DEFINITY®
Enterprise Communications Server
Release 10
Upgrades and Additions for R10r

555-233-115
Issue 3
December 2001

Notice

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

Preventing Toll Fraud

“Toll fraud” is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353. For additional support telephone numbers, see the Avaya web site:
http://www.avaya.com
Click on Support, click on Escalation Lists US and International. This web site includes phone numbers for escalation within the United States. For escalation phone numbers outside the United States, click on Global Escalation List.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's “telecommunications equipment” includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, “networked equipment”).

An “outside party” is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a “malicious party” is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Your Responsibility for Your Company’s Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - an Avaya customer's system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- your Avaya-provided telecommunications systems and their interfaces
- your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- any other equipment networked to your Avaya products.

How to get help

For support phone numbers, see the Avaya web site:
http://www.avaya.com
Click on Support, click on Escalation Lists US and International. This web site includes phone numbers for escalation within the United States. For escalation phone numbers outside the United States, click on Global Escalation List.

Standards Compliance

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user’s authority to operate this equipment.
The equipment described in this manual complies with standards of the following organizations and laws, as applicable:

- Australian Communications Agency (ACA)
- American National Standards Institute (ANSI)
- Canadian Standards Association (CSA)
- Committee for European Electrotechnical Standardization (CENELEC) – European Norms (EN’s)
- Digital Private Network Signaling System (DPNSS)
- European Computer Manufacturers Association (ECMA)
- European Telecommunications Standards Institute (ETSI)
- FCC Rules Parts 15 and 68
- International Electrotechnical Commission (IEC)
- International Special Committee on Radio Interference (CISPR)
- International Telecommunications Union - Telephony (ITU-T)
- ISDN PBX Network Specification (IPNS)
- National ISDN-1
- National ISDN-2
- Underwriters Laboratories (UL)

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

Safety of Information Technology Equipment, IEC 60950, 3rd Edition including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.

Safety of Laser products, equipment classification and requirements:

- IEC 60825-1, 1.1 Edition
- Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition
- Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997
- One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards and all relevant national deviations:

Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11
- Powerline Harmonics IEC 61000-3-2
- Voltage Fluctuations and Flicker IEC 61000-3-3

Federal Communications Commission Statement

Part 15:

Note: 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 instruction manual, 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: 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, or
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user.

This equipment returns answer-supervision signals on all direct inward dialed (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.

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
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9-BN, 1KN, 1SN	6.0F	RJ48C, RJ48M
120A2 channel service unit	04DU9-DN	6.0Y	RJ48C

If the terminal equipment (for example, the DEFINITY® System equipment) 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 1-800-242-2121 or contact your local Avaya representative. 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.

Canadian Department of Communications (DOC) Interference Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

DECLARATIONS OF CONFORMITY

United States FCC Part 68 Supplier's Declaration of Conformity (SDoC)

Avaya, Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.
Avaya further asserts that Avaya handset equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.
Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site:
http://support.avaya.com/elmodocs2/DoC/SDoC/index.jhtml/
All DEFINITY® system products are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at:
http://www.part68.org/
by conducting a search using "Avaya" as manufacturer.

European Union Declarations of Conformity

CE

Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Europeénne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC). This equipment has been certified to meet CTR3 Basic Rate Interface (BRI) and CTR4 Primary Rate Interface (PRI) and subsets thereof in CTR12 and CTR13, as applicable.
Copies of these Declarations of Conformity (DoCs) signed by the Vice President of DEFINITY® systems research and development, Avaya Inc., can be obtained by contacting your local sales representative and are available on the following Web site:
http://support.avaya.com/elmodocs2/DoC/IDoC/index.jhtml/

Japan

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Network Connections

Digital Connections - The equipment described in this document can be connected to the network digital interfaces throughout the European Union.
Analogue Connections - The equipment described in this document can be connected to the network analogue interfaces throughout the following member states:

Belgium	Germany	Greece	Italy	Luxemburg
Netherlands	Spain	United Kingdom		

LASER Product

The equipment described in this document may contain Class 1 LASER Device(s) if single-mode fiber-optic cable is connected to a remote expansion port network (EPN). The LASER devices operate within the following parameters:

- Maximum power output –5 dBm to -8 dBm
- Center Wavelength 1310 nm to 1360 nm
- CLASS 1 LASER PRODUCT IEC 60825-1: 1998

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 laser product information.

Trademarks

AUDIX, DEFINITY, and GuestWorks are registered trademarks of Avaya.
Comsphere is a registered trademark of Paradyne Corp.
GuideBuilder and INTUITY are trademarks of Avaya.
InnLine 2020 is a trademark of ComTelco (North America), Inc.
Okidata is a registered trademark of OKI Electric Co., LTD.
UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.
Xiox is a trademark of @Comm Corporation.

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Haverhill, MA 01835 USA
Attention: Avaya Account Management
Email: totalware@gwsmail.com
Order: Document No. 555-233-115
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Contents

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 (ECS) Release 10. 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 10 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 Avaya Site Administration (ASA) 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 10r, Release 10si, and Release 10csi.
- 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. 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 10 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

Avaya welcomes your feedback. Your comments are of great value and help improve our documentation.

- 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.
- E-mail your comments to **document@drmail.avaya.com**

Where to Get Additional Help

Other documents in the DEFINITY library

Other books in the DEFINITY library You can find general information on troubleshooting associated with maintenance procedures in:

- Chapter 5, “Alarms, Errors and Troubleshooting,” in *DEFINITY Enterprise Communications Server Maintenance for R10r*.
- *DEFINITY Enterprise Communications Server Installation for Adjuncts and Peripherals*
- *DEFINITY Made Easy: Multicarrier Cabinet Installation* CD
- *DEFINITY Made Easy: Single-Carrier Cabinet Installation* CD
- *DEFINITY Enterprise Communications Server Installation, Upgrades, and Additions for Compact Modular Cabinets*
- *DEFINITY ONE Communications Systems Installation and Upgrades*
- *DEFINITY Enterprise Communications Server Administrator’s Guide*
- *DEFINITY Made Easy: Upgrades for R10si CD*

Trouble escalation

For additional support telephone numbers:

1. At your browser, go to the Avaya web site:

   http://www.avaya.com

2. Click on *Support*.
3. If you are:
   - Within the United States, click on *Escalation Lists US and International*.
   - Outside the United States, click on *Global Escalation List*.

   These lists contain phone numbers for the Centers of Excellence in each Avaya-defined region.

How to Order Media

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

This book and any other DEFINITY books can be ordered directly from the Avaya Publications Fulfillment Center at 1-410-457-1235 or toll free at 1-800-457-1235.

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 G3rV4 and R5/6/7/8r to R10r	1
G3vs with Intel 386 or Risc Processor to R10r	2
Upgrading R5si/R6si to R10r EPN	3
Multicarrier G2 Universal Module to R10r 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)
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
Install License File	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 uses the Access Security Gateway (ASG) 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 µm
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 Europeénne) 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 10 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 G3rV4 and R5/6/7/8r to R10r

1

This chapter provides the information necessary to upgrade the software from a DEFINITY G3rV4 or Releases 5r, 6r, 7r, or 8r systems to a Release 10r system.

Required hardware

This upgrade requires replacing old hardware with:

- TN1657 disk drive, Vintage 9 or later
- TN2211 optical drive, V1 or later
- UN332C MSSNET circuit pack, V5 or later
- UN330B Duplication Interface circuit packs, Vintage 3 or later
- Additional TN1650B memory circuit pack(s), any vintage, to bring the total to 4 per control carrier.

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

Hardware replacement

This upgrade requires 2 hardware replacement phases. Follow this general process for this upgrade:

1. Phase 1 Hardware Replacement

   - TN1656 tape drive replaced with TN2211 optical drive
   - UN332B MSSNET replaced with UN332C MSSNET circuit pack

   This requires a service interruption for standard reliability systems. It does *not*, however, cause a service interruption for high or critical reliability systems.

2. Phase 2 Hardware Addition/Replacement

   - Add 1 or 2 TN1650B memory circuit packs, bringing the system total to 4.
   - Replace UN330B Duplication Interface circuit packs if they are not vintage 3 or later.
   - Replace the TN1657 disk drive if it is not vintage 9 or later.
   - To complete the upgrade you will remove/unseat the disk drive to force the system to boot from the R10 removable media.

   This requires a service interruption for ***all*** reliability systems.

The upgrade should take no longer that 2 hours for a high or critical reliability system and less time for a standard reliability system.

NOTE:
The **upgrade software** command is *not* used in this upgrade to Release 10r. The DEFINITY ECS becomes Release 10 after the 4th memory circuit pack is added and the SPE is rebooted from the removable media.

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 removable media.

Read This First

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches beginning with R10. The License File enables the switch's software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. W*ithout a license file, the switch does not provide normal call processing.*

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. The service outage is 2 to 15 minutes, depending on the size of the installation.

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

Before starting the upgrade, always check the *Software Release Letter* that accompanies the system removable media.

CAUTION:
Translation corruption will occur if incompatible software is loaded.

Usable Circuit Packs

The *Software Release Letter* also includes the Minimum Vintage Table (COMPAS ID 42751). Every circuit pack used in the Release 10 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 10 system. Replace all unusable vintage circuit packs with current vintages.

Refer to *Technical Quarterly*, *Reference Guide for Circuit Pack Vintages* and the *Change Notices* 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.

Required Hardware

Before starting the upgrade, check the Minimum Vintage Table included with the *Software Release Letter* or check for the most current table (COMPAS ID 42751) for any changes to the hardware for this upgrade.

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 Avaya representative.

Table 1-1. Required hardware: G3V4 through R8r to R10

		Quantity	
Equipment	**Description**	**Standard**	**High/Critical**
106495120	TN1650B Memory circuit pack(s), any vintage.	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, V5	1	2
107849754	TN2211 optical drive, V1 or later (if needed)	1	2
106495146	UN330B Duplicate Interface circuit packs, V3 or later (if needed)	NA	2

Continued on next page

Table 1-1. Required hardware: G3V4 through R8r to R10

		Quantity	
106590953	Z100A1 apparatus blank faceplate	1	2
J58890TO-1 L1	Formatted removable media with Release 10 software	2[2]	4
848445086 848445094	Carrier A strip label (if needed) Carrier B strip label (if needed)	1 NA	1 1

1. If the system is a G3rV4 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.

Survivable Remote EPNs

Check if Survivable Remote EPNs are installed and accessible. The upgrade outage may place the SREPNs into survive mode. After the upgrade, you need to switch them back to normal mode. Refer to *DEFINITY ECS Installation and Maintenance for Survivable Remote EPN*.

Wireless Systems

If the system uses Wireless Business System, you need to re-enable the radio controllers after the upgrade. Refer to Chapter 1, "UTAM Disablement" in the *DEFINITY Wireless Business System Maintenance* book. Refer also to Chapter 2, "Switch Administration" in *Definity Wireless Business System Installation and Test.*

NOTE:
This activity can only be performed with the init login.

Customer Requirements

If DEFINITY ECS has a TN750B or earlier announcement circuit pack, customers are required to back up the announcements *before* the upgrade. The Avaya field technician will not do this step.

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.

