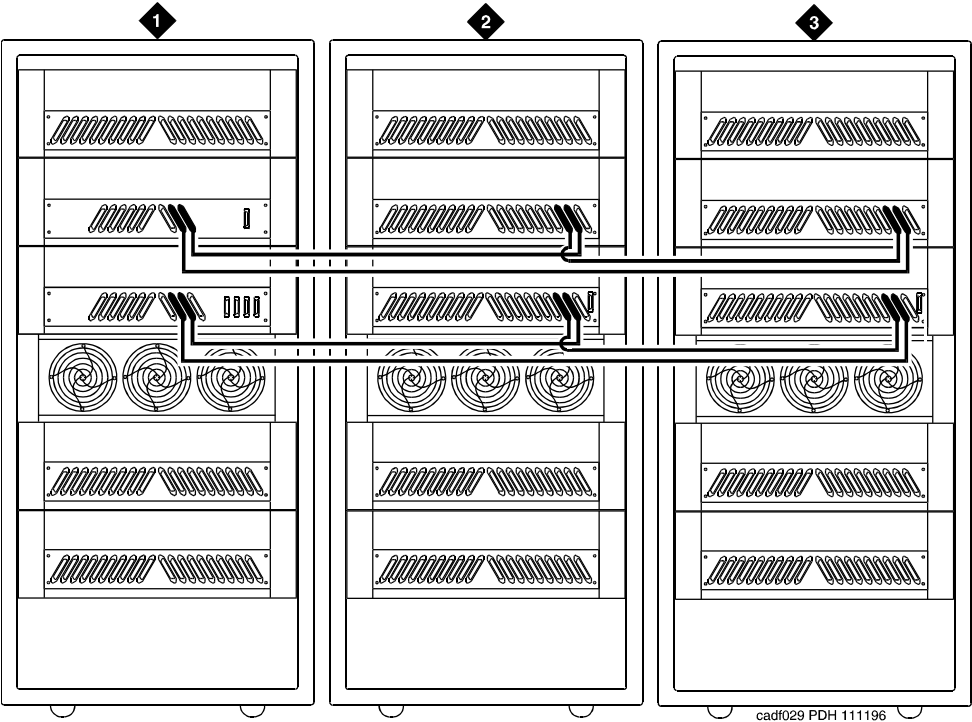


Figure Notes

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

Figure 4-28. Critical Reliability Release 9 with 2 or 3 Port Networks

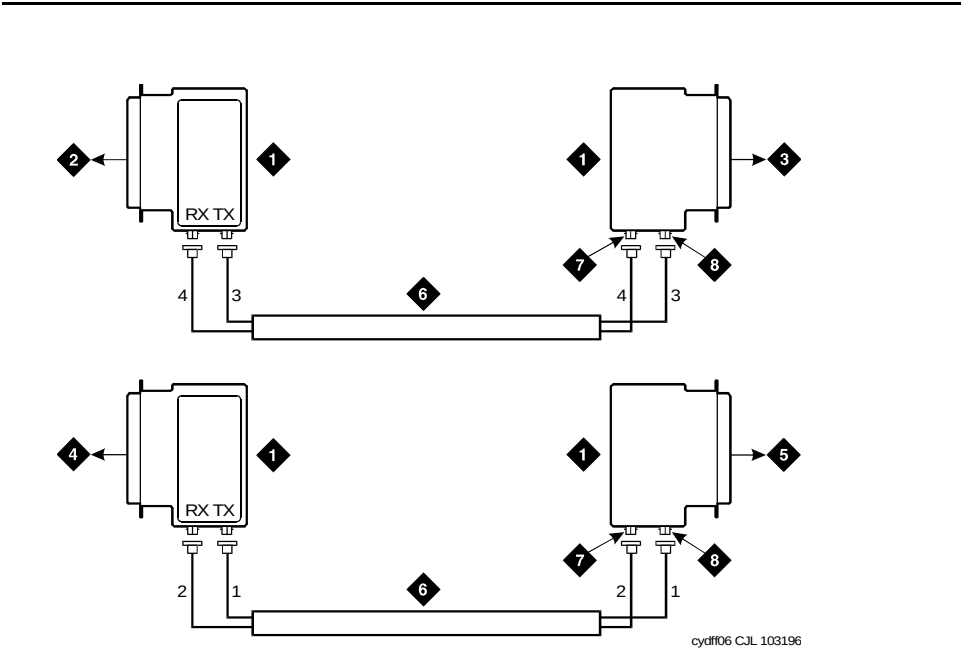


Figure Notes

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 4-29. Fiber Optic Connections PPN to EPN1

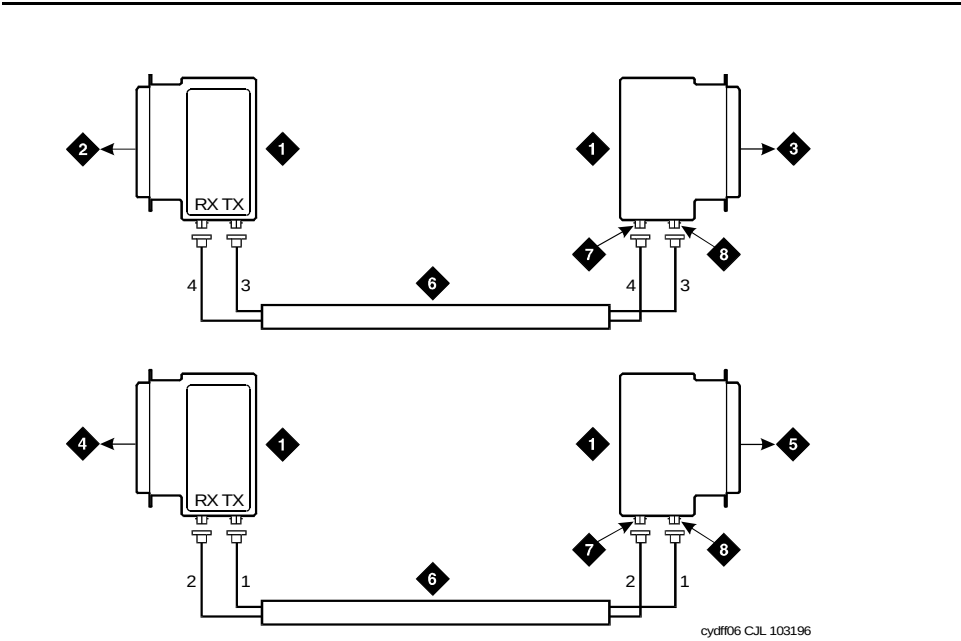


Figure Notes

1. Lightwave Transceiver	5. To EPN2 Carrier A Slot 3A01
2. To PPN Carrier A Slot 1A02	6. Fiber Optic Cable
3. To EPN2 Carrier A Slot 3A01	7. TX Connector
4. To PPN Carrier B Slot 1B02	8. RX Connector

Figure 4-30. Fiber Optic Connections PPN to EPN2

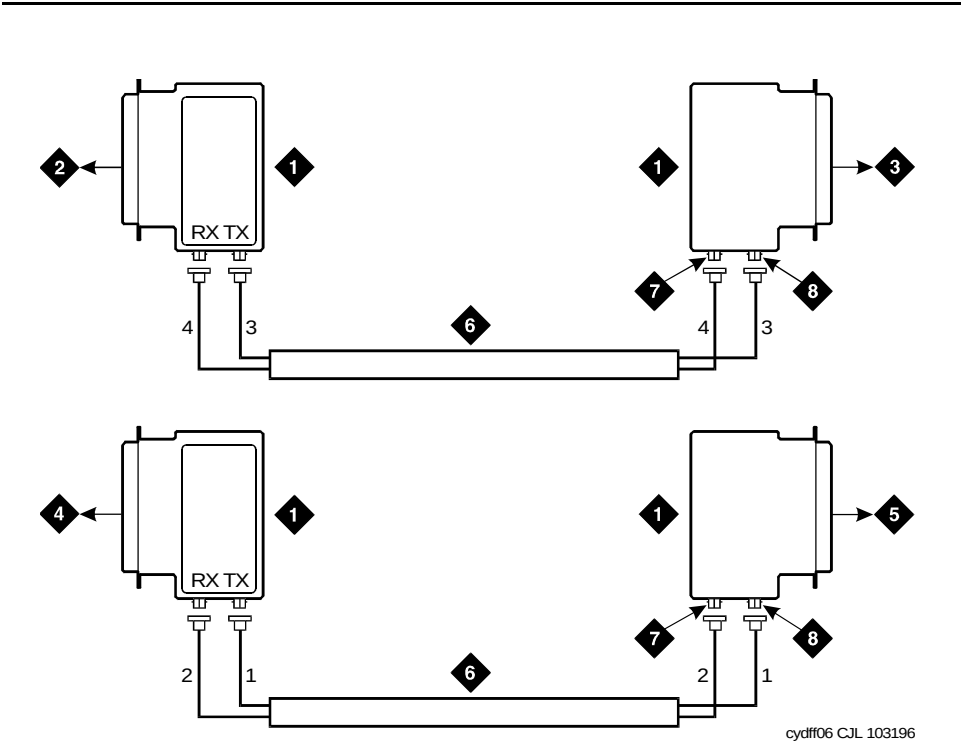


Figure Notes

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 4-31. 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 4-33](#) through [Figure 4-34](#)):
 - 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.

4 Multicarrier G2 Universal Module to R9r EPN
Interconnect Port Networks with Fiber Optic Cabling

4-105

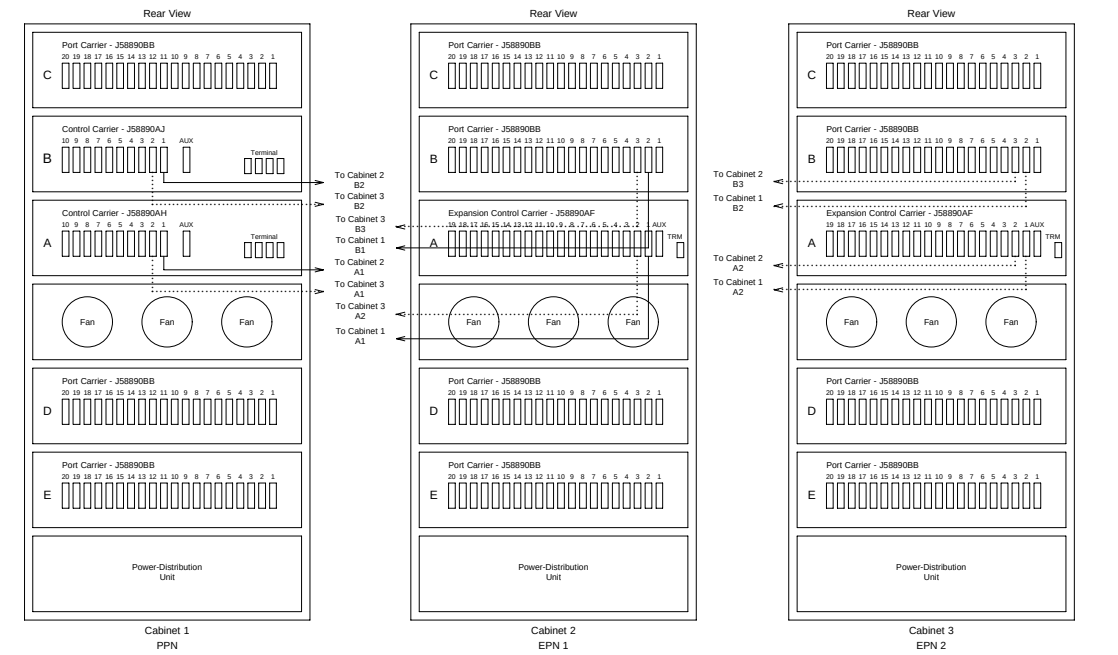
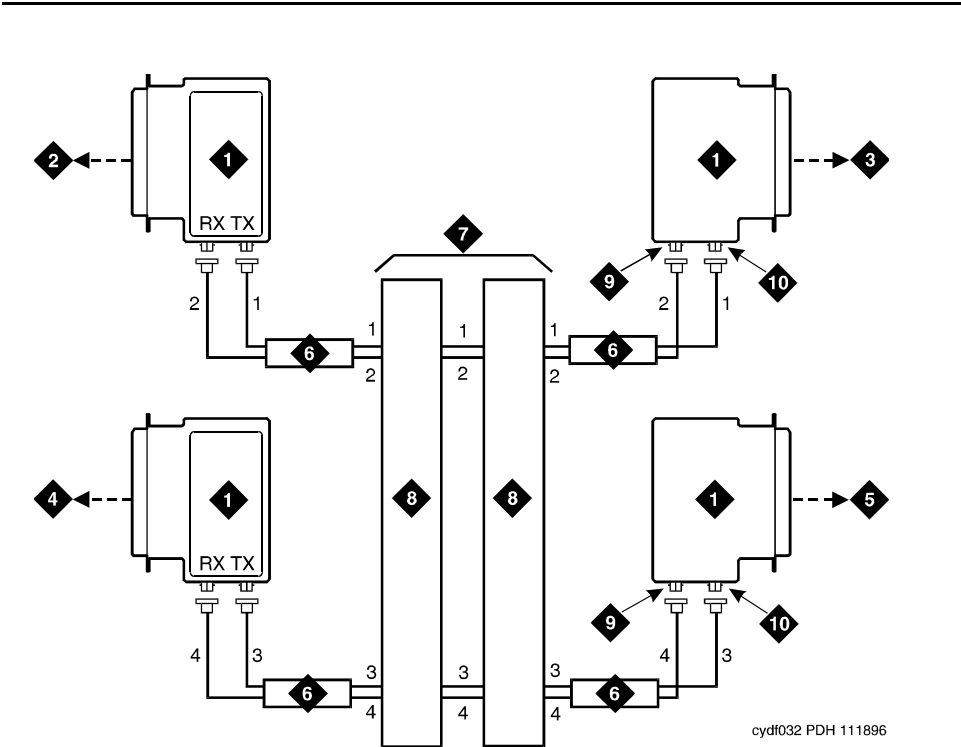


Figure 4-32. Critical Reliability Release 9 with 2 or 3 Port Networks



- Figure Notes
1. Lightwave Transceiver

2. To PPN Carrier A Slot 1A01

3. To EPN1 Carrier A Slot 2A01

4. To PPN Carrier B Slot 1B01

5. To EPN1 Carrier B Slot 2B02

6. Fiber Optic Cable

7. Optical Cross-Connect Facility

8. 100A Lightguide Interconnect Unit

9. TX Connector

10. RX Connector

Figure 4-33. Fiber Optic Connections PPN to EPN1

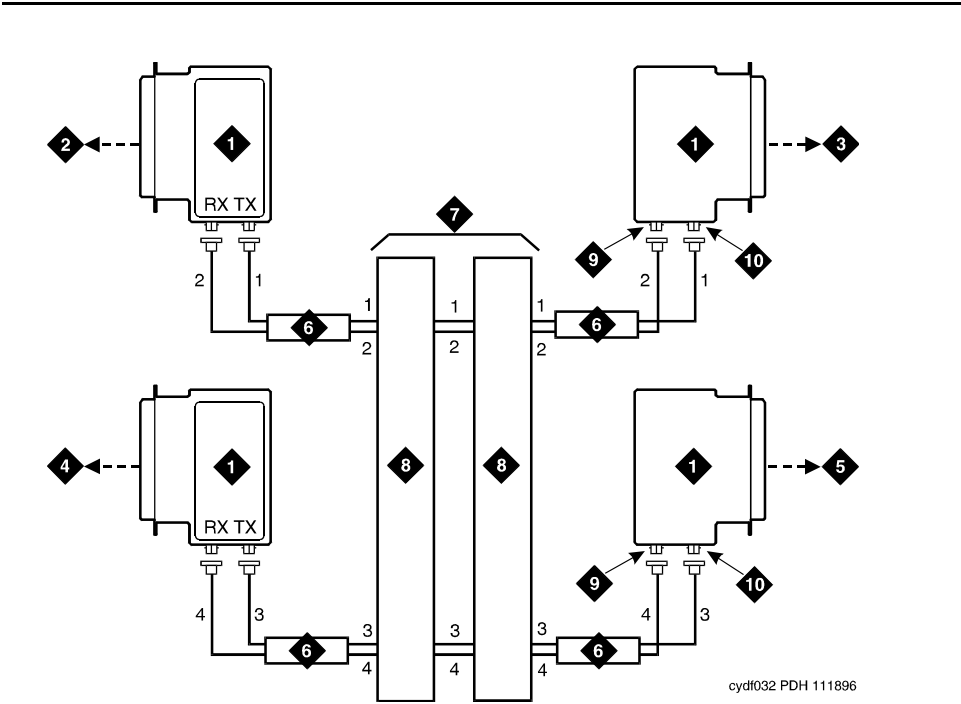


Figure Notes

1. Lightwave Transceiver	6. Fiber Optic Cable
2. To PPN Carrier A Slot 1A02	7. Optical Cross-Connect Facility
3. To EPN2 Carrier A Slot 3A01	8. 100A Lightguide Interconnect Unit
4. To PPN Carrier B Slot 1B02	9. TX Connector
5. To EPN2 Carrier B Slot 3B02	10. RX Connector

Figure 4-34. Fiber Optic Connections PPN to EPN2

4	Multicarrier G2 Universal Module to R9r EPN Interconnect Port Networks with Fiber Optic Cabling	4-108

Adding New Carriers and EPN Cabinets

5

This chapter provides information on

- Adding carriers to an r platform multicarrier cabinet
- Installing or removing EPN cabinets from a DEFINITY ECS
- Replacing a fan unit.



NOTE:

We recommend that if you are adding carriers and upgrading to a new software load that you add the hardware before you do the upgrade.

- [Add MCC Port Carriers](#)
- [Add a Control Carrier \(Add Duplication\)](#)
- [Add Center Stage Switch](#)
- [Add a Switch Node Carrier](#)
- [Install a New EPN Cabinet in an Existing System](#)
- [Remove an EPN Cabinet from an Existing System](#)

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 at least 3 TN1650B Memory Circuit Packs exist in the system. Refer to the section entitled ["Add Memory and DUPINT Circuit Pack\(s\)" on page 1-22](#) for installation instructions.

Before proceeding with the addition of a port carrier, ensure that the TN1657 Disk Drive is of Vintage 9 (or higher). Refer to ["Replace Disk Drive" on page 1-10](#) for installation instructions.

Service Interruption

1. Since the addition of port carriers requires a service interruption, notify the customer in advance as to when the addition will take place.

Verify System Status

1. Before proceeding, examine the system for alarms. Every problem should be corrected. The system must be alarm-free.

Disable Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Make a note of the Alarm Origination Activated field. If the feature is enabled, type **n** in this field to disable Alarm Origination.

You will enable this feature again in 1 of the final processes.



WARNING:

If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets is critical for measuring the quality of Lucent services and products.



NOTE:

For some releases of the software, disable Cleared Alarm Notification and Restart Notification fields before submitting the form.

Save Translations

1. Log in at the management terminal.
2. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
3. Type **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).
4. If the MCC port network contains a TN750 Announcement circuit pack,

type **display announcements** and press Enter.
If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to find out when the announcements were last saved.

Save the current announcements by typing **save announcements** and pressing Enter.

5. Type **backup disk [spe-a or both]** and press Enter. This command instructs the system to backup the current information on disk to the system tape(s).
6. Update backup tape(s), if required.

Shut Down DEFINITY LAN Gateway System

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



CAUTION:

Make sure that you save the system parameters if you plan to reuse the current system.



WARNING:

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

1. Unseat the LAN Gateway assembly from its backplane connectors in the carrier.

2. Log onto the DEFINITY LAN Gateway. See the *DEFINITY Communications System Generic 3 Installation, Administration and Maintenance of CallVisor ASAI over the DEFINITY LAN Gateway*.
3. When the main menu appears, select *Maintenance*.
4. Select *Reset System* from the *Maintenance* menu.
5. Select *Shutdown* from the *Reset System* menu.

Shut Down DEFINITY AUDIX System

1. If a DEFINITY AUDIX resides in the MCC port network to be upgraded, shut down the AUDIX assembly and allow the disk to completely spin down. Refer to ["DEFINITY AUDIX Power Procedures" on page 5-87](#).



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 5-1](#).
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 5-2](#) and [Figure 5-3](#)).

5 Adding New Carriers and EPN Cabinets
Add MCC Port Carriers

5-5

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 5-4](#), [Figure 5-5](#), [Figure 5-6](#), or [Figure 5-7](#) and [Table 5-1](#).
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 9 Maintenance for R9r*, 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 9 Administrator's Guide*.

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.
2. If the Alarm Origination Activated field administration is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press Enter.

The Alarm Origination Activated field was changed to Alarm Origination to OSS Numbers to support more than 1 OSS.

4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).

Be sure to type **y** in both Cleared Alarm Notification and Restart Notification fields. Press Enter.



NOTE:

The INADS Database Administrator enables Alarm Origination as part of the registration process.



CAUTION:

If you do not enable Alarm Origination when the customer has purchased a services contract, the switch will not report any alarm to the TSC automatically, causing the TSC to be unable to fulfill the services contract.

Save Translations

1. If the system is high- or critical-reliability, type **status spe** and press Enter to verify that the standby SPE is refreshed and that the standby disk is in service.
2. Type **save translation [spe-a or both] disk** and press Enter. This command instructs the system to take all translation information in memory and write it to the disk(s).
3. If the MCC port network contains a TN750 Announcement circuit pack, type **list configuration software-version** and press Enter.

If screen 2 shows that recorded announcements were saved, these announcements can be restored using the restore announcements command. Type **restore announcements** and press Enter.

4. Type **backup disk [spe-a or both]** and press Enter. This command instructs the system to backup the current information on disk to the removable media.

Update Port-Assignment Records

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

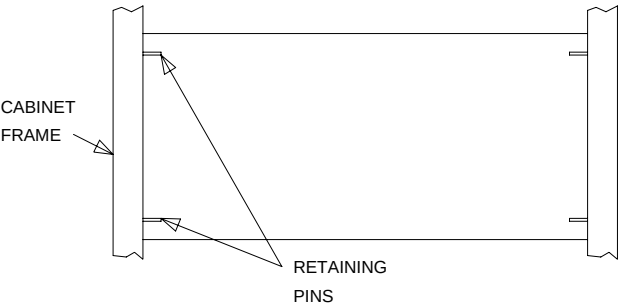


Figure 5-1. Blank Carrier Panel (Rear View)

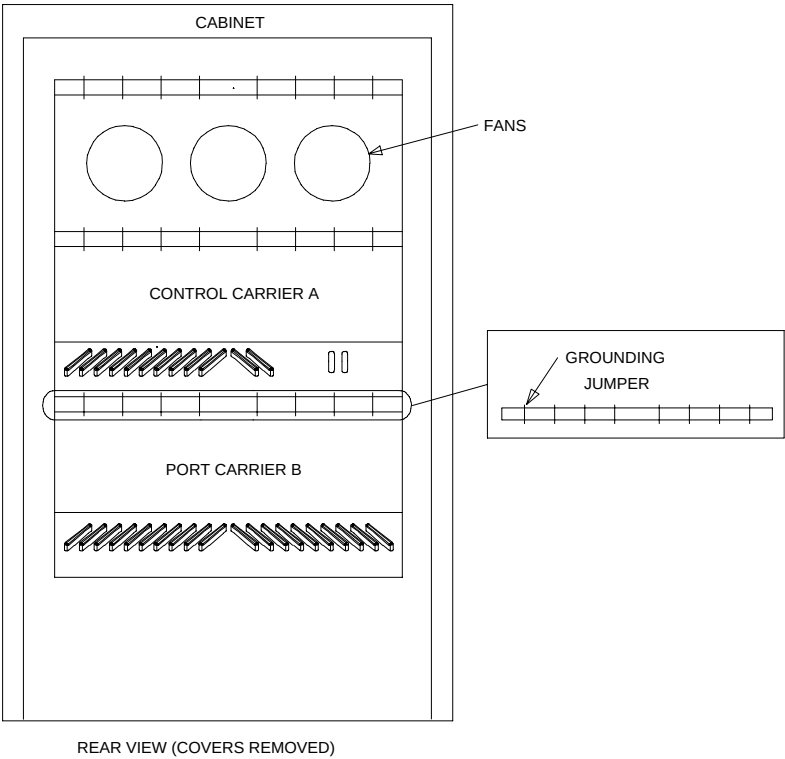


Figure 5-2. Locations of Grounding Jumpers (Small Cabinet)

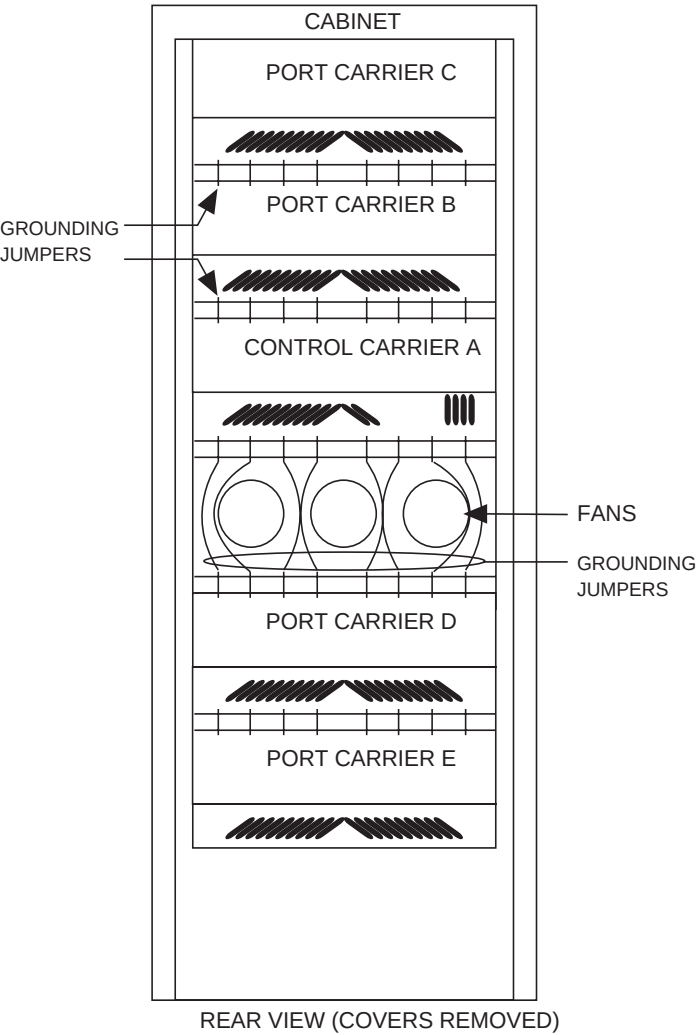


Figure 5-3. Locations of Grounding Jumpers

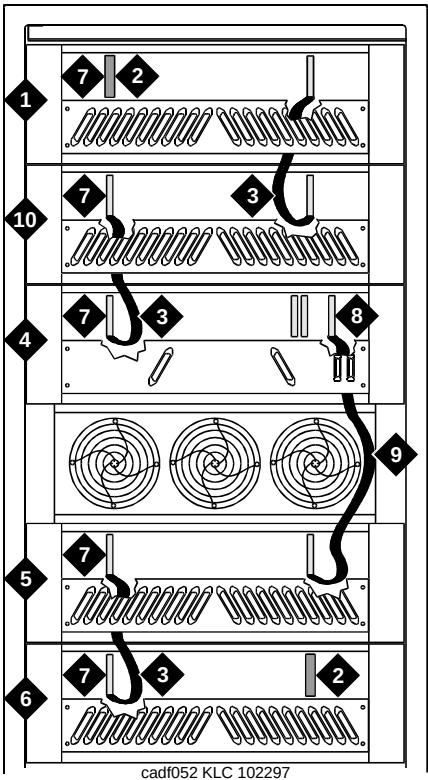


Figure Notes

1. Port Carrier (“C” Position)

2. ZAHF4 TDM/LAN Terminator

3. TDM/LAN Cable (WP91716L6)

4. Process Carrier (“A” Position)

5. Port Carrier (“D” Position)

6. Port Carrier (“E” Position)
7. Slot 21

8. Slot 00

9. TDM/LAN Cable (WP91716L7)

10. Port Carrier (“B” Position)

11. Slot TDM/LAN2 (20)

Figure 5-4. TDM/LAN Bus Connections for Standard Reliability R9r 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.

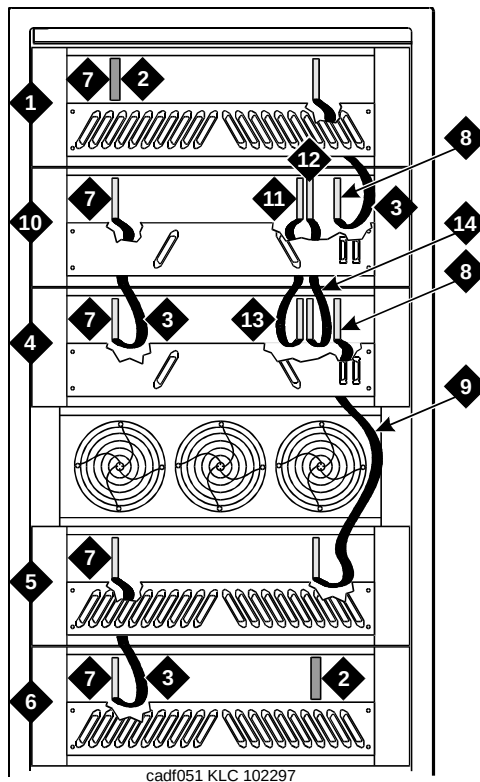


Figure Notes

1. Port Carrier ("C" Position)
2. ZAHF4 TDM/LAN Terminator
3. TDM/LAN Cable (WP91716L6)
4. Process Carrier ("A" Position)
5. Port Carrier ("D" Position)
6. Port Carrier ("E" Position)
7. Slot 21
8. Slot 00
9. TDM/LAN Cable (WP91716L7)
10. Process Carrier ("B" Position)
11. ICCD Connector
12. ICCC Connector
13. Intercarrier Cable D (WP-91954)
14. Intercarrier Cable C (H600-182)

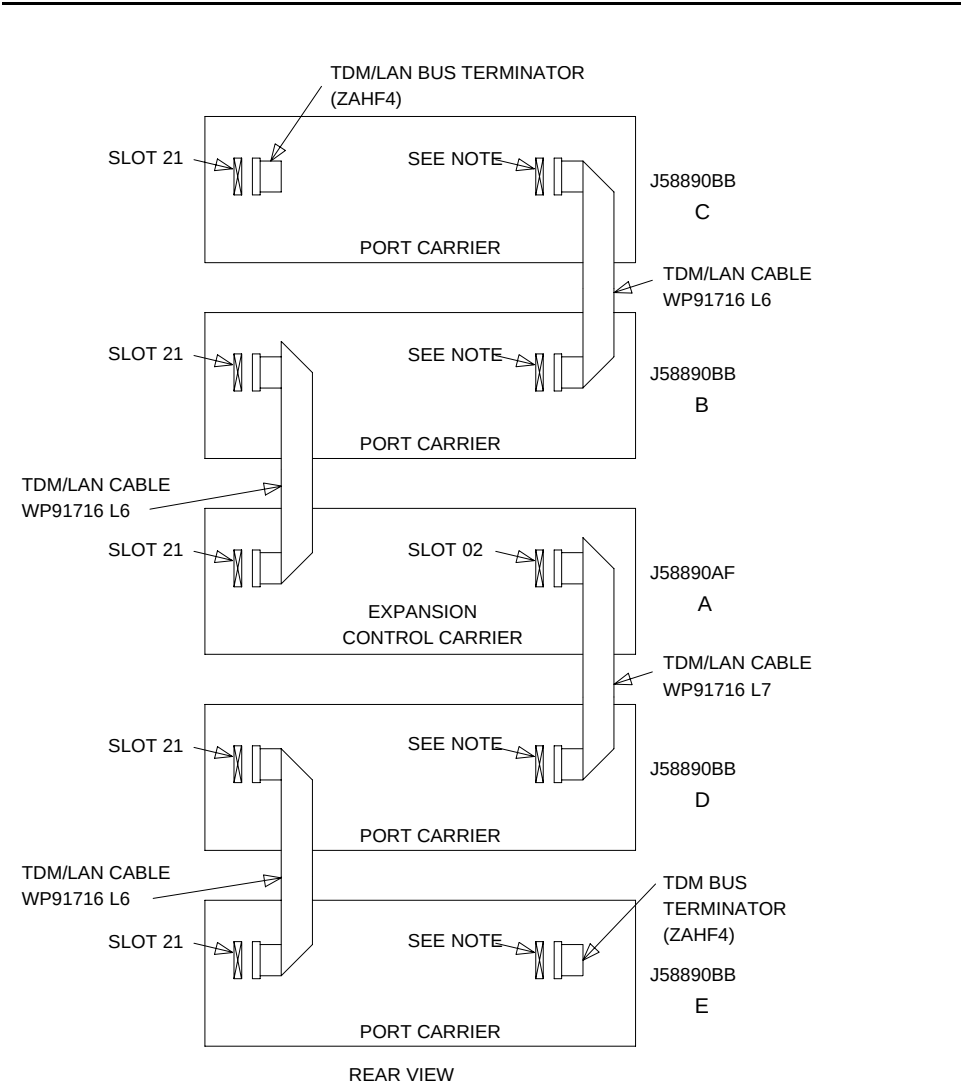
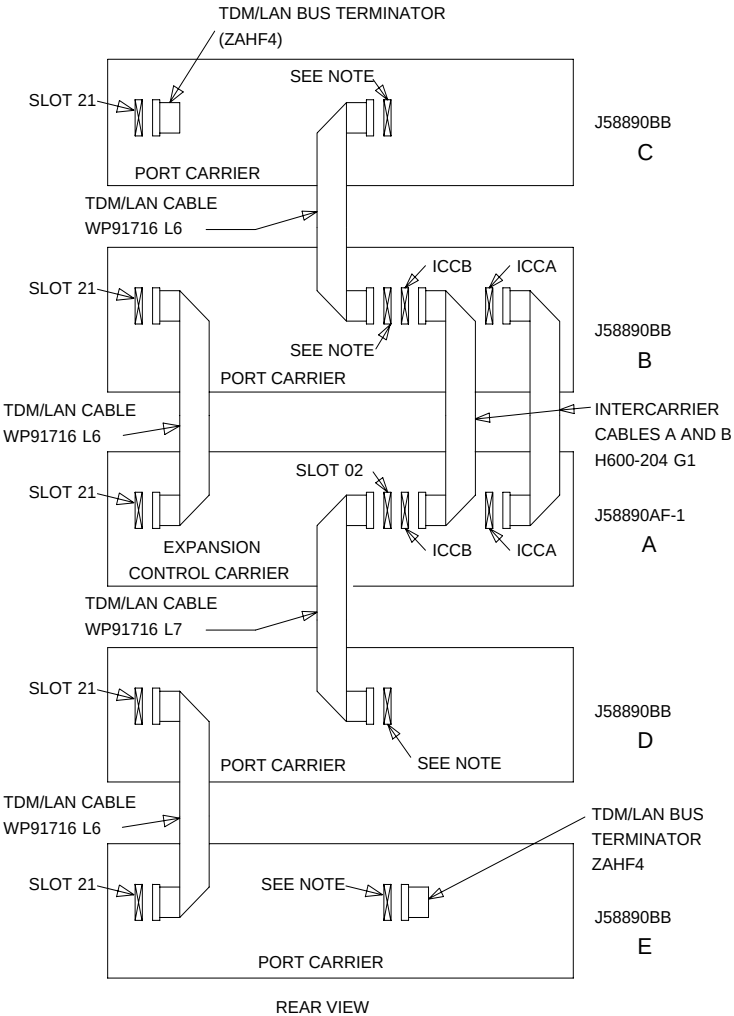


Figure 5-6. TDM/LAN Bus Connections for Standard- or High-Reliability EPN



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 5-7. TDM/LAN Bus Connections for Critical-Reliability EPN

Table 5-1. TDM/LAN Cable Connections

"J" Number	Carrier Type	LHS Slot	RHS Slot
J58890B-1	Port	21	02
J58890B-2	Port	21	01
J58890B-3	Port	21	01
J58890AP	PPN Control "A" or "B"	20	03
J58890AF	AC EPN Control "A"	21	02
J58890AF	DC EPN Control "A"	21	02

Add a Control Carrier (Add Duplication)

To upgrade a standard-reliability system to a high- or critical-reliability DEFINITY ECS Release 5 system, a second control carrier is added to carrier position "B" of the existing multicarrier cabinet PPN.

Service Interruption

1. Since the addition of the second control carrier requires a service interruption, notify the customer in advance as to when the addition will be carried out.

Verify System Status

1. Before proceeding, the system should be examined for alarms, and every problem should be corrected. The system must be alarm-free.

Disable Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Make a note of the Alarm Origination Activated field administration. If the feature is enabled, type **n** in this field and press Enter to disable Alarm Origination. This will be activated again later.



WARNING:

If you do not disable Alarm Origination before making changes to the switch, the switch may generate alarms, resulting in unnecessary trouble tickets. Reducing redundant and unnecessary trouble tickets is critical for measuring the quality of Lucent services and products.



NOTE:

For earlier releases of the system software, you may also need to disable Cleared Alarm Notification and Restart Notification fields before you can submit the form successfully.

Save Translations

1. Log in at the management terminal.
2. Type **save translation [spe-a] disk** and press Enter. This command instructs the system write all translation information from memory to disk.
3. If the PPN or an EPN (where PPN Port Carrier B will be relocated) contains a TN750 Announcement circuit pack, type **display announcements** and press Enter.
4. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to see when the announcements were last saved. Save the current announcements by typing **save announcements disk** and pressing Enter.
5. Type **backup disk [spe-a]** and press Enter. This instructs the system to backup the current information on disk to the system tape.
6. Update backup tape, if required.

Label Cables

1. To make reconnecting the cables simpler and more reliable, label both ends of the connector cables associated with the port carrier "B" to be removed.

Shut Down DEFINITY LAN Gateway System

If a DEFINITY LAN Gateway system resides in the control cabinet to be upgraded, prepare to shut down the DEFINITY LAN Gateway assembly and allow the disk to completely spin down.



CAUTION:

Before using this procedure to shut down the DEFINITY LAN Gateway, make sure that you save the system parameters if you plan to reuse the current system.



WARNING:

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

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

Shut Down DEFINITY AUDIX System

1. If a DEFINITY AUDIX resides in the PPN or an EPN (where PPN Port Carrier B will be relocated), shut down the AUDIX and allow the disk to completely spin down. Refer to [“DEFINITY AUDIX Power Procedures” on page 5-87](#).



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 5-8](#)).
3. Disconnect 1 end of the TDM/LAN cable (between the "B" and "A" carriers) from the "B" carrier (See [Figure 5-8](#)).
4. Disconnect 1 end of the 8 ground straps (between the "B" and "C" carriers) from the "B" carrier (See [Figure 5-9](#)). 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 5-9](#)). 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.

5 Adding New Carriers and EPN Cabinets
Add a Control Carrier (Add Duplication)

5-18

7. Behind the "B" carrier, remove the 2 screws holding the "B" carrier's rear connector panel to the cabinet frame. These are frame ground screws.
8. In front of "B" carrier, remove the 4 screws (top 2 first) holding the "B" carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
9. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.



CAUTION:

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

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

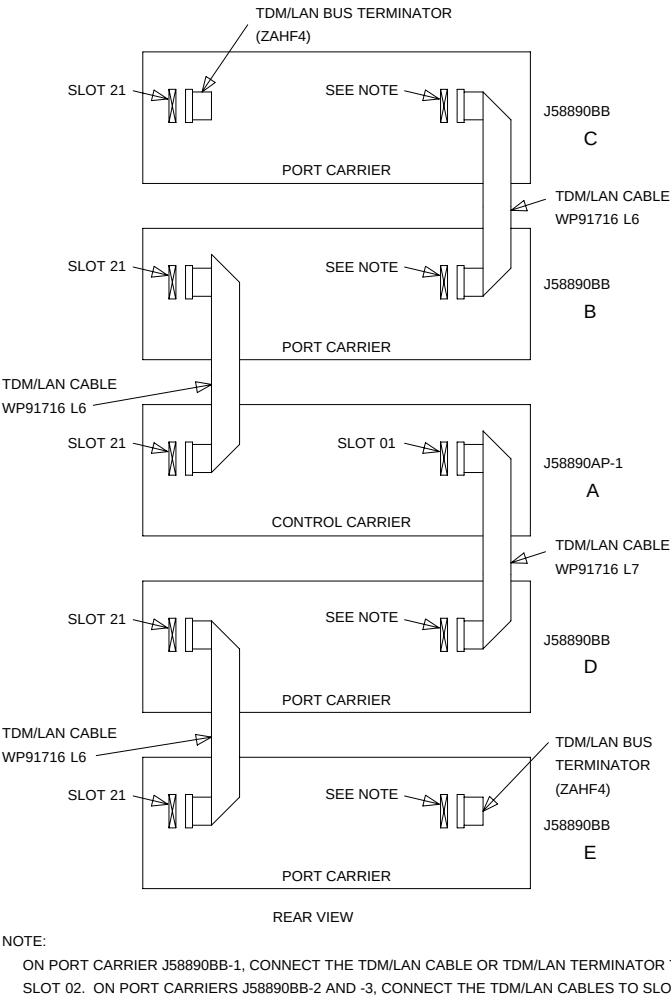


Figure 5-8. TDM/LAN Connections for Standard-Reliability PPN

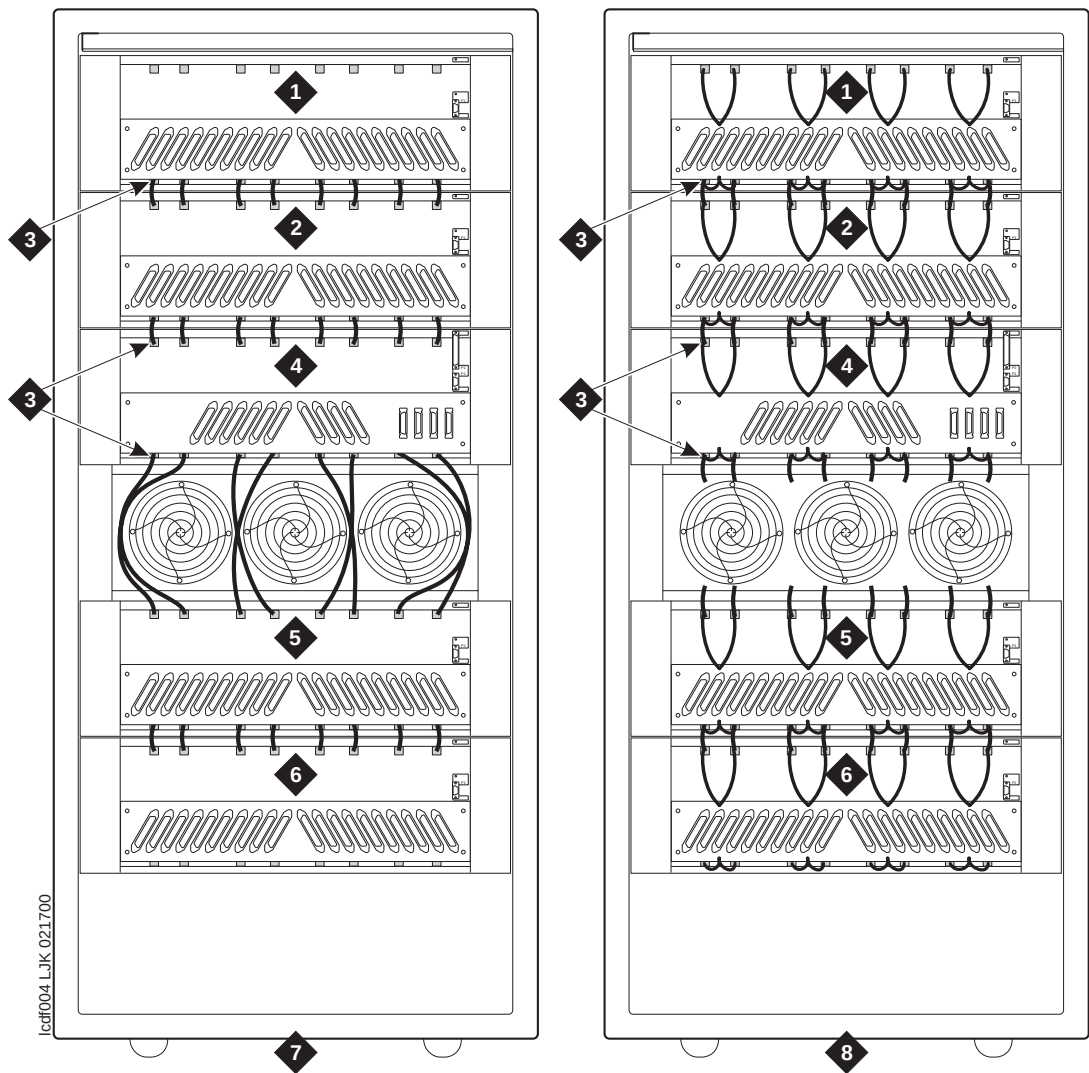


Figure Notes

1. Port Carrier "C"	5. Port Carrier "D"
2. Port Carrier "B"	6. Port Carrier "E"
3. Ground Jumpers	7. Cabinet with standard fan unit and carriers
4. Control Carrier "A"	8. Cabinet with enhanced fan unit and enhanced carriers

Figure 5-9. Locations of Ground Jumpers on standard and enhanced fan-unit cabinets

Prepare New Control Carrier B

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



NOTE:

The enhanced R9r PPN AC carrier may look different than the other carriers because it comes with 16 new grounding jumpers and 8 mounting screws.

2. Place the control carrier on the floor so that the rear of the carrier faces up.
3. Verify that the 2 AHF111 processor-bus (PX) terminators are installed on the "B" carrier to the pin-field blocks marked "PX" (top portion of slots "4" and "10"). The PX terminators are attached with the components on the left side as viewed from the rear.

Install New Control Carrier B

1. Install the J58890AP control carrier in position "B" by lining up the plastic alignment tips on the top rear of the carrier with the screw holes in the cabinet. These alignment tips will support the carrier while the screws are being replaced. Ensure that the power cords are properly placed in the slots at the sides of the carrier.
2. Fasten the carrier into position with 4 self-tapping screws saved from the removal of the old carrier.



CAUTION:

Carefully realign the threads on the self-tapping screws by turning them clockwise 1 turn before tightening them to avoid stripping the threads out of the framework.

3. Behind the carrier, replace the 2 screws saved from the removal of the old carrier. These are frame ground screws.
4. Connect the "P1" (small) connector to the "B" carrier. To get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from the "C" carrier to the new "B" carrier (See [Figure 5-9](#)). These straps were left connected to the "C" carrier when the old "B" carrier was removed.

5 Adding New Carriers and EPN Cabinets
Add a Control Carrier (Add Duplication)

5-22

6. Connect the 8 ground straps from the “A” carrier to the new “B” carrier (See [Figure 5-9](#)). These straps were left connected to the “A” carrier when the old “B” carrier was removed.
7. For a standard AC-powered control carrier, install the 4 carrier ground straps. The straps connect ground points G1 and G8 from the top of the B-carrier backplane to the B-carrier connector panel bracket and ground points G9 and G16 from the bottom of the B-carrier backplane to the B-carrier connector panel bracket.

For an enhanced carrier, install the 16 carrier-ground straps. The straps connect ground points G1 through G8 from the top of the B-carrier backplane to the B-carrier connector panel and ground points G9 through G16 from the bottom of the B-carrier backplane to the B-carrier connector panel . Use the 8 screws to connect the ground straps to the connector panel (see [Figure 5-10](#)).

 NOTE:

An enhanced carrier is used only in an R9r PPN cabinet that uses either AC power (U.S.) or Global power.

 NOTE:

DC-powered cabinets DO NOT use any of the above carrier-ground straps.

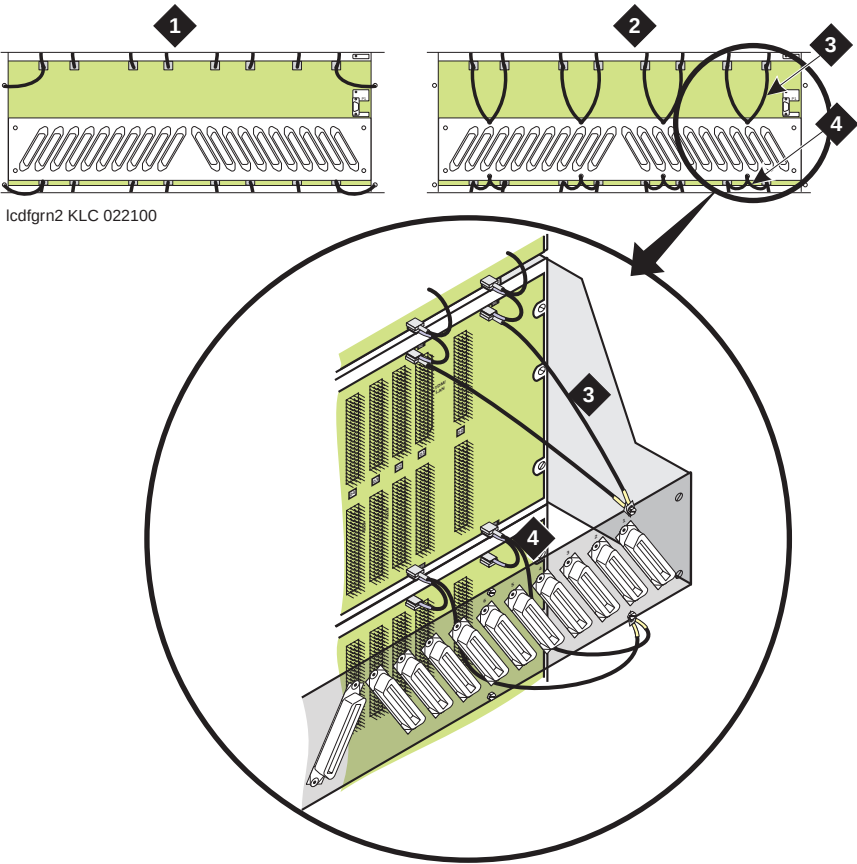


Figure Notes

1. Standard AC-powered Carrier	3. Top Ground Straps
2. Enhanced Carrier (in R9r PPNs using either AC power [U.S.] or Global power)	4. Bottom Ground Straps

Figure 5-10. Locations of Top and Bottom Ground Straps on Standard and Enhanced Carriers

8. Connect the loose end of the TDM/LAN cable (between the “C” and “B” carriers) to the pin-field block marked “TDM/LAN” on the right side of the “B” carrier (See [Figure 5-11](#) and [Table 5-2](#)). The other end remained connected to the “C” carrier when the old carrier was removed.

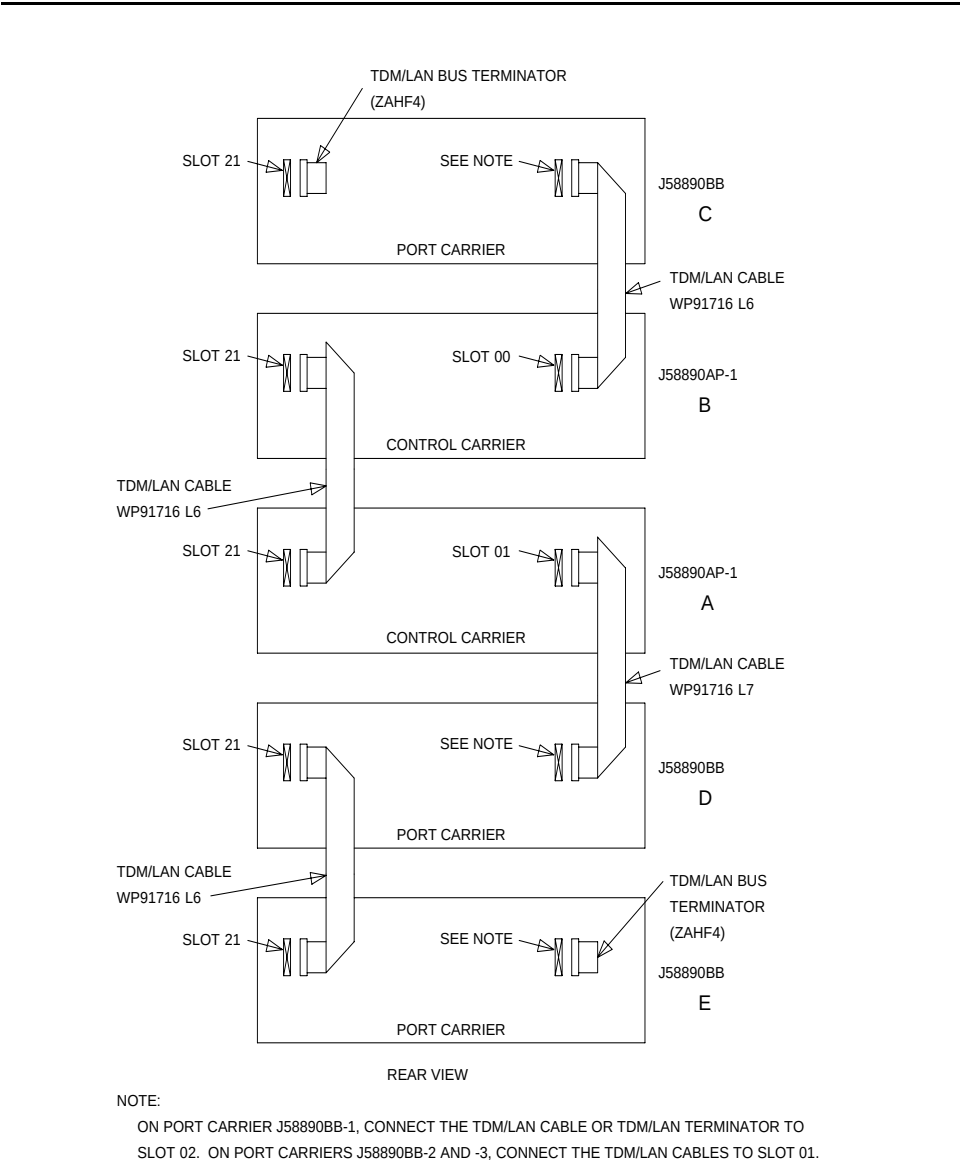


Figure 5-11. TDM/LAN Connections for High-Reliability PPN

9. Connect the loose end of the TDM/LAN cable (between the “A” and “B” carriers) to the pin-field block marked “TDM/LAN” on the left side of the “B” carrier (See [Figure 5-11](#) and [Table 5-2](#)). The other end remained connected to the “A” carrier when the old carrier was removed.

10. Connect the loose end of the TDM/LAN cable (between the “C” and “B” carriers) to the pin-field block marked “TDM/LAN” on the right side of the “B” carrier (See [Figure 5-11](#) and [Table 5-2](#)). The other end remained connected to the “C” carrier when the old carrier was removed.
11. Connect the loose end of the TDM/LAN cable (between the “A” and “B” carriers) to the pin-field block marked “TDM/LAN” on the left side of the “B” carrier (See [Figure 5-11](#) and [Table 5-2](#)). The other end remained connected to the “A” carrier when the old carrier was removed.

Table 5-2. TDM/LAN Connections

“J” Number	Carrier Type	LHS Slot	RHS Slot
J58890BB L1	Port	21	02
J58890BB L2	Port	21	01
J58890BB L3	Port	21	01
J58890AP	Control	21	02

12. Install the alarm duplication cable (H600-198 G1) between carriers “B” and “A.” Connect the cable to the “ICCA” pin-field block (to the right of the pin-field block for slot “00”) of both carriers. See [Figure 5-12](#). Connect the “UAK” (upper) connector to carrier “B,” and connect the “LAK” (lower) connector to carrier “A.”

 **CAUTION:**

While installing the ICC cable connectors, be careful not to bend any backplane pins. Double check each connection to verify that the pins are straight.

 **NOTE:**

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

13. Install the ICCC cable (H600-182 G1) between carriers “B” and “A.” Connect the cable to the “ICCC” pin-field block (behind slot “01”) of both carriers. See [Figure 5-12](#).
14. Install the duplication cable (WP91954 L1) between carriers “B” and “A.” Connect the cable to the “ICCD” pin-field block (behind slot “02”) of both carriers. See [Figure 5-12](#).

 **NOTE:**

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

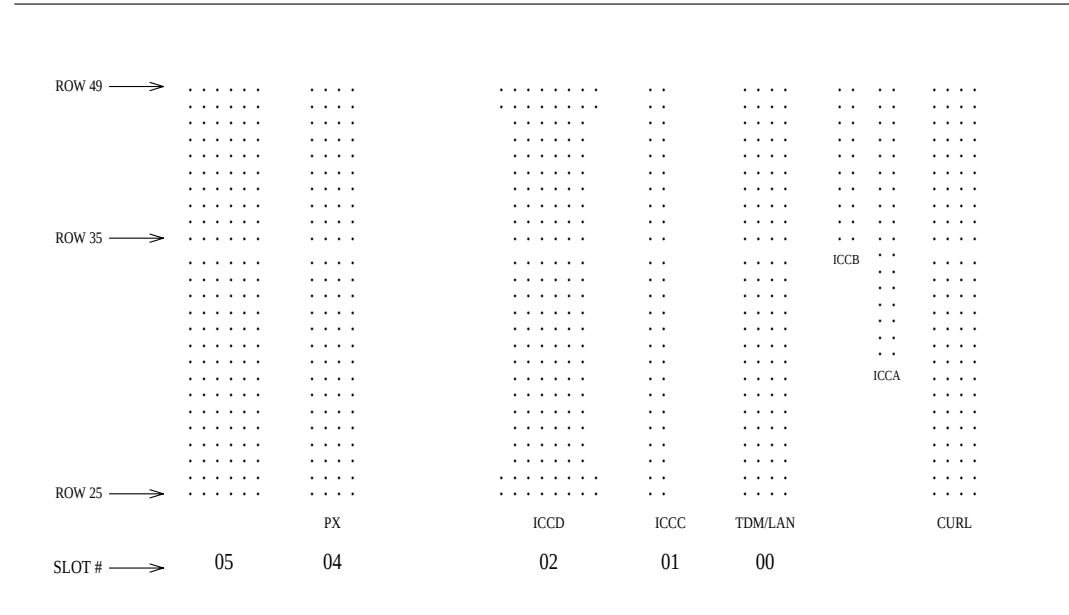


Figure 5-12. ICC Connections for R9r Control Carrier

15. Install the front trim plate on the “B” carrier.
16. Install the new power units into the “B” carrier. The 631DA1 or 644A is installed on the left side, while the 631DB1 or 645B and the 649A are installed on the right side.
17. Connect the white power cords to the power units. The power cords are equipped with plugs that are run through the slots in the front of each carrier.

Install Circuit Packs

1. Install a new UN330B Duplication Interface circuit pack into carrier “A.” Use the decal as a guide.
2. Install the new R9r 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 R9r system, install a new TN771D Maintenance/Test circuit pack into an available port slot of each EPN (if not already present).
5. Install circuit pack blanks in slots not equipped with circuit packs.

Relocate Port Carrier B

Refer to [Add a Switch Node Carrier](#) to relocate the removed port carrier.

Connect Management Terminal or PC

1. Behind control carrier "A," disconnect the management terminal or PC cable from the "TERM" connector, and reconnect the cable to the "DOT" (duplication option terminal) connector.

Reseat DEFINITY LAN Gateway System

1. Reseat the LAN Gateway assembly into its backplane connectors.

Reseat DEFINITY AUDIX System

1. If a DEFINITY AUDIX System resides in the PPN or an EPN (where PPN port carrier "B" was relocated), reseat the AUDIX assembly to its backplane connectors.

Power Up System

1. At an EPN (where PPN port carrier "B" was relocated), set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs a level 4 rebooting process, loading the system program and default or current translations from the disk. Rebooting takes 5 to 11 minutes.



NOTE:

Ignore alarms for now.

4. Type the **reset system 4** and press Enter to copy the translations from removable media to memory.
5. Clear any alarms.
6. Type **save translation [both]** and press Enter if translation changes were made in Step 8.
7. Type **restore disk [both] full** and press Enter to copy the translations from removable media to disk.
8. Verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal operating mode.

Restart DEFINITY LAN Gateway System

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

Enable SPE Duplication

1. If not also duplicating switch node carriers, refer to Duplication-Related System Parameters in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*, to enable Switch Processing Element (SPE) duplication.

Enable PNC Duplication

1. For a critical-reliability R9r system, type **change system-parameters customer-options** and press Enter. Use this screen to enable the Port Network Connectivity (PNC) duplication option.

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.
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 the Fiber Optic Cable

This chapter details the installation of the fiber optic cable using the DEFINITY fiber optic pass-thru kit for Multicarrier Cabinets (MCC) only. This kit (comcode 848029278) provides the equipment necessary to install the fiber optic connectors and associated cabling.

Unpack and Inspect

1. Verify the equipment received. See [Figure 5-13](#). Actual equipment may vary in appearance and may ship in separate packages.
2. See [Table 5-3](#) for a list of part comcodes.

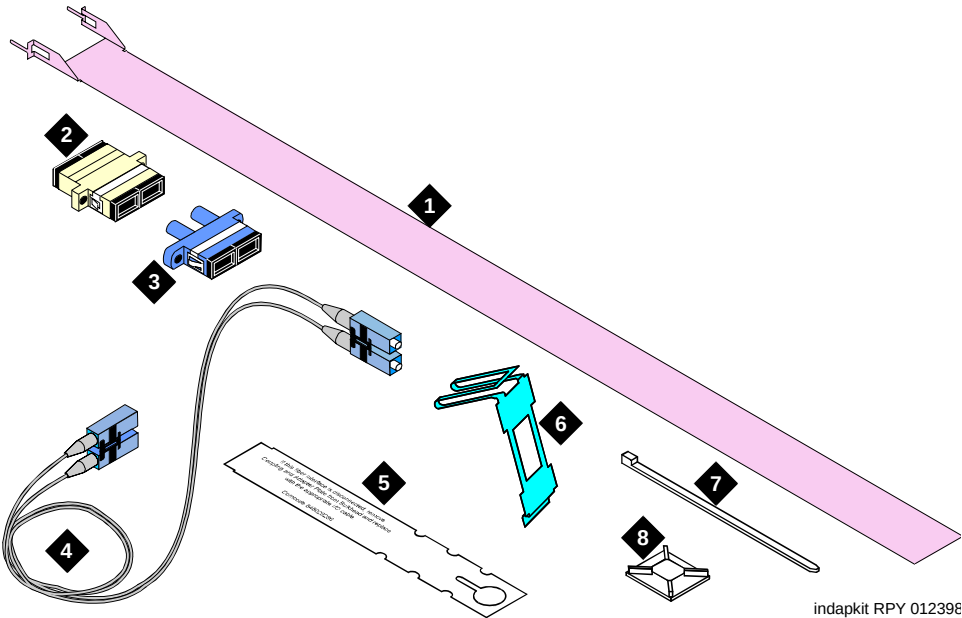


Figure Notes

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 5-13. Fiber Pass-Thru Kit Equipment

Table 5-3. 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: -5 dBm
- Wavelength: 1310 nm
- Mode Field Diameter: 8.8 μm

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

Contact your Avaya 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.

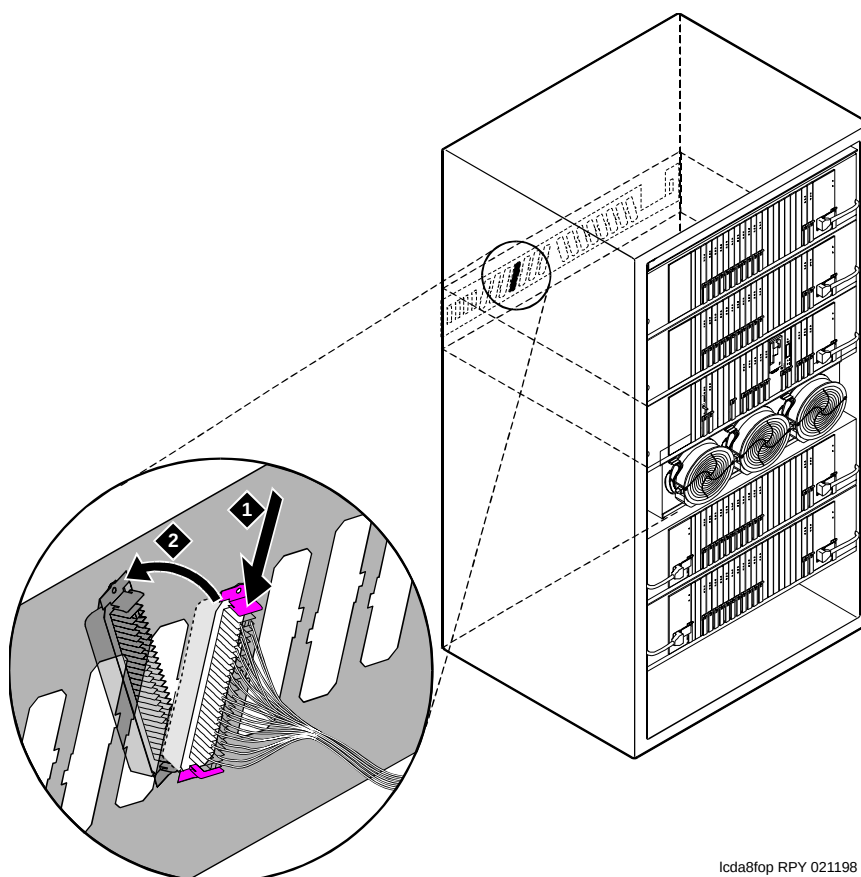
3. Remove the circuit pack or the blanking plate from the slot next to the slot determined in step 2. Two consecutive open slots are required to install the fiber optic adapter.



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 5-14](#).



lcda8top RPY 021198

Figure Notes

1. Press tab down
2. Pull connector forward

Figure 5-14. Remove the I/O Cable Connector

7. Using a supplied cable tie, secure the removed I/O connector to nearby cabling. See [Figure 5-15](#).

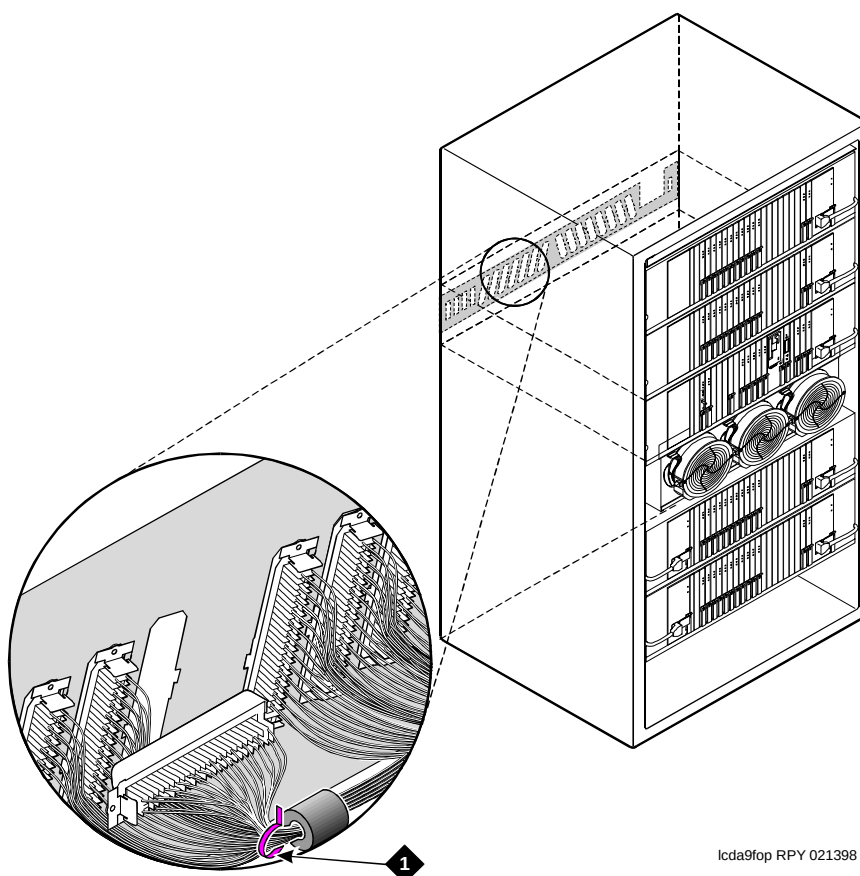


Figure Notes

1. Tie wrap

Figure 5-15. Secure the I/O Cable Connector

8. From the front, remove the fan cover. See [Figure 5-16](#).

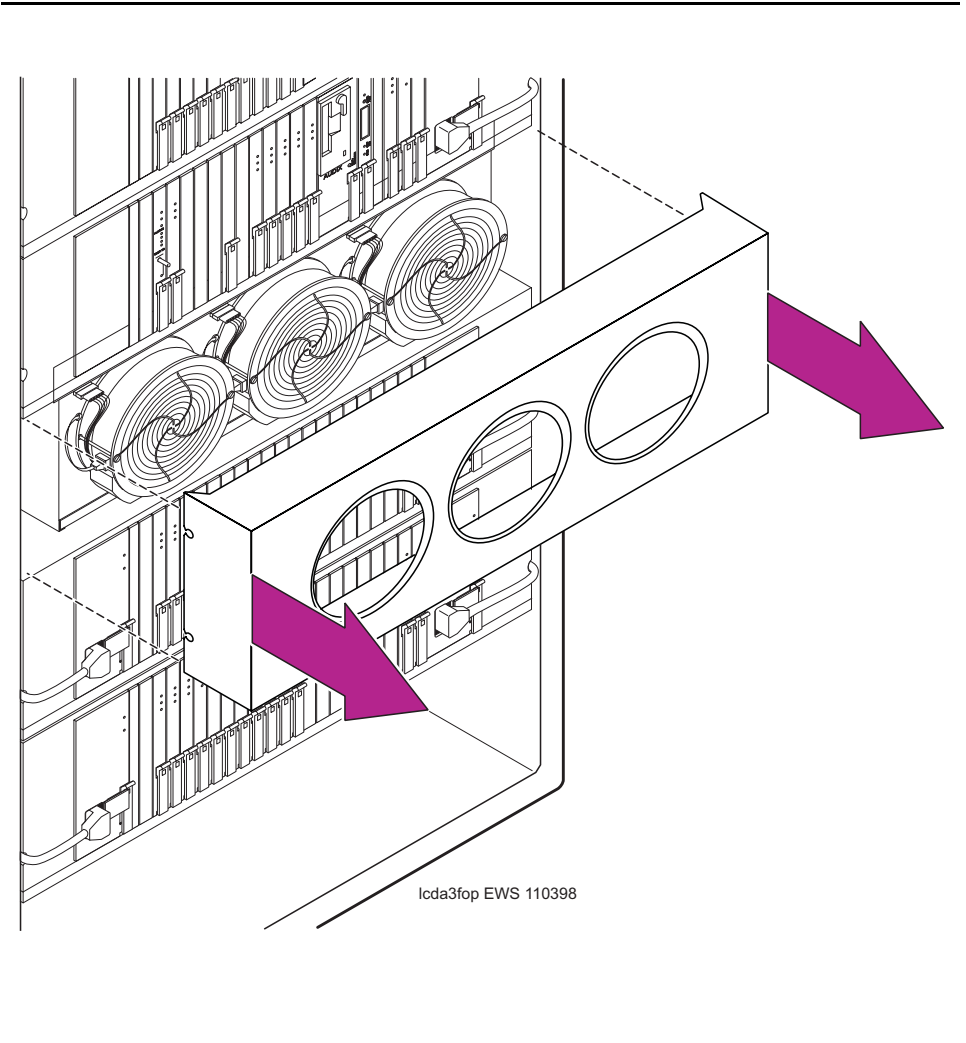


Figure 5-16. Remove the Fan Cover

Install the Pass-thru Kit

1. Snap the SC-SC fiber optic adapter on the pass-thru tool. See [Figure 5-17](#). 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.

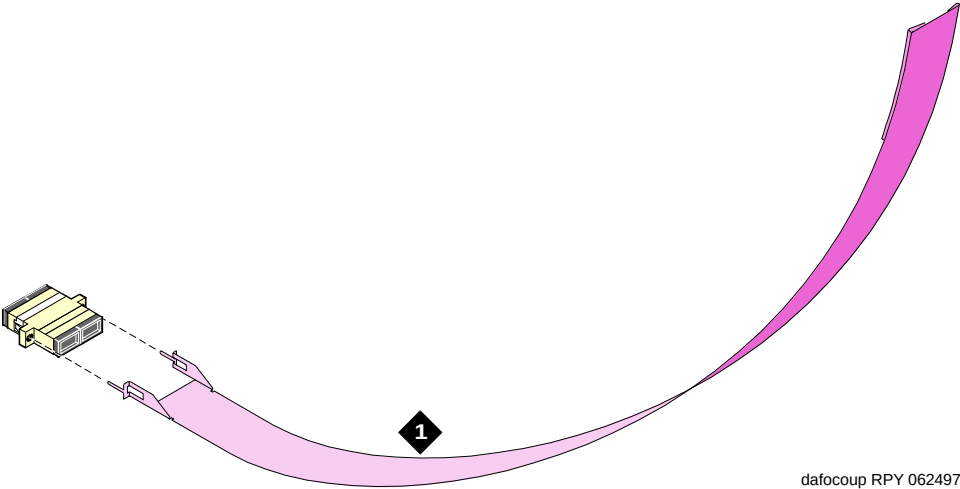


Figure Notes

1. Pass-thru Tool
2. SC-SC Fiber Optic Adapter

Figure 5-17. Fiber Optic Adapter and Pass-Thru Tool

2. Slide the tool to the rear of the cabinet. See [Figure 5-18](#).

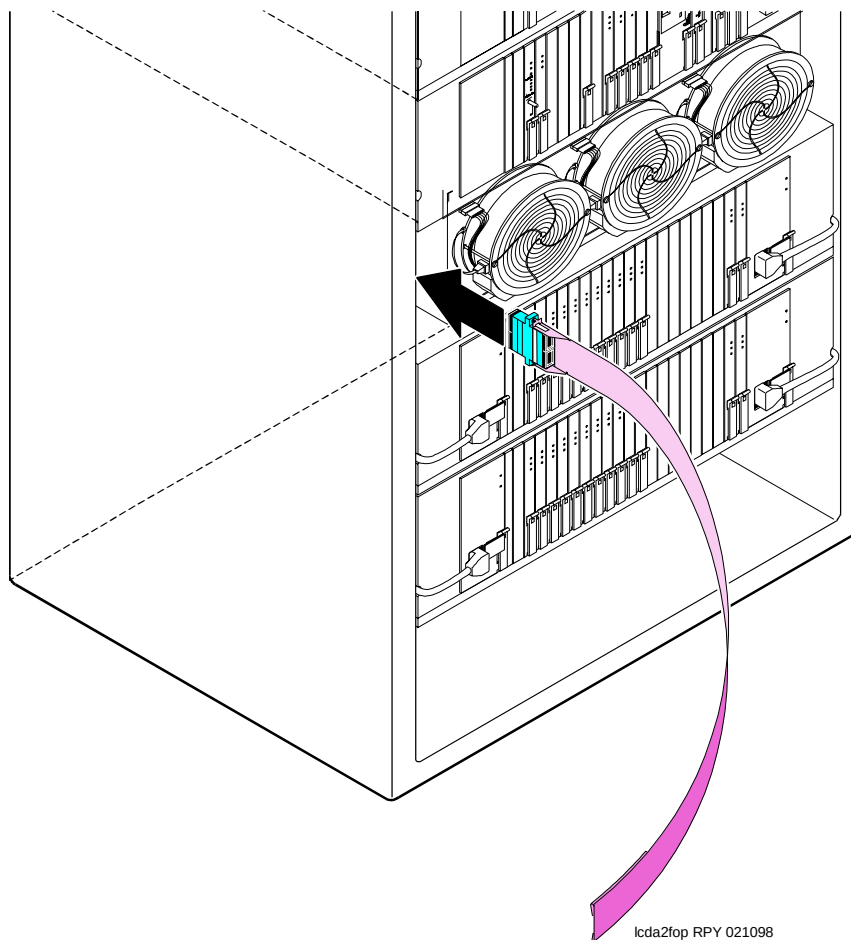


Figure 5-18. Insert the Pass-thru Tool



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 5-19](#).

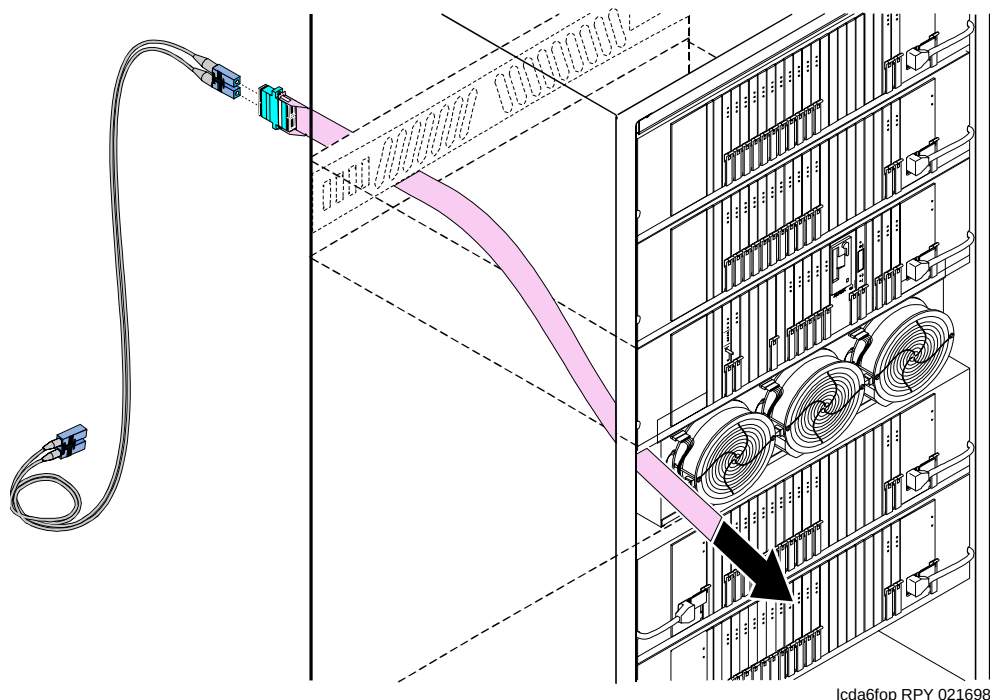


Figure 5-19. Fiber Optic Cable and Adapter

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 5-20](#). 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.

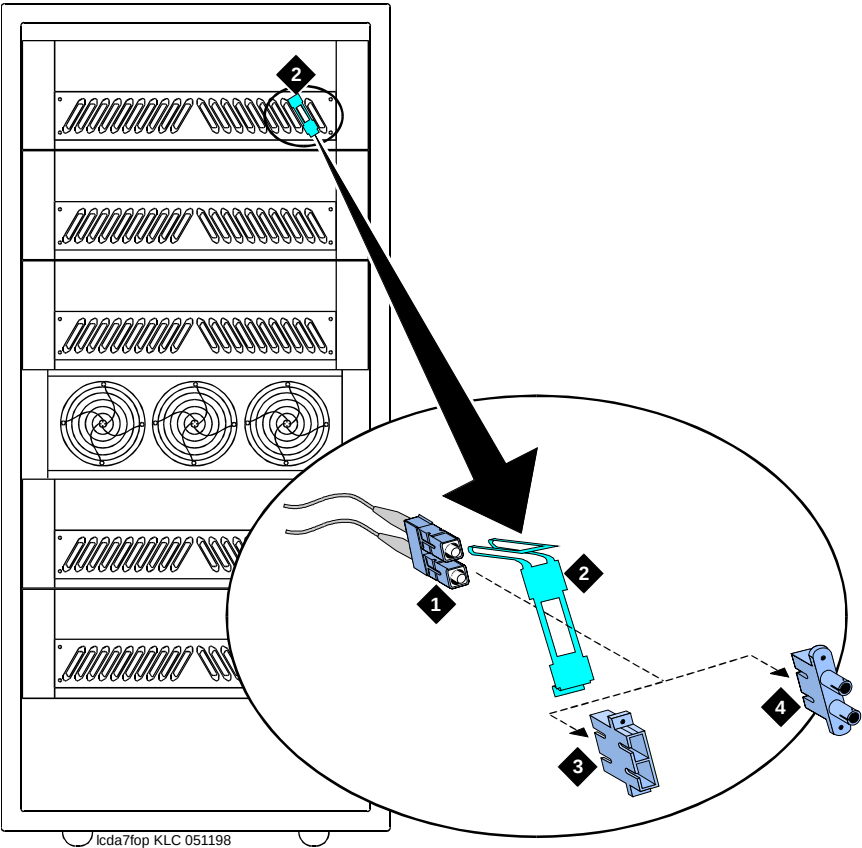


Figure Notes:

1. Fiber cable	3. SC-SC adapter
2. I/O connector adapter bracket	4. SC-ST adapter

Figure 5-20. Bracket Attachments

10. Wrap the cable disconnect label around the fiber optic cable. See [Figure 5-21](#).

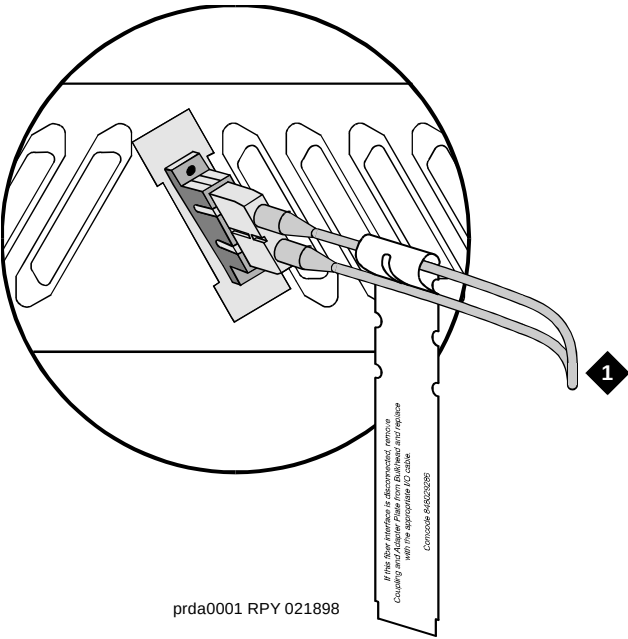


Figure Notes

- 1. To outside plant fiber

Figure 5-21. Cable Disconnect Label

- 11. Close the rear door.

CAUTION:
Avoid bending fiber optic cables to a radius smaller than 1.5 inches (3.8 cm), to prevent mechanical stress on the cables. Plan the use of cable ties to avoid crimping the cable or creating a fixed stress point where, at a later time, movement of the cable causes it to exceed the minimum bend radius.

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

- 12. Replace the fan cover. See [Figure 5-22](#).

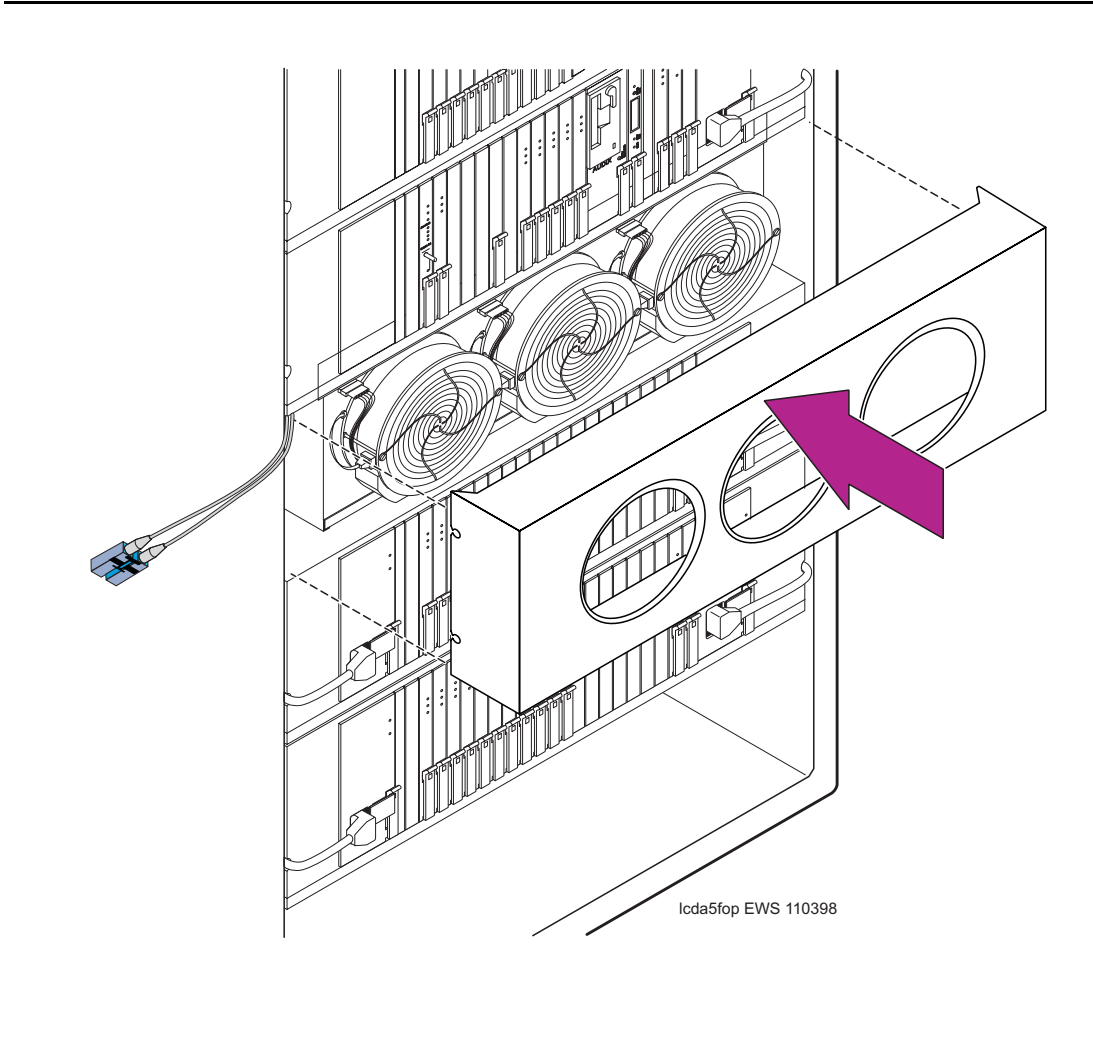


Figure 5-22. Replace the Fan Cover

- 13. Connect the fiber cable to the angled connector on the front of the circuit pack. See [Figure 5-23](#).