Task Table

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 list: hardware and software upgrade G3V4 through R8r to R10

✓	Task Description	Page
	Phase 1 Hardware Replacement	
	Pre-upgrade checklist	1-9
	Duplicate System Software	1-11
	Display Alarms	1-11
	Record Busyouts	1-11
	Check link status	1-12
	Check Clock Synchronization	1-12
	Check for Translation Corruption	1-12
	Check SPE	1-13
	Disable TTI	1-13
	Save Translations to Disk Drive (pre-upgrade)	1-13
	Save Translations to Tape/Removable Media (pre-upgrade)	1-14
	Verify Software Versions	1-14
	Disable Scheduled Maintenance and Alarm Origination to INADS	1-14
	Busyout MMI Circuit Packs (High/Critical reliability only—if necessary)	1-15
	Set SPE A and Tone/Clock A to Active	1-15
	Tape Drive: Lock to SPE A (High/Critical reliability only)	1-16
	Tape Drive: Power Down SPE B	1-17
	Remove the UN332B and Tape Drive	1-17
	Install the UN332C and Optical Drive	1-17
	Optical Drive: Power Up SPE B	1-20

Continued on next page

Table 1-2. Tasks list: hardware and software upgrade G3V4 through R8r to R10 — *Continued*

✓	Task Description	Page
	Optical Drive: Unlock DUPINT Switches (High/Critical reliability only)	1-20
	Optical Drive: Wait for System to Refresh (High/Critical reliability only)	1-20
	Set SPE B and Tone-Clock B to Active	1-21
	Tape Drive: Lock to SPE B (High/Critical reliability only)	1-21
	Tape Drive: Power Down SPE A	1-21
	Remove the UN332B and Tape Drive	1-22
	Install the UN332C and Optical Drive	1-22
	Optical Drive: Power Up SPE A	1-22
	Optical Drive: Unlock DUPINT Switches (High/Critical reliability only)	1-23
	Optical Drive: Wait for System to Refresh (High/Critical reliability only)	1-23
	Verify Software Version	1-23
	Save Translations to Removable Media	1-24
	Save Announcements (if necessary) to Removable Media	1-24
	Verify Translation Timestamp	1-24
	Phase 2 Hardware Addition/Replacement Verify Active Tone-Clock is on SPE B (High/Critical reliability only)	1-25
	Lock to SPE B (High/Critical reliability only)	1-25
	Power Down SPE A	1-26
	Add Memory, Replace DUPINT Circuit Pack, and Unseat Disk Drive on SPE A	1-26
	Power Up SPE A	1-27
	Unlock DUPINT Switches (High/Critical reliability only)	1-27
	Wait for System Handshake (High/Critical reliability only)	1-27
	Set Tone-Clock in SPE A to Active	1-28
	Lock Switches to SPE A (High/Critical reliability only—affects service)	1-28
	Power Down SPE B (High/Critical reliability only)	1-28
	Add Memory, Replace DUPINT Circuit Pack, and Unseat Disk Drive on SPE B	1-29
	Power Up SPE B (High/Critical reliability only)	1-29

Continued on next page

Table 1-2. Tasks list: hardware and software upgrade G3V4 through R8r to R10 — *Continued*

✓	Task Description	Page
	Unlock DUPINT Switches (High/Critical reliability only)	1-30
	Wait for System Refresh (High/Critical reliability only)	1-30
	Deliver or Install the License File	1-30
	Administer No-License/Emergency Numbers	1-31
	Set Daylight Savings Rules (if necessary)	1-31
	Verify Date and Time	1-32
	Set Locations (if necessary)	1-33
	Enable TTI	1-33
	Release MMI (High/Critical reliability only)	1-34
	Check for Translation Corruption	1-34
	Check Link Status	1-34
	Check ISDN Signaling Group States	1-34
	Install V9 or Later Disk Drive(s)	1-35
	Save Translations Removable-Media (post-upgrade)	1-38
	Save Announcements Removable-Media (if necessary—post-upgrade)	1-37
	Restore Disk	1-37
	Enable Scheduled Maintenance and Alarm Origination	1-38
	Register the Switch for Maintenance	1-38
	Check Customer Options	1-41
	Save Translations (post-upgrade)	1-41
	Back Up Disk	1-42
	Busy Out Trunks	1-42
	Resolve Alarms	1-42
	Set Core Dump Vector	1-42
	Verify Survivable Remote EPNs	1-42
	Affix position label(s)	1-42
	Return Replaced Equipment	1-42

Phase 1 Hardware Replacement

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 1-3 ready.

Table 1-3. G3V4 through R8r to R10r pre-upgrade checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	MSSNET serial number(s); see faceplate.	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	

Continued on next page

Table 1-3. G3V4 through R8r to R10r pre-upgrade checklist — *Continued*

Item No.	Item	✓
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

Duplicate System Software

In case the upgrade fails for any reason:

1. Ensure that the customer's previous systems software is on site.

Display Alarms

1. Type **display alarms** and press Enter.
1. Note any SPE or sync errors and which ISDN signaling groups and adjunct links are out of service.
2. Resolve all SPE-related alarms where possible before proceeding.

Record Busyouts

1. Type **display errors** and press Enter. Look for type 18 errors and record any trunks that may be busied out. You need to busy them out again after the upgrade.

Check link status

1. Enter **display communication-interface links** and press RETURN.
2. Note all administered links.
3. Type **status link *number*** and press RETURN for each administered link.

   Check the following fields for the values listed:

   - `Link Status` = connected
   - `Service State` = in service

   NOTE:
   For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to

   1. Type **list signaling group** and press RETURN.

      Note the signaling groups listed by number.

   2. For each of the signaling groups listed, type **status signaling group <*number*>** and press RETURN.
4. If any of the links are not up, take the necessary corrective action to restore the link before continuing with the upgrade.

Check Clock Synchronization

1. Type **status sync** and press Enter to verify that the clock synchronization is good. If not, contact the network to resolve.

Check for Translation Corruption

1. Type **newterm** and press Enter. If you do not get a login prompt and see the following message:

   Warning: Translation corruption detected

follow the normal escalation procedure for translation corruption before continuing the upgrade.

2. If R5r or earlier, execute the following commands and note the status:
   - list trunk-group
   - list hunt-group
   - list data-module
   - list integrated announcements (if any boards installed)

If you get the following message with any of the above commands:

Error encountered, can't complete request

follow the normal escalation procedure for translation corruption before continuing the upgrade.

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 Chapter 4, "Initialization and Recovery" in the maintenance book. Do not continue with the upgrade until all errors are resolved.

Disable TTI

NOTE:
Do this step only if 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 and skip step 3.
3. Type **status tti** and press Enter. Wait until the `Percent Complete` field shows 100%.

Save Translations to Disk Drive (pre-upgrade)

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

Save Translations to Tape/Removable Media (pre-upgrade)

NOTE:
If R7r or earlier, use the term **tape**; if R8r or later use **removable-media** in the following command.

1. Type **save translation [tape | removable-media]** and press Enter to write all translation information from the disk drive to the tape or removable media, which takes about 3 minutes (tape) or 1 minute (removable media).

Verify Software Versions

If standard reliability:

1. Type **list configuration software-version** and press Enter and verify that the memory, tape, and disk software loads and translations are current. Note any patches.

If high or critical reliability:

1. Type **list configuration software-version long** and press Enter and verify that the memory, tape, and disk software loads and translations match.

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 at least 8 hours after the upgrade starts. For example, if you start the upgrade at 8:00 p.m., set the `Start Time` field to 04:00.

   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 (High/Critical reliability only—if necessary)

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 or 3 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.

Set SPE A and Tone/Clock A to Active

NOTE:
Start the upgrade with SPE A and its clock being active.

1. Type **status spe** and press Enter to check the health of the SPE and verify that SPE A is active:

   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. Do not continue with the upgrade until all errors are resolved.

   If SPE A ***is*** active, go to step 3.

If SPE A is not active:

2. Type **reset system interchange** and press Enter to force SPE A to be the active SPE.
3. Type **status port-network 1** and press Enter to verify that the Tone/Clock in SPE A is active. The YELLOW LED on the active tone clock is flashing.

If Tone/Clock in SPE A is not active:

4. Type **set tone-clock 1a** and press Enter to move the Tone/Clock from SPE B to SPE A.

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

5. Type **status port-network 1** and press Enter to verify that the Tone/Clock has moved to SPE A. Make sure the YELLOW LED on the active Tone/Clock is flashing.

   If the Tone/Clock has not migrated to the carrier A after 1 minute, then a Tone/Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Release 10 Maintenance for R10r* book to resolve any problems.

6. 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**

   The standby refreshes after 5 minutes. If the fields display something other than the above, see the appropriate maintenance sections.

Tape Drive: Lock to SPE A (High/Critical reliability only)

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

1. Move the SPE-SELECT switches to the *left* (SPE A) on both Duplication Interface (DUPINT) circuit packs, *one at a time*.

Tape Drive: Power Down SPE B

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 *left side* of the carrier then by removing the power plug on the *right 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 SPE B only.

Remove the UN332B and Tape Drive

1. Remove the blank faceplate next to the MSSNET slot in the SPE B carrier.
2. Remove the UN332/B circuit pack from the SPE B carrier and place it in antistatic packing material.
3. Remove the tape from the tape drive (TN1656).
4. Remove the tape drive from the SPE B carrier 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 in the SPE B carrier.
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 in the SPE B carrier. It uses only 2 slots.

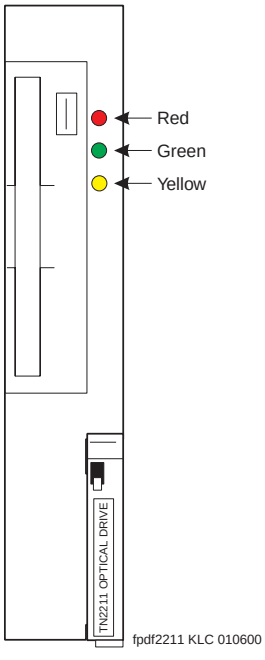


Figure 1-1. TN2211 Optical Drive

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

   NOTE:
   Make sure the removable media is not write protected before placing it into the optical drive. If you can see through the hole, it is write protected *(see* Figure 1-2*)*.

5. Place the removable media (optical disk) containing the Release 10 system software, label facing left, into the optical drive in SPE B. The arrow should be in the top left position when inserting the cartridge into the drive.

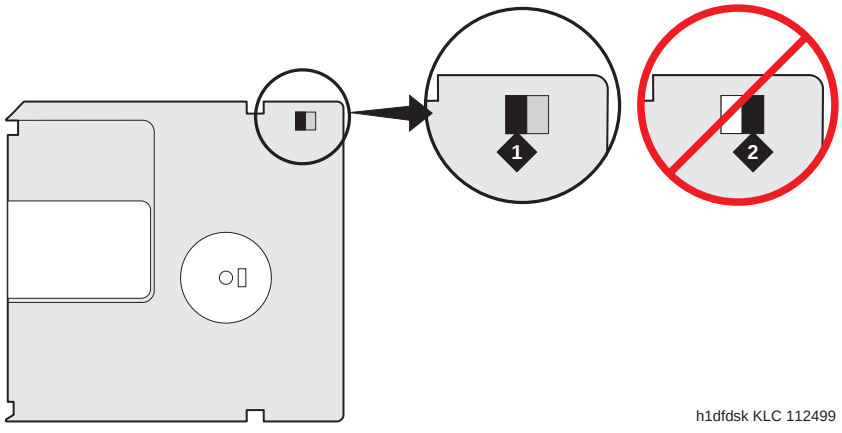


Figure Notes

1. Not Write-protected
2. Write protected

Figure 1-2. Make sure the optical 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*).*

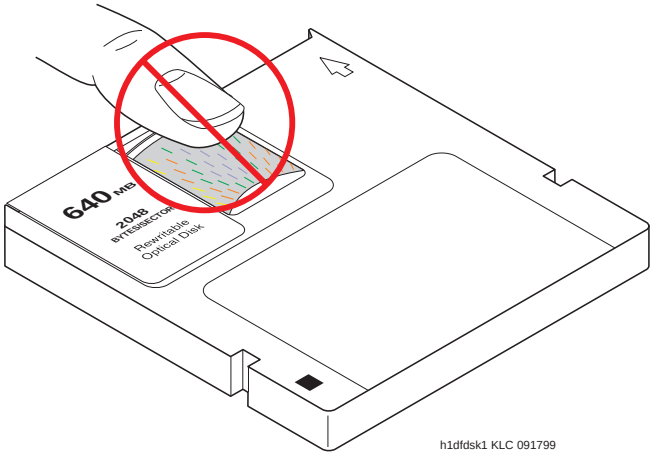


Figure 1-3. Do not touch the optical disk inside the cartridge.

Optical Drive: Power Up SPE B

NOTE:
The SPE reboots from the disk drive 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 SPE B as it reboots by observing the LEDs and the terminal. It is powered up when the YELLOW LED on the UN331B/C Processor circuit pack flashes and other LEDs go out, which takes about 10 minutes.

Optical Drive: Unlock DUPINT Switches (High/Critical reliability only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.

Optical Drive: Wait for System to Refresh (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**

The standby refreshes after 5 minutes. If the fields display something other than the above, see the appropriate maintenance sections.

2. Verify that the disk (disk drive) and removable media on both SPEs are in service.

Set SPE B and Tone-Clock B to Active

1. Type **reset system interchange** and press Enter to force SPE B to be the active SPE. This takes about 5 minutes.
2. Type **set tone-clock 1b** and press Enter to move the tone clock from SPE A to SPE B.

   NOTE:
   This takes 1 minute to complete. If SPE A (standby) is not refreshed, repeat the command until this condition is met.
3. Type **status port-network 1** and press Enter to verify that the Tone-Clock has moved to SPE B. Make sure the YELLOW LED on the active tone clock is flashing.