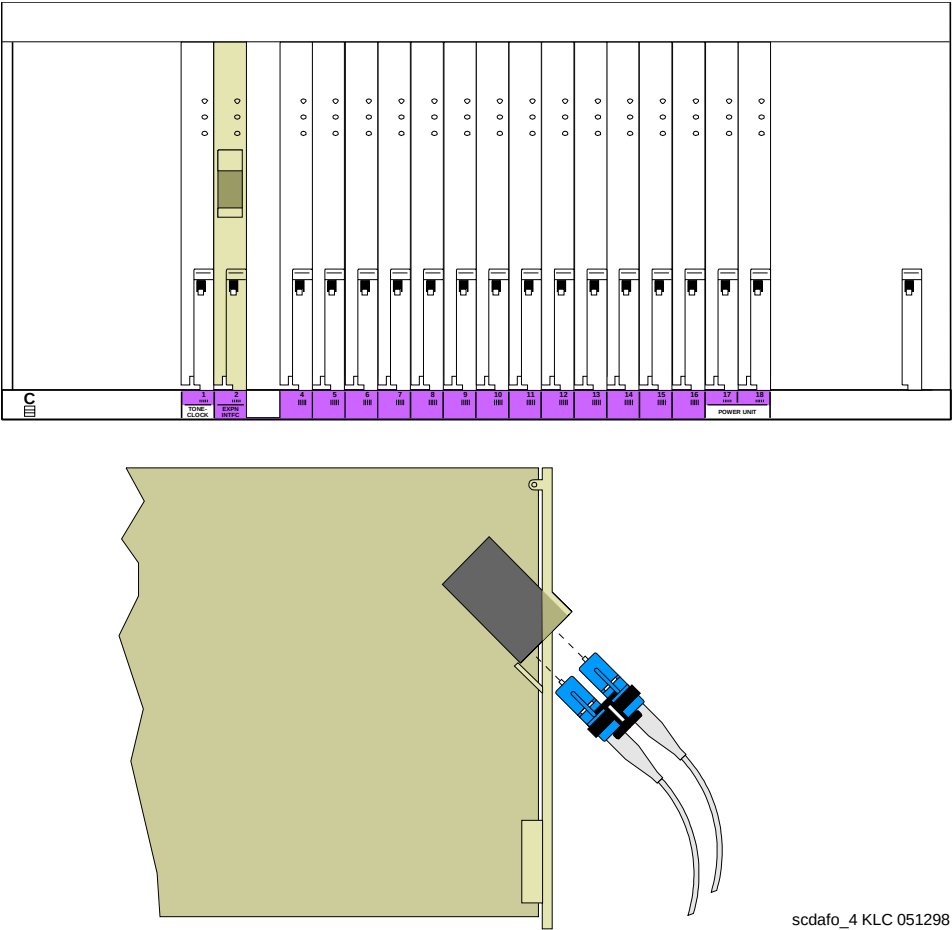


Figure 5-23. Connect Fiber Cable to Circuit Pack

14. Dress the cable using the supplied cable ties and cable tie mounts. See [Figure 5-24](#).



NOTE:
Dress the fiber optic cable straight down the front of the circuit pack.
Do not allow the cable to cross in front of another circuit pack.

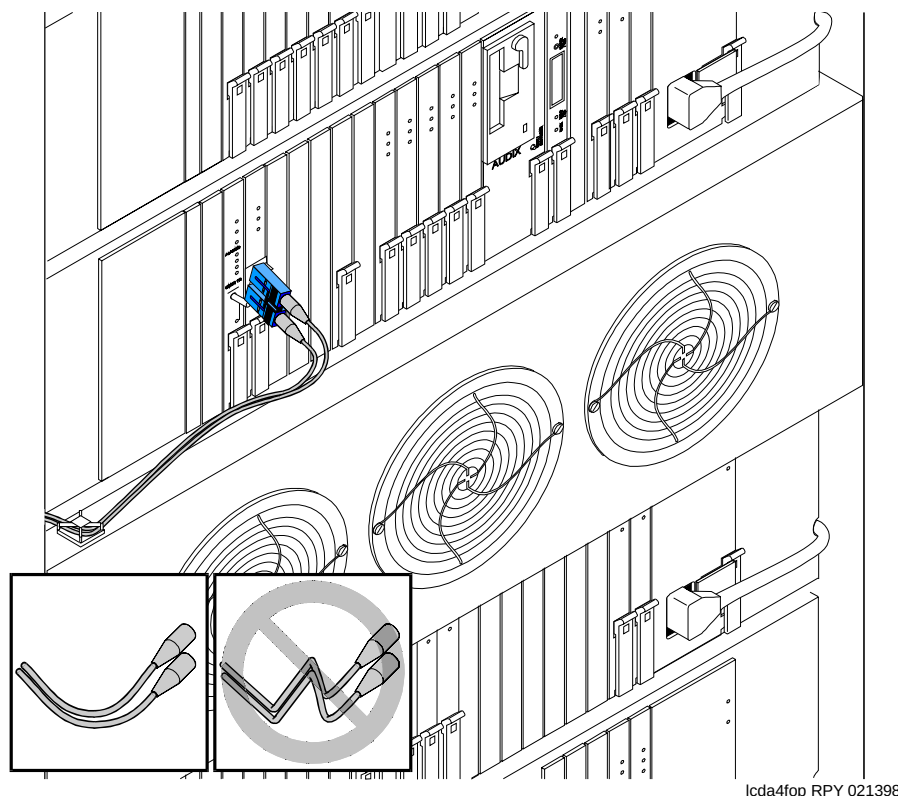


Figure 5-24. Dress the Cable

15. If a circuit pack was removed to access 2 open slots (from [“Cabinet Preparation” on page 5-31](#)), replace the circuit pack into its original slot.
16. Close the front door.
17. Discard the pass-thru tool.

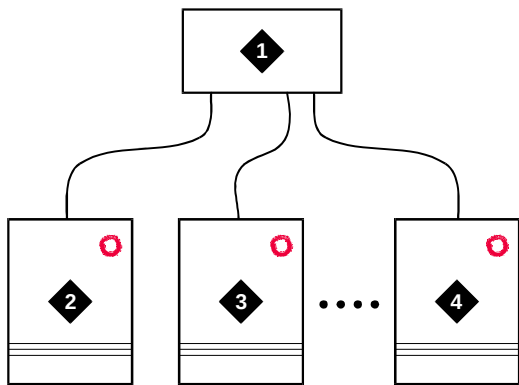
Test the Installation

1. Log in as **craft**.
2. 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.

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 Avaya 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 5-25](#) shows 1 switch node used as a center stage switch for 11 EPNs.



cydfpbx3 RPY 081897

Figure Notes

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

Figure 5-25. Single Switch Node CSS

Figure 5-26 shows 2 SNs used as a CSS for up to 23 EPNs. Use this configuration when high inter-SN traffic is expected.

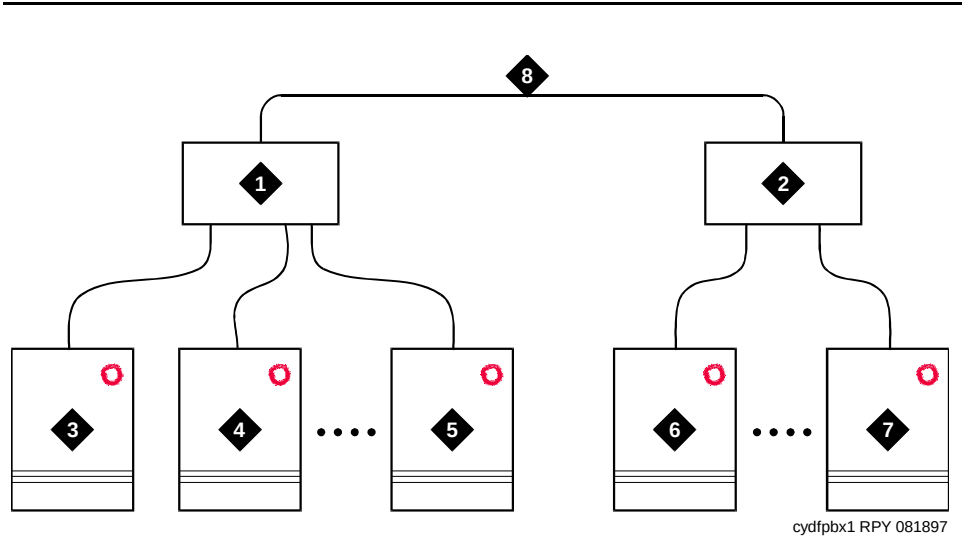


Figure Notes

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 5-26. 2-Switch Node CSS with High Inter-SN Traffic

Fiber Engineering for 2 SNs

Switches with 2 SNs are connected by 1 to 7 fiber links to provide sufficient switching fabric at the CSS. The traffic in all locales within a single SN does not require engineering. Only traffic that links from locales in 1 SN to the other SN (and vice versa) must be engineered. The traffic that links across these fibers is simply the sum of the traffic that links to locales located in the other SN.

Figure 5-27 shows 2 SNs used as a CSS for up to 29 EPNs. Use this configuration when low inter-SN traffic is expected.

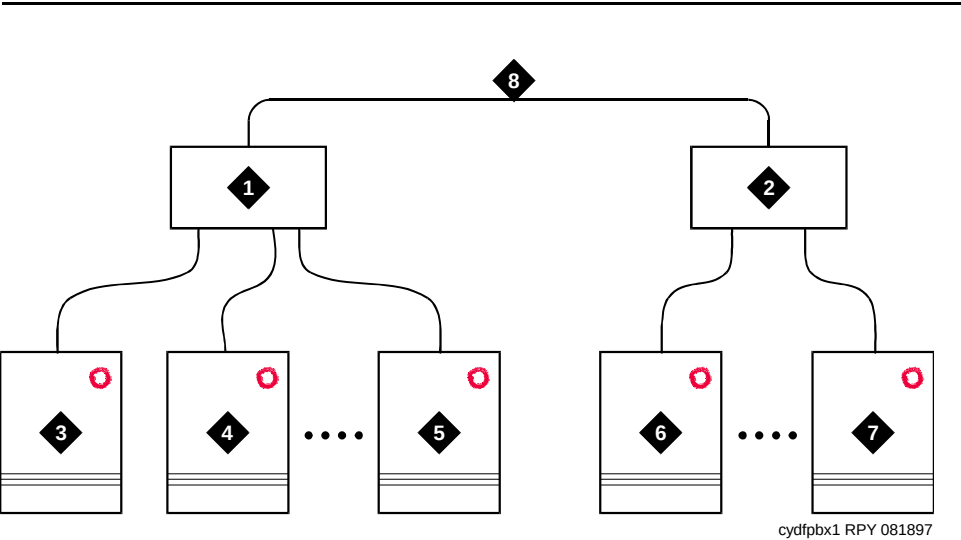


Figure Notes

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 5-27. 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 5-28 shows 3 SNs used as a CSS for up to 31 EPNs. Use this configuration when high inter-SN traffic is expected.

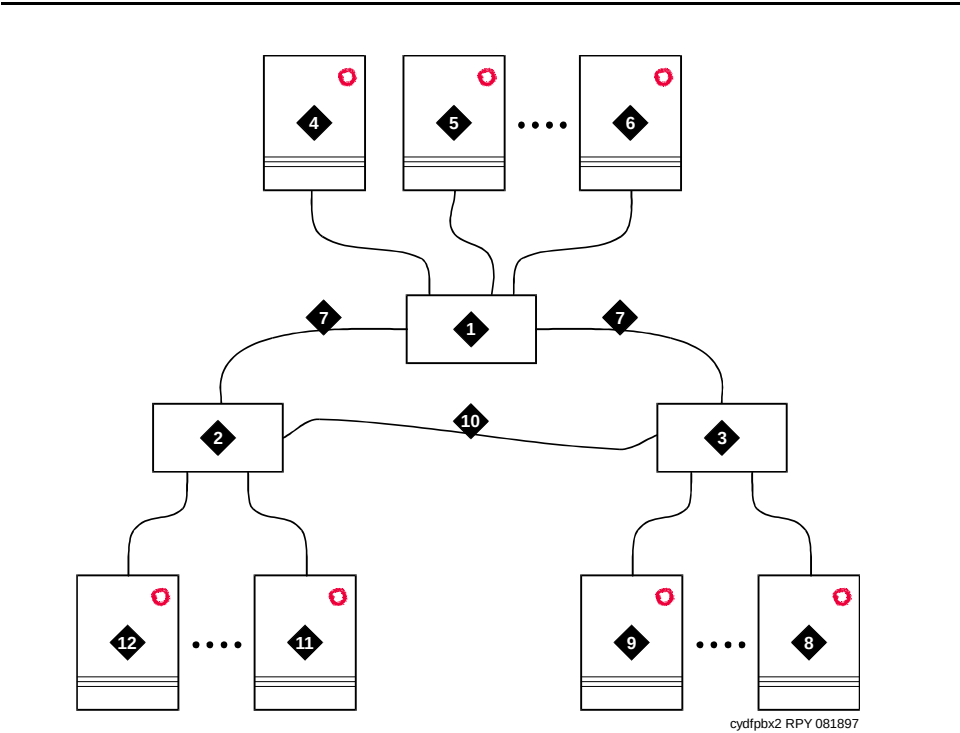


Figure Notes

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 5-28. 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 5-29 shows 3 SNs used as a CSS for up to 43 EPNs. Use this configuration when low inter-SN traffic is expected.

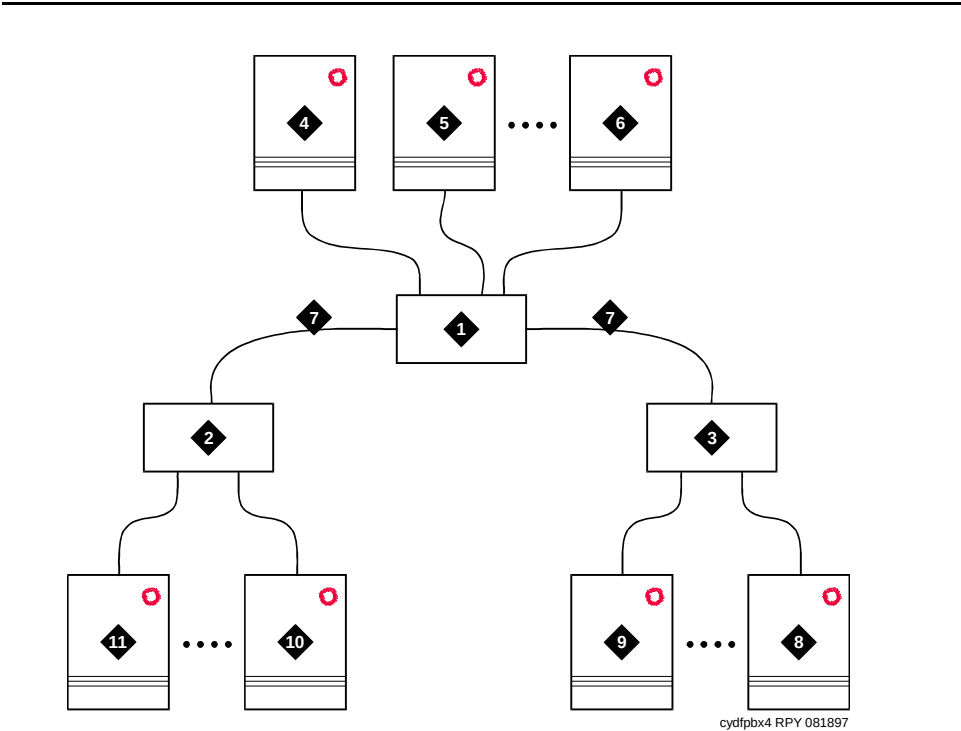


Figure Notes

1. Switch Node (SN) 1	7. Inter-SN Connections (1 fiber)
2. Switch Node 2	8. EPN Cabinet 14
3. Switch Node 3	9. EPN Cabinet 28
4. PPN Cabinet	10. EPN Cabinet 29
5. EPN Cabinet 1	11. EPN Cabinet 43
6. EPN Cabinet 13	

Figure 5-29. 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 a Switch Node Carrier

You can add a switch node carrier to a standard reliability DEFINITY ECS with Center Stage Switch (CSS) or add a second switch node carrier to a high or critical reliability DEFINITY ECS. The new carrier is added either to an empty E carrier position of an existing multicarrier port network or to the D carrier position (as the duplicate switch node carrier) of an existing multicarrier cabinet.



NOTE:

To avoid moving a port carrier, the preferred practice is to place the new switch node carrier in an empty carrier position.

Service Interruption

Because adding a first or 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, exam the system for alarms, and correct every problem. The system must be alarm-free.

Status SPE

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

For high or critical reliability systems:

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

If the fields display something other than the above, see the appropriate maintenance sections.

Disable Alarm Origination

1. To prevent scheduled daily maintenance from interfering with the update or upgrade, type **change system-parameters maintenance** and press Enter.

5 Adding New Carriers and EPN Cabinets
Add a Switch Node Carrier

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2. If scheduled maintenance has begun, set the Stop Time field to 1 minute after the current time.

or

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



CAUTION:

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

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



NOTE:

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

Check Link Status

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

Disable TTI



NOTE:

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



CAUTION:

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

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the TTI Enabled? field to **n** to de-activate the TTI feature. If it is already set to **n**, cancel the command.
3. Type **status tti** and press Enter. Wait until the Percent Complete field shows 100%.

Save Translations

If standard reliability:

1. Type **save translation disk** and press Enter to take all translation information in memory and write it to the disk.

If high or critical reliability:

1. Type **save translation [spe-a or both] disk** and press Enter.

Save Announcements

NOTE:

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

Only one announcement board can be saved per tape/optical disk cartridge.

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

NOTE:

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

Back Up Disk

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

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:

Neglecting to shut down the LAN Gateway assembly before powering down the system cabinet where it resides can damage the LAN Gateway disk.

5 Adding New Carriers and EPN Cabinets
Add a Switch Node Carrier

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1. Log onto the DEFINITY LAN Gateway.
2. On the main menu, select **Maintenance > Reset System > Shutdown**.
3. Unseat the LAN Gateway assembly from its backplane connectors.

Shut Down DEFINITY AUDIX System (if necessary)



WARNING:

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

1. Shut down the AUDIX assembly and allow the disk to completely spin down. Refer to [“Install a New EPN Cabinet in an Existing System” on page 5-68](#).



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Power Down Cabinet

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

Remove Doors

1. Remove the front and rear doors from the multicarrier cabinet where the switch node carrier is to be installed.

Disconnect Cables (Std only)



NOTE:

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.

Disconnect Cables (H/C only)

1. With the cable retainer in front of you and the part number visible, locate the slot that is almost vertical (adjacent to the part number.) Insert a flat-blade screwdriver with a wide blade (1/4-in. recommended) into the slot, and twist the screwdriver. The retainer will snap open easily so that the cable can be removed.
2. At the cabinet, disconnect the previously labeled cables associated with the carrier to be removed.

Remove Circuit Packs from Port Carrier



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 port carrier are properly replaced, label each component with its slot number.
2. Disconnect the power cords from the power units in the carrier.
3. Remove all circuit packs and power units from carrier. 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 carrier by pulling it straight off.

Remove Port Carrier



NOTE:

Skip these steps if standard reliability and 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.

5 Adding New Carriers and EPN Cabinets
Add a Switch Node Carrier

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3. Disconnect 1 end of the 8 ground straps (between the D and E carriers) from the D carrier (see [Figure 5-30](#) or [Figure 5-31](#) for standard or high/critical reliability, respectively). These straps will be reconnected to the new D carrier.
4. Disconnect the 8 ground straps from the D carrier (between the D and A carriers or the D carrier and the enhanced fan unit—see [Figure 5-30](#) or [Figure 5-31](#)). Reconnect the 8 ground straps to the D carrier.
5. Disconnect the P1 (small 9-pin) connector from the D carrier. Move the cable into a position where it will not interfere with removing the carrier.
6. Remove the 4 screws (top 2 first) holding the D carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.

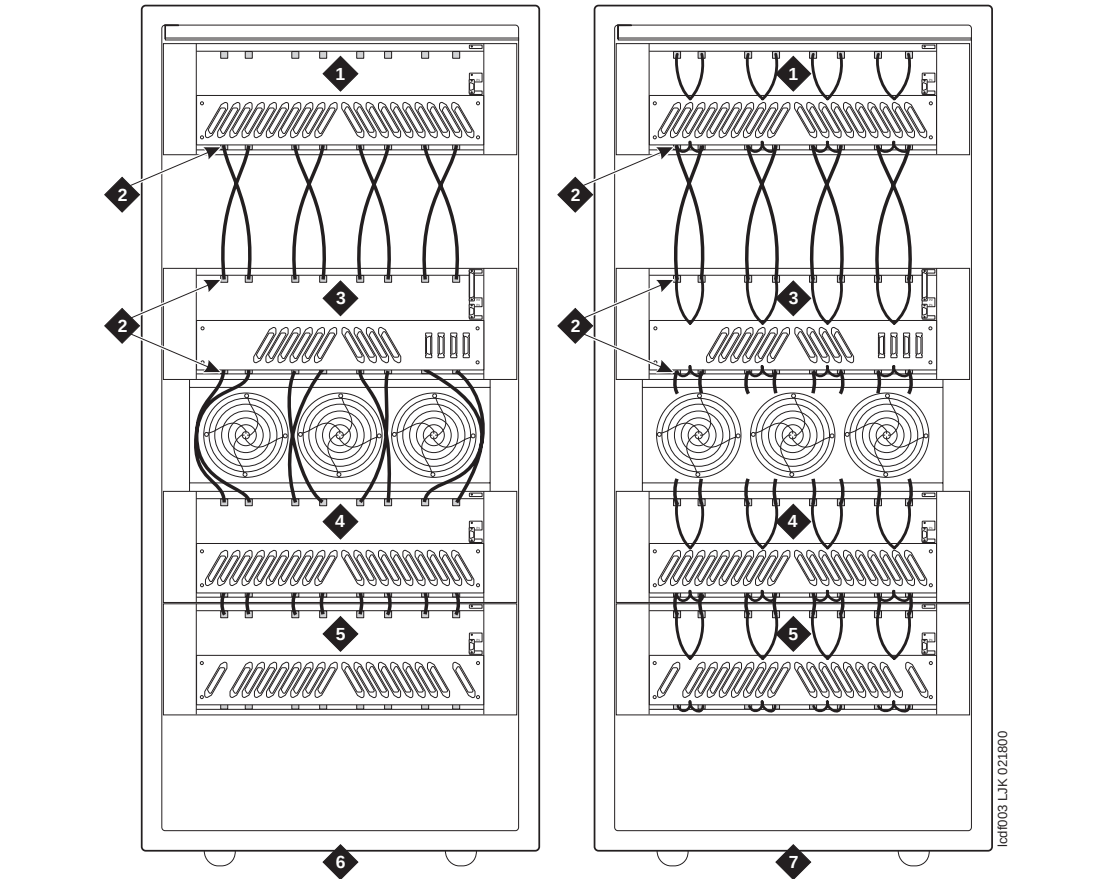


Figure Notes

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)

6. Cabinet with standard fan unit and carrier

7. Cabinet with enhanced fan unit and enhanced carrier

Figure 5-30. Locations of Ground Jumpers (Standard Reliability)

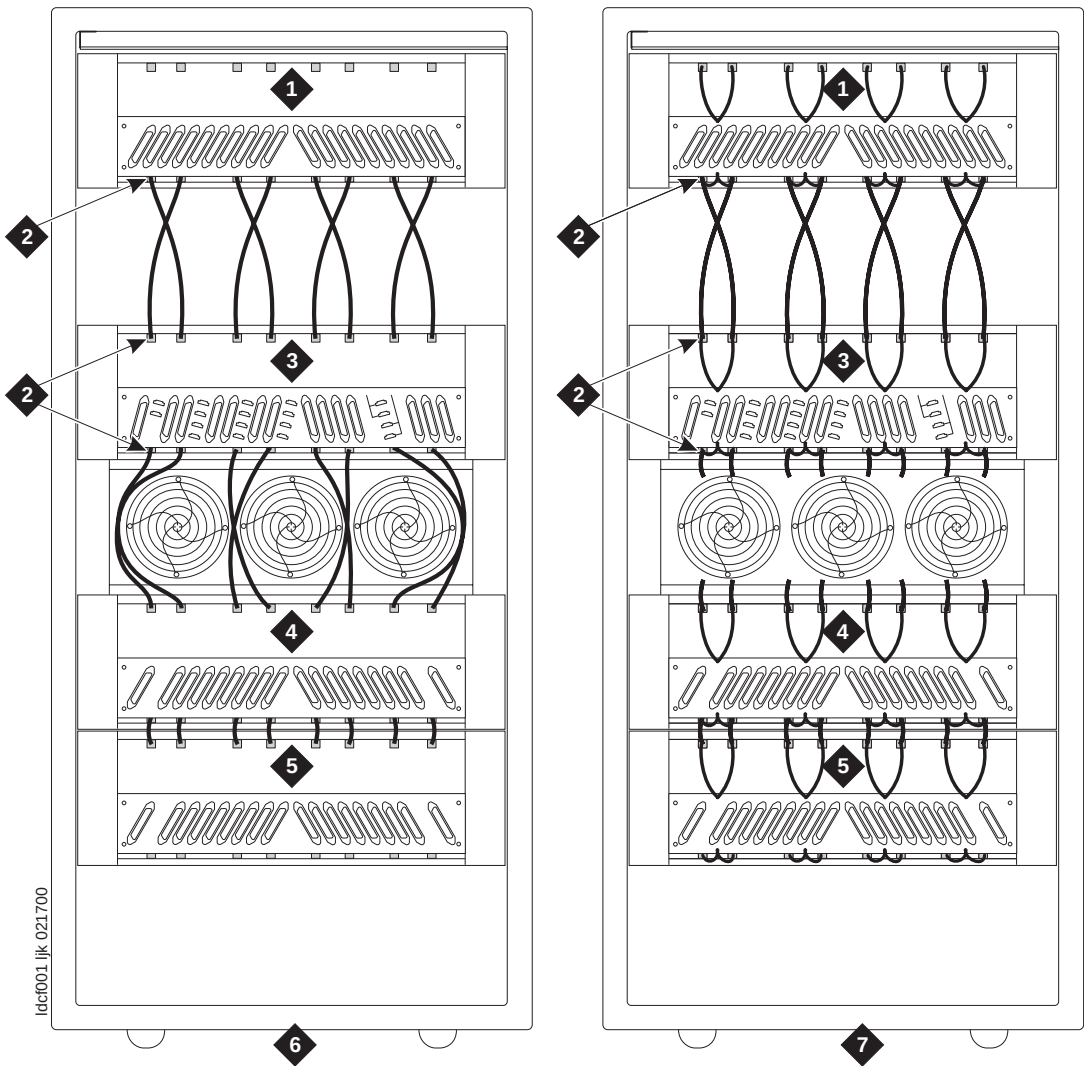


Figure Notes

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)

6. Cabinet with standard fan unit and carrier

7. Cabinet with enhanced fan unit and enhanced carrier

Figure 5-31. Locations of Ground Jumpers (High or Critical Reliability)

5 Adding New Carriers and EPN Cabinets
Add a Switch Node Carrier

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7. Behind the D carrier, 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.

Prepare New Switch Node Carrier

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



NOTE:

The enhanced PPN AC carrier may look different than the other carriers because it comes with 16 new grounding jumpers and 8 mounting screws.

2. Place the switch node carrier on the floor so that the rear of the carrier faces up.
3. Verify that the four AHF105 switch node (SN) bus terminators are installed on the carrier to the pin-field blocks marked SNTRM (top and bottom portions of slots 02 and 20). See [Figure 5-32](#). The SN bus terminators are attached with the components on the left side as viewed from the rear.
4. At the rear connector panel, determine which connectors will have a cable attached, and install a 4C cable retainer on each of these connectors.

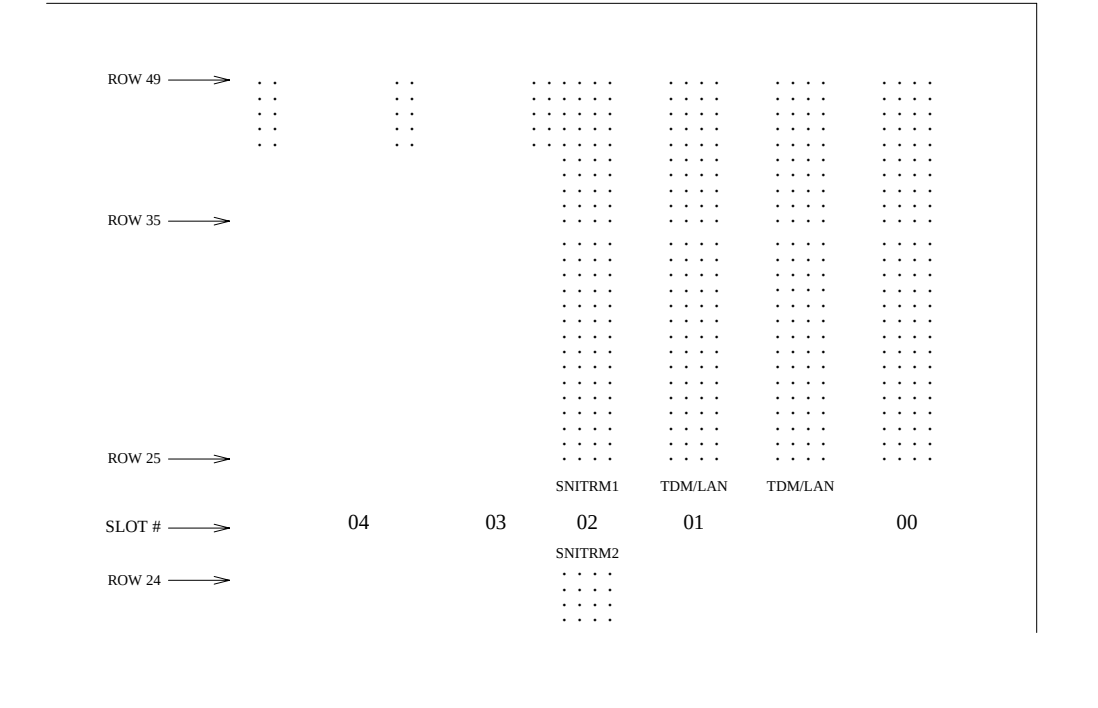


Figure 5-32. ICC Connections for Switch Node Carrier

Install New Switch Node Carrier

-  **NOTE:**
Although the procedures specify D position, they would be the same if installing the carrier in the E position.
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, replace the 2 screws saved from the removal of the old carrier.

4. Connect the P1 (small) connector to the D carrier. If necessary, to get enough slack in the cables, cut the tie wrap holding the intercabinet cable from the upright in the area being installed. Snap the connector lock into place to ensure the connection is properly made.
5. Connect the 8 ground straps from either the A carrier or the enhanced fan unit to the new D carrier (see [Figure 5-30](#) or [Figure 5-31](#) for standard or high/critical reliability, respectively). These straps were left connected when the old D carrier was removed.

 NOTE:

If installing in the E position, connect the ground straps from the D carrier to the new E carrier.

6. Connect the 8 ground straps from the E carrier (if installed) to the new D carrier (see [Figure 5-30](#) or [Figure 5-31](#)). These straps were left connected to the E carrier when the old D carrier was removed.
7. For a standard AC-powered control carrier, install the 4 carrier ground straps. The straps connect ground points G1 and G8 from the top of the B-carrier backplane to the B-carrier connector panel bracket and ground points G9 and G16 from the bottom of the B-carrier backplane to the B-carrier connector panel bracket.

For an enhanced carrier, install the 16 carrier-ground straps. The straps connect ground points G1 through G8 from the top of the B-carrier backplane to the B-carrier connector panel and ground points G9 through G16 from the bottom of the B-carrier backplane to the B-carrier connector panel. Use the 8 screws to connect the ground straps to the connector panel (see [Figure 5-33](#)).

 NOTE:

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

 NOTE:

DC-powered cabinets DO NOT use any of the above carrier-ground straps.

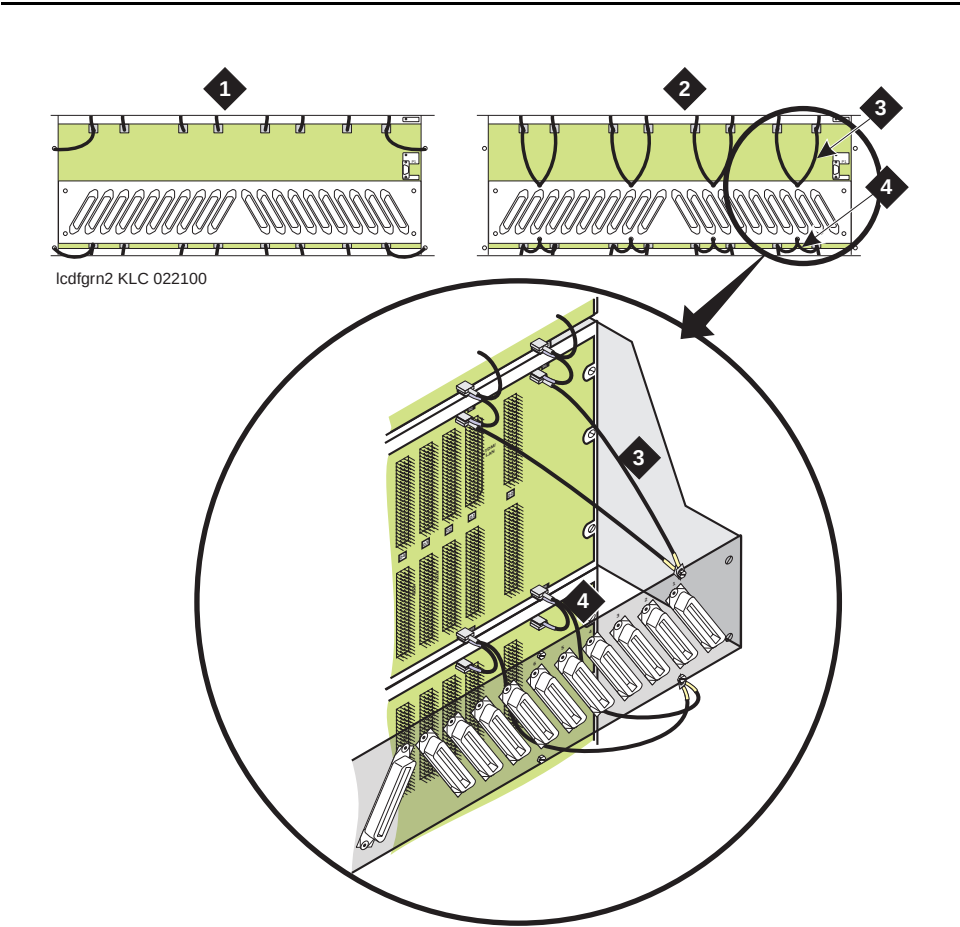


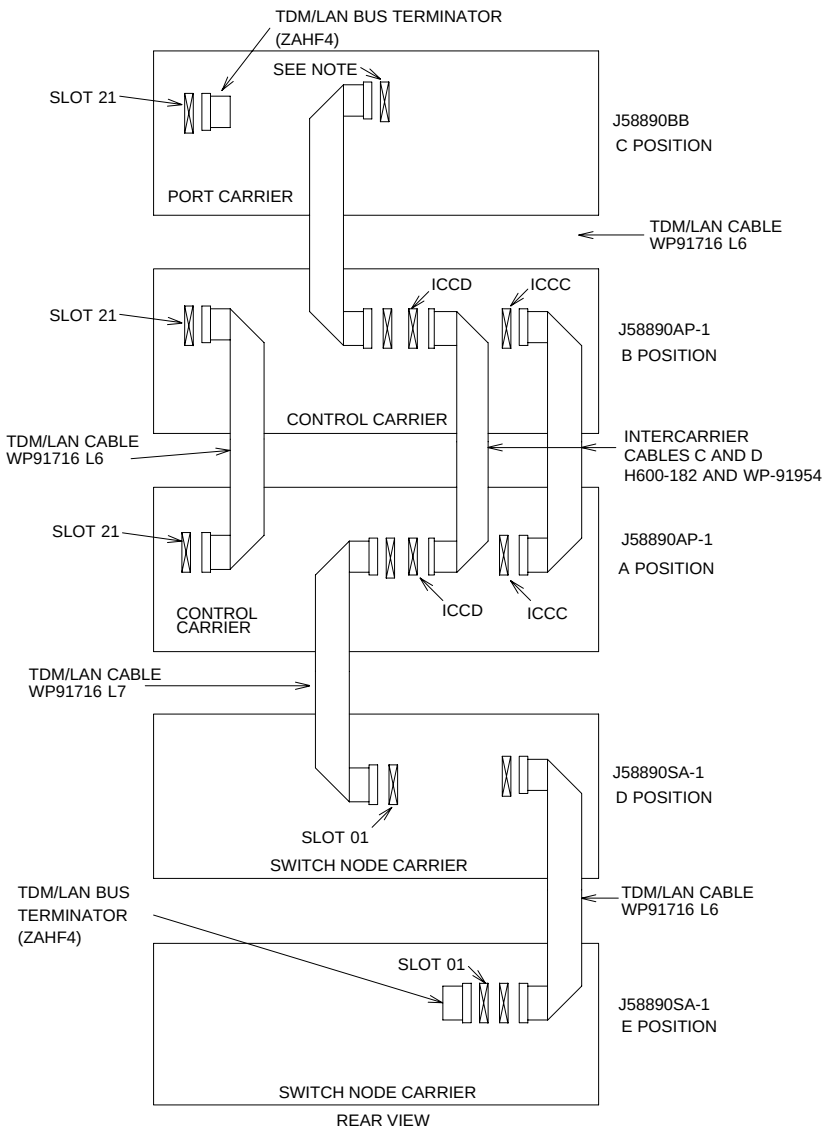
Figure Notes

1. Standard AC-powered Carrier	3. Top Ground Straps
2. Enhanced Carrier (in R9r PPNs using either AC power [U.S.] or Global power)	4. Bottom Ground Straps

Figure 5-33. Locations of Top and Bottom Ground Straps on Standard and Enhanced Carriers

8. If a switch node carrier is being installed in the D position of the PPN, install the TDM/LAN cable (between the E and D carriers) to the pin-field block marked TDM/LAN on the right side of both carriers. See [Figure 5-34](#) (for critical reliability) and [Table 5-4](#).

9. Also if high or critical reliability, 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 5-34](#) and [Table 5-4](#). The other end remained connected to the A carrier when the old carrier was removed.



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 5-34. TDM/LAN Connections for PPN (Critical Reliability)

Table 5-4. TDM/LAN Connections

J Number	Carrier Type	LHS Slot	RHS Slot
J58890BB L1	Port	21	02
J58890BB L2	Port	21	01
J58890BB L3	Port	21	01
J58890AP	Control	21	02

10. If a switch node carrier is being installed in the D position of an EPN, verify that the ZAHF4 TDM/LAN bus terminator is installed at slot 02 of expansion control carrier A. See [Figure 5-35](#) or [Figure 5-36](#) for standard or high/critical reliability, respectively.
- 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.

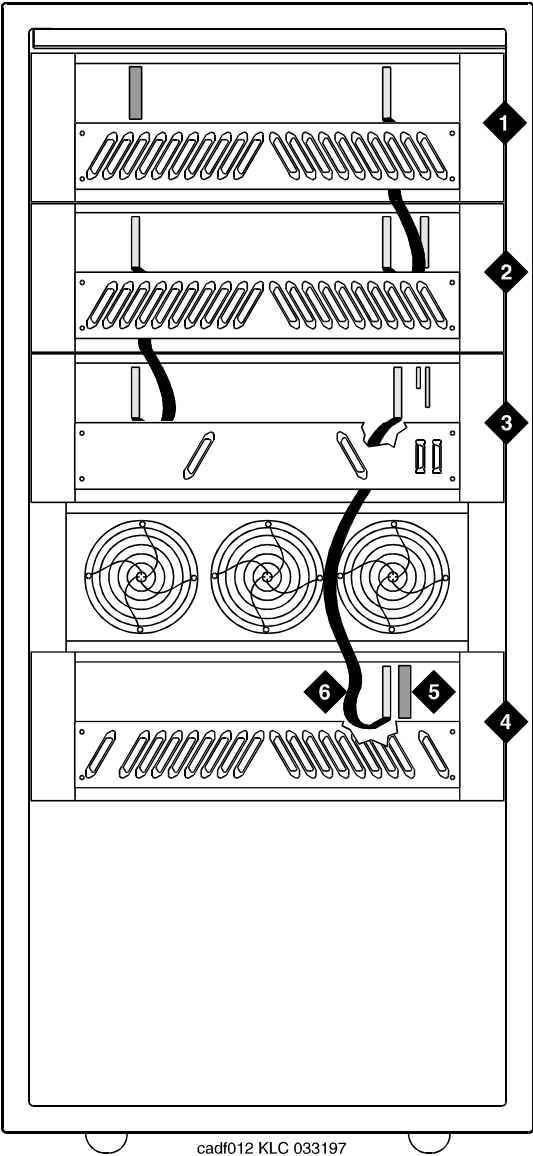


Figure Notes

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 5-35. TDM/LAN Connections for EPN (Standard Reliability)

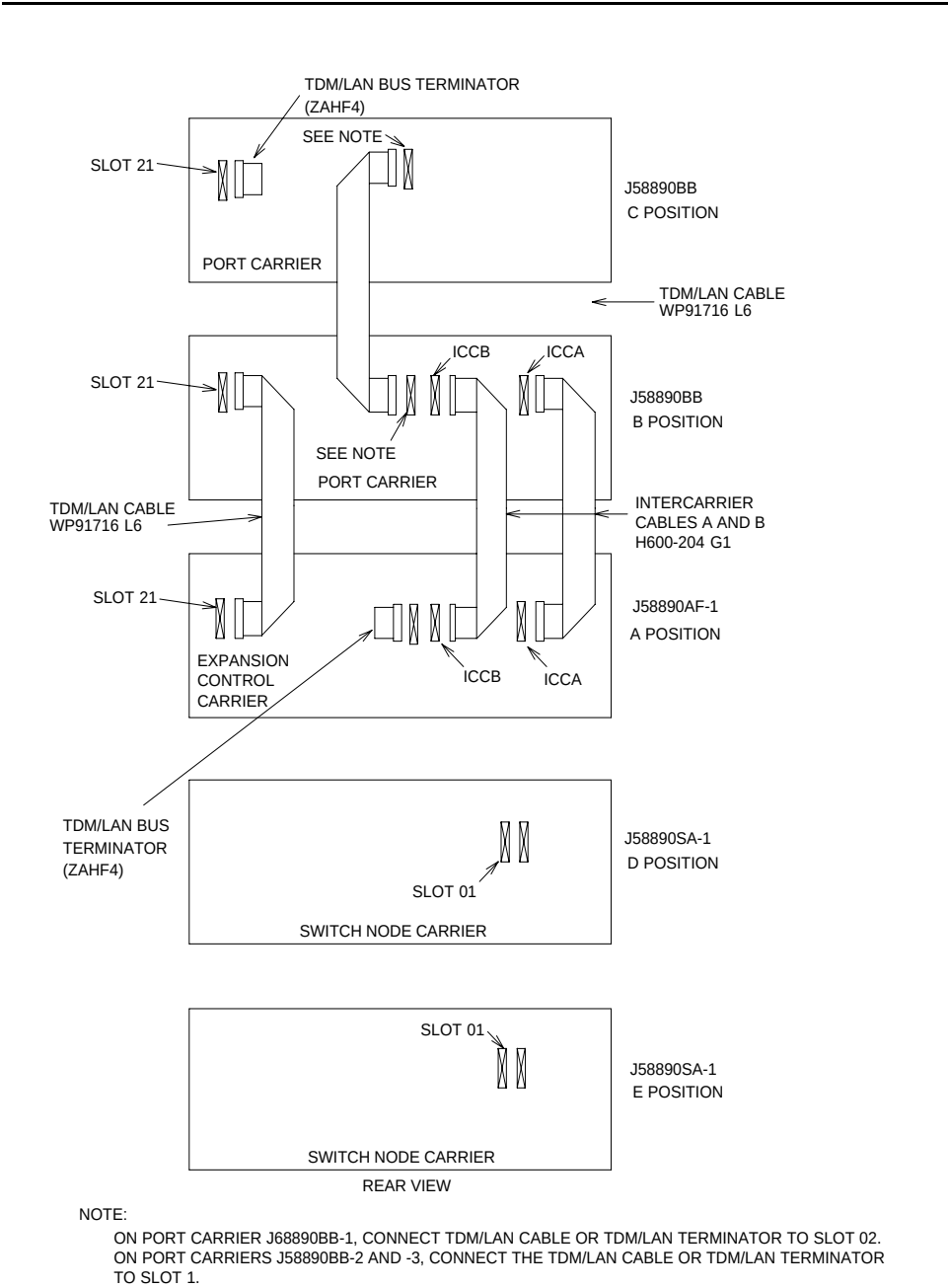


Figure 5-36. TDM/LAN Connections for EPN (Critical Reliability)

Install Circuit Packs

1. Install the new circuit packs into the new carrier. 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 new switch node carrier (see [Figure 5-37](#) for critical reliability):
 - 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 D or E of PPN cabinet 1 (See [Figure 5-37](#)):
 - a. For each EPN, install one 9823-type lightwave transceiver on the following order of D slots: 1D20, 1D03, 1D19, 1D04, 1D18, 1D05, and so forth, or E 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 the cable connector on slot A01.
 - b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed (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. If high or critical reliability, behind switch node carrier D of PPN cabinet 1 (See [Figure 5-37](#)):
 - a. For each EPN, install a lightwave transceiver on the following order of slots: 1D20, 1D03, 1D19, 1D04, 1D18, 1D05, 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 the cable connector at slot B02.

b. Connect the other end of the fiber optic cable to the lightwave transceiver, just installed.

c. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable-tie positions.

d. Coil up the surplus length of fiber optic cable, and carefully attach the coil to the wall of the cable tray.

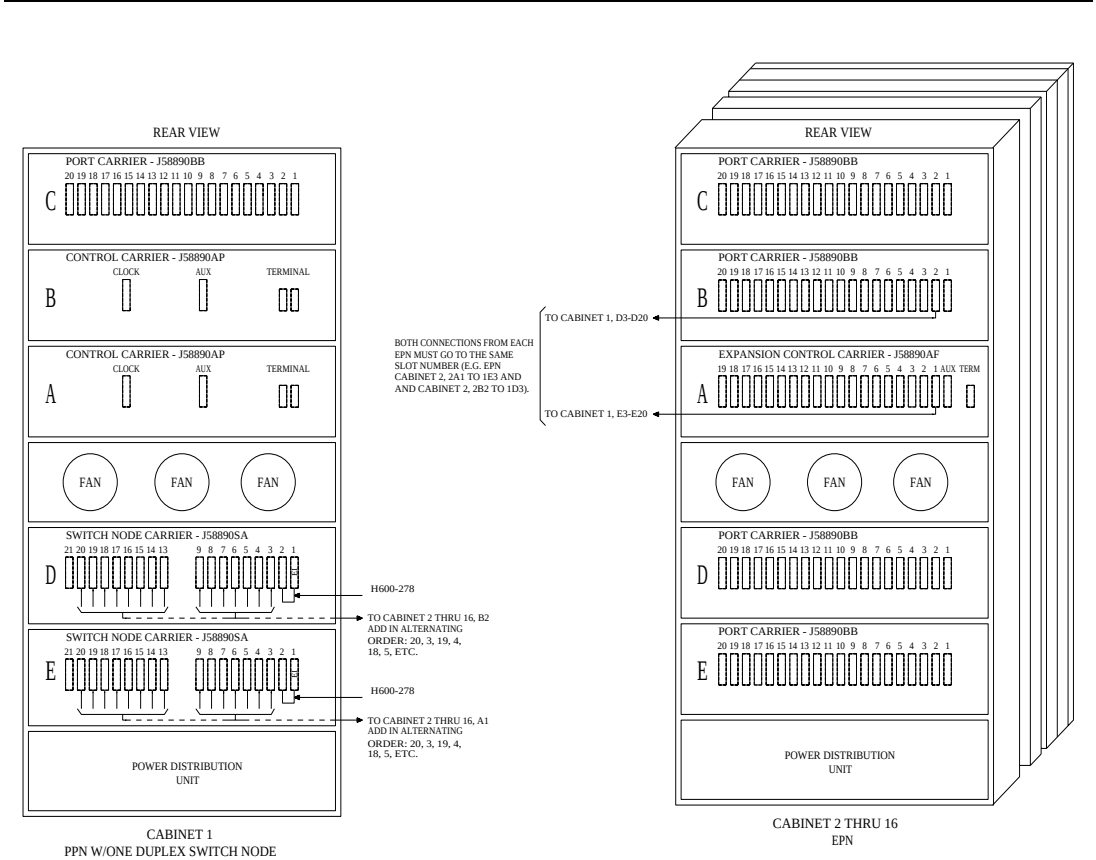


Figure 5-37. Fiber-Optic Connections through Center Stage Switch (Critical-Reliability)

Reseat DEFINITY LAN Gateway System

1. Reseat the LAN Gateway assembly into its backplane connectors.

Reseat DEFINITY AUDIX System

1. Reseat the AUDIX assembly to its backplane connectors.

Power Up System

1. At each EPN, if present, set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs the level 4 rebooting process, loading the system program and default or current translations from the disk. Rebooting takes 5 to 11 minutes.



NOTE:

Ignore alarms for now.

4. Type **reset system 4** and press Enter to copy the translations from removable media to memory.
5. Clear any alarms.

Save Translations

1. Type **save translation [both]** and press Enter if translation changes were made in Step 8 above.

Restore Disk

If standard reliability:

1. Type **restore disk full** and press Enter to copy the translations from removable media to disk.
2. 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.

If high or critical reliability:

1. Type **restore disk [both] full** and press Enter to copy the translations from removable media to disk.

Power Up DEFINITY LAN Gateway System

1. Log onto the DEFINITY LAN Gateway.
2. On the main menu, select **Maintenance > Reset System > Reboot System**.

Power Up DEFINITY AUDIX System

1. To power up the AUDIX assembly, refer to ["Install a New EPN Cabinet in an Existing System" on page 5-68](#).

Enable PNC Duplication (H/C only)

All non-duplicated SNIs to SNI fiber links are automatically duplicated.

1. Type **change system-parameters customer-options** and press Enter. On screen 2, set the PNC Duplication? field to **yes**. Press Enter.
2. Type **change system-parameters duplication** and press Enter. Change the Enable operation of PNC duplication? field to **yes**. Press Enter.
3. Type **status pnc** and press Enter. Verify the Duplicated ? field is **yes**.

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.
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 Adding New Carriers and EPN Cabinets
Install a New EPN Cabinet in an Existing System

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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.

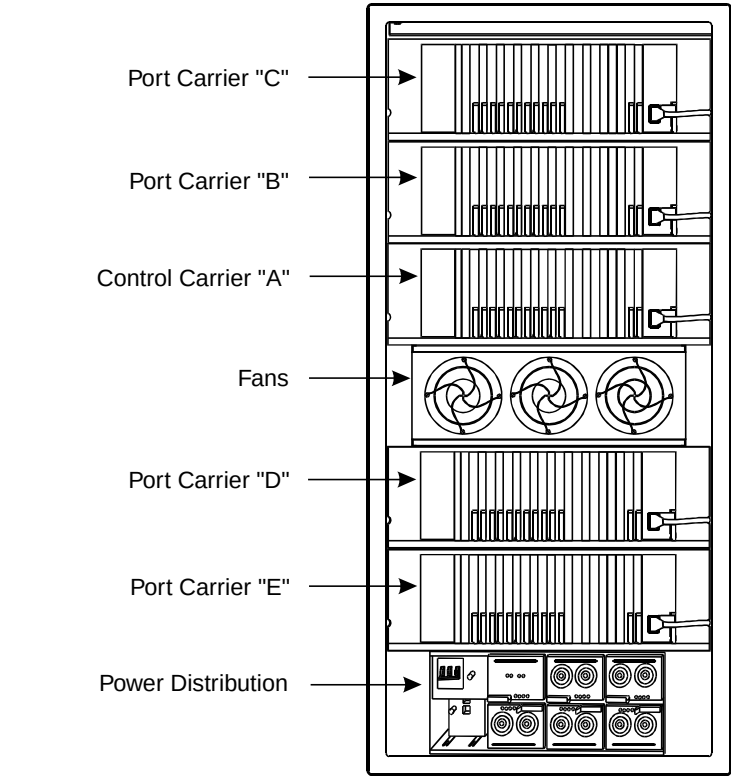


WARNING:

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.

Install a New EPN Cabinet in an Existing System

Figure 5-38 shows a typical multicarrier EPN cabinet. Each EPN cabinet is normally positioned adjacent to the PPN cabinet but may be located remotely in a different room or a different building.



0075_0 RBP 080196

Figure 5-38. Typical Multicarrier EPN Cabinet

1. Uncrate and position the cabinet as instructed at the beginning of this chapter.
2. Install earthquake protection as instructed on page 1-9.

Connect Power and Ground

1. For an AC- or DC-powered system, connect power and ground to the cabinet as instructed in *DEFINITY Enterprise Communications Server Release 9 Installation and Test for Multicarrier Cabinets*.
2. Connect the approved ground to the new cabinet as instructed in *DEFINITY Enterprise Communications Server Release 9 Installation and Test for Multicarrier Cabinets*.

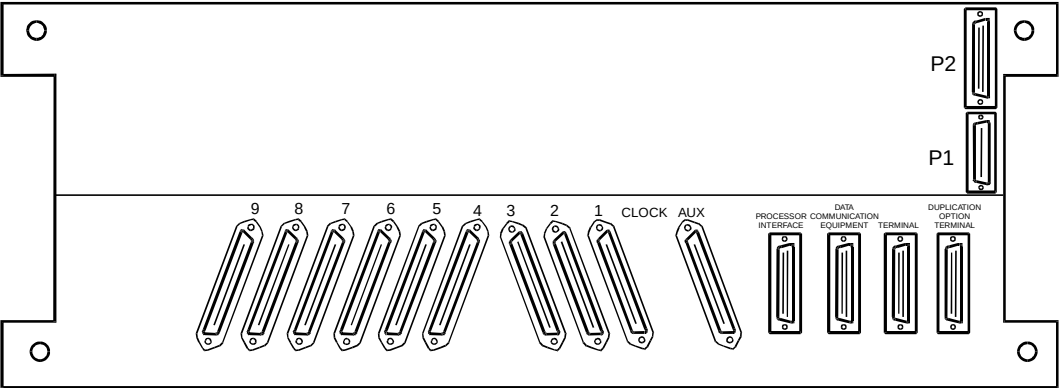
NOTE:
Do not power up the system until all power and ground connections are completed.

Interconnect Cabling Release 9r

For fiber optic cabling information and comcode numbers, refer to *DEFINITY Enterprise Communications Server Release 9 Installation and Test for Multicarrier 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 5-39. Rear of J58890AH Control Carrier (PPN)

5 Adding New Carriers and EPN Cabinets
Install a New EPN Cabinet in an Existing System

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1. Install a 9823A lightwave transceiver onto Slot 1 on the rear of the PPN Control Carrier. See [Figure 5-39](#).
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.

5 Adding New Carriers and EPN Cabinets

Install a New EPN Cabinet in an Existing System

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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.

5 Adding New Carriers and EPN Cabinets

Install a New EPN Cabinet in an Existing System

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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 9r

For more fiber optic cabling information, refer to *DEFINITY Enterprise Communications Server Release 9 Installation and Test for Multicarrier Cabinets*.

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

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

NOTE:

For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

5 Adding New Carriers and EPN Cabinets
Install a New EPN Cabinet in an Existing System

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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 5-40](#).
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).

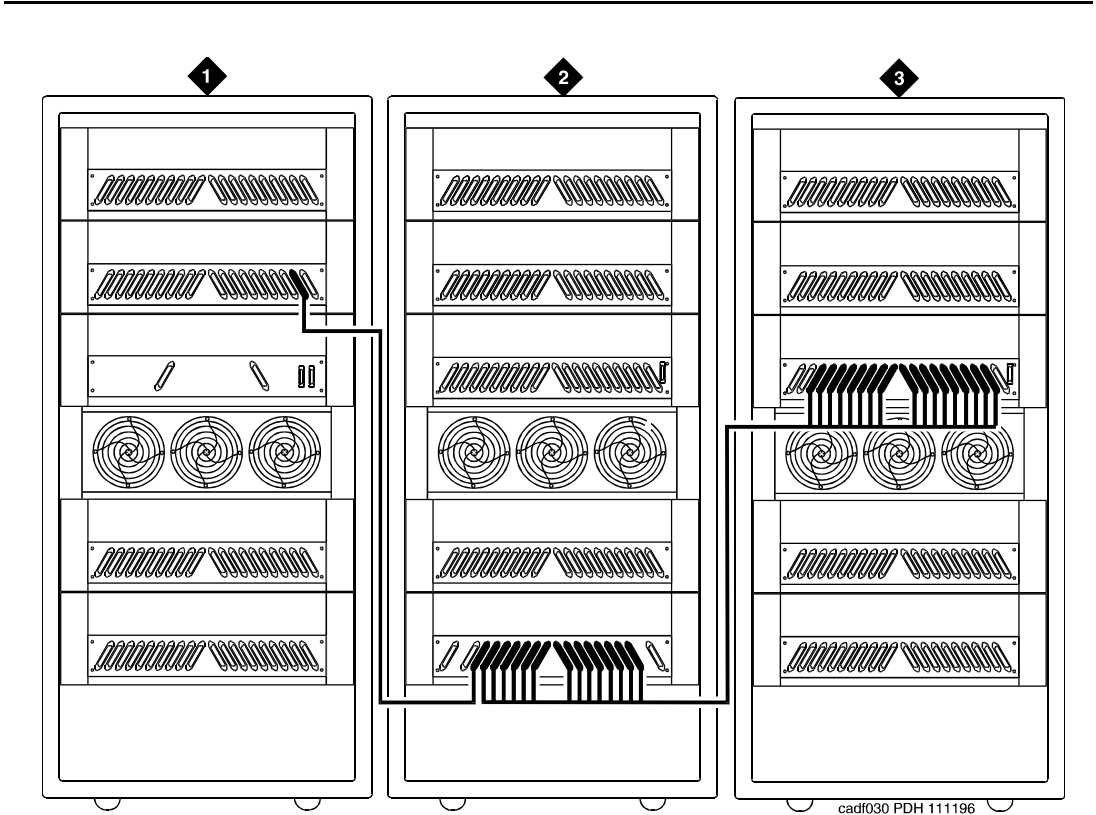


Figure Notes:

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 5-40. Switch-Connected Release 9r 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.

5 Adding New Carriers and EPN Cabinets
Install a New EPN Cabinet in an Existing System

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1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1C02). See [Figure 5-41](#).
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).

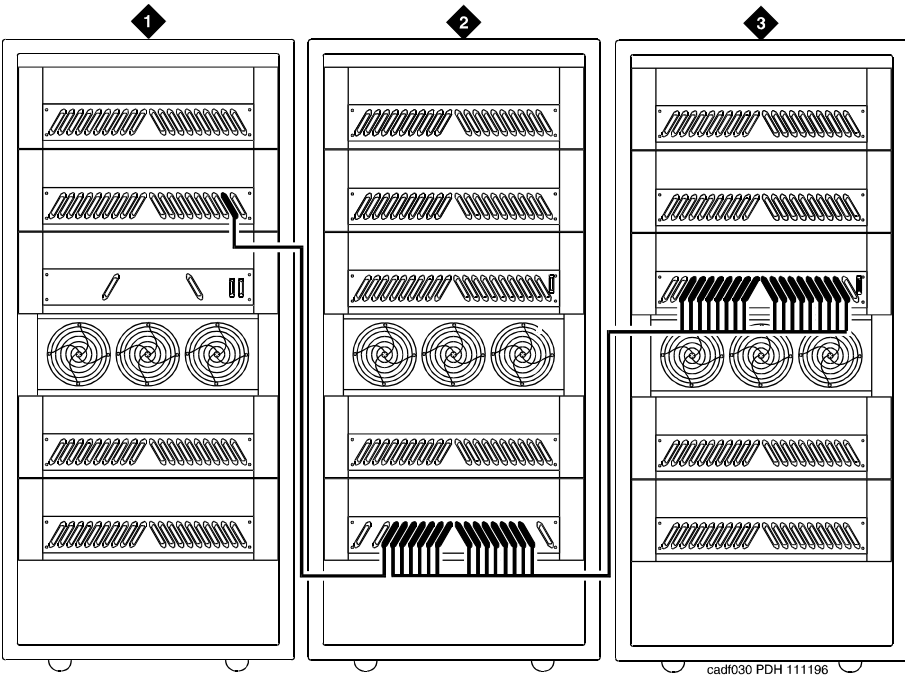


Figure Notes:

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 5-41. Switch-Connected Release 9r 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 5-42](#).

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.

5 Adding New Carriers and EPN Cabinets
Install a New EPN Cabinet in an Existing System

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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.
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.

5 Adding New Carriers and EPN Cabinets

Install a New EPN Cabinet in an Existing System

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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).

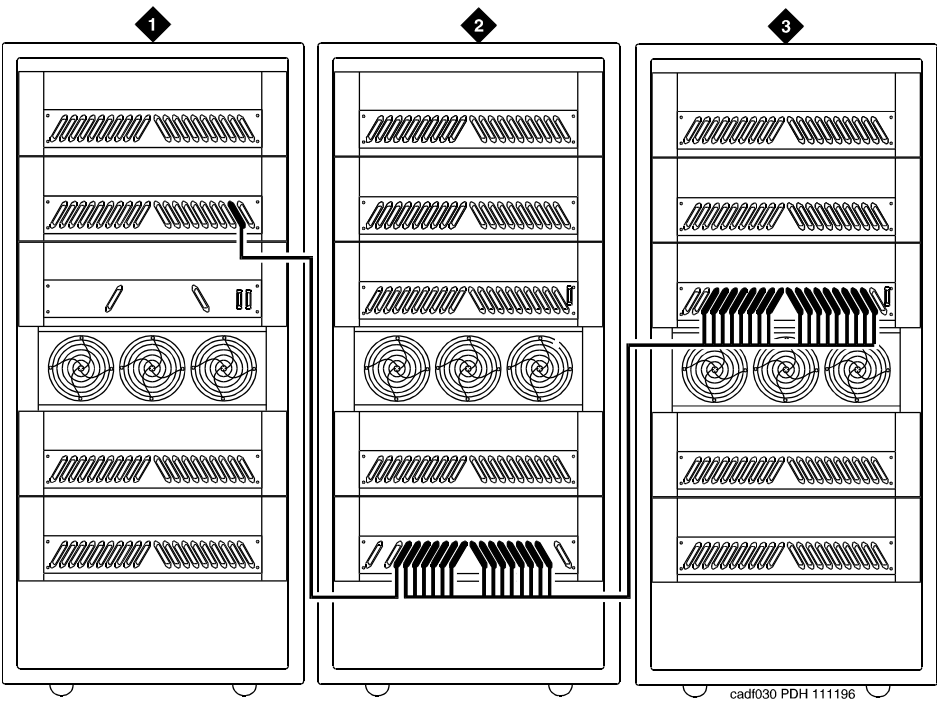


Figure Notes:

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 5-42. Switch-Connected Release 9r with SNC in EPN

27. Connect an H600-278 Metallic Cable from Slot 2 in the Port Carrier in position B in Cabinet 4 (4B02) to Slot 19 on the Switch Node Carrier in position D in Cabinet 4 (4D19).
- ➡ NOTE:

Both fibers from each PN must connect to the same slot number in each Switch Node Carrier. For example: if Slot 3A01 of EPN 3 connects to Switch Node Carrier Slot 4E19, then Slot 3B02 of EPN 3 must connect to Switch Node Carrier Slot 4D19.
28. Proceed to [Appendix A, “Fiber Link Administration”](#) to add the new fiber links.

Remove an EPN Cabinet from an Existing System

All Systems

Before starting the EPN removal process, perform the following:



NOTE:

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

1. Type **change system-parameters features** and press Enter. Use screen 2 to disable Terminal Translation Initialization (TTI) by changing the setting to **n**.
2. Unadminister *all* of the affected trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet being removed. These port-related translations must be unadministered before removing any hardware. Refer to *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide* for more information.

Unadminister Fiber Links (Simplex Systems)

The fiber links routing to and from the EPN cabinet being removed must be unadministered before removing *any* hardware from the cabinet.



CAUTION:

Failure to unadminister fiber links before removing hardware causes unnecessary alarm reports to INADS and causes errors that are very difficult to clear.

The fiber links are administered to match hardware and the Fiber Optic Cable Running List. Fiber link administration creates translation data by identifying the endpoint pairs for each link. To properly unadminister the fiber links, this translation data must be removed.

1. Unadminister the TN570 Expansion Interface and the TN574 or TN1654 DS1 Converter circuit packs. Type **change circuit-packs** and press Enter. Scroll through the screens until the carrier containing the circuit packs is displayed. Remove the TN570 and the TN574 or TN1654 circuit packs from the slot locations on the screen. Press Enter when finished.
2. Type **list fiber** and press Enter. All administered fiber connections are displayed. Make note of which fiber links are to be removed.

5 Adding New Carriers and EPN Cabinets
Remove an EPN Cabinet from an Existing System

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3. Type **change fiber link** and press Enter. The Fiber Link Administration screen appears. Use this screen to unadminister fiber links, each of which is identified by a fiber number.
 - a. The Is one endpoint remoted via DS1 Converter complex? field must remain administered.
 - b. Remove the location of the TN570 and the TN574 or TN1654 circuit pack for both ENDPOINT-1 and ENDPOINT-2.
4. Scroll to screen 2.
 - a. Type **no**, as applicable, in each Facility Installed? field (A, B, C, and D).
 - b. The Bit Rate: field must remain administered if other fiber connections associated with the facility will remain.
 - c. The idle code in the Idle Code MSB (1) LSB (8): field must remain administered.
 - d. The Line Coding: field must remain administered.
5. For a T1 site, proceed to **"T1 Installations Only"**. For an E1 site, proceed to **"E1 Installations Only"**.

T1 Installations Only

1. The Framing Mode: field is display only.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only.
3. Remove the Facility Circuit ID: from the facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:
RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

E1 Installations Only

1. The CRC? field must remain administered.
2. The Line Termination: field is display only.
3. Remove the Facility Circuit ID information from the facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:
RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."

2. A Span LED, on the front of the DS1 Converter circuit pack, must be off for each inactive facility administered. For example, if Facility A and Facility B are unadministered, then the top 2 Span LEDs on the circuit pack must be off. If the yellow LEDs are on, then problems were encountered during the unadministration of hardware. Span LEDs associated with administered facilities (C and D, in this example) should be on.

Removing the Hardware

1. Be sure that you have unadministered the trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet.
 2. Remove the fiber optic cables from the fiber transceivers at both ends of the fiber span. Carefully coil the fiber optic cables. Avoid bending cables to a radius smaller than 1.5 inches (3.8 cm).
 3. Remove the fiber transceivers from the DS1 and/or DS1 converter circuit packs at both ends of each fiber span.
 4. Remove the 25-pair cables from the connector panel on each carrier of the EPN.
 5. Type **remove cabinet** <number> and press Enter. This removes the EPN cabinet administration.
 6. Remove the power cords from the power units in each carrier in the EPN and remove the AC power cord or DC power wires.
 7. Check the grounding scheme for the cabinets. Perform the following:
 - a. If any cabinet ground wires connect in *series* between the EPN cabinet and any other cabinet, remove the wires from the EPN cabinet and connect them to the next cabinet in the ground plane.
- **CAUTION:**
Never leave cabinets ungrounded. When a ground wire is removed from a series-connected cabinet, the ground plane becomes open with respect to all subsequent cabinets.
- b. If any cabinet ground wires connect in *parallel* to other cabinets, or connect directly to the AC power panel ground or other approved ground, remove the wire from each end of the ground span.
 8. Carefully remove the EPN cabinet. The cabinet may weigh as much as 800 pounds. Use caution.
 9. Type **change system-parameters features** and press Enter. Use this screen to change the TTI field back to its previous setting before the upgrade.
 10. When finished, place dust covers over all exposed fiber couplings that remain after the fiber optic cables are removed.

5 Adding New Carriers and EPN Cabinets

Remove an EPN Cabinet from an Existing System

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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 Avaya 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 5-87](#).

Unadminister Fiber Links (Duplex Systems)

The fiber links routing to and from the EPN cabinet being removed must be unadministered before removing *any* hardware from the cabinet.

**CAUTION:**

Failure to unadminister fiber links before removing hardware causes unnecessary alarm reports to INADS and causes errors that are very difficult to clear.

The fiber links are administered to match hardware and the Fiber Optic Cable Running List. Fiber link administration creates translation data by identifying the endpoint pairs for each link. To properly unadminister the fiber links, this translation data must be removed.

1. Type **list fiber** and press **Enter**. All administered fiber connections are displayed. Make note of the fiber links to be removed.
2. Type **change fiber link** and press **Enter**. The Fiber Link Administration screen appears. On screen 1:
 - a. Remove the **Board Location:** information for ENDPOINT-1 and ENDPOINT-2. This is the cabinet, carrier, and slot that identifies the physical location of an SNI or EI circuit pack that is the first endpoint of the fiber link. Repeat for the remaining endpoints.
 - b. The **Board Type** field is display only.
 - c. In the **DS1CONV Board Location:** field, remove the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
 - d. The **DS1CONV Board Type:** field is a display only field.
 - e. The **Is one endpoint remoted via a DS1 Converter Complex?** field must remain administered if other fiber connections associated with the facility will remain.

3. Scroll to screen 2.
 - a. Remove the DS1 Converter Facilities information. In the Facility Installed? field, type **no** for all facilities (A, B, C, and D) to be removed.
 - b. The Bit Rate: field must remain administered.
 - c. The idle code in the Idle Code MSB (1) LSB (8): field must remain administered.
 - d. The data in the Line Coding: field must remain administered.
4. For a T1 site, proceed to **"T1 Installations Only"**. For an E1 site, proceed to **"E1 Installations Only"**.

T1 Installations Only

1. The Framing Mode: field is display only.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only.
3. Remove the Facility Circuit ID information from the facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

E1 Installations Only

1. The CRC? field must remain administered.
2. The Line Termination: field is display only.
3. Remove the Facility Circuit ID information from facilities being unadministered, if used. Press Enter.
4. A display similar to the following appears after the procedure is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be off for each inactive facility administered. For example, if Facility A and Facility B are unadministered, then the top 2 Span LEDs on the circuit pack must be off. If the yellow LEDs are on, then problems were encountered during the unadministration of hardware. Span LEDs associated with administered facilities (C and D, in this example) should be on.

Removing the Hardware

1. Be sure that you have unadministered the trunks, attendant consoles, voice terminals, and data modules associated with the port circuit packs in the EPN cabinet.
 2. Remove the fiber optic cables from the fiber transceivers at both ends of the fiber span. Carefully coil the fiber optic cables. Avoid bending cables to a radius smaller than 1.5 inches (3.8 cm).
 3. Remove the fiber transceivers from the DS1 and/or DS1 converter circuit packs at both ends of each fiber span.
 4. Remove the 25-pair cables from the connector panel on each carrier of the EPN.
 5. Type **remove cabinet <number>** and press Enter. This removes the EPN cabinet administration.
 6. Remove the power cords from the power units in each carrier in the EPN and remove the AC power cord or DC power wires.
 7. Check the grounding scheme for the cabinets. Perform the following:
 - a. If any cabinet ground wires connect in *series* between the EPN cabinet and any other cabinet, remove the wires from the EPN cabinet and connect them to the next cabinet in the ground plane.
-  **CAUTION:**
Never leave cabinets ungrounded. When a ground wire is removed from a series-connected cabinet, the ground plane becomes open with respect to all subsequent cabinets.
- b. If any cabinet ground wires connect in *parallel* to other cabinets, or connect directly to the AC power panel ground or other approved ground, remove the wire from each end of the ground span.
 8. Carefully remove the EPN cabinet. The cabinet may weigh as much as 800 pounds. Use caution.
 9. Type **change system-parameters features** and press Enter. Use this screen to change the TTI field back to its previous value before the upgrade.
 10. When finished, place dust covers over all exposed fiber couplings that remain after the fiber optic cables are removed.

11. If any fiber optic cables were removed from Lightguide Interconnect Units (LIUs) or Fiber Patch Panels, remove the associated cable labeling. This will prevent confusion if existing fiber is later moved.
12. Return all unused equipment (not owned by the customer) to Avaya 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.

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.
3. Press Enter again to start the shutdown process.
4. The SHUTDOWN Completed message appears when the AUDIX is successfully shut down. This takes about 2 minutes.
5. You can now shut down the carrier or remove the AUDIX System for service.



CAUTION:

If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Power Up the AUDIX System

- If the AUDIX was removed from the cabinet:
 1. Re-install the AUDIX and allow it to power up automatically.
 2. Check for AUDIX System errors.
- If the AUDIX remained in the cabinet but the cabinet was powered down:
 1. Reseat the AUDIX
 2. Power up the cabinet. The AUDIX reboots automatically.
 3. 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 enter **cc**.
 2. Enter **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.

Adding or Removing Cabinet Hardware

6

This chapter contains information to add or remove cabinet hardware. To install adjunct or peripheral equipment, refer to *DEFINITY Enterprise Communications Server Release 8 Installation for Adjuncts and Peripherals*.

To add fiber optic cables to an existing system, refer to the Multicarrier Cabinets installation instructions in *DEFINITY Made Easy* tools.

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 9 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

Continued on next page

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

Apparatus Code	Name	Type
TN439	Tie Trunk	Port
TN447	Central Office Trunk	Port
TN457	Speech Synthesizer	Service
TN458	Tie Trunk- U.K.	Port
TN459B	Direct Inward Dialing Trunk	Port
TN464C/D/E/F/GP	DS1 Interface - T1, 24 Channel - E1, 32 Channel; Firmware Download Enabled	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

Continued on next page

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

Apparatus Code	Name	Type
TN753/B	Direct Inward Dialing Trunk	Port
TN754/B/C	Digital Line 4-Wire DCP	Port
TN755/B	Neon Power Unit	Power
TN756	Tone Detector	Service
TN758	Pooled Modem	Port
TN760B/C/D/E	Tie Trunk	Port
TN762/B	Hybrid Line	Port
TN763B/C/D	Auxiliary Trunk	Port
TN765	Processor Interface	Control
TN767B/C/D/E	DS1 Interface - T1, 24 Channel	Port
TN768	Tone-Clock	Control
TN769	Analog Line	Port
TN771DP	Maintenance/Test; Firmware Download Enabled	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), V3 or later	Control
TN793	Analog Line	Port
TN794	Network Control/Packet Interface (NetPkt)	Control
TN796B	Processor	Control
TN797	Analog CO Trunk and Line Combo	Port

Continued on next page

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

Apparatus Code	Name	Type
TN799B/C	Control-LAN (C-LAN)	Port
TN802B	IP Interface Assembly	Port
TNPRI/BRI	PRI to BRI Converter	Port
TN1648/B	System Access/Maintenance	Control
TN1650B	32-MB Memory	Control
TN1654	DS1 Converter - T1, 24 Channel/E1, 32 Channel	Port
TN1655	Packet Interface	Control
TN1657	Disk Drive	Control
TN2135	Analog Line	Port
TN2136	Digital Line 2-Wire DCP	Port
TN2138	Central Office Trunk	Port
TN2139	Direct Inward Dialing Trunk	Port
TN2140/B	Tie Trunk - Hungary, Italy	Port
TN2144	Analog Line	Port
TN2146	Direct Inward Dialing Trunk	Port
TN2147/C	Central Office Trunk	Port
TN2149	Analog Line	Port
TN2180	Analog Line	Port
TN2181	Digital Line 2-Wire DCP	Port
TN2182/B	Tone-Clock -Tone Detector and Call Classifier	Control
TN2183	Analog Line	Port
TN2184	DIOD Trunk	Port
TN2198	ISDN-BRI 2-Wire U Interface	Port
TN2199	Central Office Trunk	Port
TN2202	Ring Generator	Power
TN2211	Optical Drive	Control
TN2224/B	Digital Line, 24-Port, 2-Wire DCP	Port
TN2302AP	IP Media Processor; Firmware Download Enabled	Port

Continued on next page

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

Apparatus Code	Name	Type
TN2305	ATM Interface (multimode fiber)	Port
TN2306	ATM Interface (single-mode fiber)	Port
TN2313/BP	DS1 Interface; Firmware Download Enabled	Port
UN330B	Duplication Interface	Control
UN331B	Processor	Control
UN332/B/C	Mass Storage/Network Control	Control
WP-90510	AC Power Supply (Compact Single-Carrier Cabinet)	Power
WP-91153	AC Power Supply (Single-Carrier Cabinet)	Power

Downloading Firmware to Port Circuit Packs

With Release 9, you can download updated application code for a port circuit pack on site or remotely. This eliminates the need to physically remove the circuit pack and send it to the factory for the firmware update. This feature is available on all DEFINITY ECS platforms—r, si, csi—and DEFINITY ONE.

The port circuit packs supported in Release 9 (DEFINITYECS) and Release 3 (DEFINITY ONE) include the

- UDS1 family of circuit packs—TN464GP, TN2464BP, and TN2313AP
- TN2302AP IP Media Processor
- TN771DP Maintenance Test.

 **NOTE:**
The P suffix designation means the circuit pack is programmable; new firmware can be downloaded directly to the circuit pack.

For the download, you need a temporary staging area to keep the firmware images before uploading them to the source board. Although the download is normally done from a PC, it can be done from other servers, such as UNIX.

To download firmware to appropriate circuit packs requires the following items:

On the DEFINITY ECS:

- One source board—TN799C Control Lan (C-LAN) circuit pack—with an Ethernet data module administered.
- Target port circuit packs with P designation
- DEFINITY ECS Release 9 or DEFINITY ONE Release 3 software
- Services login and password.
- Need clear channel between source (C-LAN) and target board (remote EPNs only)

On an IBM-compatible PC or other server

- Windows 95/98/2000/NT (if a PC)
- Modem (for remote downloads to the source board)
- IP connectivity to the source board
- IP connectivity to the World Wide Web
- File transfer protocol (FTP) software program
- Web browser (Netscape 4.5 or Internet Explorer 5 or higher)

The process for downloading the firmware is to

1. [Download image from support Web site](#)
2. [Set up file system on source board](#) (C-LAN in R9)
3. [Copy image from a PC to source board](#), using the file transfer protocol (FTP)
4. [Copy image from source board to target board](#).

The target boards are automatically busied out before the firmware is downloaded to them and automatically returned to service after the download is completed. While a DS1 board is busied out, any active calls through that board are dropped.

Customers can access and download the firmware image on site using the [Avaya Customer Support](#) Web site.

Download image from support Web site

1. Go to the [Avaya Customer Support](http://support.lucent.com/) Web site (<http://support.lucent.com/>).
2. From the Online Services drop-down menu on the right, select Download Software.
3. Scroll through the table until you find Firmware Download. Select it.

4. Select the circuit pack you want to upgrade, then the firmware images you need (there may be more than one, depending on the circuit pack).
5. Download the files to a temporary directory on a PC or UNIX server that has FTP and network access to the source board.

Set up file system on source board

Before you can load files onto the source board, you must first set up a file system on the board to accept the files.

1. Log onto the DEFINITY system using superuser or services ID and password.
2. Type **enable filesystem board UUCSS login ftplogin ftppassword [size actual_size]** and press Enter. **UUCSS** is the cabinet, carrier, slot of the source board.



CAUTION:

In this software release the filesystem allocates the largest block of memory available up to 1 MB; however, you can specify a smaller filesystem.



NOTE:

If the source board does not have enough available memory, make sure old files are deleted (refer to [Disable Filesystem](#)) or wait until there is less traffic on the board.

Copy image from a PC to source board

The source board for Release 9 is the TN799C Control Lan (C-LAN) circuit pack. You use an FTP program on a PC to download the files to the source board.

You'll need the IP address for the source board, which you can get from your data systems administrator or by typing the following series of commands:

1. **list configuration board UUCSS** to make sure the port is enabled (look for the number 17).
2. **display port UUCSS17** to obtain the data module ID.
3. **display data-module ID** to obtain the link number.
4. **status link link_number** to check the link status and obtain the source IP address.

You can use any FTP program. The following steps are generic to most FTP programs. Please follow the instructions for your specific program.

- [Using an FTP program through MS-DOS or UNIX](#)
- [Using a GUI-based FTP program](#)

Using an FTP program through MS-DOS or UNIX

1. Type **ping source_ip_address** and press Enter to verify a communication link to the source board.
2. Type **ftp source_ip_address** and press Enter.
3. Log in using the user ID and password that you created at the time you created the file system.
4. Type **bin** and press Enter, which enables older ftp programs to send binary files.
5. Type **put filename** to copy the file to the source board.
6. Type **dir** to verify that the file is on the source board.
7. Repeat steps 5 and 6 for each file.
8. Type **quit** and press Enter to end the ftp session.

Using a GUI-based FTP program



NOTE:

Ping the source board first to verify a communication link to the source board.

1. Open the FTP program.
2. Type in the source board's IP address and the user ID and password in the appropriate fields. The user ID and password are the ones you created at the time you created the filesystem.
3. Select binary for the file type.
4. Press **Connect**.
5. When connected, select the root directory on the source board (remote).
6. Go to the temporary file directory on your PC (local) that has the downloadable binary files.
7. Download all the files to the appropriate directory on the source board.
8. Refresh the remote directory, if necessary, to verify that all the files were transferred.
9. When done, end the ftp session.

Copy image from source board to target board

You can download the files immediately or schedule them for download at a less busy time to minimize down time. This procedure assumes that the firmware image files are resident on the source board (TN799C C-LAN).



NOTE:

Make sure the target boards are working before the download.



NOTE:

If you are scheduling circuit packs used as primary and secondary sync sources (such as TN464GPs), the timing automatically moves to a local sync source when the boards are busied out during the download. The timing automatically moves back to the proper sync sources after the boards are returned to service.

Complete the following tasks:

- [Check SPE](#)
- [Locate Target Boards](#)
- [Verify Trunk Status \(optional\)](#)
- [Verify Files](#)
- [Schedule Download](#)
- [Check Specified Resources \(scheduled downloads only\)](#)
- [Monitor Download Progress](#)
- [Disable Filesystem](#)

Check SPE

1. Log into DEFINITY ECS or DEFINITY ONE.
2. Type the following commands depending on the platform:
 - a. On a DEFINITY ECS R9r, type **status spe** and press Enter to check the health of the SPE.

For high or critical reliability systems, make sure that the:

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

- b. On a DEFINITY ECS R9si or R9csi, type **status system 1** and press Enter and verify that the SPE is active.

For high or critical reliability systems, make sure that the Service State fields for both SPEs are set to **active** or **standby**.

- c. On a DEFINITY ONE, type **status system all-cabinets** and press Enter.

Locate Target Boards

- If you do not know the target board locations, do the following step:
- To locate DS1 target boards, type **list configuration ds1** and press Enter. Look for the "P" suffix in the Code column and note the board location. You will need it later in the process.
- or
- To locate other target boards, type **list configuration all** and press Enter.

list configuration all

SYSTEM CONFIGURATION													
Board Number	Board Type	Code	Vintage	Assigned Ports									
				u=unassigned	t=tti	p=psa							
01A13	IP MEDIA PROCESSOR	TN2302AP	HW03 FW016	01	02	03	04	05	06	07	08		
01A14	CONTROL-LAN	TN799B	000002	u	u	u	u	u	u	u	u	u	u
				u	u	u	u	u	u	u	u	u	17
01A15	DIGITAL LINE	TN754B	000002	01	02	03	04	05	06	07	08		
01A16	BRI LINE	TN556B	000006	01	01	02	02	t	t	04	04		
				05	05	06	06	07	07	08	08		
				09	09	10	10	11	11	12	12		
01A	PROCESSOR	TN2404	000003										
01A	PROCR INTERFACE 1	TN765	000016	u	u	u	u						
01A	NETCON/PKTINT	TN2401	000003	01	02	03	04	05	06	07	08		
01A	TONE/CLOCK	TN2182B	000001	01	02	03	04	05	06	07	08		
01D13	DS1 INTERFACE	TN2464BP	HW00 FW101	01	02	03	04	05	u	u	u		
				u	u	u	u	u	u	u	u		
				u	u	u	u	u	u	u	u		
				u	u	u	u	u	u	u	u		

Verify Trunk Status (optional)

- This optional procedure for DS1 target boards allows you to see which ports are in service.
- Type **list configuration board UUCSS** and press Enter to identify the ports associated with a particular DS1 board. Note the total number of ports.
 - Type **display port UUCSSpp**, where **pp** is the port number of one of the ports, and press Enter to find the trunk group number.
 - Type **status trunk n**, where **n** is the trunk group number, and press Enter. Note the status of all the ports in service for that particular DS1 board.
 - If the number of ports in the group does not equal the total number of ports, repeat step 2 for a port number not listed.

For example, if trunk group 6 shows only ports 01 through 15, then display port 17 to identify the trunk group number for the rest of the ports for that particular DS1 board. Note the status of all the ports in service in that trunk group.

Verify Files

- 1. Type **list directory board UUCSS** and press Enter to list the contents of the source board's directory.
- 2. Verify that the downloaded files are present.

list directory board 1C12Page 1

LIST DIRECTORY

Board Location	File/Directory Name	Creation Date	Time	Size Kb
01C12	F:fwdling464gv01	2000/01/01	00:00:00	367
01C13	F:fwdling2302av01	2000/02/29	23:59:59	493

D = Directory F = File

Schedule Download

- 1. Type **change firmware download** and press Enter.

change firmware downloadPage 1 of 1

FIRMWARE DOWNLOAD

Source Board Location: _____

Firmware Image File Name: _____

Target Board code: _____ Suffix: _____ Firmware Vintage: _____

Schedule Download? y Remove Image File After Successful Download? y

Start Date/Time: __/__/__ :__ Stop Date/Time: __/__/__ :__

Target Location	Target Location	Target Location	Target Location	Target Location
1. _____	11. _____	21. _____	31. _____	41. _____
2. _____	12. _____	22. _____	32. _____	42. _____
3. _____	13. _____	23. _____	33. _____	43. _____
4. _____	14. _____	24. _____	34. _____	44. _____
5. _____	15. _____	25. _____	35. _____	45. _____
6. _____	16. _____	26. _____	36. _____	46. _____
7. _____	17. _____	27. _____	37. _____	47. _____
8. _____	18. _____	28. _____	38. _____	48. _____
9. _____	19. _____	29. _____	39. _____	49. _____
10. _____	20. _____	30. _____	40. _____	50. _____

Enter 5 character board number; cabinet(1-30):carrier(A-E):slot(0-20)

2. Fill in the following fields:

- Source Board Location:
- Firmware Image File Name:, which is stored in the source board filesystem
- Target Board code:, which must be one type only (for example, TN464GP)
- Suffix:, which must be a programmable board with the P suffix
- Schedule Download?



NOTE:

The default is **y**. The download to the specified target board begins when the scheduled start time is reached. Once download begins, you cannot make any changes to the Firmware Download screen.

If you set the field to **n**, the Start Date/Time: and Stop Date/time: fields do not display. The download begins as soon as you press Enter.

- Start Date/Time:
- Stop Date/time: An optional field that allows you to stop the download before the time of day of the greatest usage.



NOTE:

If the scheduled stop time is reached before all boards have been downloaded, software completes the downloading of the board in progress before aborting the remainder of the download schedule.

- Remove Image File After Successful Download?



NOTE:

The default is **y**. At the completion of a successful download, the software automatically removes the download file from the source board filesystem and, if no more files remain in the filesystem, disables the filesystem, freeing up the memory on the source board. We recommend keeping the default setting.



NOTE:

If you set it to **n**, at the completion of the download, you must manually remove the download file from the source board filesystem. See [“Disable Filesystem”](#).

■ Target Location

Make an entry for each programmable target board location, up to 50.

⇒ NOTE:

You can only download one image file to one type of target board at a given time (for example, to all the TN464GPs). The download process *does not* support broadcasting more than one image file to multiple types of target boards in parallel (for example, TN464GPs and TN2313BPs).

3. Press Enter to submit the schedule.

⇒ NOTE:

If you set the Schedule Download? field to **n**, the download starts as soon as you press Enter.

Check Specified Resources (scheduled downloads only)

1. Type **test firmware download** and press Enter.
2. Check for FAIL conditions.
3. If failures occur, investigate the errors by referencing FW-DWNLD description in the appropriate maintenance book.
4. Resolve all errors.

When the test passes, all specified resources are available for the scheduled download.