   If the Tone-Clock has not migrated to the carrier B after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Maintenance for R10r* book to resolve any problems.
4. 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.

Tape Drive: Lock to SPE B (High/Critical reliability only)

1. Move the SPE-SELECT switches to the *right* (SPE B) on both Duplication Interface (DUPINT) circuit packs, *one at a time*.

Tape Drive: Power Down SPE A

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 *left side* of the carrier then by removing the power plug on the *right 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 only.

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 into the rightmost TAPE DRIVE slot. It uses only 2 slots.
4. Remove the blank faceplate from Memory Slot 4 and place it over the leftmost Tape Drive slot.

   NOTE:
   Make sure the removable media is not write protected before placing it into the optical drive. If you can see through the hole, it is write protected.

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

Optical Drive: Power Up SPE A

NOTE:
The SPE reboots from the disk drive 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 UN331B/C Processor circuit pack flashes and other LEDs go out, which takes about 10 minutes.

Optical Drive: Unlock DUPINT Switches (High/Critical reliability only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.

Optical Drive: Wait for System to Refresh (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**

The standby refreshes after 5 minutes. If the fields display something other than the above, see the appropriate maintenance sections.

2. Verify that the disk (disk drive) and removable media on both SPEs are in service.

Verify Software Version

NOTE:
The `Tape Resident` or `R-Media Resident` field shows the software load number. Make sure it displays the correct software version number.

If standard reliability:

1. Type **list configuration software-version** and press Enter to verify that the removable media contains the Release 10 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 10 software.

Save Translations to Removable Media

NOTE:
If R7r or earlier, use the term **tape**; if R8r or later use **removable-media** in the following commands.

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) to Removable Media

NOTE:
If R7r or earlier, use the term **tape**; if R8r or later use **removable-media** in the following commands.

1. If using a TN750/B Announcement circuit pack, type **save announcements [tape | removable-media]** and press Enter to save announcements to the new removable media. You need 1 removable media for each announcement circuit pack.

Verify Translation Timestamp

NOTE:
Ignore the `System Configuration` field data for now. The screen may show incorrect system configuration data.

If standard reliability:

1. Type **list configuration software-version** and press Enter to verify that the translations show the current timestamp.

If high or critical reliability:

1. Type **list configuration software-version long** and press Enter to verify that the translations show the current timestamp.

Phase 2 Hardware Addition/Replacement

In this second phase you will add memory and replace the DUPINT circuit packs. At the end you will remove/unseat the disk drive and reboot the system from the optical drive to complete the upgrade.

1. Add the 3rd (if necessary) and 4th TN1650B Memory circuit pack
2. Replace the UN330B DUPINT circuit packs if not Vintage 3 or later
3. Remove the TN1657 Disk Drive if not Vintage 9 or later.
4. If the disk drive is Vintage 9 or later, you must back it out about an inch so the system can boot from the removable media.

Verify Active Tone-Clock is on SPE B (High/Critical reliability only)

1. Type **status port-network 1** and press Enter to verify that the Tone-Clock is on SPE B. The YELLOW LED on the active tone clock is flashing.

If Tone-Clock in SPE B is not active:

2. Type **set tone-clock 1b** and press Enter to move the tone clock from SPE A to SPE B.

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

3. Type **status port-network 1** and press Enter to verify that the Tone-Clock has moved to SPE B. Make sure the YELLOW LED on the active tone clock is flashing.

   If the Tone-Clock has not migrated to the carrier B after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Object section of the *DEFINITY Enterprise Communications Server Maintenance for R10r* book to resolve any problems.

Lock to SPE B (High/Critical reliability only)

CAUTION:
If the Tone-Clock is not on SPE B, the following step affects service.

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

Power Down SPE A

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 *left side* of the carrier then by removing the power plug on the *right 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 SPE A (standby) only, which does *not* affect service.

Add Memory, Replace DUPINT Circuit Pack, and Unseat Disk Drive on SPE A

NOTE:
The vintages on the various TN1650Bs do not have to match. They can be vintage 1 or later.

1. Insert the TN1650B memory circuit pack(s) (any vintage) in memory slot(s) 3 (if needed) and 4.
2. Check the label on the UN330B DUPINT circuit pack. If it is Vintage 3 or later, go to step 6.
3. Remove the old UN330B DUPINT circuit pack and place it in antistatic packing material.

CAUTION:
THE FOLLOWING STEPS ARE EXTREMELY CRITICAL.

4. Set the SPE SELECT switch on the V3 or later DUPINT circuit pack to be in the *same position* as the circuit pack just removed. Because you are placing it in carrier A, the SPE SELECT switch must be set to B, the active carrier.
5. Insert the new UN330B DUPINT circuit pack into the slot vacated by the old one.

   NOTE:
   The disk drive must be unlocked and moved out because the carrier must boot from the Release 10 removable media.

6. Unseat the TN1657 disk drive so SPE A boots from the optical drive.

Power Up SPE A

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 SPE A as it reboots by observing the LEDs and the terminal. It is powered up when the YELLOW LED on the UN331B/C Processor circuit pack flashes and other LEDs go out, which takes about 10 minutes.

Unlock DUPINT Switches (High/Critical reliability only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.

Wait for System Handshake (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**

For high or critical reliability only:

NOTE:
SPE A now contains the Release 10 software; however, SPE B still contains the old software release.

2. If the `Standby Handshake` field does not display **up**, retype **status spe** and press Enter. The `Standby Refreshed` and `Standby Shadowing` fields will not be up. If the handshake does not come up, refer to "Task Table" on page 1-6.

Set Tone-Clock in SPE A to Active

1. Type **set tone-clock 1a** and press Enter to move the tone clock from SPE B to SPE A.

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

2. Type **status port-network 1** and press Enter to verify that the Tone-Clock has moved to SPE A. Make sure the YELLOW LED on the tone clock is flashing.

   If the Tone-Clock has not migrated to the carrier A after 1 minute, then a Tone-Clock problem exists. Refer to the TDM-CLK Maintenance Objects section of the *DEFINITY Enterprise Communications Server Maintenance for R10r* book to resolve any problems.

Lock Switches to SPE A (High/Critical reliability only—affects service)

CAUTION:
THIS AFFECTS SERVICE. SPE A resets (cold 1 restart—reset system 3), which takes about 2 minutes.

1. Lock the SPE switches one at a time on the DUPINT circuit packs to the *left* (SPE A), the carrier with the 4 memory boards. This is a hard switch.
2. Wait until the login prompt appears, then log in.
3. Type **status spe** and press Enter to verify that SPE A is functional.

NOTE:
SPE A is now up and providing service as Release 10. If there is a major problem that affects service, refer to ''Task Table'' on page 1-6.

Power Down SPE B (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 *left side* of the carrier then by removing the power plug on the *right side* of the carrier. If there is only one power supply, remove the one power plug on the right side.

1. Power down the SPE B, the standby carrier.

Add Memory, Replace DUPINT Circuit Pack, and Unseat Disk Drive on SPE B

NOTE:
The vintages on the various TN1650Bs do not have to match. They can be vintage 1 or later.

1. Insert the TN1650B memory circuit pack(s) (any vintage) in memory slot(s) 3 (if needed) and 4.
2. Check the label on the UN330B DUPINT circuit pack. If it is Vintage 3 or later, go to step 6.
3. Remove the old UN330B DUPINT circuit pack and place it in antistatic packing material.

CAUTION:
THE FOLLOWING STEPS ARE EXTREMELY CRITICAL.

4. Set the SPE SELECT switch on the V3 or later DUPINT circuit pack to be in the *same position* as the circuit pack just removed. Because you are placing it in carrier B, the SPE SELECT switch must be set to A, the active carrier.
5. Insert the new UN330B DUPINT circuit pack into the slot vacated by the old one.

   NOTE:
   The disk drive must be unlocked and moved out because the carrier must boot from the Release 10 removable media.

6. Unseat the TN1657 disk drive so SPE B boots from the optical drive.

Power Up SPE B (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 UN331B/C Processor circuit pack flashes and other LEDs go out, which takes about 10 minutes.

Unlock DUPINT Switches (High/Critical reliability only)

1. Move the SPE SELECT switches to the AUTO position *one at a time*.

Wait for System Refresh (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**

   SPE B refreshes after 5 minutes. If the fields display something other than the above, see the appropriate maintenance sections.
2. Verify that the removable media is present and in service on both SPEs. At this point the term **tape** is replaced by **removable-media**.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                     Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Set Daylight Savings Rules (if necessary)

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.

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

```
                        DAYLIGHT SAVINGS RULES
Rule            Change Day                Month    Date    Time     Increment

0:   No Daylight Savings

1:   Start: first Sunday___ on or after April___ 1  at _2:00      01:00
     Stop:  first Sunday___ on or after October_ 25 at _2:00
2:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
3:   Start: first_______ on or after ____ __ at __:__
     Stop:  first _______ on or after ____ __ at __:__
4:   Start: first _____ on or after ____ __ at __:__
     Stop:  first _______ on or after ____ __ at __:__
5:   Start: first _____ on or after ____ __ at __:__
     Stop:  first _______ on or after ____ __ at __:__
6:   Start: first _____ on or after ____ __ at __:__
     Stop:  first _______ on or after ____ __ at __:__
7:   Start: first _____ on or after ____ __ at __:__
     Stop:  first _______ on or after ____ __ at __:__
```

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

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

3. When done, press Enter.

Verify Date and Time

1. Type **display 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. Verify that the date and time are correct and that the daylight savings rule is set.

Set Locations (if necessary)

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    Daylight-Savings        Number Plan
                                 Offset      Rule                    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.
2. On the second screen, set the `TTI Enabled?` field to **y** to activate the TTI feature.
3. Type **status tti** and press Enter. Wait until the `Percent Complete` field shows 100%.

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.

Check for Translation Corruption

1. Type **newterm** and press Enter. If you do not get a login prompt and see the following message:

   Warning: Translation corruption detected

follow the normal escalation procedure for translation corruption before continuing the upgrade.

2. If R5r or earlier, execute the following commands and note the status:
   - list station
   - list trunk-group
   - list hunt-group
   - list data-module
   - list integrated announcements (if any boards installed)

If you get the following message with any of the above commands:

Error encountered, can't complete request

follow the normal escalation procedure for translation corruption before continuing the upgrade.

Check Link Status

1. Type **display communication-interface links** and press Enter. Compare it with the earlier status. See ''Display Alarms'' on page 1-11.
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.

Install V9 or Later Disk Drive(s)

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

Ignore the RED alarm LED on the new disk drive(s) after installation. This is because the disk drive is blank. The alarm resolves itself after the disk restored.

For standard reliability:

1. Type **busyout host-adapter** and press Enter to prevent other applications from accessing the disk drive or removable media. Make sure it says PASS.

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. Check the label on the TN1657 disk drive. If it is Vintage 9 or later, lock it in place.
3. If the TN1657 disk drive is Vintage 8 or earlier, remove it and place it in antistatic packing material.
4. Insert the new TN1657 disk drive, V9 or later, all the way into the slot and lock in place.
5. Type **reset host-adapter** and press Enter to release the disk from the maintenance-busyout condition and put it back into service.
6. Type **release host-adapter** and press Enter to allow the disk to spin up. Wait until all LEDs go out, about 2 minutes.
7. 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 the steps.

8. Type **list configuration control** and press Enter to verify the disk drive vintage. If the field shows V0000 for the vintage, unlock and back out the disk drive and repeat steps 1 through 5.

For high or critical reliability:

1. Type **busyout host-adapter a** and press Enter. Make sure it says PASS.
2. Check the label on the TN1657 disk drive. If it is Vintage 9 or later, lock it in place.

3. If the TN1657 disk drive is Vintage 8 or earlier, remove it and place it in antistatic packing material.
4. Insert the new TN1657 disk drive, V9 or later, all the way into the slot and lock in place.
5. Type **reset host-adapter a** and press Enter to release the disk from the maintenance-busyout condition and put it back into service.
6. Type **release host-adapter a** and press Enter to allow the disk to spin up. Wait until all LEDs go out, about 2 minutes.
7. Type **status spe** and press Enter to verify that the disk is present and in service.

   NOTE:
   If the disk drive fails to return to service, repeat the steps.

8. Type **list configuration control** and press Enter to verify the disk drive vintages. If the field shows V0000 for the vintage, unlock and back out the disk drives and repeat the steps 1 through 5.