Monitor Download Progress

1. Type **status firmware download** and press Enter to view the progress of the all downloads on the schedule. The possible flags are **(P)**ending, **(C)**ompleted, **(F)**ailed, or **(A)**borted.

or

Type **status firmware download last** and press Enter to view the progress of the previous completed download on the schedule. Also, use this command at the end of the download schedule.

status firmware download

STATUS FIRMWARE DOWNLOAD

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Source Board Location: 01C02
Firmware Image File Name: usd1v22r1
Target Board Code: TN464 Suffix: GP Firmware Vintage: 1
Schedule Download? Y
Start Date/Time: 01/12/2001 13:30 Stop Date/Time: 01/14/2001 16:30

Target Location	St	Target Location	St	Target Location	St	Target Location	St	Target Location	St
1. 01C04	C	11. _____	-	21. _____	-	31. _____	-	41. _____	-
2. 01C06	C	12. _____	-	22. _____	-	32. _____	-	42. _____	-
3. 01C08	P	13. _____	-	23. _____	-	33. _____	-	43. _____	-
4. _____	-	14. _____	-	24. _____	-	34. _____	-	44. _____	-
5. _____	-	15. _____	-	25. _____	-	35. _____	-	45. _____	-
6. _____	-	16. _____	-	26. _____	-	36. _____	-	46. _____	-
7. _____	-	17. _____	-	27. _____	-	37. _____	-	47. _____	-
8. _____	-	18. _____	-	28. _____	-	38. _____	-	48. _____	-
9. _____	-	19. _____	-	29. _____	-	39. _____	-	49. _____	-
10. _____	-	20. _____	-	30. _____	-	40. _____	-	50. _____	-
20									
21									

Status: Pending(P) Completed(C) Failed(F) Aborted (A)

Abort a Firmware Download

If you need to abort a scheduled firmware download:

- Type **disable firmware download** and press Enter.

The software continues to download the board in progress and then aborts the remainder of the download schedule.

Disable Filesystem

To free up resources on the source board, you must delete the files and disable the filesystem.

- Type **remove file board UUCSS filename** and press Enter to remove image files from the source board.
- Type **disable filesystem board UUCSS** and press Enter to disable the filesystem on the source board.

 **NOTE:**
Only successful if no files remain on the source board.

Installing TN464GP/TN2464BP with Echo Cancellation

The TN464GP and TN2464BP circuit packs with echo cancellation are intended for DEFINITY customers who are likely to encounter echo over circuits connected to the Direct Distance Dialing (DDD) network. These circuit packs are intended for channels supporting voice; therefore, they support the following trunks: CAS, CO, DID, DIOD, DMI, FX, Tie, WATS. They do not support any data trunk groups.

NOTE:

The P suffix designation means the circuit pack is programmable; new firmware can be downloaded directly to the circuit pack.

The TN464GP and TN2464BP circuit packs are backwards compatible, although the echo cancellation feature can only be used with Release 9 or later software and after the feature is enabled.

The echo cancellation feature cancels echoes with delays up to 96 ms. Echo cancellation is disabled automatically when the circuit pack detects a 2100-Hz *phase-reversed* tone put out by high-speed modems (56 kbaud) but not when it detects a 2100-Hz *straight* tone generated by low-speed modems (9.6 kbaud).

For information on installing port circuit packs, refer to Installing Port Circuit Packs. For information on setting the option switches, refer to Option Switch Settings. For information on administering the circuit packs, refer to the *DEFINITY ECS Release 9 Administrator's Guide*.

Echo cancellation must first be purchased, then activated by someone with customer options login privileges. Refer to the *DEFINITY ECS Release 9 Administrator's Guide*.

Use the following procedure to modify the settings:

NOTE:

You do not need to busyout the circuit packs to modify the settings. But the modified settings do not take effect until either the port is busied out or the scheduled maintenance runs.

1. Type **display system-parameters customer-options** and press Enter. On screen 2 verify that the DS1 Echo Cancellation? field is set to **y**. If not, contact someone in your area with customer options login privileges.
2. Type **[add | change] trunk-group [next | number]** and press Enter.

6 Adding or Removing Cabinet Hardware

Installing TN464GP/TN2464BP with Echo Cancellation

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```
add trunk-group next                                     Page 2 of 11  SPE A
                                     TRUNK FEATURES
                                     ACA Assignment? n
                                     Internal Alert? n
                                     Data Restriction? n
                                     Glare Handling: none
                                     Measured: both
                                     Maintenance Tests? y
                                     Used for DCS? n
                                     Suppress # Outpulsing? n
Seize When Maintenance Busy: neither-end

Incoming Tone (DTMF) ANI: no
Connected to CO? n
Per Call CPN Blocking Code:
Per Call CPN Unblocking Code:
Ds1 Echo Cancellation? y
```

3. On Trunk Features, screen 2, set the DS1 Echo Cancellation? field to **y**.
4. Type **[add | change] ds1 UUCSS** and press Enter.

```
add ds1 2b08                                           Page 1 of 1  SPE B
                                     DS1 CIRCUIT PACK
                                     Location: 02B08
                                     Bit Rate: 2.048
                                     Name: Echo Cancel t23
                                     Line Coding: hdb3
                                     Signaling Mode: CAS
                                     Interconnect: pbx
                                     Country Protocol: 1
Interface Companding: mulaw
Idle Code: 11111111
CRC? n

Slip Detection? y
Near-end CSU Type: other
Echo Cancellation? y
EC Direction: inward
EC Configuration: 1
```

5. On the DS1 Circuit Pack screen, set the Echo Cancellation? field to **y**.
When set to **y**, 2 new fields display: EC Direction: and EC Configuration:.
- If you know the echo is coming into DEFINITY, keep the default setting for the EC Direction: field of **inward**.

6 Adding or Removing Cabinet Hardware
Add CO, FX, WATS, and PCOL

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- If you know that the distant party is hearing echo that originates in DEFINITY or its line side stations or equipment, set the EC Direction: field to **outward**.

Keep the default setting for the EC Configuration: field of **1**. This setting rapidly minimizes echo when first detected, regardless of the loudness of the talker's voice.

6. Test the voice quality on a telephone connected through the TN464GP or TN2464BP circuit packs and known to have echo to see if the echo was eliminated.
7. If the echo still exists, set the EC Configuration: field to **2**, **3**, or **4**, then test the voice quality. These settings provide help for the following scenarios:
 - Setting 2 minimizes speech clipping, but it takes a fraction of a second longer for the echo to fade.
 - Setting 3 eliminates speech clipping, but a strong echo may take 2 or 3 seconds to fade.
 - Setting 4 minimizes extremely strong echo, very hot signals, or excessive clipping or breakup of speech from a distant party. It reduces speech clipping but may allow slight residual echo or more background noise.
8. If after trying all these settings, the echo still exists, contact technical support. Refer to **Where To Call for Technical Support**.

Add CO, FX, WATS, and PCOL

Requirements

Each Central Office (CO), Foreign Exchange (FX), Personal Central Office Line (PCOL), or Wide Area Telecommunications Service (WATS) trunk connects to 1 port of either an 8-port TN747B or to 1 of several CO trunk circuit packs.

Installation

1. Install a TN747B or a CO Trunk circuit pack in the assigned carrier slot (if an additional circuit pack is required).
2. Administer the forms listed under CO, FX, WATS, or PCOL Trunk Group in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

3. Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

Add DID Trunks

Requirements

Each Direct Inward Dial (DID) trunk connects to 1 port DID Trunk circuit pack or to 1 port of an assortment of DID trunk circuit packs.

Installation

1. Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

- 2. Install a DID Trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
- 3. Administer forms listed under “DID Trunk Group” in *DEFINITY Enterprise Communications Server Release 9 Administrator’s Guide*.

Add Tie Trunks

Requirements

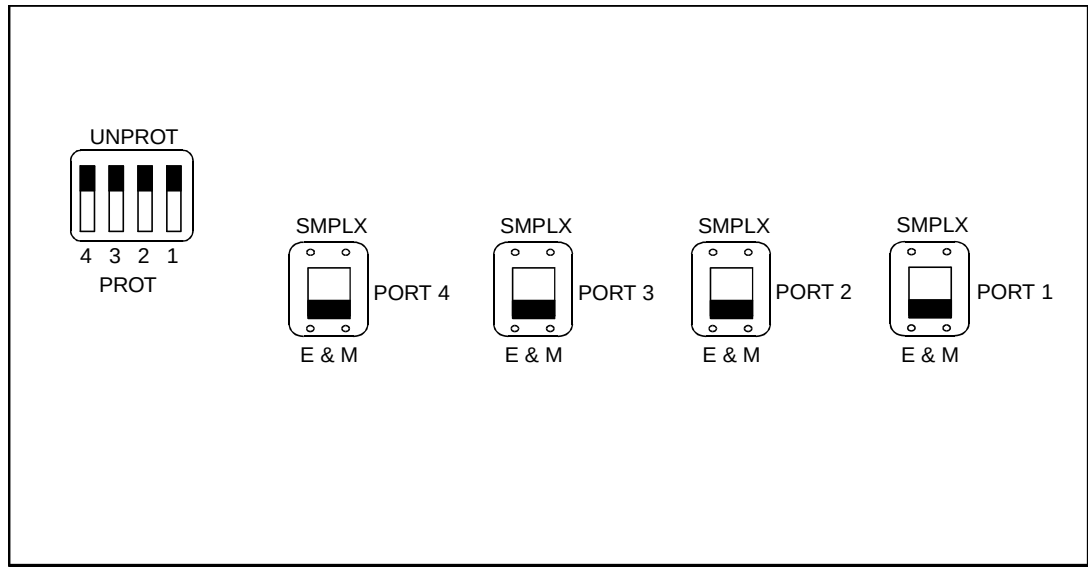
Each tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of international tie trunk circuit packs.

Installation

1. Determine the port assignment of the trunk from the trunk group screen.

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

2. Install the tie trunk or an international tie trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
3. For customer-owned (not leased) tie-trunk facilities (such as campus environments), tie trunk circuit packs provide signaling capabilities beyond those specified by the industry-wide E&M standard. Use [Figure 6-1](#) and [Table 6-2](#) to choose the preferred signaling format, set switches on the circuit pack, and administer the port.
4. Administer forms listed under “Tie Trunk Group” in the *DEFINITY Enterprise Communications Server Release 9 Administrator’s Guide*.



r758183 RBP 050896

Figure 6-1. Tie Trunk Circuit Packs (Component Side)

Table 6-2. Tie Trunk Option-Switch Settings and Administration

Installation Situation		Preferred Signaling Format		E&M/SMP LX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Collocated	DEFINITY	E&M Type 1 Compatible	E&M Type 1 Standard	E&M	Unprotected	Type 1 Compatible
Inter-Building	DEFINITY	Protected Type 1 Compatible	Protected Type 1 Standard Plus Protection Unit	E&M	Protected	Type 1 Compatible
Collocated	Net Integrated	E&M Type 1 Standard	Any PBX	E&M	Unprotected	Type 1

Add DS1 Tie and OPS

The TN2313 DS1 Tie Trunk and TN767B (or later) DS1 Interface circuit packs provide connections to a 1.544-Mbps DS1 facility (T1) as 24 independent 64-kbps trunks.

The TN2313 DS1 Tie Trunk, TN767B (or later) DS1 Interface, and TN464C (or later) DS1 Interface circuit packs provide connections to a 2.048-Mbps DS1 facility (E1) as 32 independent 64-kbps trunks.

Service Interruption

1. Since the addition of DS1 tie-trunk service may require a service interruption, notify the customer in advance as to when the addition will occur.
2. For information about administering DS1 Tie Trunks, refer to *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Add Speech Synthesis

The Speech Synthesizer circuit pack is required when the Voice Message Retrieval, Automatic Wakeup, or Do Not Disturb features are activated. The circuit pack does not require administration.

1. Determine the port assignment of the Speech Synthesizer circuit pack being added.
2. Install the Speech Synthesizer circuit pack in the designated carrier slot.

Add Code Calling Access

The tones for the Code Calling feature are generated by the Tone-Clock circuit packs in the port networks.

1. Install an Auxiliary Trunk circuit pack or a Speech Synthesizer circuit pack and connect for Loudspeaker Paging. The Code Calling Access feature shares the same ports as Loudspeaker Paging. An Auxiliary Trunk circuit pack provides 4 ports for Loudspeaker Paging and Code Calling Access.
2. Administer the form listed under "Code Calling Access" in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Add Pooled Modem

Modem pooling supports two types of conversion resources: integrated and combined.

An integrated conversion requires a Pooled Modem circuit pack for each 2 conversion resources provided.

A combined conversion requires a port of a TN745B or TN2136 Digital Line circuit pack and a port of either an 8-port TN742, TN769, a 16-port TN746B, or a 24-port TN793/B, TN2793/B Analog Line circuit pack for each conversion resource provided.

The pooled modem requires a Lucent WP90110 L7 power supply. Although integrated conversion can use either the L5 or L7, the combined only works with an L7.



CAUTION:

The L5 and L7 power supplies look identical. Check the label to be sure you have the L7 before installing.

Determine the port assignment of the circuit packs to be added (if required).

3. Install the appropriate circuit packs in assigned carrier slot (if required).
4. For Paradyne 3800 series modems:
 - a. Type **AT&F&D2&S4\D3S2=128x7V2S7=60S85=1** and press Enter.
 - b. Type **ATY0S10=100S78=2M0E0\N1&W** and press Enter.
5. For other types of modems, refer to the vendor's documentation.

Settings for Modem Connected to Data Module

1. Type **add data-module next** and press Enter.
2. Type **pdm** in the Type field.
3. Type **x** in the Port field.
4. Type **dte** in the Connected to field and press Enter.
5. Type **add station next** and press Enter.
6. Type **2500** in the Type field.
7. Type **x** in the Port field.
8. Type **n** in the Tests field and press Enter.
9. Type **add modem-pool next** and press Enter.
10. Type **combined** in the Group Type field.
11. Type **5** in the Hold Time (min) field.

6 Adding or Removing Cabinet Hardware

Add Multiple Integrated Recorded Announcement

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12. Type **two-way** in the Direction field.
13. Type **9600** in the Speed field.
14. Type **Full** in the Duplex field.
15. Type **async** in the Synchronization field.
16. Type the port pair assignments in the Analog and Digital fields and press Enter.

Settings for Modem Connected to the Data Terminal Equipment (DTE)

1. Type **add station next** and press Enter.
2. Type **2500** in the Type field.
3. Type the port assignment in the Port field and press Enter.

Add Multiple Integrated Recorded Announcement

TN750C circuit packs are required if the system has multiple announcement circuit packs. Up to 5 TN750Cs are allowed in a Release 7 or later. The announcements from a TN750 or TN750B can be copied to a TN750C.



CAUTION:

Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this process may corrupt the announcement data.

1. Install the TN750C circuit pack into any port slot.



NOTE:

Only 1 TN750 or TN750B can reside in the system with a TN750C. The TN750C need not reside in a control carrier for extra power holdover.

TN750C Announcement Circuit Pack

The TN750C circuit pack contains on-board flash memory that provides internal backup of announcements. Thus, the TN750C circuit pack does not need the save and restore processes.

The TN750C circuit pack can replace a TN750 or TN750B. The difference in operation is that the TN750C automatically restores and reports the availability of announcements from its own internal flash memory in 5 minutes, rather than the 40 minutes for the TN750 or TN750B.

If a circuit pack already has announcements in its flash memory, the yellow LED flashes as the announcements copy to the voice RAM.

Save and Restore Recorded Announcements



CAUTION:

If the yellow LED is flashing, do not remove the circuit pack, as this will corrupt the announcement data.

1. Type **save announcements <port network> <carrier> <slot>** and press Enter.
2. To restore announcements, type **restore announcements to <port network> <carrier> <slot>** and press Enter.

After 5 minutes (with no alterations to the announcements), the TN750C automatically copies the announcements from the voice RAM to the internal flash memory. The yellow LED on the front of the TN750C flashes.

You can only save the announcement contents of 1 circuit pack at a time. For the contents of every circuit pack, save to separate removable media. Label each removable media so that it matches the circuit pack.

TN750 and TN750B Announcement Circuit Packs

To save the recorded announcements in the system, type **save announcements** and press Enter. Use these codes after business hours or when the system is operating during a low-usage period. The system takes about 40 minutes to transfer the recorded announcements from the announcement circuit pack to the removable media. During this time, the management terminal cannot be used to administer the system; however, all other administration terminals, if provided, are allowed to perform administration procedures.

Type **restore announcements** and press Enter to restore the recorded announcements from the removable media to system memory.

Replace a TN750/B with a TN750C or Move all Announcements from a TN750/B to a TN750C

Use this procedure to replace a TN750/B circuit pack with a TN750C circuit pack or to move every announcement from a TN750/B to a TN750C.



CAUTION:

Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this may corrupt the announcement data.

1. Save announcements from the TN750/B to the removable media.
2. Insert the TN750C into a vacant slot of a carrier.
3. Type **add data-module next** and press Enter to administer a new data module on the TN750C.
4. Type **announcement** in the Type field.
5. Type the location in the Board field and press Enter.
6. Type **restore announcements <location>** for the TN750C.
Wait until announcements copy from voice RAM to flash memory (yellow LED on the TN750C stops flashing). This may take about 10 minutes.
7. Type **busyout board <location>** and press Enter for the TN750/B.
8. Type **change integrated announcements** and press Enter. This modifies the translations for the TN750/B to reference the TN750C circuit pack.
9. Verify proper playback of the announcements from the TN750C.
10. Type **release board <location> and** press Enter for the TN750/B.
11. Remove the TN750/B circuit pack if it is no longer necessary.

Add TN750C Circuit Packs

1. Insert the TN750C into a vacant slot in a carrier and administer a new data module on the TN750C, as described in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.
2. To administer new announcements to that TN750C slot, type **change announcements <location>** and press Enter.
3. Record the announcements, as described in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Wait until the announcements copy from voice RAM to the onboard flash memory (the yellow LED on the TN750C starts and then stops flashing). This takes about 10 minutes.

Move a Single Announcement to Another Announcement Circuit Pack

1. Type **change announcements** and press `Enter` to change the circuit pack locations of a particular announcement. (You may also change the compression rate at this time.)
2. Move the announcement, as described in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Add ISDN—PRI

North American

1. Install a TN767E (or later) DS1 or a TN464F DS1/E1 circuit pack for a signaling link and up to 23 ISDN — PRI Trunk Group members.
2. Install a Tone-Clock circuit pack to provide synchronization for the DS1 circuit pack.

International

1. Install a TN464C (or later) DS1/E1 circuit pack for the assignment of the 2 signaling channels and up to 30 ISDN — PRI Trunk Group members. Each E1 span provides 32 ports.
2. Install a Tone-Clock circuit pack to provide synchronization for the DS1/E1 circuit pack.

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the DS1 Interface circuit pack in the assigned carrier slot.
3. Install a Tone Detector circuit pack if required.

Install Cables

1. Install cables from the TN464F to the MDF as required.

Enter Added Translations

1. Administer the forms listed under “Integrated Services Digital Network — Primary Rate Interface” in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Save Translations

1. Type **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the system disk.

Add CallVisor ASAI

Enter Added Translations

1. On the System-Parameters Customer-Options screen, disable the Calling Party Number/Billing Number (CPN/BN) option, and enable the CallVisor ASAI Interface option.
2. See *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*, for details on disabling and enabling these options.

Save Translations

1. Type **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the system disk.

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the appropriate circuit packs in assigned carrier slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

The TN744/C/D Call Classifier circuit pack is required for those customers who want switch call classification.

A vacant port is required on a TN556/B/C ISDN—BRI circuit pack.

Install Cables

1. Install cables from TN464GP to the MDF as required.

Enter Added Translations

1. Administer the required translation data using the forms listed under “Adjunct/Switch Applications Interface (ASAI)” in *DEFINITY Enterprise Communications Server Release 9 Administrator’s Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9csi*.

Save Translations

1. Type **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the system disk.

Add TTC Japanese 2-Mbit Trunks

The TN2242 Japan 2-Mbit trunk interconnects DEFINITY to other vendor equipment in Japan as well as to other DEFINITY switches through the Time Division Multiplexor (TDM).

Installing the trunk

1. Determine the port assignment of the trunk from the Trunk Group form.

EXAMPLE:	3	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 9 Administrator’s Guide*.
 - For ISDN applications, see ISDN Service.
 - For non-ISDN applications, see Managing Trunks.

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 TN464GP, TN767C, and TN760) provide the voice-communications interface.

NOTE:

The P board suffix designation means the circuit pack is programmable, a feature available with Release 9. Refer to [“Downloading Firmware to Port Circuit Packs” on page 6-6](#) for more information.

Meanwhile, the data link interface (between the processor and the physical signaling link) is provided by (or through) a TN799C Control-LAN circuit pack. In some configurations, the TN799C 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, or use a 259A connector and DW8 cable to connect directly to the data-network equipment. For pinouts and diagrams, refer to the installation manual. In other configurations, the TN799C 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 DSC voice transmissions.

For further information about DCS, refer to the following documents:

- *AT&T System 75/85 Network and Data Services Reference Manual*
- *System 75 Application Notes Network Services*
- *DEFINITY ECS Release 9 Administration for Network Connectivity*

Add Circuit Packs

A TN464GP, TN767C, or TN760 DS1 circuit pack is required for PPP connections. A TN799C C-LAN circuit pack is also required.

1. Determine the port assignments of the circuit packs to be added.

If a C-LAN circuit pack is already in the system, you do not need a second C-LAN circuit pack for DCS. You do not need to power down the cabinet to install any of these circuit packs.

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 C-LAN circuit pack. See [Figure 6-2](#). For a pinout of TN799C, see [Table 6-3](#).

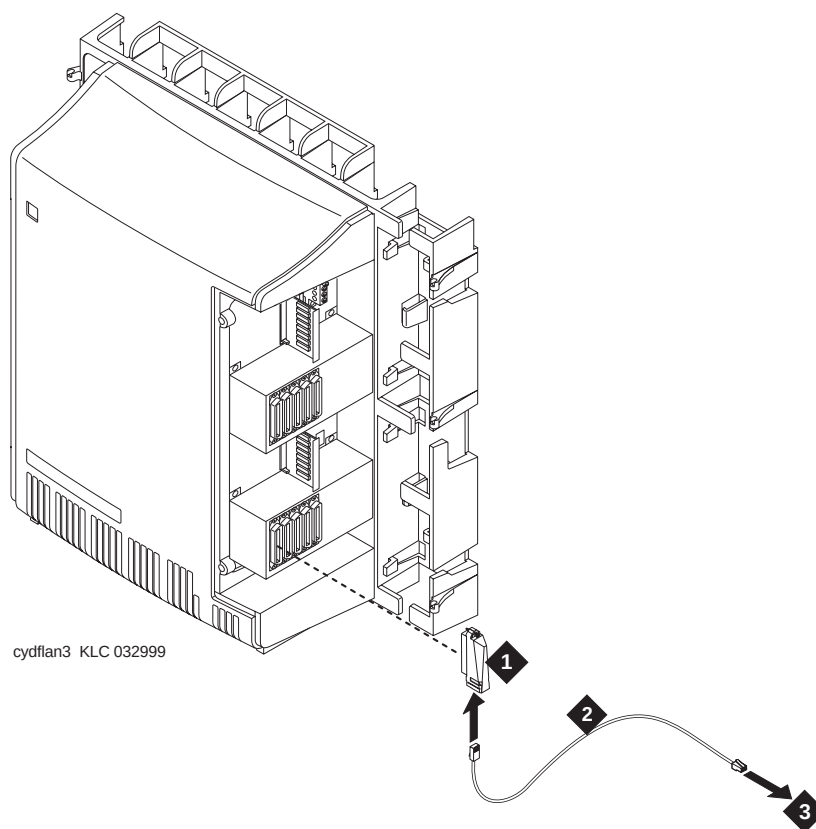


Figure Notes

1. 259A Connector
2. DW8 Cable
3. Hub or 110 (purple) wall field

Figure 6-2. Cable Connection for C-LAN

Table 6-3. TN799C 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 Networking Connectivity*.

Save Translations

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

Add ISDN—BRI

Add Circuit Packs

1. Determine port assignment of circuit packs to be added.
2. Install the appropriate circuit packs in assigned cabinet slot (as required).

EXAMPLE:	3	A	07	01
	Cabinet (Port Network)	Carrier	Slot Number	Port Number

Install Cables

1. Install cables from cabinet to the MDF as required.



NOTE:

BRI requires a 12-port backplane cable terminator (breakout connector). Connect this terminator to the 25-pair cable. This is different from the 8-port connector used for DCP.

Enter Added Translations

1. Administer the required translation data using the forms listed under 7500D voice terminals and 8500 voice terminals in *DEFINITY Enterprise Communications Server Release 9 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Release 9 Maintenance for R9r*.

Save Translations

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

Add Radio Controller

For information on installing and administering the TN789 Radio Controller, refer to *DEFINITY Wireless Business System Installation and Test*.

Add External Modem to EPN

U.S. Robotics Model USR 33.6 EXT External Modem

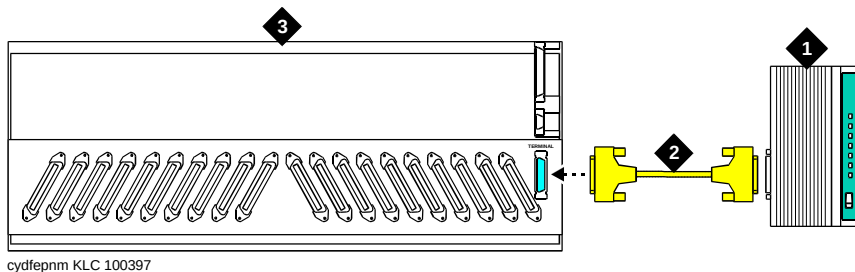


Figure Notes:

1. U.S. Robotics External Modem
2. RS-232 Cable
3. Expansion Port Network

Figure 6-3. Connect External Modem to EPN

1. Connect an RS-232 cable to the modem. See [Figure 6-3](#).



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 IP Solutions

Avaya offers several IP solutions for customers, two of which are Avaya R300 Remote Office Communicator and the IP Media Processor. For information on the Avaya R300, refer to the documentation on the CD or with the Avaya R300 equipment.

DEFINITY ECS IP Media Processor allows you to send voice and fax from the DEFINITY ECS through an Internet protocol (IP) network to other DEFINITY ECSs having this feature or to other H.323 V2 compliant endpoints. It is implemented using either the TN802B IP Interface, which is a Windows NT server residing on the IP Interface Assembly (Release 8.1 or later software) or TN2302AP IP Media Processor (Release 8.3 or later software).

NOTE:

The P board suffix designation means the circuit pack is programmable, a feature available with Release 9. Refer to [“Downloading Firmware to Port Circuit Packs” on page 6-6](#) for more information.

Both the TN802B and the TN2302AP work on all 3 DEFINITY ECS platforms (r, si, csi) and DEFINITY ONE.

For information on installing this IP Solution, refer to

- [Add IP Media Processor](#)
- [Add IP Interface Assembly](#)

For information on TN802 IP Trunking, refer to the *DEFINITY Enterprise Communications Server Release 7 Installation and Test for Multicarrier Cabinets*.

Add IP Media Processor

Unlike the TN802B IP Interface Assembly, the TN2302AP operates in one mode: Media Processor (MedPro), which is H.323 V2 compatible.

The following sections describe the process for

- [Preparing for Installation and Upgrade](#)
- [Installing the TN2302AP IP Media Processor](#)
- [Upgrading TN802 IP Trunking to TN2302AP IP Media Processor](#)
- [Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor](#)

For administration, refer to the *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity*.

Preparing for Installation and Upgrade

In addition to the TN2302AP IP Media Processor, you must also install and administer a C-LAN circuit pack (TN799B or later). For C-LAN administration, refer to *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity*.

 **NOTE:**
Although the TN2302AP IP Media Processor works with the TN799B C-LAN circuit pack, you need a TN799C to download new firmware to the TN2302AP circuit pack.

The TN2302AP IP Media Processor can work in the same DEFINITY with the TN802 IP Trunking and the TN802B IP Interface Assembly. When figuring the maximum number of circuit packs, you must include all in your total count.

 **NOTE:**
The TN802 IP Trunking cannot talk directly via Ethernet to the TN2302AP IP Media Processor.

Table 6-4. Release 9 software limits

	r	si	csi	ONE
TN802/B + TN2302AP	50	50	50	5
Endpoints ¹	5000	1000	1000	1000
C-LANs	10	10	10	10

¹The administered IP endpoints may be a mix of any of these types: H.323 trunks, H.323 stations, and IP SoftPhones, as long as the sum of all administered endpoints is no more than 1000 on csi/si or DEFINITY ONE and 5000 on r.

Each TN2302AP can support between 32 and 64 voice channels, depending on the codecs used.

Check your onsite equipment

Have the following equipment on site before your shipment arrives:

- An unoccupied port slot in the DEFINITY ECS for each TN2302AP IP Media Processor

 **NOTE:**
The TN2302AP consumes 16 W of power per slot compared with an average of 15 W per slot. Do not fill every available slot in a given carrier with them.

- An additional unoccupied port slot for the TN799B/C, if needed. If you have an existing C-LAN TN799 circuit pack, replace it with the TN799B or later if it is to be used for IP solutions registration. Replace it with a TN799C if you want to be able to download new firmware to the TN2302AP.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network (LAN) for the TN2302AP.
- A 10 BaseT Ethernet connection into your LAN for the TN799B/C.
- Two or more valid, unused IP addresses on your network (one for each TN2302AP or TN802/B and one for each C-LAN) that can be assigned to the IP Media Processor server. You also need the subnet mask and default gateway.



NOTE:

The customer provides the IP address, subnet mask, and gateway address.

Check your shipment

When your DEFINITY ECS IP Solutions order arrives at your site, check the contents (see [Table 6-5](#)).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in [Table 6-5](#) for each TN2302AP IP Media Processor ordered.
3. Read and follow any directions inserted into the package by the factory.

Table 6-5. Required Hardware

Comcode/Code	Description	Quantity
108312612	TN2302AP IP Media Processor	1
848525887	TN2302AP Amphenol Adapter ¹	1
108525528	TN799B/C ² C-LAN circuit pack. ⇒ NOTE: One TN799B/C supports more than one TN2302AP.	1
102631413	ADPTR-259A connector	1

¹The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the LAN. See [Figure 6-4](#).

²You must install a TN799C to be able to download new firmware to the TN2302AP.

⇒ NOTE:
The customer must provide one CAT5 or better cable for each TN2302AP.

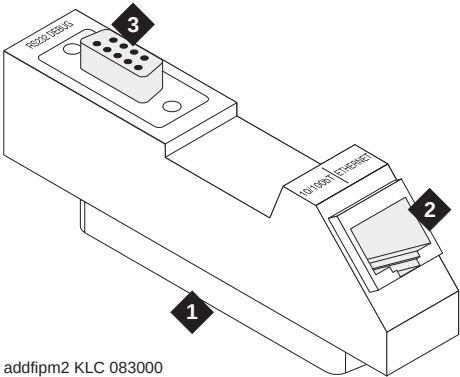


Figure Notes

1. Amphenol connector to backplane connector corresponding to TN2302AP slot
2. To Ethernet
3. 9-pin connector for maintenance

Figure 6-4. TN2302AP Amphenol Adapter

Installing the TN2302AP IP Media Processor

To install a TN2302AP IP Media Processor, you must install

- One or more TN2302AP circuit pack
- One or more TN799B/C circuit pack (A TN799B/C can support more than one TN2302AP)
- An IP Media Processor adapter.

Connect the cables for TN799B/C

1. Determine into which port slots you are putting the TN799B/C C-LAN circuit packs.

From the rear of the cabinet:

2. Connect a 259A connector to the backplane connector corresponding to each TN799B/C slot.
3. Connect one end of each DW8 cable to each 259A connector.

Connect the cables for TN2302AP

1. Determine into which port slots you are putting the TN2302AP IP Media Processor circuit packs.

From the rear of the cabinet:

2. Connect the amphenol connector on the adapter to the backplane connector corresponding to each TN2302AP slot.

Connect the Ethernet

1. Connect the network cable(s) to the ETHERNET connector on the TN2302AP Amphenol adapter(s).



NOTE:

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs



CAUTION:

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



NOTE:

The TN799B/C and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier or cabinet to install them.

If replacing the existing TN799 circuit pack, remove it first and replace it with the new TN799B/C.



NOTE:

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

1. Insert the TN799B/C circuit pack into the port slot identified earlier.
2. Insert the TN2302AP IP Media Processor into the port slot you reserved for it and seat it properly (See [Figure 6-5](#)).

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press `Enter` to verify that the system recognizes the TN2302AP circuit packs.



Figure 6-5. TN2302AP IP Interface faceplate

Initial Administration Steps for C-LAN and IP Media Processor

NOTE:
Refer to the *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity* for specific information.

1. Log in as **craft**.
2. Type **change node-names** and press Enter.

3. On page 2, type in the node names and IP addresses for the TN799B/C and the TN2302AP.

➤ NOTE:

The customer or design team provides the actual name and address.
Suggest a generic name and not one tied to the circuit pack.

change node-names

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NODE NAMES			
Name	IP Address	Name	IP Address
clan-a1	192.168.1 .31	.	.
clan-b1	192.168.2 .31	.	.
default	0 .0 .0 .0	.	.
mrmedpro1	192.168.1 .81	.	.
	.	.	.
	.	.	.
	.	.	.

4. Type **display circuit-pack** and press Enter. Verify that the TN2302AP shows up in the Code column.
5. Type **change ip-interfaces** and press Enter.

change ip-interfaces

Page1 of2

IP INTERFACES										
Inter-region IP connectivity allowed? n										
Enable										
Eth	Pt	Type	Slot	Code	Sfx	Node Name	Subnet Mask	Gateway Address	Net Rgn	
y		C-LAN	01A09	TN799	B	clan-a1	255.255.255.0	.	.	1
y		MEDPRO	01A13	TN802	B	med-a1	255.255.255.0	192.168.10 .21		1
y		C-LAN	01B03			ppp10	255.255.255.0	.	.	1
y		MEDPRO	01B09	TN2302	AP	mrmedpro1	255.255.255.0	.	.	1
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	
n							255.255.255.0	.	.	

➤ NOTE:

The customer provides the IP address, subnet mask, and gateway address.

6. Type in the following information for the TN2302AP IP Media Processor and TN799B/C C-LAN:

 NOTE:

Enable the Ethernet port last, after you have filled in the information in the other fields.

- Set Slot field to **UUCSS**, where **UUCSS** is the cabinet, carrier, and slot.
- The Code and SFX fields are automatically populated with TN799B/C and TN2302AP.
- In the Node Name field type the same node name entered on the Node Name screen.
- In the Subnet Mask field use the default setting unless you are given a different subnet mask.
- In the Gateway Address field use the address you are given or leave blank.
- Set the Net Region field to **1** unless you are given a different number.
- Set the Enable Eth Pt field to **y**

7. Press Enter to save the information and effect the new settings.

Refer to the *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

 NOTE:

The administration of the TN2302AP is the same as that for the TN802B.

Test the External Connection to the LAN

To test the external IP connections, ping the C-LAN or IP Media Processor server and ping a known computer connected to your network. If everything is configured correctly, the Result column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board **UUCSS**** and press Enter. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN2302AP IP Media Processor and ***UUCSS*** is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

```
ping ip-address 192.168.10.21
```

PING RESULTS						
End-pt IP	Port	Port Type	Result	Time(ms)	Error	Code
192.168.10.21	01A13	MEDPRO	PASS	10	1124	

2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.
The variable *nnn.nnn.nnn.nnn* is the IP address of the customer's gateway and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.
The variable *nnn.nnn.nnn.nnn* is the IP address of another computer beyond the gateway and *UUCSS* is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

The TN2302AP IP Media Processor is now installed in the DEFINITY carrier and connected to the IP network.

Upgrading TN802 IP Trunking to TN2302AP IP Media Processor

To upgrade IP Trunking to IP Media Processor, you must replace

- The TN802 circuit pack with a TN2302AP circuit pack
- The TN799 circuit pack with a TN799B/C circuit pack
- The H600 512, G1 external cable assembly with an IP Media Processor adapter.

Pre-upgrade steps

1. Type **list configuration all** and press Enter to locate all the TN802 circuit pack ports.
2. Type **display port *UUCSSppp*** and press Enter to find the trunk group number associated with the TN802 circuit pack port.
3. Type **change trunk-group *number*** and press Enter. Go to screen 4. Delete all the TN802 ports.
4. Repeat steps1 through 3 for each port.
5. Type **remove ds1 *UUCSS*** and press Enter.

Remove the Circuit Packs



CAUTION:

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



NOTE:

The TN799B/C, TN802, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

1. Press the recessed Reset button on the TN802 circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799 and TN802 circuit packs.

Replace the Cables

1. Disconnect the network cable from the Ethernet connection.
2. If using a monitor, keyboard, and mouse:
 - a. Turn off the monitor and unplug it from the AC outlet.
 - b. Disconnect the monitor, keyboard, and mouse from the H600-512 external cable assembly.
3. Turn off the modem and unplug it from the AC outlet.
4. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

5. Disconnect the amphenol connector on the existing external cable assembly from the backplane connector corresponding to the TN802 circuit pack.
6. Connect the amphenol connector of the TN2302AP Amphenol adapter to the backplane connector corresponding to the slot selected for the TN2302AP circuit pack.



NOTE:

The TN802 occupied 3 slots, and the cable was connected to the rightmost backplane slot. For convenience use the same rightmost slot vacated by the TN802 circuit pack for the TN2302AP circuit pack.

7. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

1. If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.

2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802 and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press Enter to verify that the system recognizes the TN2302AP circuit packs.

Administration Steps

1. Administer the TN799B/C C-LAN. Refer to the *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity*.
2. Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.
3. Complete the administration and testing. Refer to [“Initial Administration Steps for C-LAN and IP Media Processor” on page 6-42](#) and [“Test the External Connection to the LAN” on page 6-44](#).

Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor

To upgrade an IP Interface Assembly to IP Media Processor, you must replace

- The TN802B circuit pack with a TN2302AP circuit pack
- The TN799 circuit pack with a TN799B/C circuit pack, if necessary
- The H600-512, G1 external cable assembly with an IP Media Processor adapter.

Pre-upgrade steps

1. Type **change ip-interfaces** and press Enter.

change ip-interfacesPage 1 of 2

IP INTERFACES

Inter-region IP connectivity allowed? n

Enable

Eth Pt	Type	Slot	Code	Sfx	Node Name	Subnet Mask	Gateway Address	Net Rgn
y	C-LAN	01A09	TN799	B	clan-a1	255.255.255.0	. . .	1
n	MEDPRO				med-a1	255.255.255.0	192.168.10 .21	1
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	
n						255.255.255.0	. . .	

2. Set the Enable Eth Pt field to n
3. Press Enter to effect the change.
4. Type **change ip-interfaces** and press Enter.
5. Delete the information in the Type, Slot, and Node Name fields for each TN802B you are replacing.
6. Press Enter to save the information and effect the new settings.

Remove the Circuit Packs

 **CAUTION:**

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

 **NOTE:**

The TN799B/C, TN802B, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

 **NOTE:**

If replacing the existing TN799 circuit pack, remove it first and replace it with the TN799C. If you have a TN799B, you do not need to replace it for the TN2302AP to work. You do need a TN799C if you want to be able to download new firmware to the TN2302AP.

1. Press the recessed Reset button on the TN802B circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799B and TN802B circuit packs.

Replace the Cables

1. Disconnect the network cable from the Ethernet connection.
2. Turn off the modem and unplug it from the AC outlet. It is not needed for the TN2302AP.
3. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

4. Disconnect the amphenol connector on the external cable assembly from the backplane connector corresponding to the TN802B circuit pack.
5. Connect the amphenol connector on the TN2302AP Amphenol adapter to the backplane connector corresponding to slot selected for the TN2302AP circuit pack.



NOTE:

The TN802 circuit pack occupied 3 slots, and the cable was connected to the rightmost slot. For convenience use the same rightmost slot vacated by the TN802B circuit pack for the TN2302AP circuit pack. The other 2 slots are now available for other circuit packs.

6. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

1. If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.
2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802B and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press Enter to verify that the system recognizes the TN2302AP circuit packs.

Administration Steps

1. Administer the TN799B/C C-LAN, if necessary. Refer to the *DEFINITY Enterprise Communications Server Release 9 Administration for Network Connectivity*.
2. Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.
3. Complete the administration and testing. Refer to [“Initial Administration Steps for C-LAN and IP Media Processor” on page 6-42](#) and [“Test the External Connection to the LAN” on page 6-44](#).

Add IP Interface Assembly

The IP Interface is an assembly composed of a TN802B circuit board, a processor card, and DSP resource card. For ordering purposes, the assembly is identified as a J58890MA-1 L30, but for simplicity, we refer to it as the TN802B IP Interface.

The TN802B IP Interface operates in two modes: IP Trunk, available with Release 7 or later, and Media Processor (MedPro), available with Release 8. The IP Trunk mode is Internet Telephone Server—Enterprise (ITS-E) compatible, and the MedPro mode is H.323 V2 compatible. The TN802B IP Interface is backwards compatible and defaults to IP Trunk mode. You must administer it to use it in MedPro mode.

For more information on the IP Interface capabilities and limitations, refer to the *DEFINITY Enterprise Communications Server Release 8 Overview*.

The following sections describe the process for

- [Installing in Media Processor Mode](#)
- [Installing in IP Trunk Mode](#)
- [Upgrading a TN802 V3 \(or later\) to a TN802B \(MedPro mode\)](#)



WARNING:

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

Installing in Media Processor Mode

To operate in MedPro mode, you must install the TN802B IP Interface and, if the system does not have one, you must also install and administer a TN799B C-LAN circuit pack. For C-LAN administration, refer to *DEFINITY Enterprise Communications Server Administration for Network Connectivity*.

If you have existing TN802 IP Interface circuit packs, you can upgrade them either by replacing the circuit pack with a TN802B or by downloading the TN802B firmware onto the circuit packs (see [“Upgrade to TN802B \(R8\)” on page 6-79](#)).

Prepare for Installation

Have the following equipment on site before your shipment arrives:

- AC power outlets for the modem and monitor.
- Three unoccupied and adjoining port slots in the DEFINITY ECS for the TN802B IP Interface, if needed.

The TN802B occupies only one slot, but it needs the two slots to its left for clearance.
- An additional unoccupied port slot for the TN799B, if needed. If you have an existing TN799 circuit pack, replace it with the TN799B.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network for the TN802B.
- A 10 BaseT Ethernet connection into your local area network for the TN799B.
- Two or more valid, unused IP addresses on your network (one for MedPro and one for C-LAN) that can be assigned to the IP Interface server. You also need the subnet mask and default gateway.
- An analog telephone line reserved (DID is okay) for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

In addition if non-U.S. customer:

- Modem comparable to a U.S. Robotics Sportster Model USR 33.6 EXT.
- Cable from modem to TN802B external cable assembly.

We recommend that you protect your cabinet with an uninterruptible power system (UPS).

Check your Shipment

When your DEFINITY ECS order arrives at your site, check the contents (see [Table 6-6](#)).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

Table 6-6. Required Hardware

Comcode/Code	Description	Quantity
108525528	TN799B C-LAN circuit pack. One TN799B supports more than one TN802B.	1
J58890MA-1 L30	TN802B IP Interface Assembly	1 or more
601939804	H600-512,G1 external cable assembly	1 or more
	259A connector	1
	CAT5 or better cable	1
407633999	U.S. Robotics Sportster external modem, Model USR 33.6 EXT (U.S. customers only). Non-U.S. customers must provide a modem comparable to this model.	1
601087091	20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only). Non-U.S. customers must provide a serial cable.	1

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

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 6-6](#). Look for the label where the bundle enters the amphenol connector.

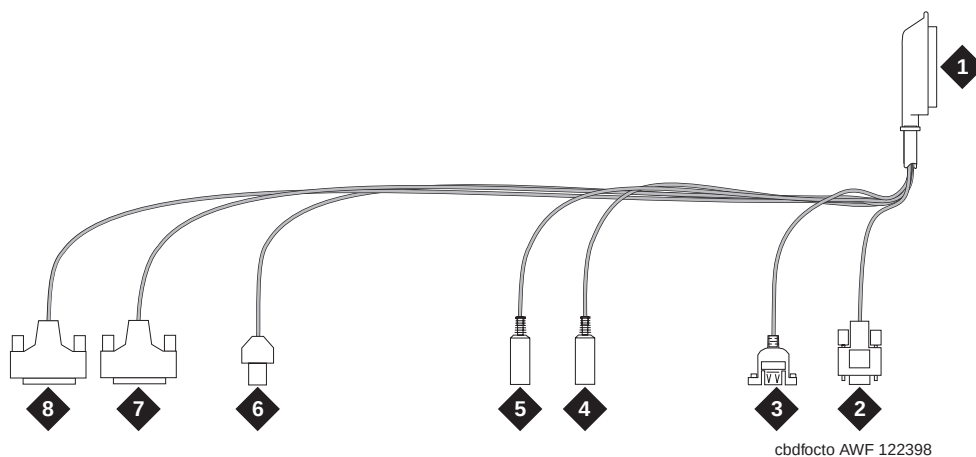


Figure Notes

1. Amphenol connector to connector corresponding to TN802B slot	5. To mouse
2. To VGA monitor	6. To ethernet
3. To USB (not used)	7. 25-pin male connector to modem
4. To keyboard	8. 25-pin male connector to COM2

Figure 6-6. TN802B IP Interface External Cable Assembly

Connect the Cables

1. Determine into which port slots you are putting the TN799B C-LAN and TN802B IP Interface circuit packs.



NOTE:

Make sure that at least 3 adjacent slots are free for the TN802B.

From the rear of the cabinet:

2. If adding a new TN799B, connect the 259A connector to the backplane connector corresponding to the TN799B slot.
3. If adding a new TN799B, connect one end of the DW8 cable to the 259A connector. Connect the other end to the customer's network.
4. Connect the amphenol connector on the external cable assembly to the backplane connector corresponding to the TN802B slot (the highest numbered connector of the 3 slots required)

Connect the Modem

NOTE:
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

- 1. Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

NOTE:
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2. Connect an analog telephone line to the left most analog-line port on the modem as shown in [Figure 6-7](#).
- 3. Make sure that the modem's DIP switches are set as shown in [Figure 6-7](#) and [Table 6-7](#).
- 4. Plug the modem into an AC power outlet.
- 5. Turn on the modem using the switch on the front of the modem.

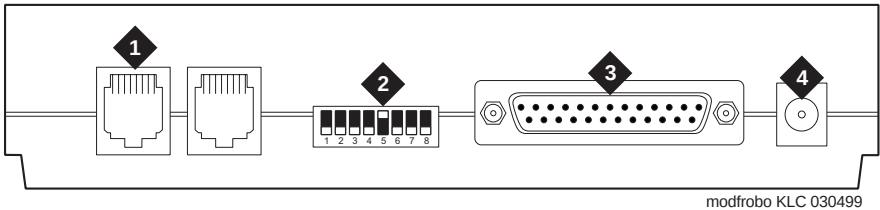


Figure Notes

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

Figure 6-7. External Modem Connections for U.S. Robotics Modem

Table 6-7. U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

 **NOTE:**
You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs

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

 **NOTE:**
The TN799B and TN802B circuit packs are hot-swappable, so you do not need to power down the carrier to install them.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on

the faceplate (see [Figure 6-8](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

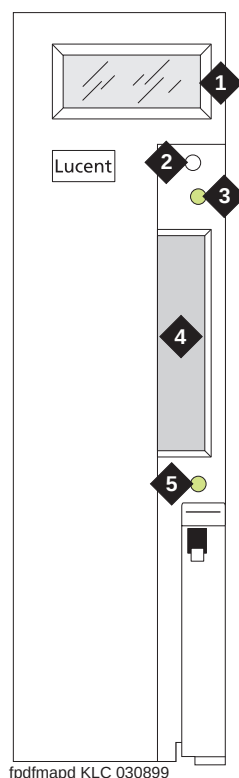


Figure Notes

1. LCD display	4. PCMCIA card slot
2. Reset button (recessed)	5. Yellow PCMCIA disk-in-use LED
3. Red board status LED	

Figure 6-8. TN802B IP Interface faceplate



NOTE:

If replacing the existing TN799 circuit pack, remove it first and replace it with the new one.

1. Insert the TN799B circuit pack into the port slot identified earlier.

 NOTE:

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

2. Insert the TN802B IP Interface into the right most of the three slots you reserved for it (see [Figure 6-9](#)) and seat it properly.

When you plug in the TN802B IP Interface Assembly, the circuit pack starts to boot and the LCD reads **PC Boot**. The circuit pack reboots automatically, and after about 3 to 4 minutes the LCD changes to **IPTRK***, the default mode, or **MEDPRO***.

If the TN802B is pre-administered at the factory, it reboots several times to initialize to MedPro mode.

If the TN802B is not pre-administered, go to [“Administration Steps” on page 6-58](#)

 NOTE:

For an initial installation, the TN802B IP Interface needs to be administered first (see [“Administer the IP Interface” on page 6-58](#)).

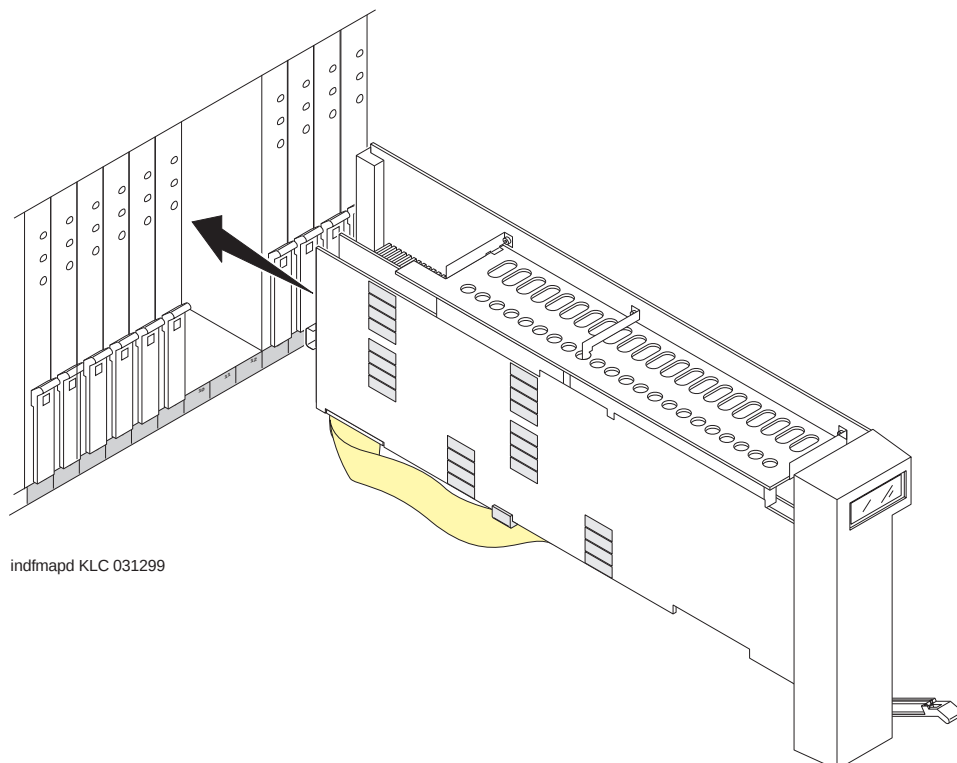


Figure 6-9. J58890MA-1 L30 IP Interface Assembly

Administer the TN799B C-LAN

Refer to the *DEFINITY Enterprise Communications Server Administration for Network Connectivity*.

Administer the IP Interface

Administration is usually done remotely; call your service representative to start the process.

Administration Steps



NOTE:

Refer to the *DEFINITY Enterprise Communications Server Administration for Network Connectivity for Release 8* for specific information.

1. Log in as **craft**.
2. Type **change node-names** and press Enter.

3. On screen 2, type in the node name and IP address for the TN802B.

change node-names

Page 2 of 6

NODE NAMES

Name	IP Address	Name	IP Address
clan-a1	192.168.1 .31		. . .
clan-b1	192.168.2 .31		. . .
default	0 .0 .0 .0		. . .
med-a1	192.168.1 .81		. . .
	. . .		. . .
	. . .		. . .
	. . .		. . .

4. Type **change circuit-pack** and press Enter.
5. Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

change circuit-packs

Page 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A

Carrier Type: processor

Slot	Code	Sf	Mode	Name	Slot	Code	Sf	Mode	Name
01:	TN754			DIGITAL LINE	11:	MEDPRO			RESERVED-IP
02:	TN758			POOLED MODEM	12:	MEDPRO			RESERVED-IP
03:	TN2144			ANALOG LINE	13:	TN802	B		MAPD BOARD
04:	TN746	B		ANALOG LINE	14:				
05:					15:				
06:	TN771	C		MAINTENANCE/TEST	16:				
07:	TN464	F		DS1 INTERFACE					
08:	TN2140			E&M TIE TRUNK					
09:	TN767	E		DS1 INTERFACE					
10:	TN799	B		CONTROL-LAN					

'#' indicates circuit pack conflict.

6. If not, type MEDPRO in the slot just above TN802B slot and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:
- MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
7. Type **change ip-interfaces** and press Enter.
8. Type in the information for the TN802B IP Interface,
9. Set the Enabled field to **y**, and press Enter.

 **NOTE:**
The customer provides the IP address, subnet mask, and gateway address.

At this time the TN802B LCD reads **PC BOOT ***, and about 3 to 4 minutes later reads **MEDPRO *** with the asterisk flashing

change ip-interfacesPage 1 of 2

Network regions are interconnected? n

En-abled	Type	Slot	Code	Sfx	Node Name	Subnet Mask	Bcast/Gway	Net
Addr Rgn								
n	C-LAN	01A09	TN799		clan-a1	255.255.255.0	192.168.1.100	1
y	MEDPRO	01A13	TN802	B	med-a1	255.255.255.0	192.168.1.21	1
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.
n						255.255.255.0	.	.

Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server, and ping a known computer connected to your network. If everything is configured correctly, the Result column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address nnn.nnn.nnn.nnn board UUCSS** and press Enter.
The variable **nnn.nnn.nnn.nnn** is the IP address of the TN802B IP Interface and **UUCSS** is the cabinet, carrier, and slot of the TN802B IP Interface.