Repeat for the SPE B:

9. Type **busyout host-adapter b** and press Enter. Make sure it says PASS.
10. Check the label on the TN1657 disk drive. If it is Vintage 9 or later, lock it in place.
11. If the TN1657 disk drive is Vintage 8 or earlier, remove it and place it in antistatic packing material.
12. Insert the new TN1657 disk drive, V9 or later, all the way into the slot and lock in place.
13. Type **reset host-adapter b** and press Enter to release the disk from the maintenance-busyout condition and put it back into service.
14. Type **release host-adapter b** and press Enter to allow the disk to spin up. Wait until all LEDs go out, about 2 minutes.
15. Type **status spe** and press Enter to verify that the disk is present and in service.

    NOTE:
    If the disk drive fails to return to service, repeat the steps.

16. Type **list configuration control** and press Enter to verify the disk drive vintages. If the field shows V0000 for the vintage, unlock and back out the disk drives and repeat the steps 7 through 11.

Save Translations Removable-Media (post-upgrade)

1. Type **save translations removable-media** and press Enter to copy upgraded translations from the disk drive to the removable media, which takes about 2 minutes.

Save Announcements Removable-Media (if necessary—post-upgrade)

1. If using a TN750/B Announcement circuit pack, type **save announcements removable-media** and press Enter to copy announcements from the disk drive to the removable media.

Restore Disk

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

If standard reliability:

1. Type **restore disk full** and press Enter to copy the information on the removable media to the disk drive, which takes about 10 minutes.
2. Type **list configuration software-version** and press Enter to verify that all copies are good.
3. 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.

If high or critical reliability:

1. Type **restore disk full both** and press Enter to copy the information on the removable media to the disk drive, which takes about 20 minutes.
2. Type **list configuration software-version long** and press Enter to verify that all copies are good.
3. 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.

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade:

1. Type **display system-parameters customer-options** and press Enter.
2. Go to screen 7, QSIG Optional Features, and ensure that the `Basic Call Setup` field is **y**.

Save Translations (post-upgrade)

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

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.

Busy Out Trunks

1. Busy out trunks that were busied out before the upgrade.

Resolve Alarms

1. Type **display alarms** and press Enter to examine the alarm log. Resolve new alarms since the upgrade using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

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.

Affix position label(s)

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

Return Replaced Equipment

1. Return replaced equipment to Avaya.

G3vs with Intel 386 or Risc Processor to R10r

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 10r system.

The upgrade to a Release 10r 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 10r.

Some of the I/O cables from the existing system may be too short to reach from the Release 10r 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 10r 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

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches beginning with R10. The License File enables the switch's software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. W*ithout a license file, the switch does not provide normal call processing.*

Service Interruption

This upgrade process requires a service interruption that depends on whether the Release 10r 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 10r 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 10 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 10 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 10.

Task Tables

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

Table 2-1. Task list: Intel 386 or RISC processor to Release 10r

✓	Task Description	Page
	Pre-upgrade checklist	2-5
	Software Upgrade	2-8
	Check SPE	2-9
	Disable Maintenance	2-10
	Check Link Status	2-9
	Disable TTI	2-10
	Save Translations	2-10
	Save Announcements	2-10
	Back Up Disk	2-11
	Check ISDN Signaling Group States	2-11
	Shut Down DEFINITY LAN Gateway System	2-11
	Shut Down DEFINITY AUDIX System (if necessary)	2-11
	Power Down the SPE	2-12
	Install Emergency Transfer Ground Wire	2-12
	Remove the Present System	2-12
	Unpack and Install the Release 10r Multicarrier Cabinet	2-13
	Remove Emergency Transfer Ground Wire	2-13
	Power-Up the Release 10r PPN	2-13
	Deliver or Install the License File	2-13
	Administer No-License/Emergency Numbers	2-14
	Verify Software Version	2-15
	Restore Disk	2-15
	Set Daylight Savings Rules	2-15
	Set Date and Time	2-16
	Set Locations	2-18

Continued on next page

Table 2-1. Task list: Intel 386 or RISC processor to Release 10r — *Continued*

✓	Task Description	Page
	Re-Record Announcements (if necessary)	2-19
	Copy Announcements (if necessary)	2-19
	Install Remaining Hardware and Administer the System	2-20
	Enable TTI	2-20
	Resolve Alarms	2-20
	Check Link Status	2-20
	Check ISDN Signaling Groups	2-21
	Enable Scheduled Maintenance and Alarm Origination	2-21
	Register the Switch for Maintenance	2-21
	Check Customer Options	2-25
	Verify the Upgrade	2-25
	Save Translations	2-25
	Save Announcements (if necessary)	2-25
	Power Up DEFINITY LAN Gateway System	2-25
	Power Up DEFINITY AUDIX System	2-25
	Back Up Disk	2-26
	Set Core Dump Vector	2-26
	Return Replaced Equipment	2-26

Perform Precutover Procedures

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 2-2 ready.

Table 2-2. Intel 386 or RISC processor to R10r pre-upgrade checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Release 10, Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Release 10 Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	MSSNET serial number(s); see faceplate	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

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 10r removable media. This process takes several days.

The new Release 10r software removable media (including 1 with translations) must be on-site before the upgrade begins. For each Release 10r 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 10r 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 Maintenance for R10r*.

Remove the Present System

NOTE:
If the equipment room is large enough to allow the Release 10r cabinet to be installed while the present system is in service, skip to ''Install the Release 10r Cabinets'' on page 2-13. Return to this section when finished.

If the present system must be removed to make room for the Release 10r 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.
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 and TN2501AP Integrated Announcement circuit packs store 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 2-27.

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 Maintenance for R10r, for information about preparing the system for a power down.

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

Install Emergency Transfer Ground Wire

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

1. Connect a 10 AWG (#25) (2.6 mm^2) 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 mm^2) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm^2) 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 10r 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 10r cabinet, retain them for connection to the Release 10r system.

Install the Release 10r Cabinets

Unpack and Install the Release 10r Multicarrier Cabinet

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

   CAUTION:
   Do not power up the Release 10r system.

2. Return to this section when the installation of the Release 10r is completed.

Remove Emergency Transfer Ground Wire

1. If the Release 10r is being installed while the present system is in service:
   a. Connect a 10 AWG (#25) (2.6 mm^2) 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 10r cabinet:
   a. Disconnect the 10 AWG (#25) (2.6 mm^2) wire (installed earlier) from the connecting block or pin 49 of the CAP (cable access panel).

Power-Up the Release 10r PPN

1. Insert the new Release 10r removable media into the optical drive.
2. Power up the Release 10r cabinet and allow the system to boot up completely.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Verify Software Version

1. Type **list configuration software long** and press Enter to verify the removable media contains the required Release 10 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 10 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 G3V10r.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 2-3 for English day names When done, press Tab to move to next field.

Table 2-3. English Day of the Week Names

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

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

Table 2-4. English Month Names

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

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

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    Daylight-Savings        Number Plan
                                 Offset      Rule                    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 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.

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 10r cabinet, skip to Step 3.

If the Release 10r cabinet was installed while the present system is in service, return to ''Remove the Present System'' on page 2-9. Return to this section when finished.

1. Connect all new and reusable I/O cables to the Release 10r cabinet. Cross-connect at the MDF as required.
2. Remove all reusable circuit packs from the present system and install into the Release 10r cabinet. Install any new circuit packs into the Release 10r 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 Maintenance for R10r*.

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 and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:

   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.

6. In the **Product Type** field choose *DEFINITY* for the following products:

7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.

8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer's FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others
13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing
14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.
15. In the **Alarm Destination** field, choose
    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).
16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.
17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.
18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

1. Type **display system-parameters customer-options** and press Enter to set the customer options that were purchased.

   Ensure that the `G3 version:` field is **V10**.

2. 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 ensure that the `Basic Call Setup` field is **y**.

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 2-27.

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 crtl 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 R10r EPN

3

This chapter provides the information necessary to upgrade the following Single Carrier Cabinet (SCC) Processor Port Network (PPN) releases to a R10:

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

Upgrading these systems to a Release 10r means installing a new Release 10r 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 10r 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 10r cabinet has already been installed. If not, refer to Multicarrier Cabinet installation procedures in *DEFINITY Made Easy* tools to install the Release 10r system. Return to this chapter when finished.

DEFINITY Enterprise Communications Server Release 10 Administrator's Guide lists features and functions and provides the commands, procedures, and forms to initialize and administer the Release 10r.

The upgrade follows this general process:

- Preliminary Procedures
- Dismantle SCC PPN
- Convert to SCC EPN
- Install the EPN

Read This First

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches beginning with R10. The License File enables the switch's software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. W*ithout a license file, the switch does not provide normal call processing.*

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 10 *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 10r EPN, a Release 10r 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 10r, 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 10r 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 10r PPN.

When connecting adjuncts to an upgraded Release 10r, 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 10r removable media.

Usable Circuit Packs

Every circuit pack used in the upgraded Release 10r system must conform to the minimum usable vintage requirements for Release 10r. Those circuit packs shipped in the new Release 10r 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 10r 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 10r system.

Site Inspections

For a Release 10r 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 10r removable media. This process takes 2 weeks. The Release 10r media (including 1 with translations) must be on-site before the upgrade begins. For each Release 10r 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, 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 10 Administrator’s Guide*, for information to make any required changes.

ISDN Gateway

When upgrading to a Release 10r, 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 10 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]
	Earthquake Equipment (if needed):	
846408268 846408386 846408250 846408243	Front Panel Ground Plate Stiffener Front Mounting Angle	1 1 1 1
	Attenuators (single-mode fiber only):	
106060718 106060734 106061021	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 10r 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 10r system.
5. Required for the B port cabinet of a critical reliability Release 10r EPN.
6. Required for a critical reliability Release 10r 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 10* 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 10r System

✓	Task Description	Page
	Pre-upgrade checklist	3-10
	Mail Spare Translation Card to STS	3-12
	Follow Routine Preventive Maintenance	3-12
	Label Cables	3-12
	Check SPE	3-13
	Disable Scheduled Maintenance and Alarm Origination to INADS	3-13
	Busyout MMI Circuit Packs (H/C only)	3-14
	Save Translations	3-14
	Save Announcements (if necessary)	3-14
	Check Link Status	3-15
	Disable TTI	3-15
	Shut Down DEFINITY LAN Gateway System	3-16
	Shut Down DEFINITY AUDIX System	3-16
	Power Down Existing System	3-16

Continued on next page

Table 3-2. Tasks to Upgrade to Release 10r System — *Continued*

✓	Task Description	Page
	Disconnect Power and Ground	3-17
	Install Emergency Transfer Ground Wire	3-17
	Disconnect Equipment and Cables	3-17
	Remove Circuit Packs	3-17
	Disconnect TDM/LAN Cables and ICC Cables	3-17
	Remove the Existing Control Cabinet	3-18
	Unpack and Install Expansion Control Cabinet	3-18
	Install Port Cabinets	3-18
	Install Circuit Packs	3-19
	Change Cabinet Address Plugs	3-19
	Install TDM/LAN Bus Terminators	3-21
	Connect TDM/LAN Cables and ICC Cables	3-23
	Interconnect Port Networks	3-25
	Connect Power and Ground	3-25
	Verify Usable Circuit Pack Vintages	3-25
	Install System Access Ports	3-25
	Reseat DEFINITY LAN Gateway System	3-26
	Reseat DEFINITY AUDIX System	3-26
	Remove Emergency Transfer Ground Wire	3-26
	Reboot the System	3-26
	Deliver or Install the License File	3-27
	Administer No-License/Emergency Numbers	3-27
	Restart DEFINITY LAN Gateway System	3-28
	Label Main Distribution Frame	3-28
	Reconnect Cables	3-28
	Power Up the EPN Cabinet	3-28
	Install Rear Ground Plates (Systems with Earthquake Protection)	3-29
	Install Front Ground Plates (Systems with Earthquake Protection)	3-29

Continued on next page

Table 3-2. Tasks to Upgrade to Release 10r System — *Continued*

✓	Task Description	Page
	Install Cabinet Clips (Systems without Earthquake Protection)	3-30
	Install Cable Clamps	3-32
	Retranslate Port Circuits	3-32
	Re-record Announcements (TN750/B Only)	3-33
	Administer Fiber Links	3-33
	Enable TTI	3-33
	Check Link Status	3-33
	Resolve Alarms	3-33
	Enable Scheduled Maintenance and Alarm Origination	3-33
	Register the Switch for Maintenance	3-34
	Check Customer Options	3-37
	Save Translations	3-38
	Return Replaced Equipment	3-38

Preliminary Procedures

During an upgrade, Software Technical Support (STS) must convert the Release 5/6si translations and write them to a Release 10r 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 10r removable media (1 with the converted translations, 2 if duplicated) must be on-site before the upgrade begins.

Because a new Release 10r PPN is installed during the upgrade, STS changes the PN number of the Release 5/6si PPN to be converted to a Release 10r EPN. To minimize the renumbering of PNs and to minimize the rewiring and relabeling of the MDF, the removable 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 10r EPN. For example, if a Release 5/6si system with 2 PNs (a PPN and an EPN) were upgraded to a Release 10r, 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.

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 3-3 ready.

Table 3-3. R5si/R6si to R10r EPN pre-upgrade checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Release 10, Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Release 10 Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	MSSNET serial number(s); see faceplate.	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

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 Maintenance for R10r*.

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.

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 and TN2501AP Integrated Announcement circuit packs store 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 10r EPN.

Check Link Status

1. Enter **display communication-interface links** and press RETURN.
2. Note all administered links.
3. Type **status link *number*** and press RETURN for each administered link.

   Check the following fields for the values listed:

   - `Link Status` = connected
   - `Service State` = in service

   NOTE:
   For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to

   1. Type **list signaling group** and press RETURN.

      Note the signaling groups listed by number.

   2. For each of the signaling groups listed, type **status signaling group <*number*>** and press RETURN.
4. If any of the links are not up, take the necessary corrective action to restore the link before continuing with 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.

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 Maintenance for R10si, 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 mm^2) coupled bonding conductor wire.
3. Disconnect the 6 AWG (#40) (4.1 mm^2) cabinet ground wire from the ground bar in the cabinet.

Install Emergency Transfer Ground Wire

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

1. Connect a 10 AWG (#25) (2.6 mm^2) 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.

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 10r 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 10r 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 3-4.

Table 3-4. 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.

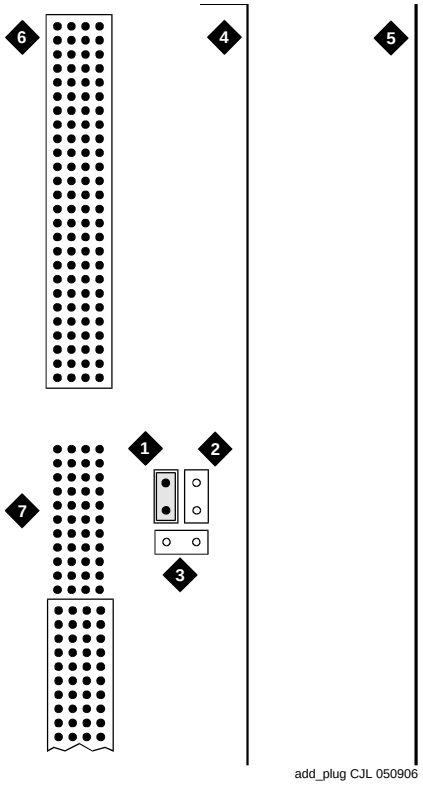


Figure Notes

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

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.

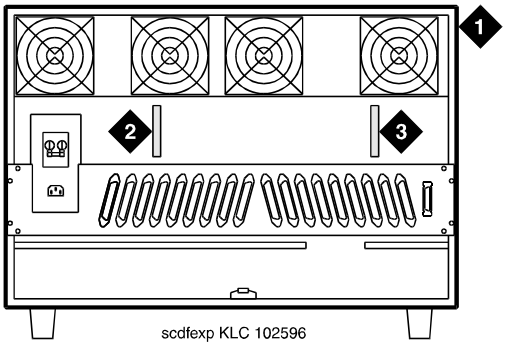


Figure Notes

1. Expansion Cabinet (A Position)
2. AHF110 TDM LAN/Bus Terminator (Slot 18)
3. AHF110 TDM LAN/Bus Terminator (Slot 01)

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.

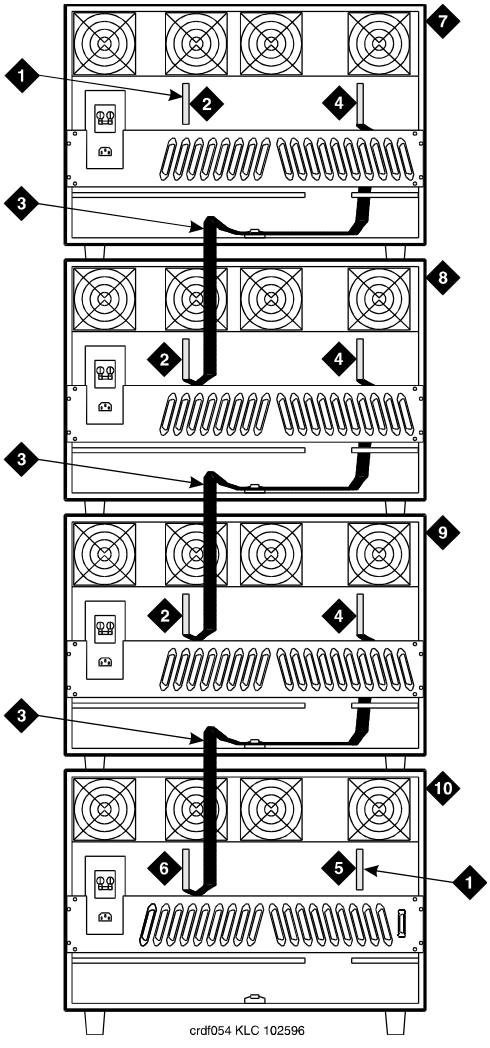


Figure Notes

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

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

Connect TDM/LAN Cables and ICC Cables

1. Route and connect the TDM/LAN cables. If any of the Release 5/6si port cabinets (being upgraded to Release 10r cabinets) were originally R1V3 port cabinets, use the following steps to route a cable between an R1V3 upper cabinet and cabinet beneath it. Do not run a new cable through the existing slot in the rear shelf of the upper cabinet.

   a. Loosen the 2 left connector panel screws, then remove the other 2 connector panel screws.

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

   c. Replace and tighten the connector panel screws.

2. For a critical reliability system, connect the ICC cables as shown in Table 3-5, 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 3-5. Intercabinet Cable Connections

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

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

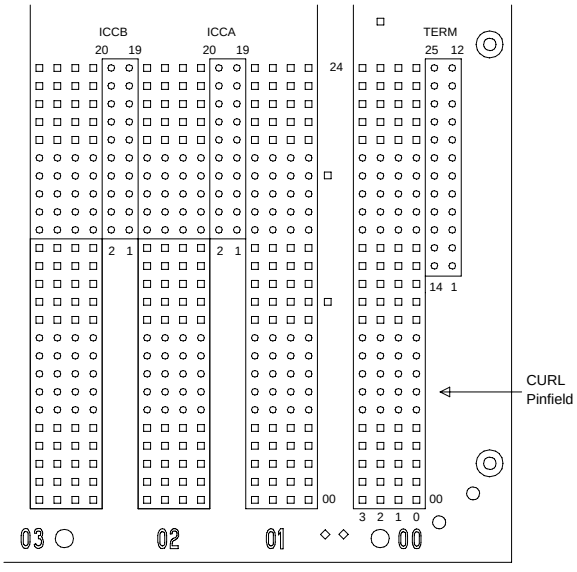


Figure 3-4. ICC Pinfield Blocks on J58890N Expansion Control Cabinet

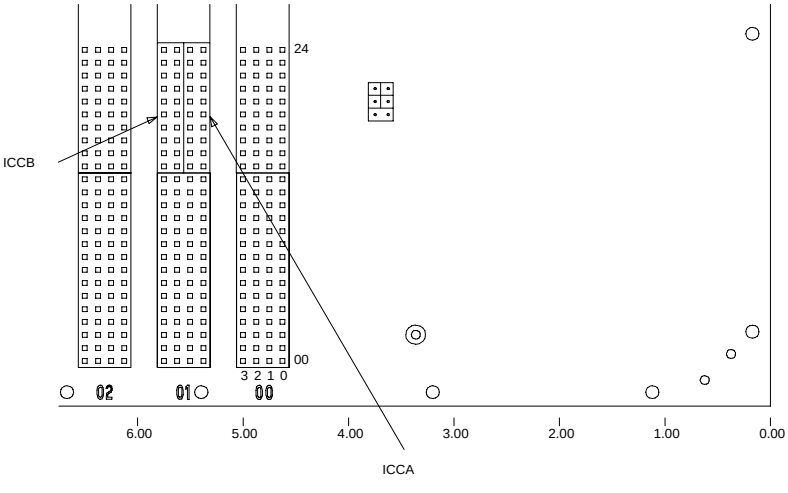


Figure 3-5. ICC Pinfield Blocks on J58890H Port Cabinet

Interconnect Port Networks

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 3-38.

Connect Power and Ground

1. Reconnect the 6 AWG (#40) (4.1 mm^2) cabinet ground wire to the single-point ground bar on the cabinet.
2. Reconnect the 10 AWG (#25) (2.6 mm^2) 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 10r 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+)
- 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 10r 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.
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).

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.

4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

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 10r 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 10r 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 10r and the EPN was originally an R1V3, replace the lower rear cover of port cabinet “B” with a new cover (846307817) so the ICC cables and the new ground plate can be installed between cabinets A and B.

Power Up the EPN Cabinet

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

Install Rear Ground Plates (Systems with Earthquake Protection)

1. Loosen the 4 screws at the bottom of the top cabinet and at the top of the cabinet underneath the top cabinet. See Figure 3-6.
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.

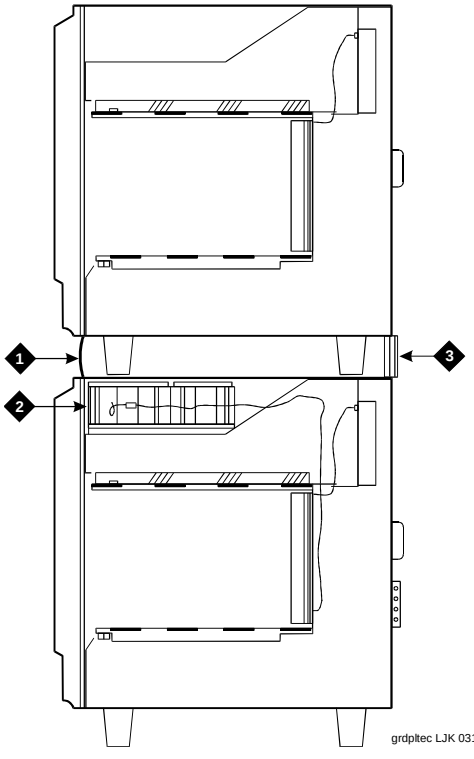


Figure Notes

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.

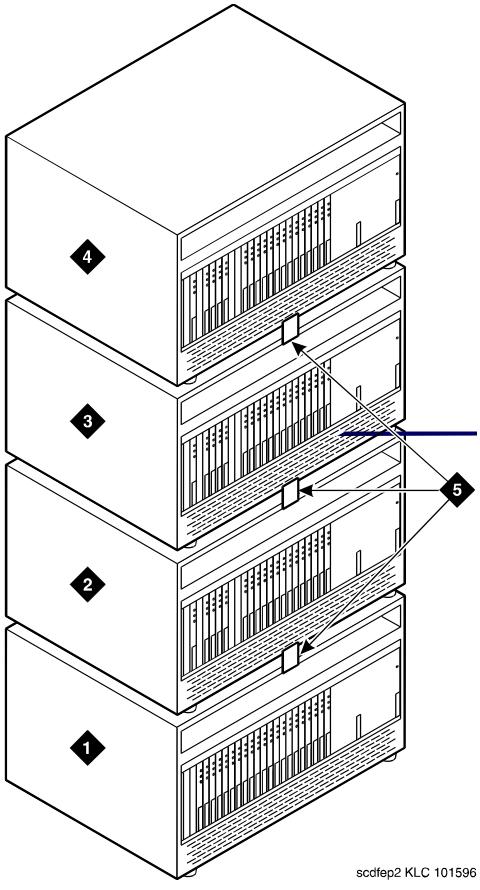


Figure Notes

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

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.