```
ping ip-address 192.168.10.21
```

PING RESULTS						
End-pt	IP	Port	Port Type	Result	Time(ms)	Error Code
192.168.10.21		01A13	MEDPRO	PASS	10	1124

2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.
The variable *nnn.nnn.nnn.nnn* is the IP address of the customer's gateway and *UUCSS* is the cabinet, carrier, and slot of the TN802B IP Interface.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter.
The variable *nnn.nnn.nnn.nnn* is the IP address of another computer beyond the gateway and *UUCSS* is the cabinet, carrier, and slot of the TN802B IP Interface.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network.

Installing in IP Trunk Mode

 **NOTE:**

IP Trunk mode should only be used to maintain compatibility with existing Release 7 IP Trunk or ITS-E installations. We strongly recommend that MedPro mode be used whenever possible.

Prepare for Installation

Have the following equipment on site before your shipment arrives:

- A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need AC power outlets for the modem and monitor.
- Three adjoining, unoccupied port slots in the DEFINITY ECS
The TN802B IP Interface slides into only 1 slot, but its faceplate occupies 3 slots.
- A 10 BaseT or 10/100 BaseT Ethernet connection into the customer's local area network (LAN)
- A valid, unused IP address on the customer's LAN that can be assigned to the IP Interface server. You also need the subnet mask, default gateway, domain name, and so forth from the customer's network administrator.

- An analog telephone line reserved for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

If non-U.S. customer:

- Modem comparable to a U.S. Robotics, Inc. Sportster Model USR 33.6 EXT.
- A cable from the modem to the TN802B external cable assembly.

We recommend that you protect the cabinet where the IP Interface is installed with an uninterruptible power system (UPS).

Check your Shipment

When your DEFINITY ECS order arrives at the customer's site, check the contents (see Table 6-8).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the following for each IP Interface ordered:

Table 6-8. Required Hardware

Comcode/Code	Description	Quantity
J58890MA-1 L30	TN802B IP Interface Assembly	1
601939804	H600-512,G1 external cable assembly	1
407633999	U.S. Robotics Sportster external modem, model number USR 33.6 EXT (U.S. customers only) ¹	1
601087091	20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only) ²	1

1. For non-U.S. customers, you need a modem comparable to the U.S. Robotics Sportster and a serial cable.

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See [Figure 6-10](#). Look for the label where the bundle enters the amphenol connector.

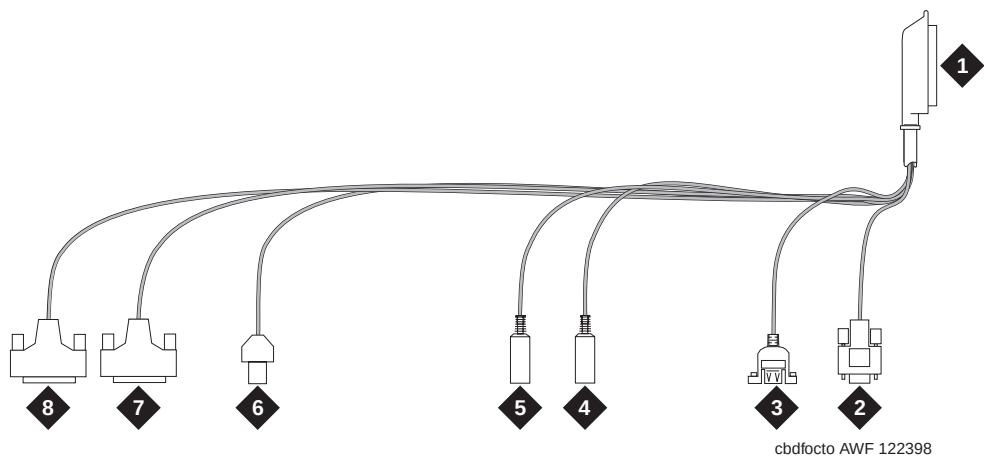


Figure Notes

1. Amphenol connector to connector corresponding to TN802B slot	5. To mouse
2. To VGA monitor	6. To ethernet
3. To USB (not used)	7. 25-pin male connector to modem
4. To keyboard	8. 25-pin male connector to COM2

Figure 6-10. TN802B IP Interface External Cable Assembly

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

Connect the Cables

1. Determine into which port slot you are putting the TN802B IP Interface.

NOTE:
Make sure that at least 3 adjoining slots are free.

2. From the rear of the cabinet, connect the amphenol connector on the external cable assembly to the backplane connector corresponding to that slot (the highest numbered connector of the 3 slots required).

Connect the Modem

NOTE:
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

- 1. Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

NOTE:
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

- 2. Connect an analog telephone line to the leftmost analog-line port on the modem as shown in [Figure 6-11](#).
- 3. Make sure that the modem's DIP switches are set as shown in [Figure 6-11](#) and [Table 6-9](#).
- 4. Plug the modem into an AC power outlet.
- 5. Turn on the modem using the switch on the front of the modem.

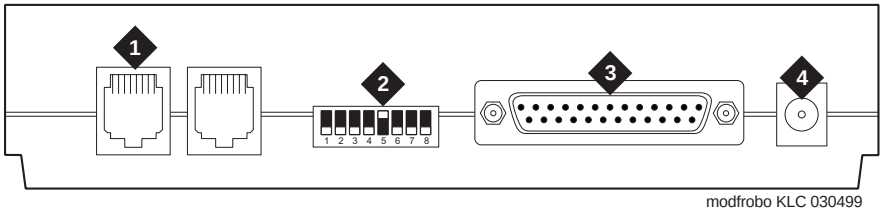


Figure Notes

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

Figure 6-11. External Modem Connections for U.S. Robotics Sporster

Table 6-9. U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	UP DOWN	Auto answer on first ring or higher if specified in NVRAM Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

Connect the Monitor, Keyboard, and Mouse

-  **NOTE:**
Only make these connections if administered locally. Not necessary if administered remotely.
- You must connect these before inserting the TN802B IP Interface.
1. Attach a VGA monitor to the VGA connector of the TN802B IP Interface external cable assembly.
 2. Attach the keyboard to the KEYBOARD connector of the external cable assembly.
 3. Attach the mouse to the MOUSE connector of the external cable assembly.
 4. Plug the monitor into an AC power receptacle and turn it on.

Connect the Ethernet

1. Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.



NOTE:

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Pack



CAUTION:

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



NOTE:

The TN802B IP Interface is hot-swappable, so you do not need to power down the carrier to install it.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see [Figure 6-12](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

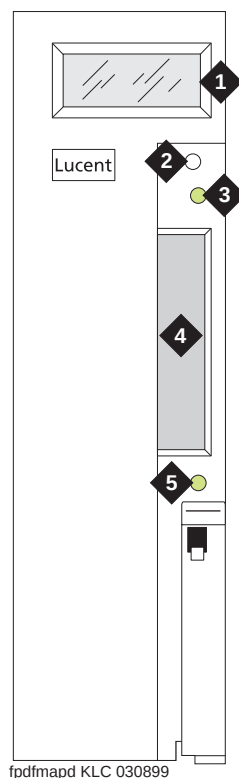


Figure Notes

1. LCD display	4. PCMCIA card slot
2. Reset button (recessed)	5. Yellow PCMCIA disk-in-use LED
3. Red board status LED	

Figure 6-12. TN802B IP Interface faceplate

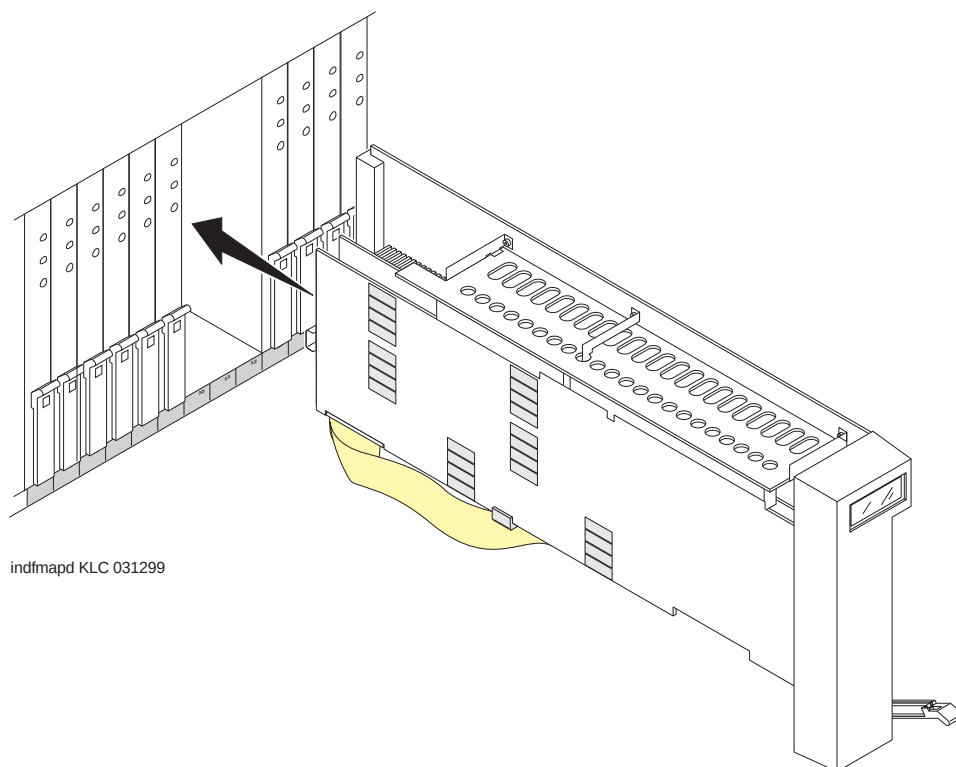


NOTE:

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

1. Insert the TN802B IP Interface into the rightmost of the three slots you reserved for it (see [Figure 6-13](#)).

When you plug in the TN802B IP Interface, the circuit pack starts to boot and the LCD reads **PC Boot** then after about 3 to 4 minutes it changes to **IP TRK ***, the default mode.



indfmapd KLC 031299

Figure 6-13. J58890MA-1 L30 IP Interface Assembly

Test the Modem

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

Administer the IP Interface

Administration is done either locally or remotely. If administered locally, proceed with the following administration steps on the attached keyboard, mouse, and monitor. If administered remotely, call your service representative to start the process.

Administration Steps

1. Log in as **craft**.
2. Type **change circuit-pack** and press Enter.

3. Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

change circuit-packsPage 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A
Carrier Type: processor

Slot	Code	Sf	Mode	Name	Slot	Code	Sf	Mode	Name
01:	TN754			DIGITAL LINE	11:	DSMAPD			RESERVED-IP
02:	TN758			POOLED MODEM	12:	DSMAPD			RESERVED-IP
03:	TN2144			ANALOG LINE	13:	TN802	B		MAPD BOARD
04:	TN746	B		ANALOG LINE	14:				
05:					15:				
06:	TN771	C		MAINTENANCE/TEST	16:				
07:	TN464	F		DS1 INTERFACE					
08:	TN2140			E&M TIE TRUNK					
09:	TN767	E		DS1 INTERFACE					
10:	TN799	B		CONTROL-LAN					

'#' indicates circuit pack conflict.

4. If MEDPRO, go to the entry just above the TN802B that says MEDPRO.
5. Type DSMAPD, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.

Log onto the TN802B Interface Server . If administered remotely through pcANYWHERE:

1. Dial in to the server through pcANYWHERE using the dialup number supplied.
2. Click on the pcANYWHERE Remote Host Computer button on the toolbar to send CTRL ALT DEL to the host.
3. Type **administrator** in the User Name field.
4. Type **iptrunk** in the Password field and click **OK**.
5. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

If administered locally on a monitor, keyboard, and mouse:

1. Press CTRL, ALT, and DEL simultaneously.
2. Type **administrator** in the User Name field.
3. Type **iptrunk** in the Password field and click **OK**.

4. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

A-Law versus Mu-Law. For systems using A-Law companding, an additional procedure is necessary.

On the SAT:

1. Busyout the trunk group associated with the IP trunk by typing **busyout board UUCSS** and pressing Enter.

In the Windows interface to TN802B:

1. Click on **Control Panel > Services**.
2. Highlight **IP Trunk Service**, then click on **Stop**.
3. In the lower left-hand corner, right-click **Start > Explore**.
4. Go to the c: drive and click on its, then bin.
5. Double-click on the its.ini file to open it in Notepad.
6. Under the [MediaLib] section, go to COMPANDING=MLAW. Change **MLAW** to **ALAW**.
7. Click on **File > Save** to save the file.
8. Click on **File > Exit** to exit Notepad.
9. Click on **Control Panel > Services**.
10. Highlight **IP Trunk Service**, then click on **Start**.



NOTE:

Do not select Startup.

After service has started, go to the SAT:

1. Release the trunk group associated with the IP trunk by typing **release board UUCSS** and pressing Enter.

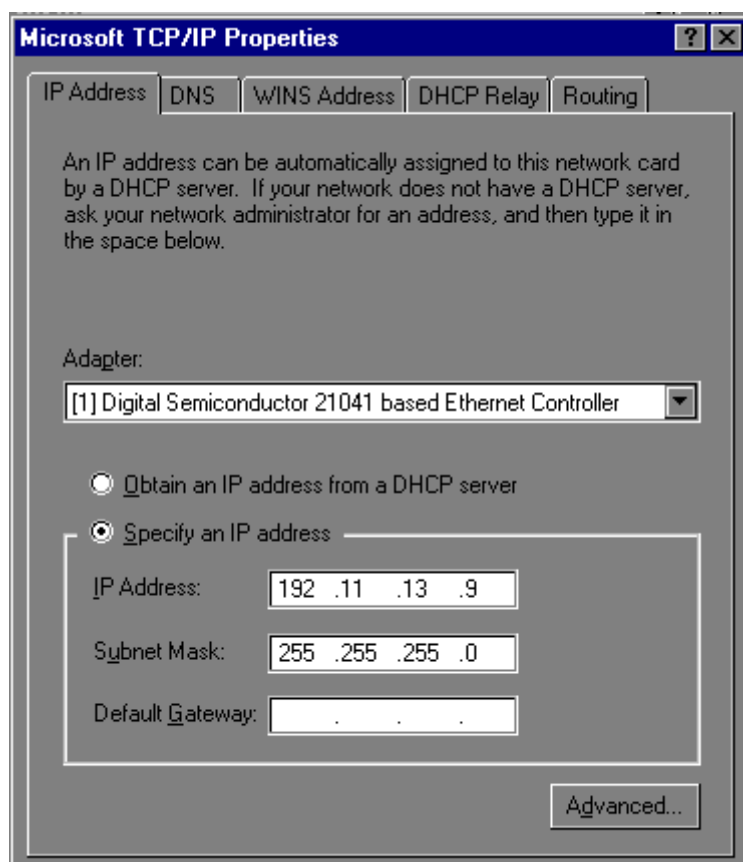
Assign Server and Domain Names. The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within your network.

1. Click on **My Computer > Control Panel > Network**.
2. Select the **Identification** tab, then click **Change**.
3. Type the new server name in the Computer Name field.
4. Type the new domain name in the Domain field and click **OK > OK > Close**.

5. When prompted to reboot the computer, select one of the following options:
 - **No** if you have not assigned IP addresses then go to [“Assign an IP Address”](#)
 - **Yes** if you have assigned IP addresses.

Assign an IP Address. 1. Click on **My Computer > Control Panel > Network**.

2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window.



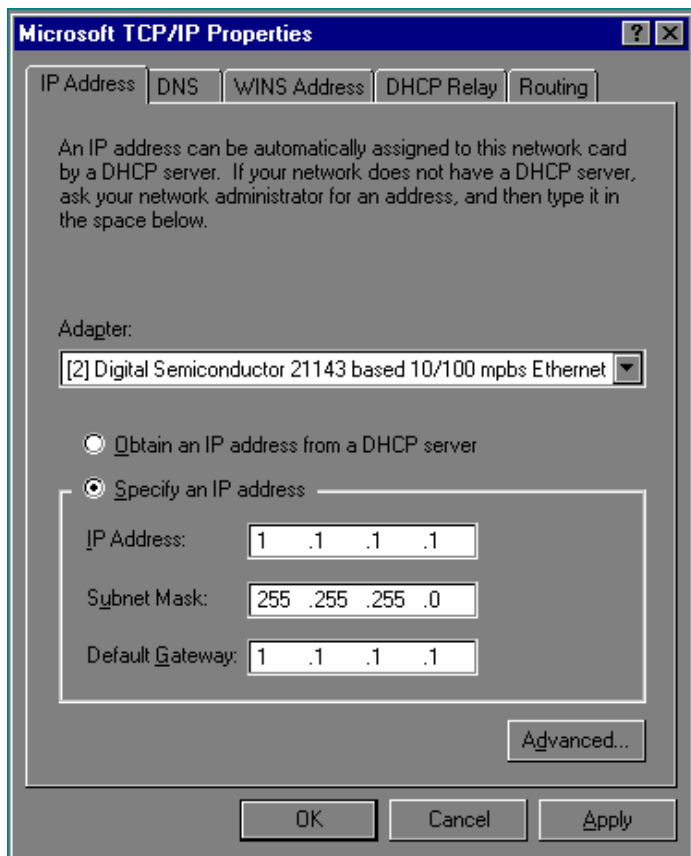
5. Verify that the Adapter drop down menu lists 2 DEC Ethernet adapters.



CAUTION:

Do not change any settings on the adapter labeled [1] for any reason.

6. Select the DEC Ethernet adapter labeled [2].

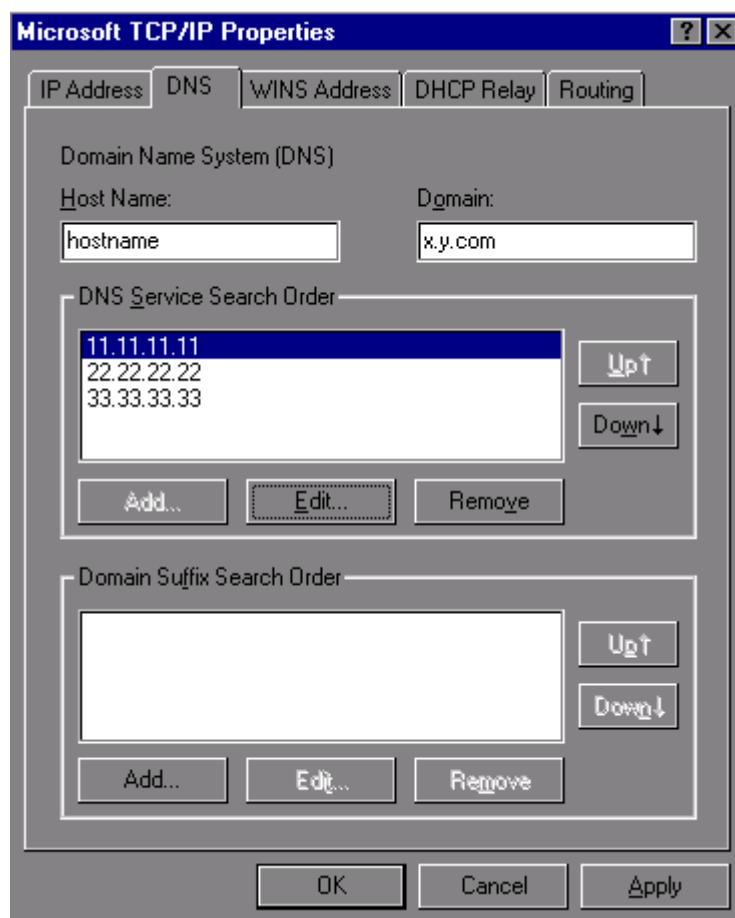


7. Type a valid IP address for the IP Interface server in the IP Address : field.
8. Type the appropriate subnet mask in the Subnet Mask : field.

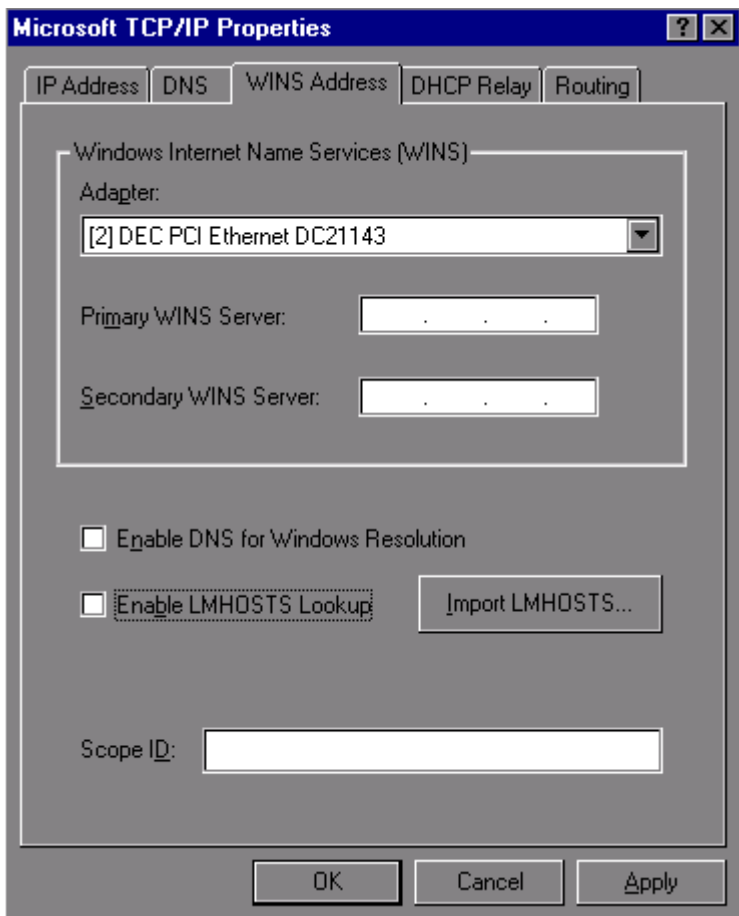
NOTE:

Not all networks require steps 9 through 18. Check with the local network administrator to determine which are required.

9. If you use gateways, type the IP address of the default gateway for the IP Interface server in the Default Gateway : field.
10. Click on the DNS tab and verify that the domain DNS server is correct.



11. Type domain name in the Domain field.
12. If using DNS, click Add under the DNS Service Search Order field and type its IP address.
13. Click on the WINS Address tab.



14. Make sure the [2] DEC shows in the Adapter field.
15. If WINS server is available, type its IP address in the Primary WINS Server field.
16. If DNS is available, select Enable DNS for Windows Resolution.
17. If the network uses an imported LMHOSTS file, select Enable LMHOSTS Lookup and Import LMHOSTS and click **OK**.
18. If the following dialog box opens, click **Yes**:
At least one of the adapter cards has an empty primary WINS address. Do you want to continue?
19. Click the **Bindings** tab to effect the changes.
NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (a red circle with a line through it), review the previous network-configuration steps for omissions or errors.
20. Click **Close**.

If administered remotely through pcANYWHERE:

21. Click on the pcANYWHERE Restart Host Computer button on the toolbar to restart the computer.

If administered locally on a monitor, keyboard, and mouse:

1. Click **Yes** in the dialog box to restart the computer.



WARNING:

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

Check Network Services

When the server restarts, make sure that the required network services have started correctly. If you see an error dialog box, then the network services did not start correctly. Also, check the NT Event Log.

1. Click on **My Computer > Control Panel > Network > Services**. Make sure that the following services are listed:
 - Computer Browser
 - Microsoft Internet Information Server 2.0
 - NetBIOS Interface
 - RPC Configuration
 - Server
 - Workstation
2. Click the **Protocols** tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
3. Click **OK**.

Test the External Connection to the LAN. To test the external IP connections, ping the IP Interface server and ping a known computer connected to your network.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping nnn.nnn.nnn.nnn** (which is your IP address).
 - If everything is configured correctly, the system responds with the following message:

Reply from nnn.nnn.nnn.nnn: bytes=32 time<###ms
TTL=###
 - If no response, verify the IP-address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of your gateway).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling.
 - If all else fails, click on **Start > Settings > Control Panel > Network**. Select the **Adapters** tab and highlight the [2] DEC adapter.
 - Click **Properties > Change**.
 - From the Duplex Mode dropdown menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test
4. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of another external computer beyond the gateway).
 - If you have connectivity, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
5. Type **exit** and press Enter.

Test the IP Interface Onboard LAN Connections. To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B Interface.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping 192.11.13.9** (which is the IP address of the internal IP Interface server).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
 - If you have connectivity, the system responds with the following message:

Reply from 192.11.13.8: bytes=32 time<###ms TTL=###
 - If no response, verify the IP settings for Adapter [1].
4. Type **exit** and press Enter.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (preinstalled on the TN802B hard disk) and DEFINITY ECS switch administration to administer connections to other IP Trunk and ITS-E equipment.

Upgrading a TN802 V3 (or later) to a TN802B (MedPro mode)

If you have a TN802 V3 (or later) IP Interface, you must either replace it with a TN802B circuit pack or upgrade the existing TN802 circuit pack to operate in MedPro mode. Also, to operate in the MedPro mode, the DEFINITY ECS switch must be Release 8 or later.



NOTE:

The TN802 IP Interface must be V3 or later to upgrade to TN802B.

To upgrade the TN802 to a TN802B, you need the following hardware:

- Monitor, keyboard, and mouse to access the IP Interface's Windows NT environment or pcANYWHERE software.
- 10-Mbyte SanDisk PCMCIA flashcard loaded with the MedPro NT Application Install Wizard
- TN802B label

The upgrade adds or modifies the following directories or files on your computer's hard drive:

- c:\dolan*
- c:\mapd\dnld\medpro.img
- c:\mapd\dnld\tmp.img

Connect the Monitor, Keyboard, and Mouse

1. Attach a VGA monitor to the VGA connector of the TN802 IP Interface external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the external cable assembly.
3. Attach the mouse to the MOUSE connector of the external cable assembly.

4. Plug the monitor into an AC power receptacle and turn it on.
5. If upgrading locally, reboot Windows NT by pressing the recessed reset button on the faceplate (see [Figure 6-12](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.
6. After the TN802B is shut down, reseal the circuit pack to restart the system.
7. Log in using **ctrl alt del**

Upgrading IP trunks (R7) to H.323 trunks

If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to [“Upgrade to TN802B \(R8\)” on page 6-79](#)

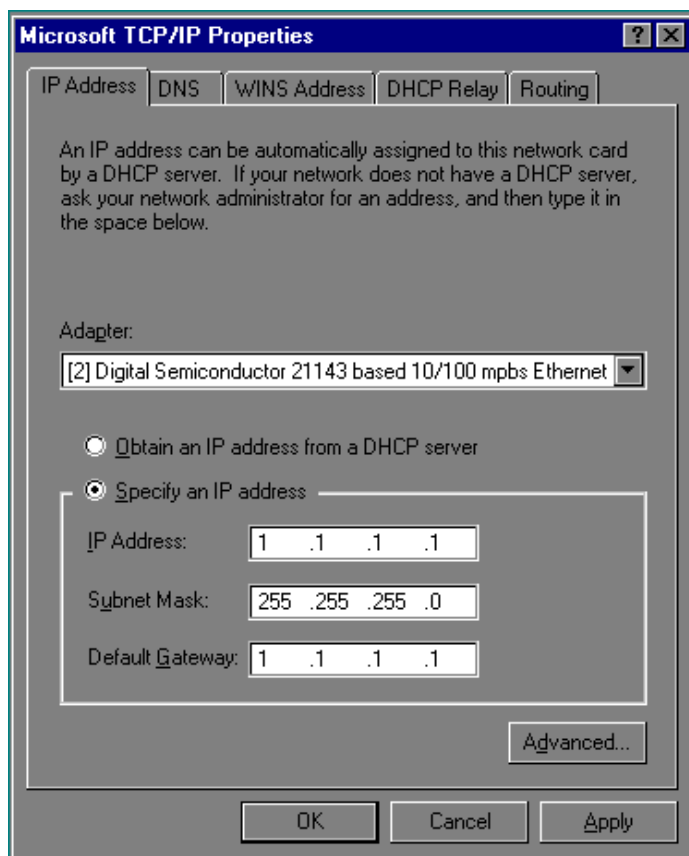
To upgrade an existing IP trunk (R7) to an H.323 trunk (R8) requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window. Write down the IP address, subnet address, and gateway address shown for adaptor [2] (see example below).



NOTE:

Do not use the addresses for adaptor [1].



5. When done, click **OK, OK**.

Upgrade to TN802B (R8)

➤ NOTE:

The upgrade takes about 20 minutes.

1. Insert the flash disk into the right most slot on the TN802 IP trunk. On the monitor, a dialog box assigns a drive letter with the removable media designation; the default is D:.
2. Right click on **Start > Explore** to open the Windows NT Exploring pane and select the drive letter indicated in step 1.
3. Double-click on **Medpro** and select the Setup icon.

4. Follow the Install Shield procedure to transfer all the necessary files to the TN802 IP Interface.



NOTE:

In the Finish dialog box, select `I will restart later`. Do not select `Restart computer`.

This would be a good time to read the Readme.txt file.

5. Click on **Start > Settings > Control Panel > Services**.
6. Select **IP Trunk** and click on **Startup**.



NOTE:

Do not click on `Start`.

7. Under Startup Type, select **Disabled** and click **OK** to disable IP Trunk mode.



NOTE:

If IP trunk and MedPro services are both set to automatic, the TN802B defaults to IP Trunk and MedPro features cannot be used.

8. Select **MedPro** and click on **Startup**.



NOTE:

Do not click on `Start`.

9. Under Startup Type, select **Automatic** and click **OK** to enable MedPro mode.
10. Click **Start > Shut Down** and select `Restart the computer?`

or on the TN802:

Press the recessed reset button on the faceplate (see [Figure 6-12](#)) until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), reseal the circuit pack to restart the system.

or on the SAT:

- a. Type **busyout board UUCSS** and press `Enter`.
- b. Type **reset board UUCSS** and press `Enter`.
- c. Type **release board UUCSS** and press `Enter`.

Once the system is completely initialized, the LCD reads **MEDPRO ***.

**WARNING:**
When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

- 11. Affix the new TN802B label to the circuit pack.
- 12. Disconnect the monitor, keyboard, and mouse.

Circuit Pack Verification

- 1. Type **change circuit-pack** and press Enter.
- 2. Check the Code column to see if it says DSMAPD or MedPro.

change circuit-packs

Page 1 of 5

CIRCUIT PACKS

Cabinet: 1

Carrier: A
Carrier Type: processor

Slot	Code	Sf	Mode	Name	Slot	Code	Sf	Mode	Name
01:	TN754			DIGITAL LINE	11:	MEDPRO			RESERVED-IP
02:	TN758			POOLED MODEM	12:	MEDPRO			RESERVED-IP
03:	TN2144			ANALOG LINE	13:	TN802	B		MAPD BOARD
04:	TN746	B		ANALOG LINE	14:				
05:					15:				
06:	TN771	C		MAINTENANCE/TEST	16:				
07:	TN464	F		DS1 INTERFACE					
08:	TN2140			E&M TIE TRUNK					
09:	TN767	E		DS1 INTERFACE					
10:	TN799	B		CONTROL-LAN					

'#' indicates circuit pack conflict.

- 3. To correct it, go to the entry just above the TN802B that says DSMAPD.
- 4. Type MEDPRO, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
- 5. To complete the administration, refer to the *DEFINITY ECS Release 8 Network Connectivity* book.

Installing an Integrated Channel Service Unit (ICSU) Module

The integrated channel service unit (ICSU) is a combination of a 120A CSU module integrated with a DS1 circuit pack. Use this device with the 700A DS1 loopback jack when testing the DS1 span.

Checking for required components

The integrated channel service unit (ICSU) package contains:

- 120A CSU module
- Cable H600-383
4-pair modular cord
Group 2, 50-Foot (15.2 m) cable (standard)
- Cord DW8A-DE
4-pair modular cord to alarm contacts
- DS1 circuit pack

The basic ICSU requires a TN474E or TN777D or later suffix. The enhanced integrated channel service unit requires a TN474F or TN777E or later suffix.

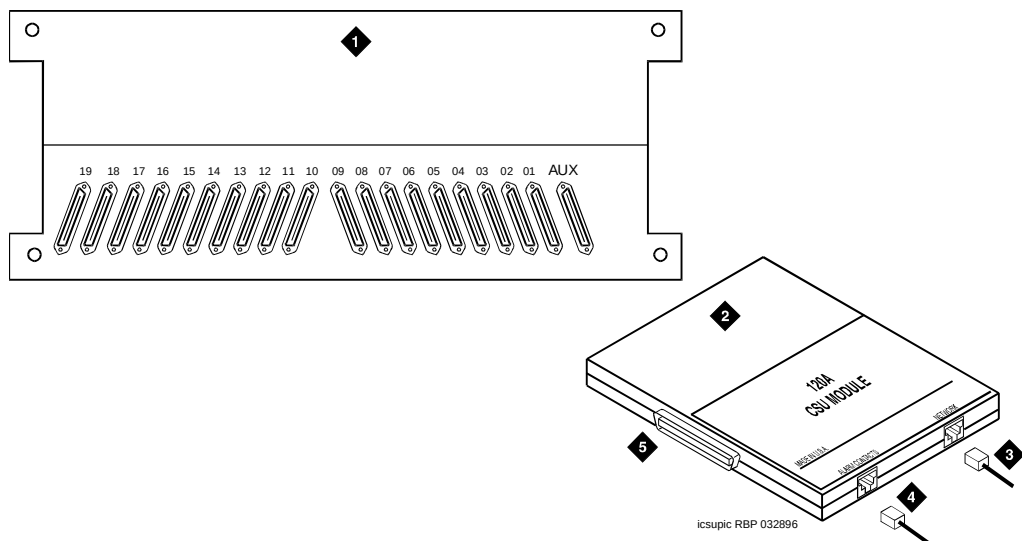
Installing the 120A CSU

See [Figure 6-14](#).

6 Adding or Removing Cabinet Hardware

Installing an Integrated Channel Service Unit (ICSU) Module

6-83



1. Rear of carrier containing DS1 circuit pack
2. 120A CSU
3. 4-pair cord to network interface (H600-383)
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. To 25-pair connector on rear of carrier containing DS1 circuit pack

Figure 6-14. 120A Channel Service Unit Module



CAUTION:

Do not plug the 120A into any circuit pack other than a TN474F or TN777E or later release/vintage. Do not connect the 120A to any interface other than a network smart jack.

Be sure the DS1 circuit pack is set for 24-channel operation (1.544 Mbps). The 120A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.



CAUTION:

Always wear an anti-static wrist strap when installing a 120A module. Do not touch the external alarm cable when it is connected to the 120A. Static discharge can damage connector terminals and relays.

1. Unplug the DS1 circuit pack from its slot.
2. Install a 4C retainer in the 50-pin plug associated with the DS1 circuit pack slot.
3. Plug the 120A's 25-pair connector directly into the plug associated with the DS1 circuit pack slot.

4. Secure the 4C retainer around the 120A.
5. Attach the supplied H600-383 cable to the 120A and to the network smart jack.

This cable is directional. To determine the end that connects to the 120A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A end. The shield is grounded only at the 120A end.

Use the cable provided. If cabling other than that provided with the 120A is used, observe the following guidelines:

- Use 24-gauge wire that provides individually shielded, twisted pairs for transmit and receive signals. Use the cable between the network interface and the 120A. Ground the shields of this cable only at the 120A end to avoid ground loops.
 - Cabling between the network interface and 120A can have no bridge taps.
 - If using standard house riser cable for connections between the network interface and the 120A, maintain a 100-pair separation between the receive and transmit twisted pairs.
 - If using standard house riser cable for connections between the network interface and the 120A, allow no more than 2 cross connects to 110-type cross connect blocks.
 - Never use quad cable (untwisted two pair telephone cable) in a DS1 line.
 - Avoid mixing wires of different gauges in a DS1 line.
6. If using external alarm equipment, attach the supplied DW8 cable to the 120A and the external equipment. The maximum length of this cable depends on the alarm equipment.
 7. If a TN474F is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack as shown in Figure 2-1.
 8. From the DS1 circuit-pack screen of the system administration console, set the line compensation field to 0-133 feet (40.6 m).
 9. Reset the 120A by reseating the DS1 circuit pack.

When you reinsert the DS1 circuit pack after installing a 120A CSU the 120A resets. The DS1 circuit pack initializes and tests the 120A. When initialization and testing is complete, the green LED goes off. If the RED indicator is OFF after the test, the ICSU is working.

10. If the circuits do not pass the self test, troubleshoot the 120A as instructed in *Integrated CSU Module Installation and Operation*.

Table 6-10 provides the H600-383 cable pinouts. Table 6-11 provides the cable lengths for each cable group number.

Table 6-10. H600-383 cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	
7	Shield			
7				Not assigned
8				Not assigned

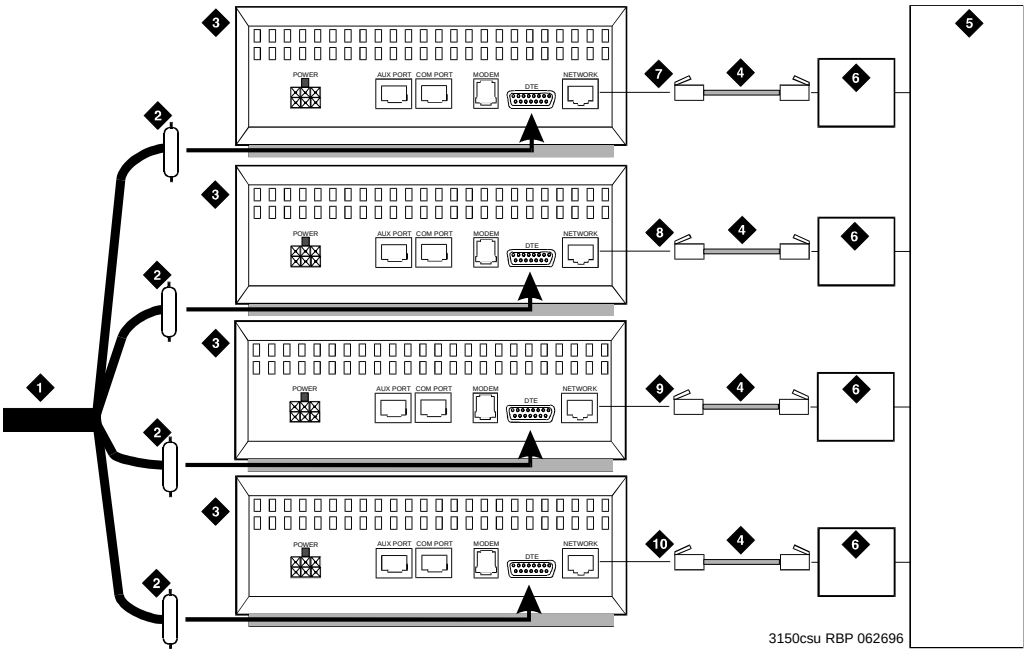
Table 6-11. H600-383 cable Lengths by Group Number

Group	Length	Group	Length
1	25 feet (7.7 m)	5	125 feet (38.1 m)
2	50 feet (15.2 m)	7	200 feet (71 m)
3	75 feet (22.9 m)	7	400 feet (122 m)
4	100 feet (30.5 m)	8	750 feet (198.1 m)

Installing a 3150/3170 Channel Service Unit

1. Install the CSU as shown in [Figure 6-15](#). For some installations (such as a DS1 converter), use a Y-cable to connect the DEFINITY System to the quad cable. [Table 6-12](#) shows the Y-cable lengths. Be sure to label all cables.

[Figure 6-15](#) shows a typical connection from the H600-348 Quad cable to the CSU, through the H600-307 network cable, and to the network interface through the smart jacks. The quad cable provides up to four connections using a 15-pin connector that plugs into the DTE jack on each CSU. The H600-348 quad cable may require an adapter cable.



1. H600-348 quad cable	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. H600-307 cable (RJ-48C to RJ-48C)	8. Cable B	

Figure 6-15. 3150/3170 Channel Service Unit Connections

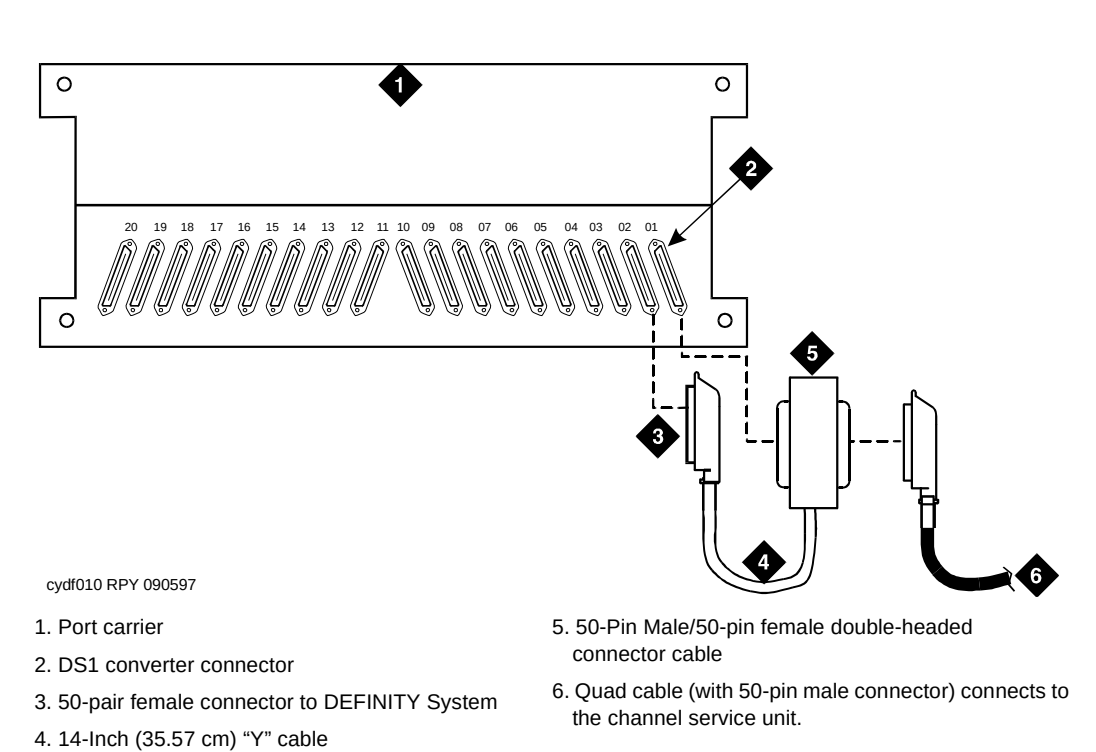


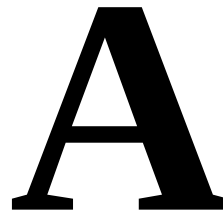
Figure 6-16. DS1 Converter Connections Using Double-Headed cable

Table 6-12. "Y" cable Lengths (DS1 converter Only)

Length (in/cm)	Description	Comcode
14/35.5	TN1754 to adjacent expansion interface circuit pack or TN573B switch node interface circuit pack in same carrier	847245750
70/177.8	TN1754 to expansion interface circuit pack or switch node interface in another carrier	847245778
14/35.5	TN1754 to fiber optic transceiver (DC-powered cabinets only). This cable is for intercabinet cabling only.	847245777
14/35.5	TN1754 to adjacent TN570/B/C expansion interface circuit pack	847747741

6	Adding or Removing Cabinet Hardware	
	Installing a 3150/3170 Channel Service Unit	6-88

Fiber Link Administration



This appendix describes the steps required to administer fiber links on G3rV4 and later systems.

Before starting the administration process, verify the following:

1. Be sure all fiber optic transceivers and all fiber optic cables are correctly installed on the DS1 and/or DS1 converter circuit packs.
2. Verify connections to the Lightguide Interconnect Units (LIUs) or shelves, to the fiber multiplexers, and to the outside world. Refer to Appendix A in *DEFINITY Enterprise Communications Server Release 8 Installation and Test for Multicarrier Cabinets*.

Administer Fiber Links

Administer system fiber link configurations to match the hardware installed and according to the Fiber Optic Cable Running List.

NOTE:

Fiber link administration interacts with or depends upon other system features that must be administered before it.

Fiber link administration creates translation data by identifying the endpoint pairs for each link. Endpoints can be:

- An Expansion Interface (EI) circuit pack
- A Switch Node Interface (SNI) circuit pack

Circuit Pack Form

After installing the equipment (including circuit packs), the circuit packs must be administered *before* the fiber link is administered. Refer to *DEFINITY Enterprise Communications Server Release 8 Administrator's Guide* for more information.

The following information describes general circuit pack administration information:

- a. Use the Circuit Packs form to administer circuit packs to carrier slots. Install or administer the circuit packs (or assigned using the Circuit Packs form) before administering voice terminals, attendant consoles, or trunks.
- b. Each page of the form represents 1 carrier in the cabinet shown on the command line.
- c. Refer to *DEFINITY Communications System Generic 3 Planning and Configuration* for more information about circuit pack administration and port assignment records.
- d. For initial installation, assign circuit packs to slots using the hardware configuration layout record from the factory or Customer Services Organization. Do not arbitrarily assign circuit packs to slots.
- e. If the carrier type administered on the Cabinet Administration form does not match the physical hardware, question marks (??) may display in the Code fields.
- f. When a circuit pack in a slot differs from what has been administered on the form, a “#” displays between the “Sfx” and “Name” fields to indicate a conflict.
- g. For Release 8r, the number of slot fields displayed represents administrable slots for the given carrier type.

Administer Fiber Links on Simplex Systems

Administer the TN570 Expansion Interface and the TN574 or TN1654 DS1 Converter circuit packs.

1. Type **change circuit packs** and press Enter. Scroll through the pages on the form until the carrier containing the new circuit packs displays on the screen.
2. Enter the circuit packs into the appropriate slot locations on the form. Press Enter when finished.
3. Type **list fiber** and press Enter. All administered fiber connections display.
4. If a previously used fiber link is to be reused, enter **add fiber <number>** and press Enter. If this is a new fiber link, type **add fiber next** and press Enter. The Fiber Link Administration screen appears. Each fiber link is identified by a fiber number.
 - a. Type **y** or **n** in the field **Is one endpoint remoted via DS1 Converter complex?** and press Enter.
 - b. Enter the location of the TN570 and the TN574 or TN1654 circuit packs for both **ENDPOINT-1** and **ENDPOINT-2**.
 - c. Scroll to page 2 of the form. Enter **y** as applicable, in each **Facility Installed?** field (A, B, C, and D).
 - d. In the **Bit Rate:** field, type either **1.544** (T1) or **2.048** (E1).
 - e. Enter the idle code in the **Idle Code MSB (1) LSB (8) :** field. The default value is **11101000**. It is recommended that the default value be used unless it becomes absolutely necessary to change it. The "MSB" means Most Significant Bit, the "LSB" means Least Significant Bit.
 - f. In the **Line Coding:** field, enter the line coding information. This information should match the line coding of the facility. For T1, example line coding is **b8zs**. For E1, example line coding is **hdb3**.



NOTE:

If this data is not correct, wideband errors (multimedia call handling) may occur.

5. For T1 sites, refer to **"T1 Installations Only"**. For E1 sites, refer to **"E1 Installations Only"**.

T1 Installations Only

1. The Framing Mode: field is display only and shows the hardware setting.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only and show the hardware setting.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

E1 Installations Only

1. Type **y** or **n** in the CRC? field. The "CRC" means Cyclic Redundancy Check. This is an error detection algorithm.
2. The Line Termination: field is display only. A 75 (75 Ohms) or 120 (120 Ohms) typically displays.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be on for each active facility administered. For example, if Facility A and Facility B are administered, then the top 2 Span LEDs on the circuit pack must be on (yellow). The yellow LEDs are on only if no problems were encountered during the administration of hardware. Span LEDs associated with non-administered facilities (C and D, in this example) should be off.
3. Perform a test call, if desired.

Administer Fiber Links on Duplex Systems

All non-duplicated Switch Node Interfaces to Switch Node Interface fiber links are automatically duplicated. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet Form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
 - Fiber Link Administration Form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.
 - Duplication-Related System-Parameters Form — An additional field appears to enable operation of PNC duplication.
1. Type **change system-parameters customer-options** and press Enter. On Page 2 of the form, set the PNC Duplication? field to **y**. Press Enter.
 2. Type **change system-parameters duplication** and press Enter. Change the Enable operation of PNC duplication? field to **y**. Press Enter.
 3. Type **status pnc** and press Enter. Verify the Duplicated ? field is **yes**.
 4. Type **list fiber** and press Enter. All administered fiber connections display.
 5. If a previously used fiber link is to be reused, type **add fiber <number>** and press Enter. If this is a new fiber link, type **add fiber next** and press Enter.
 6. The Fiber Link Administration form appears. On Page 1 of the form:
 - a. Enter the Board Location: for Endpoint-1 and Endpoint-2. This is the cabinet, carrier, and slot that identifies the physical location of an SNI or EI circuit pack that is the first endpoint of the fiber link. Repeat for the remaining endpoints.
 - b. The Board Type field is display only and shows the type of circuit pack in Endpoint-1.
 - c. In the DS1CONV Board Location: field, enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
 - d. The DS1CONV Board Type: field is display only and shows the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must match.

- e. In the Is one endpoint remoted via a DS1 Converter Complex? field, type **y** to specify that a DS1 Converter complex is used to remote 1 endpoint. If **y** is entered, administer the A-PNC DS1 Converter Board Location on Page 1. The A-PNC DS1 Converter Board Type displays.
7. On Page 2 of the form:
- a. Administer the A-PNC DS1 Converter (DS1CONV) Attributes.
 - b. Enter the DS1 Converter Facilities information. In the Facility Installed? field, type **y** for all installed facilities (A, B, C, and D).
 - c. In the Bit Rate: field, type **1.544** for T1 operation or **2.048** for E1 operation.



NOTE:

One bit rate applies for all facilities within the same DS1 Converter complex. The Bit Rate: field displays only under Facility A.

- d. Enter the idle code in the Idle Code MSB (1) LSB (8): field. The default value is **11101000**. It is recommended that the default value be used unless it becomes absolutely necessary to change it. The “MSB” means Most Significant Bit, the “LSB” means Least Significant Bit.
- e. Enter the appropriate data in the Line Coding: field. This data should match the line coding of the facility. For T1, example line coding is **b8zs**. For E1, example line coding is **hdb3**.
- f. Scroll to Page 3 and modify the fields as needed for the B-PNC.



NOTE:

If this data is not correct, wideband errors (such as multimedia call handling) may occur.

8. For T1 sites, refer to [“T1 Installations Only”](#). For E1 sites, refer to [“E1 Installations Only”](#).

T1 Installations Only

1. The Framing Mode: field is display only and shows the hardware setting.
2. The DS1CONV-1 Line Compensation: and the DS1CONV-2 Line Compensation: fields are display only and show the hardware setting.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

E1 Installations Only

1. Type **y** or **n** in the CRC? field. The "CRC" means Cyclic Redundancy Check. This is an error detection algorithm.
2. The Line Termination: field is display only. A 75 (75 Ohms) or 120 (120 Ohms) typically displays.
3. In the Facility A Circuit ID: field, enter an optional facility name that is unique to each facility (up to 40 alphanumeric characters). Press Enter.
4. A display similar to the following appears after the fiber link administration is completed:

RESET PORT-NETWORK 2 LEVEL 2 (COLD) PERFORMED.

All Installations

1. When the system reset is finished, type **status port-network 2** and press Enter. The Port Network Status screen appears. Verify that PNC Active is "up" and that the Service State is "in."
2. A Span LED, on the front of the DS1 Converter circuit pack, must be on for each active facility administered. For example, if Facility A and Facility B are administered, then the top 2 Span LEDs on the circuit pack must be on (yellow). The yellow LEDs are on only if no problems were encountered during the administration of hardware. Span LEDs associated with non-administered facilities (C and D, in this example) should be off.
3. Perform a test call, if desired.

Fiber Link Administration Form

This form administers fiber links, each of which is identified by a fiber number.

⇒ NOTE:
Fiber link administration only applies to R5r and later configurations.

Port networks (PNs) are connected via direct fiber link connections or through a center stage switch (CSS) to provide the interconnection of port networks required for voice/data information transfer. The CSS is composed of "switch nodes" that can be interconnected in one or two levels to provide Port Network Connectivity (PNC). The CSS provides circuit-switched connectivity for voice and data communications as well as packet-switched connectivity. Fiber link administration permits an administration of translation data associated with a switch connection (such as optical fiber, metallic cable, or DS1CONV circuit packs and DS1 facility links between two endpoints). The two fiber endpoints can be:

- An expansion interface (EI) circuit pack
- A switch node interface (SNI) circuit pack

⇒ NOTE:
Only one administrative terminal can administer fiber links at a time; others can display fiber link information.

Administration commands

Use the following commands to administer the Fiber Link Administration form.

Action	Object	Qualifier ¹
add	fiber-link	link number or ['next']
change	fiber-link	link number
display	fiber-link	link number
list	fiber-link	link number
remove	fiber-link	link number

1. Brackets [] indicate the qualifier is optional. Single quotes (' ') indicate the text inside the quote must be entered exactly as shown or an abbreviated form of the word may be entered.

PNCs have three different reliability configurations (one for each system reliability configuration) as follows:

System Configuration	PNC
Standard Reliability	Simplex Fibers
High Reliability	Simplex Fibers to Expansion Port Networks and Duplicated Fibers between Processor Port Networks (PPN) and Switch Nodes
Critical Reliability	Duplicated Fibers

Simplex PNC

For Simplex PNC, PNC Duplication is disabled on the System-Parameters Customer-Options form and Operation of Duplication is disabled on the Duplication-Related System-Parameters form.

Administration of PNC Duplication

The PNC Duplication feature is enabled on the System-Parameters Customer-Options form and Operation of Duplication is enabled on the Duplication-Related System-Parameters form. When PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
- Fiber Link form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.
- Duplication-Related System-Parameters form — An additional field appears to enable operation of PNC duplication.

Form instructions

Page 1 of the form

Fiber Link #: 1

FIBER LINK ADMINISTRATION

Page 1 of 1

Is one endpoint remoted via a DS1 Converter Complex? _____

ENDPOINT-1
(A-PNC)

Board Location: _____

Board Type: xxx

ENDPOINT-2
(A-PNC)

Board Location: _____

Board Type: xxx

Screen A-1. Fiber Link Administration form

Basic Fiber Link Administration.

The following fields appear:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the first endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the second endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2.
- **Is one endpoint remoted via a DS1 Converter Complex?** — Enter **y** to specify that a DS1 Converter complex is used to remote one endpoint. If a **y** is entered, A-PNC DS1 Converter circuit pack Location must be administered on Page 1. A-PNC DS1 Converter circuit pack Type displays. A-PNC DS1 Converter (DS1CONV) Attributes must be administered on Page 2 of this form.

Duplicated Fiber Link Administration.

add fiber-link next

Page 1 of 3

FIBER LINK ADMINISTRATION

Fiber Link #: 1

Is one endpoint remotod via DS1 Converter Complex? yes

ENDPOINT-1
(A-PNC)

Board Location: 01E01
Board Type: ei
DS1CONV Board Location: 01B01
DS1CONV Board Type: TN574

ENDPOINT-2
(A-PNC)

Board Location: 02A01
Board Type: ei
DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574

ENDPOINT-1
(B-PNC)

Board Location: 01D01
Board Type: ei
DS1CONV Board Location: 01C01
DS1CONV Board Type: TN574

ENDPOINT-2
(B-PNC)

Board Location: 02A02
Board Type: ei
DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574

Screen A-2. Fiber Link Administration form (page 1 of 3)

The following fields appear when Administration of PNC Duplication is enabled on the System-Parameters Customer-Options form:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Is one endpoint remotod via DS1 Converter Complex?** — Enter **yes** to specify that a DS1 converter complex is used to remote one endpoint. If **yes** is entered, A-PNC and B-PNC DS1 Converter (DS1CONV) Attributes must be administered on Pages 2 and 3 (respectively) of the form.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.

- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.

DS1C Converter Complex Administration for TN574 Circuit Packs.

add fiber-link next

Page 2 of 3

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

DS1CONV Board Location: 01B01DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574DS1CONV Board Type: TN574

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	no	no	no
Passes Far-end Clock?	yes	yes	yes	yes
Digital Data Compatible?	yes	yes	yes	yes
Line Coding:	ami-zcs	ami-zcs	ami-zcs	ami-zcs
Framing Mode:	esf	esf	esf	esf
DS1CONV-1 Line Compensation:	1	1	1	1
DS1CONV-2 Line Compensation:	1	1	1	1

Facility A Circuit ID: 09876543

Screen A-3. Fiber Link Administration form for TN574 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following DS1 Converter Complex fields appear on Page 2 when the Is one endpoint remotod via a DS1 Converter Complex field is **y**.

 NOTE:

When you administer DS1 Converter TN1654 circuit packs, different fields display.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the first endpoint of the fiber link. This is entered on Page 1 and displays on Page 2.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the first endpoint.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the second endpoint of the fiber link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the second endpoint. This field is updated via the Change Circuit-packs command.
- **Facility Installed** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex. Default is **yes** for Facility A.