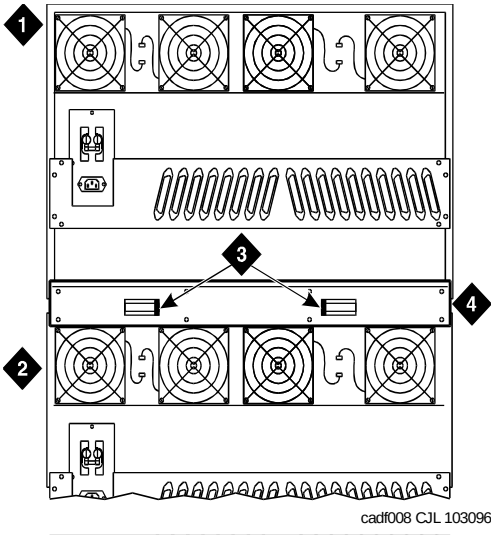


Figure Notes

1. Port Cabinet
2. Control Cabinet
3. Cable Clamps
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 10 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:
   Even though a system may have a mixture of TN750/B, TN750C and TN2501AP announcement/integrated announcement circuit packs, you do not need to re-record TN750C or TN2501AP integrated announcements.

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 Maintenance for R10r.*

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    If you have to abort your registration, click on the ***Abort Session*** *button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

1. Type **display system-parameters customer-options** and press Enter.

   Ensure that the `G3 version:` field is **V10**.

2. 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 ensure that the `Basic Call Setup` field is **y**.

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 10r with 2 PNs.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Because a Release 10r 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.

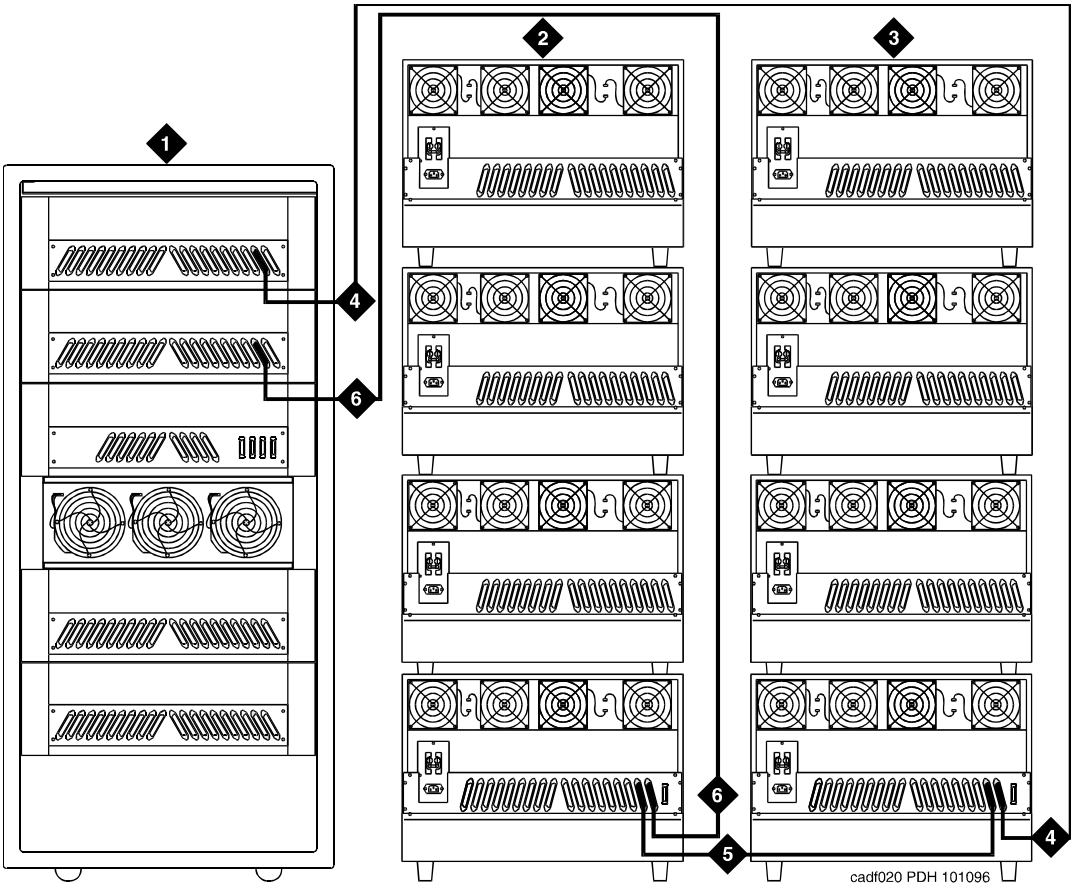


Figure Notes

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

Figure 3-9. Standard Reliability Release 10r with 2 or 3 Port Networks

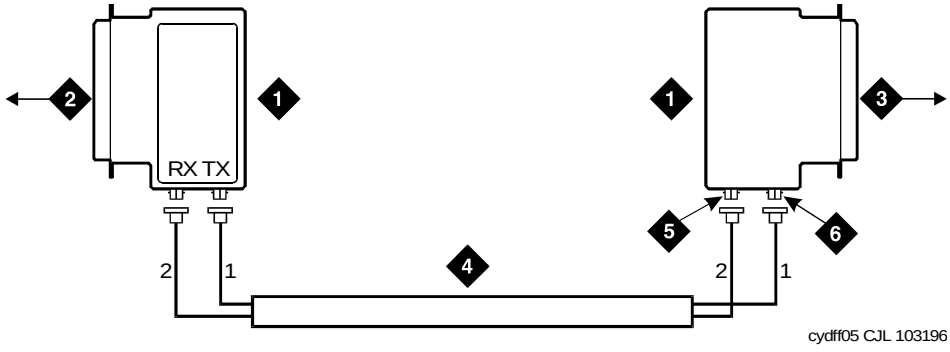


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier B Slot 1B02
3. To EPN 1 Carrier A Slot 2A01 (Cabinet Stack 2)
4. Fiber Optic Cable
5. TX Connector
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.

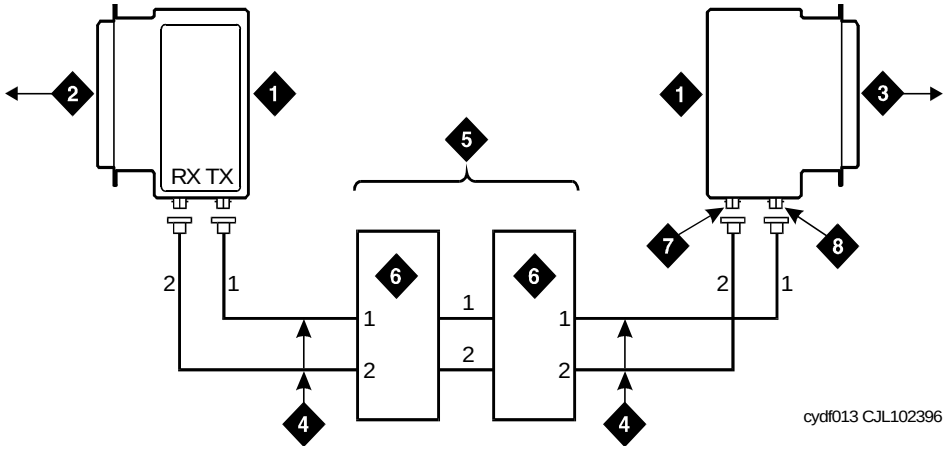


Figure Notes

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

Figure 3-11. Fiber Optic Connections PPN to EPN1

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 10r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 10r 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.

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

   b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1C02.
   c. Route the fiber optic cable from the lightwave transceiver to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
   d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control cabinet A EPN stack 2:
   a. Install a lightwave transceiver on the connector at slot 2A01.

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

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

For 2 Collocated Expansion Port Networks

1. Behind port carrier D of the multicarrier PPN:
   a. Install a lightwave transceiver on the connector at slot 1D02.

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

   b. Connect 1 end of the appropriate fiber optic cable to the lightwave transceiver at slot 1D02.
   c. Route the cable to the cabinet's cable tray and down, out of the cabinet, to the EPN stack.
   d. Carefully attach the fiber optic cable (with cable ties) to the wall of the cable tray at the built-in cable tie positions.
2. Behind control cabinet A of EPN stack 3:
   a. Install a lightwave transceiver on the connector at slot 3A01.

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

   b. Connect the other end of the fiber optic cable from the PPN to the lightwave transceiver at slot 3A01.
   c. Carefully attach the fiber optic cable (with cable ties) to the rear covers of the EPN stack.
   d. Coil the surplus fiber optic cable and place it either in the cable manager or on the bottom shelf (holding the power supply) of the PPN cabinet.
3. Behind control cabinet A of EPN stack 2:
   a. Install a lightwave transceiver on the connector at slot 2A02.

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

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

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

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

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

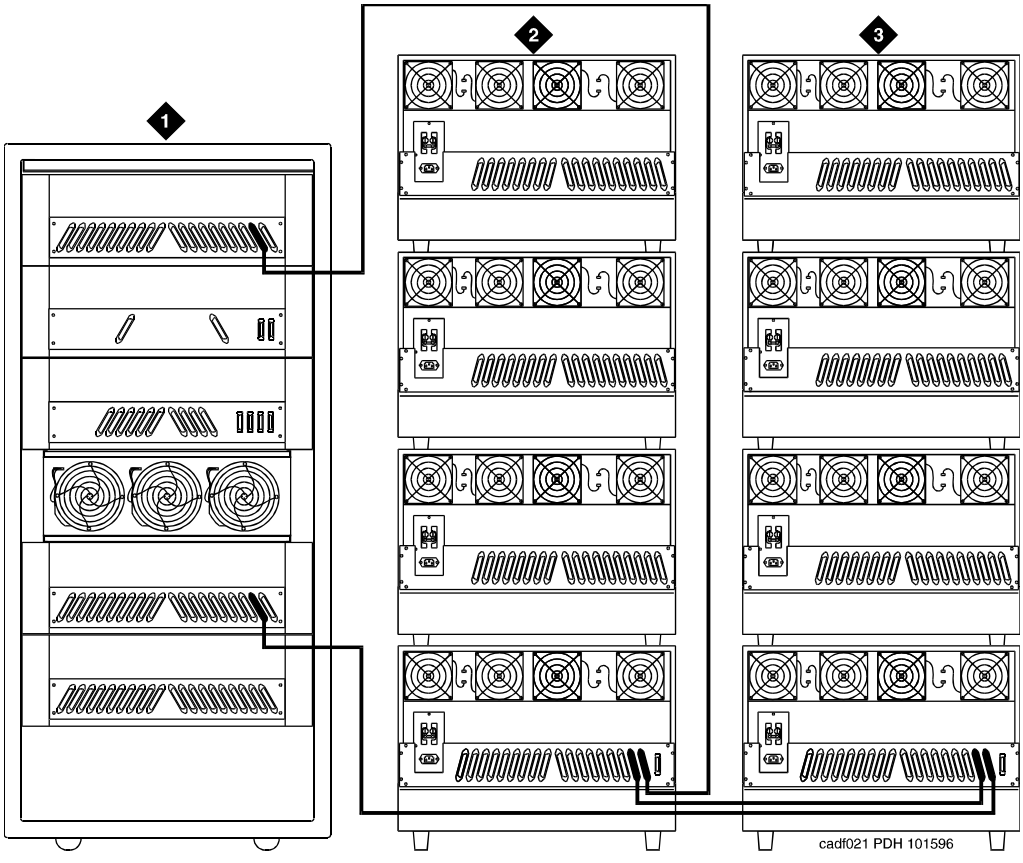


Figure Notes

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

Figure 3-12. High Reliability Release 10r with 2 or 3 Port Networks

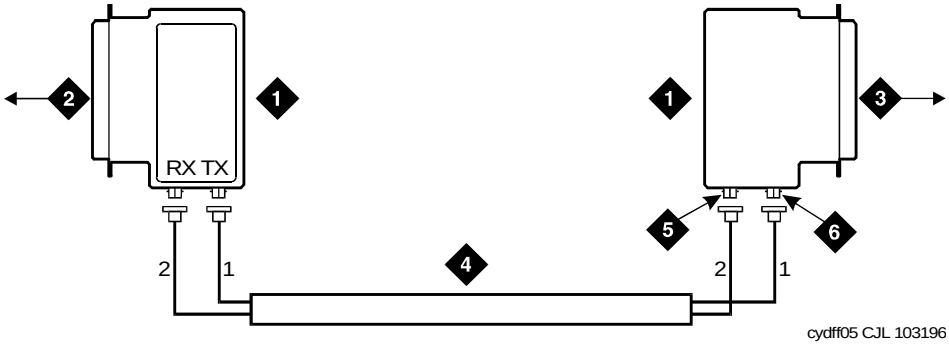


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier C Slot 1C02
3. To EPN 1 Carrier A Slot 2A01 (Cabinet Stack 2)
4. Fiber Optic Cable
5. TX Connector
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:

   a. Install a lightwave transceiver on the connector at slot 2A01.