- **Passes Far-end Clock** — Enter "**yes**" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far end converter circuit pack or the network (such as when the signal is converted from digital to analog and then back to digital), enter "**no**." Default is **yes** for Facility A.

This field determines whether the DS1 converter circuit pack can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter **yes** (default) in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least Facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter **no**.

- **Line Coding** — Enter the line coding format, **ami-zcs** (default), or **ami-basic**, **b8zs**, or **hdb3** in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

When ami-zcs line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ami-zcs line coding results in data corruption. The DS1CONV circuit pack protects the packet facility (one of up to four facilities dynamically allocated by the DS1CONV circuit pack) from corruption through a special escape mechanism.

When b8zs line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

**NOTE:**

Note that although the esf framing mode and b8zs line coding are the preferable modes of operation, you should confirm that the DS1 facilities support them before selecting this line coding.

- **Framing Mode** — Enter the framing format, **esf** (default) or **d4**, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

**NOTE:**

The D4 format is supported by the Converter circuit packs, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use is discouraged.

- **DS1CONV-1 Line Compensation** — Enter the line compensation (**1 to 5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see [Table A-1](#)).

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 A-1. Distance to DSX-1 Interface (feet)

Equalizer Setting	22 AWG ABAM & 24 AWG PDS	26 AWG PDS
1	1 to 133	0 to 90
2	133 to 266	90 to 180
3	266 to 399	180 to 270
4	399 to 533	270 to 360
5	533 to 655	360 to 450

 **NOTE:**
The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

If it is a TN574 circuit pack, the default for all facilities is **1**.

- **DS1CONV-2 Line Compensation** — Enter the line compensation (**1 to 5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see [Table A-1](#)). 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: 01C01DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574DS1CONV Board Type: TN574

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	no	no	no
Passes Far-end Clock?	yes	yes	yes	yes
Digital Data Compatible?	yes	yes	yes	yes
Line Coding:	ami-zcs	ami-zcs	ami-zcs	ami-zcs
Framing Mode:	esf	esf	esf	esf
DS1CONV-1 Line Compensation:	1	1	1	1
DS1CONV-2 Line Compensation:	1	1	1	1

Facility B Circuit ID: 01112343

Screen A-4. Fiber Link Administration form for TN574 Circuit Pack (Duplicated DS1 Converter Complex Administration) (page 3 of 3)

Page 3 appears when the Is one endpoint remoted via a DS1 Converter Complex field is "yes" and duplication is enabled.

 **NOTE:**
When you administer DS1 Converter TN1654 circuit packs, different fields display.

For field definitions of the fields displayed on page 3 of the Fiber Link Administration form, refer back to the previous section.

DS1 Converter Complex Administration for T1 TN1654 Circuit Packs.

add fiber-link next

Page 2 of 3

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

DS1CONV Board Location: 01B01
DS1CONV Board Type: TN1654

DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	yes	no	no
Bit Rate:	1.544			
Facility Startup Idle Code:	11101000			
Line Coding:	ami-zcs	ami-zcs	ami-zcs	ami-zcs
Framing Mode:				
DS1CONV-1 Line Compensation:	1	1	1	1
DS1CONV-2 Line Compensation:	1	1	1	1

Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889

Screen A-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: 01B01DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654DS1CONV 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 A-6. Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

The following unique fields display when administering a TN1654 DS1 Converter.

- **Bit Rate** — A display-only field for TN1654 entered on page 3 of the form. See previous section. **1.544** indicates domestic T1 operation and **2.048** indicates international E1 operation.

DS1 Converter Complex Administration for E1 TN1654 Circuit Packs .

The following unique fields display when administering a E1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.



NOTE:

Since one bit rate applies for all facilities within the same DS1 Converter complex, Bit Rate displays only under Facility A. To activate the desired Bit Rate, the toggle switch on the circuit pack must be set and it must correspond to the Bit Rate.

- **Idle Code MSB(1) ... LSB(8)** — Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis.

- **CRC** — Displays when the DS1 Converter circuit pack is TN1654 and the Bit Rate is 2.048 Mbps. Enter **yes** to receive a “yellow 2” alarm for E1 operation. Default is **no**. You can administer this field on a per circuit pack basis.
- **Line Termination** — A display-only field for DS1 Converter circuit packs that are TN1654 and have a Bit Rate of 2.048 Mbps. It identifies facility connections as CEPT 75 ohm coaxial or 120 ohm CEPT twisted pair.

Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs.

See the previous sections for screen layout and field definitions.

add fiber-link nextPage 3 of 3

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

DS1CONV Board Location: 01C01

DS1CONV Board Location: 02C01

DS1CONV Board Type: TN1654

DS1CONV Board Type: TN1654

DS1 CONVERTER FACILITIES

	A	B	C	D
Facility Installed?	yes	yes	yes	no
Bit Rate:	2.048			
Facility Startup Idle Code:	11101000			
Line Coding:	hdb3	hdb3	hdb3	hdb3
CRC?	yes			
Line Termination:				

Facility A Circuit ID: 0AABB01

Facility B Circuit ID: 0CCDD02

Facility C Circuit ID: 0EEFF03

Screen A-7. Fiber Line Administration form for B-PNC DS1 Converter (DS1CONV) Attributes

A	Fiber Link Administration Administer Fiber Links	A-20

Troubleshooting an Upgrade

B

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 Avaya. For general information on troubleshooting associated with maintenance procedures, see one of the following references:

- Chapter 5, Alarms, Errors and Troubleshooting, of the Release 9, Maintenance for R9r manual

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

This appendix is organized into three main sections, as described below:

- [New for Release 9](#) – provides information on introductions for Release 9 that might result in upgrade problems
- [Troubleshooting Guidelines](#) – provides general procedures to try before escalating a problem
- [Troubleshooting Release 9 Upgrades](#) – provides specific troubleshooting procedures for common upgrade problems

New for Release 9

- [DS1 With Echo Cancellation \(UDS1-BD\)](#)
- [Firmware Download \(FW-DWNLD\)](#)
- [IP Media Processor \(IPMEDPRO\)](#)

- Remote Office (REM-OFF, RDIG-STA, RANL-STA)
- Campon Busyout Command

DS1 With Echo Cancellation (UDS1-BD)

The TN464GP and TN2464BP UDS1 circuit packs feature an integrated echo canceller. Echo cancellation is a Software Right-To-Use feature that can be turned as needed. Echo cancellation supports channels carrying voice and is not intended for channels that support data. The TN464GP/TN2464BP will have the capability to detect modem tone and turn off echo cancellation accordingly for the duration of a data call. Echo cancellation on the TN464GP/TN2464BP will be administrable per channel. The echo cancellation circuitry on a given TN464GP/TN2464BP is driven by administrable parameters.

The TN464GP/TN2464BP circuit packs are intended for use with ATM, IP, wideband, or other complex services which are likely to have problems with echo.

The echo cancellation circuitry on a given TN464GP/TN2464BP is a right-to-use feature activated on the System-Parameters Customer-Options form. Also on this form is a field that indicates the "Maximum number of DS1 boards with echo cancellation" for a specific customer.

The DS1 CIRCUIT PACK form for the TN464GP/TN2464BP circuit packs has fields to support echo cancellation: Echo Cancellation, EC Direction, and EC Configuration. These fields will only be displayed when the Echo Cancellation feature has been activated on the **System-Parameters Customer Options** form by entering a y in the Echo Cancellation field.

- EC Direction determines the direction from which echo will be eliminated, either inward or outward.
- EC Configuration is the set of parameters that will be used when cancelling echo.

This information is stored in firmware on the UDS1 circuit pack.

Echo cancellation is turned on or off on a trunk group basis using the **change trunk-group** command. If the TRUNK GROUP field, DS1 Echo Cancellation? is set to y, echo cancellation will be applied to every TN464GP/TN2464BP trunk member in that trunk group. The echo cancellation parameters used for a given trunk member are determined by the Echo Cancellation Plan number administered on the **DS1 Circuit Pack** form for that specific trunk's board.

Echo cancellation on the TN464GP/TN2464BP is selectable per channel, even though it is administrable on a trunk group basis. For example, if all but two ports on a TN464GP/TN2464BP need to have echo cancellation applied, those two ports must be put in a trunk group where the DS1 Echo Cancellation field is

set to n. The remaining ports will be in a trunk group(s) where the DS1 Echo Cancellation field is set to y. A user will have the ability to cancel echo coming from the network (far-end echo) or coming from the switch (near-end echo).

Firmware Download (FW-DWNLD)

The Firmware Download feature provides DEFINITY ECS the ability to download new firmware to one or more circuit boards of the same type residing in its system. The download image is copied onto a source (C-LAN) board, using the File Transfer Protocol (FTP). The image is then copied to the target boards Flash over the TDM bus. The transfer of the download image from the source board to the target board is done under switch software control. This process is initiated using the DEFINITY System Access Terminal (SAT) interface.

The following is a list of commands for testing the firmware download feature:

- enable filesystem
- disable filesystem
- list directory
- remove filesystem
- change firmware download
- disable firmware download
- display firmware download
- status firmware download
- test firmware download

IP Media Processor (IPMEDPRO)

The TN2302 (IPMEDPRO) circuit pack is the next generation H.323 platform. The TN2302 includes a 10/100 BaseT Ethernet interface to support H.323 endpoints for DEFINITY IP (Internet Protocol) trunks and H.323 endpoints. The TN2302 can perform echo cancellation, silence suppression, DTMF detection, and conferencing. It supports the following codecs, fax detection for them, and conversion between them:

- G.711 (mu-law or a-law, 64 kbps);
- G.723.1 (6.3 kbps or 5.3 kbps audio);
- G.729A (8 kbps audio);

The TN2302 IP Media Processor circuit board is used by the DOLAN (Definity on the LAN) feature to provide voice over IP connectivity. The TN2302 can run the Media Processor application, which allows the TN2302 to act as a service circuit to terminate generic RTP streams used to carry packetized audio over an IP network. As part of the overall H.323 implementation, the TN2302 circuit pack

handles the audio streams while the TN799 C-LAN handles the TCP/IP signaling channels. This maintenance object applies only to a TN2302 IP Media Processor running the Media Processor application.

The Media Processor application is built upon the existing ITS software, and as such is not administered in DEFINITY as a DS1 trunk, and does not emulate a DS1 for maintenance purposes. Use the following Maintenance procedures for this application.

Remote Office (REM-OFF, RDIG-STA, RANL-STA)

REM-OFF

An instance of this maintenance object (REM-OFF) is associated with every Remote Office box that is administered on the switch. This maintenance object monitors keep alive and periodic PING test failures, and if these errors occur, they are logged against this maintenance object.

RDIG-STA

A per-port instance of this maintenance object (RDIG-STA) is used to maintain the circuitry associated with a port which has been translated as a digital station (or DCP Console). The combo blade circuit board has the capability of having 24 instances of this type of maintenance object.

Remote Digital Station maintenance software provides maintenance for a port administered as a digital station on the circuit pack. This strategy covers the in-line errors log, initialization tests, periodic tests, craft-demanded tests, and alarm resolution and escalation. Each port, translated as a digital station on a digital line board, is running as a separate maintenance object (RDIG-STA) of this type. Fault conditions discovered on one maintenance object may or may not indicate faults on other maintenance objects of the same type.

Maintenance testing for the port circuitry on the combo blade circuit packs is handled by on-board firmware and SPE (switch) controlled tests. Maintenance software queries the firmware for error and alarm information, status, and test results. Firmware automatically reports in-line error conditions, which results in SPE-controlled testing.

There are instances where the service state of a station is mentioned. The different service states that apply to a remote digital line station are as follows:

Table B-1. Remote Digital Line Station Service States

Out-of-Service	The port, and thus the station, have been removed from service. Busyout puts the port in the out-of-service state.
Ready-for-Service	The port on the circuit pack has been put into service, but the voice terminal has not yet established signaling communications with the port.
In-Service	The voice terminal has established signaling communications with the port, and the system is ready to process calls to and from that station. A terminal in the ready-for-service state will progress to the in-service state if it is functioning normally. It can also be forced into the in-service state by going off-hook.

RANL-STA

A per-port instance of this maintenance object (RANL-STA) is used to maintain the circuitry associated with a port which has been translated as analog station. The combo blade circuit board has the capability of having two instances of this type of maintenance object.

Campon Busyout Command

The **campon busyout** command enables the user to select a trunk group or trunk group member for busyout while it is being utilized. This command will busyout the selected trunk(s) only after the facility becomes idle.

The effect of busying out a targeted trunk group using the current (destructive) busyout command can be summarized as follows:

- No new calls, either voice or data, are connected over the busied out facility
- All existing switched connections, both voice and data, that exist over the links associated with the busied connection are torn down, and the connected parties are dropped from the call.

The addition of a **campon busyout trunk** command allows customers and system maintenance personnel to mark trunks for busyout when they are idle, instead of immediately. The effect of the new **campon busyout** command can be summarized:

- No new calls, either voice or data, are connected over the busy-when-idle facility
- If the facility is idle, it is immediately busied

- If the facility is currently in use, existing connections are not be affected. The facility is marked, and as soon as it becomes idle, it is busied out.

This new command offers two advantages:

- Calls-in-progress no longer have to be disrupted to accomplish a maintenance busyout - increasing customer sat-isfaction.

Service personnel no longer need to be waiting on premises for all targeted maintenance objects to become idle before activating a maintenance busyout - allowing for increased productivity.

Troubleshooting Guidelines

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 9 software removable media for defects. Type **test removable-media UUCSS long** and press Enter, if you are using R9 software. If you are using R7 or earlier software, type **test tape UUCSS long** and press Enter. If the tape (removable media) has errors, replace it.



NOTE:

Do not run the **test removable-media short command**, or the **test tape short command**. This test cannot find all of the bad sectors that may be present on the tape (removable media).

3. If upgrading from G3V4 and earlier systems to a Release 9r, check the vintage of the disk drive. The disk drive *must* be TN1657 Vintage 9 or later.
4. Always use the Software Release Letter that accompanies the software tape (removable media). If the letter is not available, use the appropriate chapter in this book.

Removable Media Troubleshooting Guidelines

Use the following guidelines when troubleshooting and resolving removable media (R-MEDIA) problems.

1. *Avoid saving translations or announcements* on the backup removable drive until all other removable media and Host Adapter problems have been resolved.

If there is something wrong with the Mass Storage System, an attempt to save translations or announcements could destroy a good copy of the files on the removable media.

2. In a system configured with duplicated SPEs, the tests run on the standby removable media circuit pack are identical to those run on the active removable media circuit pack. Communications between the active and standby SPEs is provided by the DUPINT circuit pack for both the control channel and memory shadowing. Therefore, problems with the DUPINT circuit pack may affect maintenance tests of the standby removable media circuit pack.
3. Check the error log for power related problems and refer to the maintenance documentation on power.
4. The data on the removable media will likely be destroyed if:
 - The optical disk is removed when the amber LED on the removable media circuit pack is on.
 - The removable media circuit pack is removed while the amber LED on the removable media circuit pack is on.
 - Power is removed from the removable media while the amber LED on the removable media circuit pack is on.

Troubleshooting Release 9 Upgrades

The subsections to follow present specific procedures for common upgrade problems, listed below:

- [No Translations After Upgrade](#)
- [One Side Upgrades, the Other Side Does Not \(No Shadowing\); Active Side Has Correct R9 Load](#)
- [Restore Disk Install or Restore Disk Full Fails](#)
- [Message Waiting Lamps On \(After Removing an EPN\)](#)
- [Tone Clock Does Not Function in New EPN](#)

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 (removable media) into the tape (removable media) drive. This tape (removable media) must contain the original translations before the upgrade started.
2. Verify that the software is Release 9 and that shadowing is up.
3. Copy the translations from the backup tape (removable media) to the disk. Type **copy translation disk both** and press Enter. This copies the translations from tape (removable media) to disk and takes about 30 minutes.
4. Type **reset system 3** and press Enter.
5. When the reboot is finished, the system should contain all of the translations from the backup tape (removable media).

One Side Upgrades, the Other Side Does Not (No Shadowing); Active Side Has Correct R9 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 9 software removable media into the active optical disk drive.
3. Type **list configure software** and press **Enter** to verify the removable media contains the required Release 9 software.
4. If the software version on the removable media is incorrect, type **restore disk full active** and press **Enter**. This copies the entire backup removable media to disk and takes about 30 minutes. Do not use the “restore disk install” command.
5. Perform a “hot-swap” of the disk drives (move the standby disk to the active side and vice versa).
6. Perform a power-down reset on the standby side *only*. Disconnect the power cords (first from the left side and then the right side) from the power supplies on both sides of the standby SPE.

Restore Disk Install or Restore Disk Full Fails

This problem assumes that an MSS error was encountered, a restore disk full failed, or a restore disk install failed.

1. This usually indicates that a bad removable media was used. To verify:
 - a. Insert the suspect removable media into the removable media drive.
 - b. Type **test tape UUCSS long** and press **Enter**.



NOTE:

Do not run the “test tape short” command. The short test cannot find all of the bad sectors that may be present on the removable media.

- c. If the removable media has errors, replace it.
2. Insert a good Release 9 software removable media into the removable media drive.
 3. Test the removable media before starting the upgrade. Type **test removable-media UUCSS long** and press **Enter**, if you are using R9 software. If you are using R7 or earlier software, type **test tape UUCSS long** and press **Enter**.



NOTE:

Do not run the **test removable-media short command**, or the **test tape short command**. The short test cannot find all of the bad sectors that may be present on the tape (removable media).

Message Waiting Lamps On (After Removing an EPN)

All affected port-related translations were not unadministered before removing an EPN cabinet.

1. Type **clear amw all <extension>** and press Enter. This clears the message waiting lamp for the specified extension.
2. Repeat the command for each extension with a lit message waiting lamp.

Tone Clock Does Not Function in New EPN

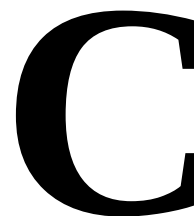
1. If the existing system is pre-G3V4 and contains TN768 Tone-Clock circuit packs, remove the NETCON, PI, and tone translations before starting the upgrade. The active tone clock in 0x1c cannot be properly inserted while PI translations exist from the old carrier.
2. Add the translations again after the upgrade.

Software Incompatibility

If these procedures do not clear the corruption problem, then the software versions may be incompatible. You may need to upgrade to an interim software version before upgrading to the final software version.

1. Consult the remediation that came with the upgrade software.
2. Contact your Avaya representative for this information.

Access Security Gateway



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 Avaya 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 connection continue to rely on password authentication.

Using the ASG Mobile

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 OK, 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 1-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 7-digit number.
13. Move to your communications package window.
14. Type the new 7-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

Numerics

800 service

A service in the United States that allows incoming calls from certain areas to an assigned number for a flat-rate charge based on usage.

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 \(AC\)](#).

ACA

See [Automatic Circuit Assurance \(ACA\)](#).

ACB

See [Automatic Callback \(ACB\)](#).

ACD

See [Automatic Call Distribution \(ACD\)](#).

ACD agent

See [agent](#).

ACU

See [Automatic calling unit \(ACU\)](#)

ACW

See [after-call work \(ACW\) mode](#).

access code

A 1-, 2-, or 3-digit dial code used to activate or cancel a feature, or access an outgoing trunk.

access endpoint

Either a nonsignaling channel on a DS1 interface or a nonsignaling port on an analog tie-trunk circuit pack that is assigned a unique extension.

access tie trunk

A trunk that connects a main communications system with a tandem communications system in an electronic tandem network (ETN). An access tie trunk can also be used to connect a system or tandem to a serving office or service node. Also called access trunk.

access trunk

See [access tie trunk](#).

ACCUNET

A trademarked name for a family of digital services offered by AT&T in the United States.

ACD

See [Automatic Call Distribution \(ACD\)](#). ACD also refers to a work state in which an agent is on an ACD call.

ACD work mode

See [work mode](#).

active-notification association

A link that is initiated by an adjunct, allowing it to receive event reports for a specific switch entity, such as an outgoing call.

active-notification call

A call for which event reports are sent over an active-notification association (communication channel) to the adjunct. Sometimes referred to as a monitored call.

active notification domain

VDN or ACD split extension for which event notification has been requested.

ACU

See [Automatic calling unit \(ACU\)](#).

AD

See [Abbreviated Dialing \(AD\)](#).

ADAP

AUDIX Data Acquisition Package

ADC

See [analog-to-digital converter \(ADC\)](#).

adjunct

A processor that does one or more tasks for another processor and that is optional in the configuration of the other processor. See also [application](#).

adjunct-control association

A relationship initiated by an application via *Third Party Make Call*, the *Third Party Take Control*, or *Domain (Station) Control* capabilities to set up calls and control calls already in progress.

adjunct-controlled call

Call that can be controlled using an adjunct-control association. Call must have been originated via *Third Party Make Call* or *Domain (Station) Control* capabilities or must have been taken control of via *Third Party Take Control* or *Domain (Station) Control* capabilities.

adjunct-controlled split

An ACD split that is administered to be under adjunct control. Agents logged into such splits must do all telephony work, ACD login/ logout, and changes of work mode through the adjunct (except for auto-available adjunct-controlled splits, whose agents may not log in/out or change work mode).

adjunct-monitored call

An adjunct-controlled call, active-notification call, or call that provides event reporting over a domain-control association.

Adjunct-Switch Application Interface (ASAI)

A recommendation for interfacing adjuncts and communications systems, based on the CCITT Q.932 specification for layer 3.

ADM

Asynchronous data module

administer

To access and change parameters associated with the services or features of a system.

Administered Connection (AC)

A feature that allows the switch to automatically establish and maintain end-to-end connections between access endpoints (trunks) and/or data endpoints (data modules).

administration group

See [capability group](#).

administration terminal

A terminal that is used to administer and maintain a system. See also [terminal](#).

Administration Without Hardware (AWOH)

A feature that allows administration of ports without associated terminals or other hardware.

ADU

See [asynchronous data unit \(ADU\)](#).

AE

See [access endpoint](#).

after-call work (ACW) mode

A mode in which agents are unavailable to receive ACD calls. Agents enter the ACW mode to perform ACD-related activities such as filling out a form after an ACD call.

AG

ASAI Gateway

agent

A person who receives calls directed to a split. A member of an ACD hunt group or ACD split. Also called an ACD agent.

agent report

A report that provides historical traffic information for internally measured agents.

AIM

Asynchronous interface module

AIOD

Automatic Identification of Outward Dialing

ALBO

Automatic Line Build Out

All trunks busy (ATB)

The state in which no trunks are available for call handling.

ALM-ACK

Alarm acknowledge

American Standard Code for Information Interchange

See [ASCII \(American Standard Code for Information Interchange\)](#).

AMW

Automatic Message Waiting

AN

Analog

analog

The representation of information by continuously variable physical quantities such as amplitude, frequency, and phase. See also [digital](#).

analog data

Data that is transmitted over a digital facility in analog (PCM) form. The data must pass through a modem either at both ends or at a modem pool at the distant end.

analog telephone

A telephone that receives acoustic voice signals and sends analog electrical signals along the telephone line. Analog telephones are usually served by a single wire pair (tip and ring). The model-2500 telephone set is a typical example of an analog telephone.

analog-to-digital converter (ADC)

A device that converts an analog signal to digital form. See also [digital-to-analog converter \(DAC\)](#).

angel

A microprocessor located on each port card in a processor port network (PPN). The angel uses the control-channel message set (CCMS) to manage communications between the port card and the archangel on the controlling switch-processing element (SPE). The angel also monitors the status of other microprocessors on a port card and maintains error counters and thresholds.

ANI

See [Automatic Number Identification \(ANI\)](#).

ANSI

American National Standards Institute. A United States professional/technical association supporting a variety of standards.

answerback code

A number used to respond to a page from a code-calling or loudspeaker-paging system, or to retrieve a parked call.

AOL

Attendant-offered load

AP

Applications processor

APLT

Advanced Private-Line Termination

appearance

A software process that is associated with an extension and whose purpose is to supervise a call. An extension can have multiple appearances. Also called call appearance, line appearance, and occurrence. See also [call appearance](#).

application

An adjunct that requests and receives ASAI services or capabilities. One or more applications can reside on a single adjunct. However, the switch cannot distinguish among several applications residing on the same adjunct and treats the adjunct, and all resident applications, as a single application. The terms application and adjunct are used interchangeably throughout this document.

applications processor

A micro-computer based, program controlled computer providing application services for the DEFINITY switch. The processor is used with several user-controlled applications such as traffic analysis and electronic documentation.

application service element

See [capability group](#).

architecture

The organizational structure of a system, including hardware and software.

ARS

See [Automatic Route Selection \(ARS\)](#).

ASAI

See [Adjunct-Switch Application Interface \(ASAI\)](#)

ASCII (American Standard Code for Information Interchange)

The standard code for representing characters in digital form. Each character is represented by an 8-bit code (including parity bit).

association

A communication channel between adjunct and switch for messaging purposes. An active association is one that applies to an existing call on the switch or to an extension on the call.

asynchronous data transmission

A method of transmitting data in which each character is preceded by a start bit and followed by a stop bit, thus permitting data characters to be transmitted at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard). Also called asynchronous transmission. See also [synchronous data transmission](#).

asynchronous data unit (ADU)

A device that allows direct connection between RS-232C equipment and a digital switch.

asynchronous transfer mode (ATM)

A packet-like switching technology in which data is transmitted in fixed-size (53-byte) cells. ATM provides high-speed access for data communication in LAN, campus, and WAN environments.

ATB

See [All trunks busy \(ATB\)](#).

ATD

See [Attention dial \(ATD\)](#).

attendant

A person at a console who provides personalized service for incoming callers and voice-services users by performing switching and signaling operations. See also [attendant console](#).

ATM

See [asynchronous transfer mode \(ATM\)](#).

attendant console

The workstation used by an attendant. The attendant console allows the attendant to originate a call, answer an incoming call, transfer a call to another extension or trunk, put a call on hold, and remove a call from hold. Attendants using the console can also manage and monitor some system operations. Also called console. See also [attendant](#).

Attention dial (ATD)

A command in the Hayes modem command set for asynchronous modems.

Audio Information Exchange (AUDIX)

A fully integrated voice-mail system. Can be used with a variety of communications systems to provide call-history data, such as subscriber identification and reason for redirection.

AUDIX

See [Audio Information Exchange \(AUDIX\)](#).

auto-in trunk group

Trunk group for which the CO processes all of the digits for an incoming call. When a CO seizes a trunk from an auto-in trunk group, the switch automatically connects the trunk to the destination — typically an ACD split where, if no agents are available, the call goes into a queue in which callers are answered in the order in which they arrive.

Auto-In Work mode

One of four agent work modes: the mode in which an agent is ready to process another call as soon as the current call is completed.

Automatic Alternate Routing (AAR)

A feature that routes calls to other than the first-choice route when facilities are unavailable.***

Automatic Callback (ACB)

A feature that enables internal callers, upon reaching a busy extension, to have the system automatically connect and ring both parties when the called party becomes available.

Automatic Call Distribution (ACD)

A feature that answers calls, and then, depending on administered instructions, delivers messages appropriate for the caller and routes the call to an agent when one becomes available.

Automatic Call Distribution (ACD) split

A method of routing calls of a similar type among agents in a call center. Also, a group of extensions that are staffed by agents trained to handle a certain type of incoming call.

Automatic calling unit (ACU)

A device that places a telephone call.

Automatic Circuit Assurance (ACA)

A feature that tracks calls of unusual duration to facilitate troubleshooting. A high number of very short calls or a low number of very long calls may signify a faulty trunk.

Automatic Number Identification (ANI)

Representation of the calling number, for display or for further use to access information about the caller. Available with Signaling System 7.

automatic restoration

A service that restores disrupted connections between access endpoints (nonsignaling trunks) and data endpoints (devices that connect the switch to data terminal and/or communications equipment). Restoration is done within seconds of a service disruption so that critical data applications can remain operational.

Automatic Route Selection (ARS)

A feature that allows the system to automatically choose the least-cost way to send a toll call.

automatic trunk

A trunk that does not require addressing information because the destination is predetermined. A request for service on the trunk, called a seizure, is sufficient to route the call. The normal destination of an automatic trunk is the communications-system attendant group. Also called automatic incoming trunk and automatic tie trunk.

AUX

Auxiliary

auxiliary equipment

Equipment used for optional system features, such as Loudspeaker Paging and Music-on-Hold.

auxiliary trunk

A trunk used to connect auxiliary equipment, such as radio-paging equipment, to a communications system.

Aux-Work mode

A work mode in which agents are unavailable to receive ACD calls. Agents enter Aux-Work mode when involved in non-ACD activities such as taking a break, going to lunch, or placing an outgoing call.

AVD

Alternate voice/data

AWOH

See [Administration Without Hardware \(AWOH\)](#).

AWG

American Wire Gauge

AWT

Average work time

B

B8ZS

Bipolar Eight Zero Substitution.

bandwidth

The difference, expressed in hertz, between the defined highest and lowest frequencies in a range.

barrier code

A security code used with the Remote Access feature to prevent unauthorized access to the system.

baud

A unit of transmission rate equal to the number of signal events per second. See also [bit rate](#) and [bits per second \(bps\)](#).

BCC

See [Bearer capability class \(BCC\)](#).

BCMS

Basic Call Management System

BCT

See [business communications terminal \(BCT\)](#).

Bearer capability class (BCC)

Code that identifies the type of a call (for example, voice and different types of data). Determination of BCC is based on the caller's characteristics for non-ISDN endpoints and on the Bearer Capability and Low-Layer Compatibility Information Elements of an ISDN endpoint. Current BCCs are 0 (voice-grade data and voice), 1 (DMI mode 1, 56 kbps data transmission), 2 (DMI mode 2, synchronous/asynchronous data transmission up to 19.2 kbps) 3 (DMI mode 3, 64 kbps circuit/packet data transmission), 4 (DMI mode 0, 64 kbps synchronous data), 5 (temporary signaling connection, and 6 (wideband call, 128–1984 kbps synchronous data).

BER

Bit error rate

BHCC

Busy-hour call completions

bit (binary digit)

One unit of information in binary notation, having two possible values: 0 or 1.

bits per second (bps)

The number of binary units of information that are transmitted or received per second. See also [baud](#) and [bit rate](#).

bit rate

The speed at which bits are transmitted, usually expressed in bits per second. Also called data rate. See also [baud](#) and [bits per second \(bps\)](#).

BLF

Busy Lamp Field

BN

Billing number

BOS

Bit-oriented signaling

BPN

Billed-party number

bps

See [bits per second \(bps\)](#).

bridge (bridging)

The appearance of a voice terminal's extension at one or more other voice terminals.

BRI

The ISDN Basic Rate Interface specification.

bridged appearance

A call appearance on a voice terminal that matches a call appearance on another voice terminal for the duration of a call.

BTU

British Thermal Unit

buffer

1. In hardware, a circuit or component that isolates one electrical circuit from another. Typically, a buffer holds data from one circuit or process until another circuit or process is ready to accept the data.

2. In software, an area of memory that is used for temporary storage.

bus

A multiconductor electrical path used to transfer information over a common connection from any of several sources to any of several destinations.

business communications terminal (BCT)

A digital data terminal used for business applications. A BCT can function via a data module as a special-purpose terminal for services provided by a processor or as a terminal for data entry and retrieval.

BX.25

A version of the CCITT X.25 protocol for data communications. BX.25 adds a fourth level to the standard X.25 interface. This uppermost level combines levels 4, 5, and 6 of the ISO reference model.

bypass tie trunks

A 1-way, outgoing tie trunk from a tandem switch to a main switch in an ETN. Bypass tie trunks, provided in limited quantities, are used as a last-choice route when all trunks to another tandem switch are busy. Bypass tie trunks are used only if all applicable intertandem trunks are busy.

byte

A sequence of (usually eight) bits processed together.

C

CACR

Cancellation of Authorization Code Request

cabinet

Housing for racks, shelves, or carriers that hold electronic equipment.

cable

Physical connection between two pieces of equipment (for example, data terminal and modem) or between a piece of equipment and a termination field.

cable connector

A jack (female) or plug (male) on the end of a cable. A cable connector connects wires on a cable to specific leads on telephone or data equipment.

CAG

Coverage answer group

call appearance

1. For the attendant console, six buttons, labeled a–f, used to originate, receive, and hold calls. Two lights next to the button show the status of the call appearance.
2. For the voice terminal, a button labeled with an extension and used to place outgoing calls, receive incoming calls, or hold calls. Two lights next to the button show the status of the call appearance.

call-control capabilities

Capabilities (*Third Party Selective Hold*, *Third Party Reconnect*, *Third Party Merge*) that can be used in either of the Third Party Call Control ASE (cluster) subsets (Call Control and Domain Control).

Call Detail Recording (CDR)

A feature that uses software and hardware to record call data (same as CDRU).

Call Detail Recording utility (CDRU)

Software that collects, stores, optionally filters, and outputs call-detail records.

Call Management System (CMS)

An application, running on an adjunct processor, that collects information from an ACD unit. CMS enables customers to monitor and manage telemarketing centers by generating reports on the status of agents, splits, trunks, trunk groups, vectors, and VDNs, and enables customers to partially administer the ACD feature for a communications system.

call-reference value (CRV)

An identifier present in ISDN messages that associates a related sequence of messages. In ASAI, CRVs distinguish between associations.

call vector

A set of up to 15 vector commands to be performed for an incoming or internal call.

callback call

A call that automatically returns to a voice-terminal user who activated the Automatic Callback or Ringback Queuing feature.

call-waiting ringback tone