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

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

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

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

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

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

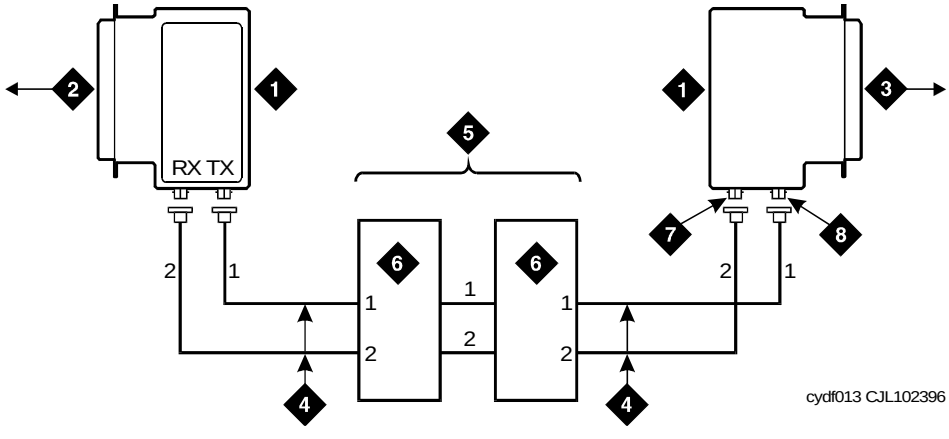


Figure Notes

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

Figure 3-14. 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 10r with 2 port networks.

For collocated cabinets, route the fiber optic cables directly from the PPN to each EPN cabinet. Since a Release 10r 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.

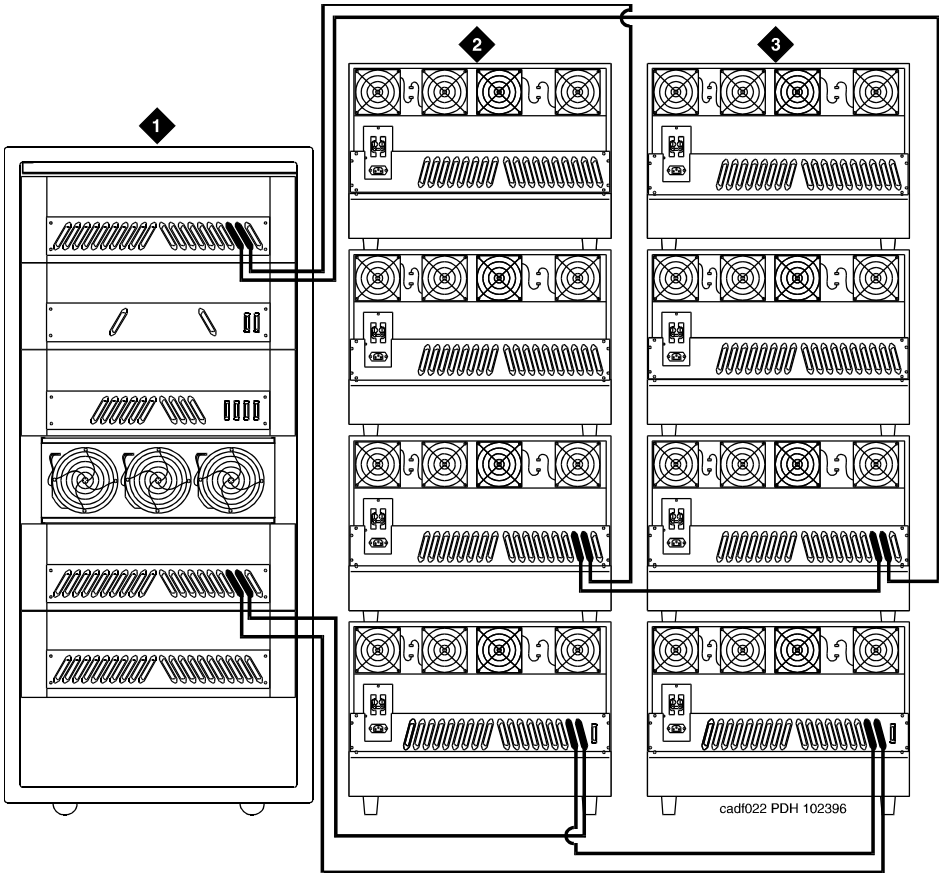


Figure Notes

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

Figure 3-15. Critical Reliability Release 10r with 2 or 3 Port Networks

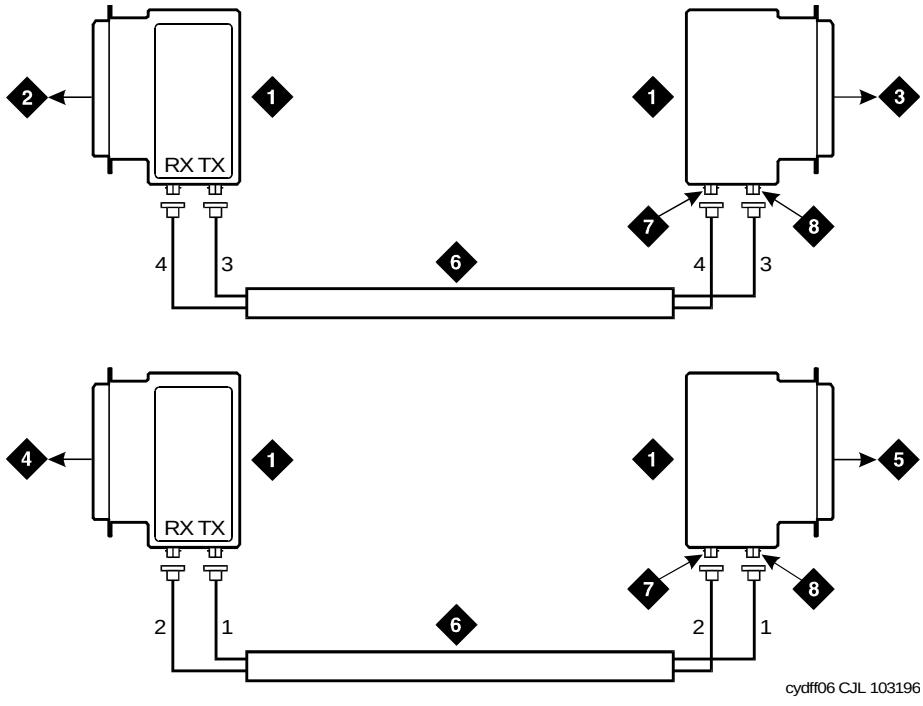


Figure Notes

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

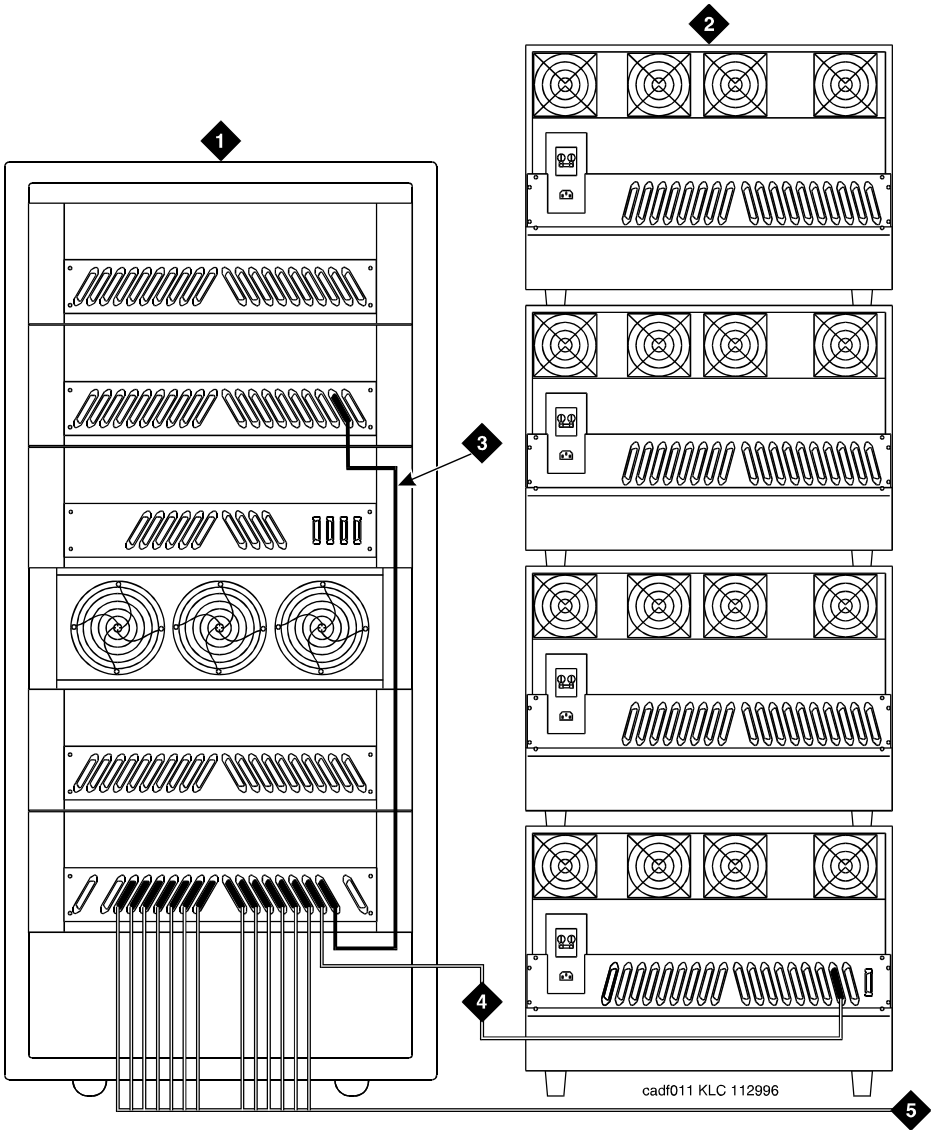


Figure Notes

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.

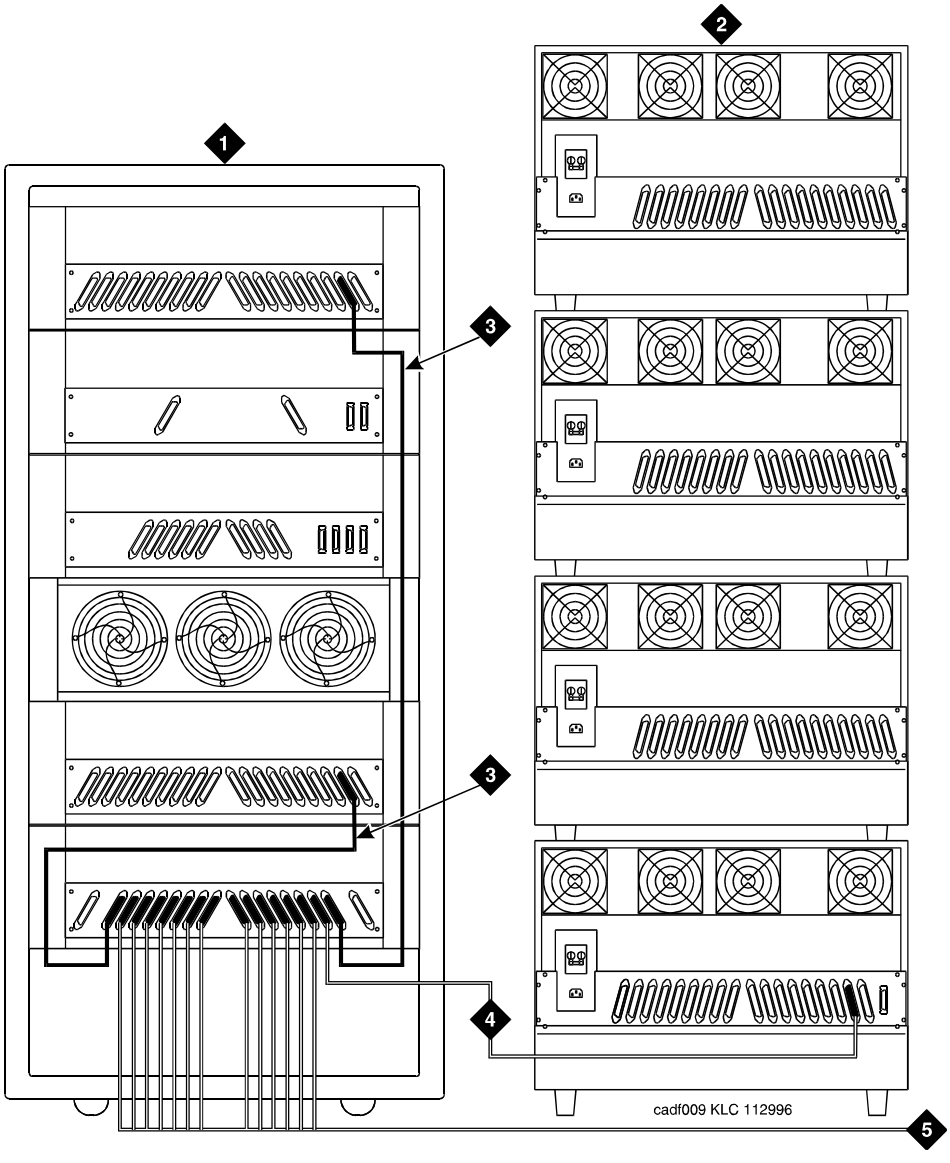


Figure Notes

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.