A low-pitched tone identical to ringback tone except that the tone decreases in the last 0.2 seconds (in the United States). Call-waiting ringback tone notifies the attendant that the Attendant Call Waiting feature is activated and that the called party is aware of the waiting call. Tones in international countries may sound different.

call work code

A number, up to 16 digits, entered by ACD agents to record the occurrence of customer-defined events (such as account codes, social security numbers, or phone numbers) on ACD calls.

CAMA

Centralized Automatic Message Accounting

carrier

An enclosed shelf containing vertical slots that hold circuit packs.

carried load

The amount of traffic served by traffic-sensitive facilities during a given interval.

CARR-POW

Carrier Port and Power Unit for AC Powered Systems

CAS

Centralized Attendant Service or Call Accounting System

CCS or hundred call seconds

A unit of call traffic. Call traffic for a facility is scanned every 100 seconds. If the facility is busy, it is assumed to have been busy for the entire scan interval. There are 3600 seconds per hour. The Roman numeral for 100 is the capital letter C. The abbreviation for call seconds is CS. Therefore, 100 call seconds is abbreviated CCS. If a facility is busy for an entire hour, then it is said to have been busy for 36 CCS. See also [Erlang](#).

capability

A request or indication of an operation. For example, *Third Party Make Call* is a request for setting up a call; *event report* is an indication that an event has occurred.

capability group

Set of capabilities, determined by switch administration, that can be requested by an application. Capability groups denote association types. For example, *Call Control* is a type of association that allows certain functions (the ones in the capability group) to be performed over this type of association. Also referred to as administration groups or application service elements (ASEs).

CA-TSC

Call-Associated Temporary Signaling Connection

cause value

A value is returned in response to requests or in event reports when a denial or unexpected condition occurs. ASAI cause values fall into two coding standards: Coding Standard 0 includes any cause values that are part of AT&T and CCITT ISDN specifications; Coding standard 3 includes any other ASAI cause values. This document uses a notation for cause value where the coding standard for the cause is given first, then a slash, then the cause value. Example: CS0/100 is coding standard 0, cause value 100.

CBC

Call-by-call or coupled bonding conductor

CC

Country code

CCIS

Common-Channel Interoffice Signaling

CCITT

CCITT (Comitte Consultatif International Telephonique et Telegraphique), now called *International Telecommunications Union* (ITU). See [International Telecommunications Union \(ITU\)](#).

CCMS

Control-Channel Message Set

CCS

See [CCS or hundred call seconds](#).

CCSA

Common-Control Switching Arrangement

CDM

Channel-division multiplexing

CDOS

Customer-dialed and operator serviced

CDR

See [Call Detail Recording \(CDR\)](#).

CDRP

Call Detail Record Poller

CDRR

Call Detail Recording and Reporting

CDRU

See [Call Detail Recording utility \(CDRU\)](#).

CEM

Channel-expansion multiplexing

center-stage switch (CSS)

The central interface between the processor port network and expansion port networks in a CSS-connected system.

central office (CO)

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

central office (CO) codes

The first three digits of a 7-digit public-network telephone number in the United States.

central office (CO) trunk

A telecommunications channel that provides access from the system to the public network through the local CO.

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

CMDR

Centralized Message Detail Recording

CMS

Call Management System

CO

See [central office \(CO\)](#).

common-control switching arrangement (CCSA)

A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

communications system

The software-controlled processor complex that interprets dialing pulses, tones, and keyboard characters and makes the proper connections both within the system and external to the system. The communications system itself consists of a digital computer, software, storage device, and carriers with special hardware to perform the connections. A communications system provides voice and data communications services, including access to public and private networks, for telephones and data terminals on a customer's premises. See also [switch](#).

confirmation tone

A tone confirming that feature activation, deactivation, or cancellation has been accepted.

connectivity

The connection of disparate devices within a single system.

console

See [attendant console](#).

contiguous

Adjacent DS0s within one T1 or E1 facility or adjacent TDM or fiber time slots. The first and last TDM bus, DS0, or fiber time slots are not considered contiguous (no wraparound). For an E1 facility with a D-channel, DS0s 15 and 17 are considered contiguous.

control cabinet

See [control carrier](#).

control carrier

A carrier in a multicarrier cabinet that contains the SPE circuit packs and, unlike an R5r control carrier, port circuit packs. Also called control cabinet in a single-carrier cabinet. See also [switch-processing element \(SPE\)](#).

controlled station

A station that is monitored and controlled via a domain-control association.

COR

See [Class of Restriction \(COR\)](#).

COS

See [Class of Service \(COS\)](#).

coverage answer group

A group of up to eight voice terminals that ring simultaneously when a call is redirected to it by Call Coverage. Any one of the group can answer the call.

coverage call

A call that is automatically redirected from the called party's extension to an alternate answering position when certain coverage criteria are met.

coverage path

The order in which calls are redirected to alternate answering positions.

coverage point

An extension or attendant group, VDN, or ACD split designated as an alternate answering position in a coverage path.

covering user

A person at a coverage point who answers a redirected call.

CP

Circuit pack

CPE

Customer-premises equipment

CPN

Called-party number

CPN/BN

Calling-party number/billing number

CPTR

Call-progress-tone receiver

CRC

Cyclical Redundancy Checking

critical-reliability system

A system that has the following duplicated items: control carriers, tone clocks, EI circuit packs, and cabling between port networks and center-stage switch in a CSS-connected system. See also [duplicated common control](#), and [duplication](#).

CSA

Canadian Safety Association

CSCC

Compact single-carrier cabinet

CSCN

Center-stage control network

CSD

Customer-service document

CSM

Centralized System Management

CSS

See [center-stage switch \(CSS\)](#).

CSSO

Customer Services Support Organization

CSU

Channel service unit

CTS

Clear to Send

CWC

See [call work code](#).

D

DAC

1. Dial access code or Direct Agent Calling
2. See [digital-to-analog converter \(DAC\)](#).

data channel

A communications path between two points used to transmit digital signals.

data-communications equipment (DCE)

The equipment (usually a modem, data module, or packet assembler/disassembler) on the network side of a communications link that makes the binary serial data from the source or transmitter compatible with the communications channel.

data link

The configuration of physical facilities enabling end terminals to communicate directly with each other.

data module

An interconnection device between a BRI or DCP interface of the switch and data terminal equipment or data communications equipment.

data path

The end-to-end connection used for a data communications link. A data path is the combination of all elements of an interprocessor communication in a DCS.

data port

A point of access to a computer that uses trunks or lines for transmitting or receiving data.

data rate

See [bit rate](#).

data service unit (DSU)

A device that transmits digital data on transmission facilities.

data terminal

An input/output (I/O) device that has either switched or direct access to a host computer or to a processor interface.

data terminal equipment (DTE)

Equipment consisting of the endpoints in a connection over a data circuit. In a connection between a data terminal and host, the terminal, the host, and their associated modems or data modules make up the DTE.

dB

Decibel

dba

Decibels in reference to amperes.

dBrnC

Decibels above reference noise with C filter.

DC

Direct current

DCE

Data-communications equipment

D-channel backup

Type of backup used with Non-Facility Associated Signaling (NFAS). A primary D-channel provides signaling for an NFAS D-channel group (two or more PRI facilities). A second D-channel, on a separate PRI facility of the NFAS D-channel group, is designated as backup for the D-channel. Failure of the primary D-channel causes automatic transfer of call-control signaling to the backup D-channel. The backup becomes the primary D-channel. When the failed channel returns to service, it becomes the backup D-channel.

DCO

Digital central office

DCP

Digital Communications Protocol

DCS

Distributed Communications System

DDC

Direct Department Calling

DDD

Direct Distance Dialing

delay-dial trunk

A trunk that allows dialing directly into a communications system (digits are received as they are dialed).

denying a request

Sending a negative acknowledgement (NAK), done by sending an FIE with a *return error* component (and a cause value). It should not be confused with the denial event report that applies to calls.

designated voice terminal

The specific voice terminal to which calls, originally directed to a certain extension, are redirected. Commonly used to mean the forwarded-to terminal when Call Forwarding All Calls is active.

dial-repeating trunks

A PBX tie trunk that is capable of handling PBX station-signaling information without attendant assistance.

dial-repeating tie trunk

A tie trunk that transmits called-party addressing information between two communications systems.

DID

Direct Inward Dialing

digit conversion

A process used to convert specific dialed numbers into other dialed numbers.

digital

The representation of information by discrete steps. See also [analog](#).

digital communications protocol (DCP)

A proprietary protocol used to transmit both digitized voice and digitized data over the same communications link. A DCP link is made up of two 64-kbps information (I-) channels and one 8-kbps signaling (S-) channel.

digital data endpoints

In DEFINITY ECS, devices such as the 510D terminal or the 515-type business communications terminal (BCT).

digital multiplexed interface (DMI)

An interface that provides connectivity between a communications system and a host computer or between two communications systems using DS1 24th-channel signaling. DMI provides 23 64-kbps data channels and 1 common-signaling channel over a twisted-pair connection. DMI is offered through two capabilities: bit-oriented signaling (DMI-BOS) and message-oriented signaling (DMI-MOS).

digital signal level 0 (DS0)

A single 64-kbps voice channel. A DS0 is a single 64-kbps channel in a T1 or E1 facility and consists of eight bits in a T1 or E1 frame every 125 microseconds.

digital signal level 1 (DS1)

A single 1.544-Mbps (United States) or 2.048-Mbps (outside the United States) digital signal carried on a T1 transmission facility. A DS1 converter complex consists of a pair, one at each end, of DS1 converter circuit packs and the associated T1/E1 facilities.

digital terminal data module (DTDM)

An integrated or adjunct data module that shares with a digital telephone the same physical port for connection to a communications system. The function of a DTDM is similar to that of a PDM and MPDM in that it converts RS-232C signals to DCP signals.

digital-to-analog converter (DAC)

A device that converts data in digital form to the corresponding analog signals. See also [analog-to-digital converter \(ADC\)](#).

digital transmission

A mode of transmission in which information to be transmitted is first converted to digital form and then transmitted as a serial stream of pulses.

digital trunk

A circuit that carries digital voice and/or digital data in a telecommunications channel.

DIOD

Direct Inward and Outward Dialing

direct agent

A feature, accessed only via ASAI, that allows a call to be placed in a split queue but routed only to a specific agent in that split. The call receives normal ACD call treatment (for example, announcements) and is measured as an ACD call while ensuring that a particular agent answers.

Direct Extension Selection (DXS)

A feature on an attendant console that allows an attendant direct access to voice terminals by pressing a group-select button and a DXS button.

Direct Inward Dialing (DID)

A feature that allows an incoming call from the public network (not FX or WATS) to reach a specific telephone without attendant assistance.

Direct Inward Dialing (DID) trunk

An incoming trunk used for dialing directly from the public network into a communications system without help from the attendant.

disk drive

An electromechanical device that stores data on and retrieves data from one or more disks.

distributed communications system (DCS)

A network configuration linking two or more communications systems in such a way that selected features appear to operate as if the network were one system.

DIVA

Data In/Voice Answer

DLC

Data line circuit

DLDM

Data-line data module

DMI

Digital-multiplexed interface

DND

Do not disturb

DNIS

Dialed-Number Identification Service

DOD

Direct Outward Dialing

domain

VDNs, ACD splits, and stations. The VDN domain is used for active-notification associations. The ACD-split domain is for active-notification associations and domain-control associations. The station domain is used for the domain-control associations.

domain-control association

A *Third Party Domain Control Request* capability initiates a unique CRV/link number combination, which is referred to as a domain-control association.

domain-controlled split

A split for which *Third Party Domain Control* request has been accepted. A domain-controlled split provides an event report for logout.

domain-controlled station

A station for which a *Third_Party_Domain_Control* request has been accepted. A domain-controlled station provides event reports for calls that are alerting, connected, or held at the station.

domain-controlled station on a call

A station that is active on a call, and which provides event reports over one or two domain-control associations.

DOSS

Delivery Operations Support System

DOT

Duplication Option Terminal

DPM

Dial Plan Manager

DPR

Dual-port RAM

DS1

Digital Signal Level 1

DS1C

Digital Signal Level-1 protocol C

DS1 CONV

Digital Signal Level-1 converter

DSI

Digital signal interface

DSU

Data service unit

DTDM

Digital-terminal data module

DTE

Data-terminal equipment

DTGS

Direct Trunk Group Select

DTMF

Dual-tone multifrequency

DTS

Disk-tape system

duplicated common control

Two processors ensuring continuous operation of a communications system. While one processor is online, the other functions as a backup. The backup processor goes online periodically or when a problem occurs.

duplication

The use of redundant components to improve availability. When a duplicated subsystem fails, its backup redundant system automatically takes over.

duplication option
A system option that duplicates the following: control carrier containing the SPE, EI circuit packs in carriers, fiber-optic cabling between port networks, and center-stage switch in a CSS-connected system.

DWBS
DEFINITY Wireless Business System

DXS
Direct extension selection

E

E1
A digital transmission standard that carries traffic at 2.048 Mbps. The E1 facility is divided into 32 channels (DS0s) of 64 kbps information. Channel 0 is reserved for framing and synchronization information. A D-channel occupies channel 16.

E & M
Ear and mouth (receive and transmit)

EA
Expansion archangel

EAL
Expansion archangel link

ear and mouth (E & M) signaling
Trunk supervisory signaling, used between two communications systems, whereby signaling information is transferred through 2-state voltage conditions (on the E and M leads) for analog applications and through a single bit for digital applications.

EEBCDIC
Extended Binary-Coded Decimal Interexchange Code

ECC
Error Correct Code

ECMA
European Computer Manufacturers Association

EPF
Electronic power feed

EI
Expansion interface

EIA
Electronic Industries Association

EIA-232
A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

electronic tandem network (ETN)

A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

Electronics Industries Association (EIA)

A trade association of the electronics industry that establishes electrical and functional standards.

emergency transfer

If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

EMI

Electromagnetic interference

end-to-end signaling

The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

enhanced private-switched communications service (EPSCS)

An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

EPN

Expansion-port network

EPROM

Erasable programmable read-only memory

EPSCS

Enhanced Private Switched Communications Services

ERL

Echo return loss

Erlang

A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also [CCS or hundred call seconds](#).

ESF

Extended superframe format

ESPA

European Standard Paging Access

ETA

Extended Trunk Access; also Enhanced Terminal Administration

ETN

Electronic tandem network

ETSI

European Telecommunications Standards Institute

expansion archangel (EAA)

A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

expansion-archangel link (EAL)

A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

expansion control cabinet

See [expansion control carrier](#).

expansion control carrier

A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

expansion interface (EI)

A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

expansion port network (EPN)

A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also [port network \(PN\)](#).

extension-in

Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

extension-out

The work state that agents go into when they place (originate) a non-ACD call.

external measurements

Those ACD measurements that are made by the External CMS adjunct.

extension

A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

external call

A connection between a communications system user and a party on the public network or on another communications system in a private network.

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.

firmware download

A method to download updated application code to a port circuit pack on site or remotely without having to return the circuit pack to the factory.

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

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.

Internet Protocol

Software that tracks the Internet address of nodes, routes outgoing messages, and recognizes incoming messages.

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

IP

See [Internet Protocol](#)

ISDN

See [Integrated Services Digital Network \(ISDN\)](#).

ISDN Gateway (IG)

A feature allowing integration of the switch and a host-based telemarketing application via a link to a gateway adjunct. The gateway adjunct is a 3B-based product that notifies the host-based telemarketing application of call events.

ISDN trunk

A trunk administered for use with ISDN-PRI. Also called ISDN facility.

ISDN-PRI terminal adapter

An interface between endpoint applications and an ISDN PRI facility. ISDN-PRI terminal adapters are currently available from other vendors and are primarily designed for video conferencing applications. Accordingly, currently available terminal adapters adapt the two pairs of video codec data (V.35) and dialing (RS-366) ports to an ISDN PRI facility.

IS/DTT

Integrated Services/digital tie trunk

ISN

Information Systems Network

ISO

International Standards Organization

ISV

Independent software vendor

ITP

Installation test procedure

ITU
International Telecommunications Union

IXC
Interexchange carrier code

K

kHz
Kilohertz

kbps
Kilobits per second

kbyte
Kilobyte

kg
Kilogram

L

LAN
Local area network

LAP-D
Link Access Procedure on the D-channel

LAPD
Link Access Procedure data

LATA
Local access and transport area

lb
Pound

LBO
Line buildout

LDN
Listed directory number

LDS
Long-distance service

LEC
Local exchange carrier

LED
See [light-emitting diode \(LED\)](#).

light-emitting diode (LED)

A semiconductor device that produces light when voltage is applied. LEDs provide a visual indication of the operational status of hardware components, the results of maintenance tests, the alarm status of circuit packs, and the activation of telephone features.

lightwave transceiver

Hardware that provides an interface to fiber-optic cable from port circuit packs and DS1 converter circuit packs. Lightwave transceivers convert electrical signals to light signals and vice versa.

line

A transmission path between a communications system or CO switching system and a voice terminal or other terminal.

line appearance

See [appearance](#).

line buildout

A selectable output attenuation is generally required of DTE equipment because T1 circuits require the last span to lose 15–22.5 dB.

line port

Hardware that provides the access point to a communications system for each circuit associated with a telephone or data terminal.

link

A transmitter-receiver channel that connects two systems.

link-access procedure on the D-channel (LAPD)

A link-layer protocol on the ISDN-BRI and ISDN-PRI data-link layer (level 2). LAPD provides data transfer between two devices, and error and flow control on multiple logical links. LAPD is used for signaling and low-speed packet data (X.25 and mode 3) on the signaling (D-) channel and for mode-3 data communications on a bearer (B-) channel.

LINL

Local indirect neighbor link

local area network (LAN)

A networking arrangement designed for a limited geographical area. Generally, a LAN is limited in range to a maximum of 6.2 miles and provides high-speed carrier service with low error rates. Common configurations include daisy chain, star (including circuit-switched), ring, and bus.

logical link

The communications path between a processor and a BRI terminal.

loop-start trunk

A trunk on which, after establishing a connection with a distant switching system for an outgoing call, the system waits for a signal on the loop formed by the trunk leads before sending the digits of the called number.

LSU

Local storage unit

LWC

Leave Word Calling

M

MAC

Medium access

MADU

Modular asynchronous data unit

main distribution frame (MDF)

A device that mounts to the wall inside the system equipment room. The MDF provides a connection point from outside telephone lines to the PBX switch and to the inside telephone stations.

main-satellite-tributary

A private network configuration that can either stand alone or access an ETN. A main switch provides interconnection, via tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and access to and from the public network. To a user outside the complex, a main/satellite configuration appears as one switch, with one listed directory number (LDN). A tributary switch is connected to the main switch via tie trunks, but has its own attendant positions and LDN.

maintenance

Activities involved in keeping a telecommunications system in proper working condition: the detection and isolation of software and hardware faults, and automatic and manual recovery from these faults.

management terminal

The terminal that is used by the system administrator to administer the switch. The terminal may also be used to access the BCMS feature.

major alarm

An indication of a failure that has caused critical degradation of service and requires immediate attention. Major alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, logged to the alarm log, and reported to a remote maintenance facility, if applicable.

Manual-In work mode

One of four agent work modes: the mode in which an agent is ready to process another call manually. See [Auto-In Work mode](#) for a contrast.

MAP

Maintenance action process

MAPD

Multiapplication platform for DEFINITY

MA-UII

Message-Associated User-to-User Signaling

Mbps

Megabits per second

M-Bus

Memory bus

Mbyte

Megabyte

MCC
Multicarrier cabinet

MCS
Message Center Service

MCT
Malicious Call Trace

MCU
Multipoint control unit

MDF
Main distribution frame

MDM
Modular data module

MDR
Message detail record

MEM
Memory

memory
A device into which information can be copied and held, and from which information can later be obtained.

memory shadowing link
An operating-system condition that provides a method for memory-resident programs to be more quickly accessed, allowing a system to reboot faster.

message center
An answering service that supplies agents to and stores messages for later retrieval.

message center agent
A member of a message-center hunt group who takes and retrieves messages for voice-terminal users.

MET
Multibutton electronic telephone

MF
Multifrequency

MFB
Multifunction board

MFC
Multifrequency code

MHz
Megahertz

MIM
Management information message

minor alarm
An indication of a failure that could affect customer service. Minor alarms are automatically displayed on LEDs on the attendant console and maintenance or alarming circuit pack, sent to the alarm log, and reported to a remote maintenance facility, if applicable.

MIPS
Million instructions per second

MIS
Management information system

MISCID
Miscellaneous identification

MMCS
Multimedia Call Server

MMCH
Multimedia call handling

MMI
Multimedia interface

MMS
Material Management Services

MO
Maintenance object

modem
A device that converts digital data signals to analog signals for transmission over telephone circuits. The analog signals are converted back to the original digital data signals by another modem at the other end of the circuit.

modem pooling
A capability that provides shared conversion resources (modems and data modules) for cost-effective access to analog facilities by data terminals. When needed, modem pooling inserts a conversion resource into the path of a data call. Modem pooling serves both outgoing and incoming calls.

modular processor data module (MPDM)
A processor data module (PDM) that can be configured to provide several kinds of interfaces (RS-232C, RS-449, and V.35) to customer-provided data terminal equipment (DTE). See also [processor data module \(PDM\)](#).

modular trunk data module (MTDM)
A trunk data module that can be configured to provide several kinds of interfaces (RS-232, RS-449, and V.35) to customer-provided data terminal equipment.

modulator-demodulator
See [modem](#).

monitored call
See [active-notification call](#).

MOS
Message-oriented signaling

MPDM
Modular processor data module

MS
Message server

ms

Millisecond

MS/T

Main satellite/tributary

MSA

Message servicing adjunct

MSG

Message service

MSL

Material stocking location

MSM

Modular System Management

MSS

Mass storage system

MSSNET

Mass storage/network control

MT

Management terminal

MTDM

Modular trunk data module

MTP

Maintenance tape processor

MTT

Multitasking terminal

multiappearance voice terminal

A terminal equipped with several call-appearance buttons for the same extension, allowing the user to handle more than one call on that same extension at the same time.

Multicarrier cabinet

A structure that holds one to five carriers. See also [single-carrier cabinet](#).

Multifrequency Compelled (MFC) Release 2 (R2) signaling

A signal consisting of two frequency components, such that when a signal is transmitted from a switch, another signal acknowledging the transmitted signal is received by the switch. R2 designates signaling used in the United States and in countries outside the United States.

multiplexer

A device used to combine a number of individual channels into a single common bit stream for transmission.

multiplexing

A process whereby a transmission facility is divided into two or more channels, either by splitting the frequency band into a number of narrower bands or by dividing the transmission channel into successive time slots. See also [time-division multiplexing \(TDM\)](#).

multirate

The new N x DS0 service (see N x DS0).

MWL

Message-waiting lamp

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
- optical drive**
A drive that accepts removable media (optical disks) for loading software and saving translations and announcements.
- OPX**
Off-premises extension
- OQT**
Oldest queued time
- OSHA**
Occupational Safety and Health Act
- OSI**
Open Systems Interconnect
- OSS**
Operations Support System
- OSSI**
Operational Support System Interface
- OTDR**
Optical time-domain reflectometer
- othersplit**
The work state that indicates that an agent is currently active on another split's call, or in ACW for another split.
- OTQ**
Outgoing trunk queuing
- outgoing gateway**
A PBX that routes an incoming call on a trunk administered for Supplementary Services Protocol B to a trunk *not* administered for Supplementary Services Protocol B.

P

PACCON
Packet control

packet

A group of bits (including a message element, which is the data, and a control information element (IE), which is the header) used in packet switching and transmitted as a discrete unit. In each packet, the message element and control IE are arranged in a specified format. See also [packet bus](#) and [packet switching](#).

packet bus

A wide-bandwidth bus that transmits packets.

packet switching

A data-transmission technique whereby user information is segmented and routed in discrete data envelopes called packets, each with its own appended control information, for routing, sequencing, and error checking. Packet switching allows a channel to be occupied only during the transmission of a packet. On completion of the transmission, the channel is made available for the transfer of other packets. See also [BX.25](#) and [packet](#).

PAD

Packet assembly/disassembly

paging trunk

A telecommunications channel used to access an amplifier for loudspeaker paging.

party/extension active on call

A party is on the call if he or she is actually connected to the call (in active talk or in held state). An originator of a call is always a party on the call. Alerting parties, busy parties, and tones are not parties on the call.

PBX

Private branch exchange

PC

See [personal computer \(PC\)](#).

PCM

See [pulse-code modulation \(PCM\)](#).

PCOL

Personal central-office line

PCOLG

Personal central-office line group

PCS

Permanent switched calls

PDM

See [processor data module \(PDM\)](#).

PDS

Premises Distribution System

PE

Processing element

PEC

Price element code

PEI

Processor element interchange

personal computer (PC)

A personally controllable microcomputer.

PGATE

Packet gateway

PGN

Partitioned group number

PI

Processor interface

PIB

Processor interface board

pickup group

A group of individuals authorized to answer any call directed to an extension within the group.

PIDB

Product image database

PKTINT

Packet interface

PL

Private line

PLS

Premises Lightwave System

PMS

Property Management System

PN

Port network

PNA

Private network access

POE

Processor occupancy evaluation

POP

Point of presence

port

A data- or voice-transmission access point on a device that is used for communicating with other devices.

port carrier

A carrier in a multicarrier cabinet or a single-carrier cabinet containing port circuit packs, power units, and service circuits. Also called a port cabinet in a single-carrier cabinet.

port network (PN)

A cabinet containing a TDM bus and packet bus to which the following components are connected: port circuit packs, one or two tone-clock circuit packs, a maintenance circuit pack, service circuit packs, and (optionally) up to four expansion interface (EI) circuit packs in DEFINITY ECS. Each PN is controlled either locally or remotely by a switch processing element (SPE). See also [expansion port network \(EPN\)](#) and [processor port network \(PPN\)](#).

port-network connectivity

The interconnection of port networks (PNs), regardless of whether the configuration uses direct or switched connectivity.

PPM

1. Parts per million
2. Periodic pulse metering

PPN

See [processor port network \(PPN\)](#).

PRI

See [Primary Rate Interface \(PRI\)](#).

primary extension

The main extension associated with the physical voice or data terminal.

Primary Rate Interface (PRI)

A standard ISDN frame format that specifies the protocol used between two or more communications systems. PRI runs at 1.544 Mbps and, as used in North America, provides 23 64-kbps B-channels (voice or data) and one 64-kbps D-channel (signaling). The D-channel is the 24th channel of the interface and contains multiplexed signaling information for the other 23 channels.

PRI endpoint (PE)

The wideband switching capability introduces PRI endpoints on switch line-side interfaces. A PRI endpoint consists of one or more contiguous B-channels on a line-side T1 or E1 ISDN PRI facility and has an extension. Endpoint applications have call-control capabilities over PRI endpoints.

principal

A terminal that has its primary extension bridged on one or more other terminals.

principal (user)

A person to whom a telephone is assigned and who has message-center coverage.

private network

A network used exclusively for the telecommunications needs of a particular customer.

private network office code (RNX)

The first three digits of a 7-digit private network number.

PROCR

Processor

processor carrier

See [control carrier](#).

processor data module (PDM)

A device that provides an RS-232C DCE interface for connecting to data terminals, applications processors (APs), and host computers, and provides a DCP interface for connection to a communications system. See also [modular processor data module \(MPDM\)](#).

processor port network (PPN)

A port network controlled by a switch-processing element that is directly connected to that PN's TDM bus and LAN bus. See also [port network \(PN\)](#).

processor port network (PPN) control carrier

A carrier containing the maintenance circuit pack, tone/clock circuit pack, and SPE circuit packs for a processor port network (PPN) and, optionally, port circuit packs.

Property Management System (PMS)

A stand-alone computer used by lodging and health-services organizations for services such as reservations, housekeeping, and billing.

protocol

A set of conventions or rules governing the format and timing of message exchanges to control data movement and correction of errors.

PSC

Premises service consultant

PSDN

Packet-switch public data network

PT

Personal terminal

PTC

Positive temperature coefficient

PTT

Postal Telephone and Telegraph

public network

The network that can be openly accessed by all customers for local and long-distance calling.

pulse-code modulation (PCM)

An extension of pulse-amplitude modulation (PAM) in which carrier-signal pulses modulated by an analog signal, such as speech, are quantized and encoded to a digital, usually binary, format.

Q

QPPCN

Quality Protection Plan Change Notice

quadrant

A group of six contiguous DS0s in fixed locations on an ISDN-PRI facility. Note that this term comes from T1 terminology (one-fourth of a T1), but there are five quadrants on an E1 ISDN-PRI facility (30B + D).

queue

An ordered sequence of calls waiting to be processed.

queuing

The process of holding calls in order of their arrival to await connection to an attendant, to an answering group, or to an idle trunk. Calls are automatically connected in first-in, first-out sequence.

R

RAM

See [random-access memory \(RAM\)](#).

random-access memory (RAM)

A storage arrangement whereby information can be retrieved at a speed independent of the location of the stored information.

RBS

Robbed-bit signaling

RC

Radio controller

RCL

Restricted call list

read-only memory (ROM)

A storage arrangement primarily for information-retrieval applications.

recall dial tone

Tones signalling that the system has completed a function (such as holding a call) and is ready to accept dialing.

redirection criteria

Information administered for each voice terminal's coverage path that determines when an incoming call is redirected to coverage.

Redirection on No Answer

An optional feature that redirects an unanswered ringing ACD call after an administered number of rings. The call is then redirected back to the agent.

remote home numbering-plan area code (RHNPA)

A foreign numbering-plan area code that is treated as a home area code by the Automatic Route Selection (ARS) feature. Calls can be allowed or denied based on the area code and the dialed CO code rather than just the area code. If the call is allowed, the ARS pattern used for the call is determined by these six digits.

Remote Operations Service Element (ROSE)

A CCITT and ISO standard that defines a notation and services that support interactions between the various entities that make up a distributed application.

removable media

A generic name for the formatted optical disk used with an optical drive.

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 report.

time slice

See [time interval](#).

time slot

64 kbps of digital information structured as eight bits every 125 microseconds. In the switch, a time slot refers to either a DS0 on a T1 or E1 facility or a 64-kbps unit on the TDM bus or fiber connection between port networks.

time slot sequence integrity

The situation whereby the N octets of a wideband call that are transmitted in one T1 or E1 frame arrive at the output in the same order that they were introduced.

to control

An application can invoke *Third Party Call Control* capabilities using either an adjunct-control or domain-control association.

to monitor

An application can receive *event reports* on an active-notification, adjunct-control, or domain-control association.

TOD

Time of day

tone ringer

A device with a speaker, used in electronic voice terminals to alert the user.

TOP

Task-oriented protocol

trunk

A dedicated telecommunications channel between two communications systems or COs.

trunk allocation

The manner in which trunks are selected to form wideband channels.

trunk-data module

A device that connects off-premises private-line trunk facilities and DEFINITY ECS. The trunk-data module converts between the RS-232C and the DCP, and can connect to DDD modems as the DCP member of a modem pool.

trunk group

Telecommunications channels assigned as a group for certain functions that can be used interchangeably between two communications systems or COs.

TSC

Technical Service Center

TTI

Terminal translation initialization

TTR

Touch-tone receiver

TTT

Terminating trunk transmission

TTTN

See [tandem tie-trunk network \(TTTN\)](#).

TTY

Teletypewriter

U

UAP

Usage-allocation plan

UART

Universal asynchronous transmitter

UCD

Uniform call distribution

UCL

Unrestricted call list

UDP

See [Uniform Dial Plan \(UDP\)](#).

UL

Underwriter Laboratories

UM

User manager

Uniform Dial Plan (UDP)

A feature that allows a unique 4- or 5-digit number assignment for each terminal in a multiswitch configuration such as a DCS or main-satellite-tributary system.

UNMA
Unified Network Management Architecture

UNP
Uniform numbering plan

UPS
Uninterruptible power supply

USOP
User service-order profile

UUCP
UNIX-to-UNIX Communications Protocol

UII
User-to-user information

V

VAR
Value-added reseller

VDN
See [vector directory number \(VDN\)](#).

vector directory number (VDN)
An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

vector-controlled split
A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

VIS
Voice Information System

VLSI
Very-large-scale integration

VM
Voltmeter

VNI
Virtual nodepoint identifier

voice terminal
A single-line or multiappearance telephone.

W

WATS
See [Wide Area Telecommunications Service \(WATS\)](#).

WCC

World-Class Core

WCR

World-Class Routing

WCTD

World-Class Tone Detection

WFB

Wireless fixed base

Wide Area Telecommunications Service (WATS)

A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

wideband

A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

wideband access endpoint

Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

wink-start tie trunk

A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

work mode

One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

work state

An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

write operation

The process of putting information onto a storage medium, such as a hard disk.

WSA

Waiting session accept

WSS

Wireless Subscriber System



Z

ZCS
Zero Code Suppression

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DEFINITY® ECS Release 9 Upgrades and Additions for R9r
555-233-115, Issue 2, November 2000

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