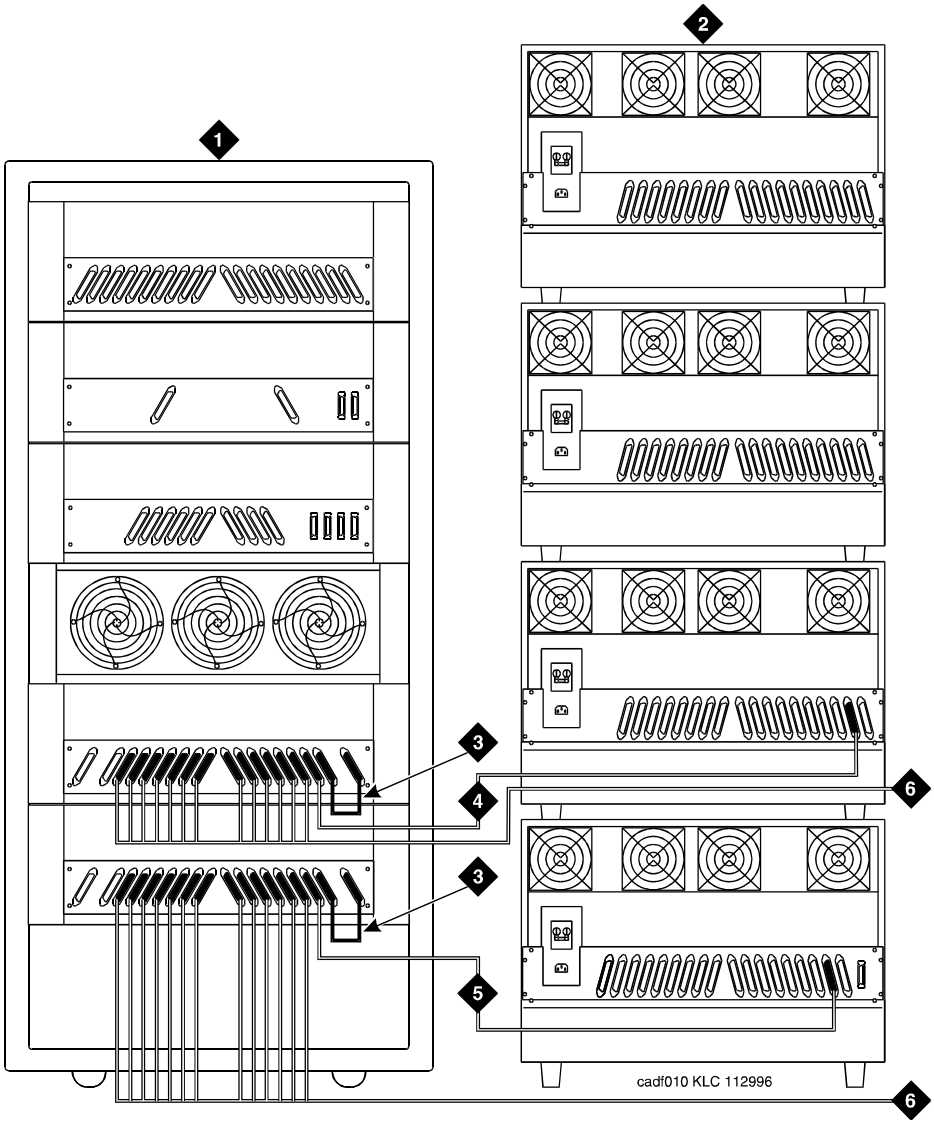


Figure Notes

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

Figure 3-19. Fiber Optic Connections Through Center Stage Switch

DS1 CONV-Remoted Cabinets

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

NOTE:
These limits for DS1 remoting is the maximum distance between *any* 2 port networks in a Release 10r 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 10r 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 3-6 lists the cable numbers and lengths for the possible connections.

Table 3-6. 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 10r 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 crtl 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 R10r EPN

4

This chapter provides the information necessary to upgrade a DEFINITY G2 universal module to a DEFINITY ECS R10r for standard, high, and critical reliabilities.

Upgrading this system to a Release 10r means installing a new Release 10r 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 10r requires changing, and often restructuring, the expansion interface circuit packs and the hardware, including replacing the control carrier.

This upgrade assumes that the Release 10r cabinet has already been installed. If not, refer to Multicarrier Cabinets installation instructions in *DEFINITY Made Easy* tools to install the Release 10r system. Return to this chapter when finished.

DEFINITY Enterprise Communications Server Administrator's Guide lists the features and functions and provides the commands, procedures, and forms to initialize and administer the Release 10r.

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

License File

Remote Feature Activation (RFA) is a Web-based application that enables the creation and deployment of License Files for all switches beginning with R10. The License File enables the switch's software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. W*ithout a license file, the switch does not provide normal call processing.*

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 10, 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 10 translations that are appropriate for the customer's needs. For information to make the required changes, refer to:

- *DEFINITY Enterprise Communications Server 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 10 *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 10 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 10 system must conform to the minimum usable vintage requirements for Release 10. Those circuit packs shipped in the new Release 10 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 10 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 10 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 10 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 10 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 10 upgrade has different power requirements than the G2 system. Refer to the *DEFINITY Enterprise Communications Server 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 R10 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 10 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 10 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 10 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 10 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 10 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.

Standard Reliability

Table 4-3. Tasks to Upgrade to Release 10r — Standard Reliability

✓	Task Description	Page
	Pre-upgrade checklist	4-14
	Required Hardware	4-17
	Follow Routine Preventive Maintenance	4-18
	Label Cables	4-18
	Remove Module Control Carrier(s)	4-18
	Disable TTI	4-18
	Power Down G2 System	4-19
	Install Power-Failure Transfer Ground Wire	4-19
	Disconnect Cables	4-19
	Remove Circuit Packs from Module Control Carrier A	4-19
	Remove CURL from Module Control Carrier A	4-20
	Remove Module Control Carrier A	4-20
	Install Expansion Control Carrier(s)	4-24
	Install New Expansion Control Carrier A	4-24
	Install Circuit Packs	4-27
	Interconnect Port Networks	4-27
	Verify Usable Circuit Pack Vintages	4-27
	Remove Power-Failure Ground Wire	4-27
	Boot the Release 10 System	4-28
	Deliver or Install the License File	4-28
	Administer No-License/Emergency Numbers	4-29
	Set Daylight Savings Rules	4-29

Continued on next page

Table 4-3. Tasks to Upgrade to Release 10r — Standard Reliability — *Continued*

✓	Task Description	Page
	Set Date and Time	4-30
	Set Additional Administration	4-32
	Reconnect Cables to Upgraded EPN Cabinet	4-32
	Power Up the EPN Cabinets	4-33
	Retranslate Port Circuits	4-33
	Enable TTI	4-33
	Check Link Status	4-33
	Resolve Alarms	4-33
	Enable Scheduled Maintenance and Alarm Origination	4-34
	Register the Switch for Maintenance	4-34
	Check Customer Options	4-37
	Save Translations	4-38
	Back Up Disk	4-38
	Return Replaced Equipment	4-38

High Reliability

Table 4-4. Tasks to Upgrade to Release 10r — High Reliability

✓	Task Description	Page
	Pre-upgrade checklist	4-40
	Follow Routine Preventive Maintenance	4-43
	Label Cables	4-43
	Check Link Status	4-43
	Disable TTI	4-43
	Power Down G2 System	4-43
	Install Power-Failure Transfer Ground Wire	4-44
	Disconnect Cables	4-44

Continued on next page

Table 4-4. Tasks to Upgrade to Release 10r — High Reliability

Critical Reliability

Table 4-5. Tasks to Upgrade to Release 10r — Critical Reliability

✓	Task Description	Page
	Pre-upgrade checklist	4-65
	Upgrade Cabinets	4-68
	Follow Routine Preventive Maintenance	4-69
	Label Cables	4-69
	Check Link Status	4-70
	Disable TTI	4-70
	Power Down G2 System	4-70
	Install Power-Failure Transfer Ground Wire	4-70
	Disconnect Cables	4-71
	Remove Circuit Packs from Module Control Carriers A and B	4-71
	Remove CURL from Module Control Carrier A	4-71
	Remove Module Control Carriers A and B	4-72
	Prepare the New A and B Position Carriers	4-77
	Install the New A and B Position Carriers	4-77
	Test the CURL	4-83
	Install Circuit Packs	4-83
	Interconnect Port Networks	4-83
	Verify Usable Circuit Pack Vintages	4-84
	Remove Power-Failure Ground Strap	4-84
	Boot the Release 10 System	4-84
	Deliver or Install the License File	4-84
	Administer No-License/Emergency Numbers	4-85
	Set Daylight Savings Rules	4-86
	Set Date and Time	4-87
	Set Additional Administration	4-89
	Close Upgraded EPN Cabinet and Reconnect Cables	4-89
	Power Up the EPN Cabinets	4-89

Continued on next page

Table 4-5. Tasks to Upgrade to Release 10r — Critical Reliability — *Continued*

✓	Task Description	Page
	Retranslate Port Circuits	4-90
	Enable TTI	4-90
	Check Link Status	4-90
	Resolve Alarms	4-90
	Enable Scheduled Maintenance and Alarm Origination	4-90
	Register the Switch for Maintenance	4-91
	Check Customer Options	4-94
	Save Translations	4-95
	Back Up Disk	4-95
	Return Replaced Equipment	4-95

Standard Reliability

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 4-6 ready.

Table 4-6. Pre-upgrade checklist - Standard Reliability

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	

Continued on next page

Table 4-6. Pre-upgrade checklist - Standard Reliability — *Continued*

Item No.	Item	✓
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	MSSNET serial number(s); see faceplate.	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

Required Hardware

The equipment in Table 4-7 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 4-7. 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 10 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 10 system with the optional packet bus.
3. Depending on the number of DEFINITY ECS Release 10 EPNs. Two or 6 are required if the PPN and EPN(s) are remotely located. Assuming acceptable lengths, the fiber that previously connected an upgraded G2 universal module (not a traditional module) to the G2 TMS has the correct transceiver connectors and can be reused.
4. One pair for each fiber connection. For each connection, either 1 lightwave transceiver is installed in an EPN and 1 in the PPN. A transceiver can be reused from each upgraded G2 universal module. Additional transceivers, ordered separately, are also shipped loose with the EPN equipment.

Required Tools

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

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect ground straps and straighten backplane pins

- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve spare #12 and #10 self-tapping screws
- Four spare carrier ground straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- A copy of *DEFINITY Enterprise Communications Server Release 10* 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 Maintenance for R10r*.

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**.

Power Down G2 System

1. At the common control's power distribution unit, set the main circuit breaker to OFF.
2. At the universal module's power distribution unit, set the main circuit breaker to OFF.

Install Power-Failure Transfer Ground Wire

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

1. Connect a 10 AWG (#25) (2.6 mm^2) wire to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) on the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground and connect.

Disconnect Cables

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a #2 flat blade screwdriver into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect the cables associated with the carrier to be removed.
3. Remove the rear doors from the cabinet.
4. Behind a previously upgraded cabinet, remove all of the rear panels. Two different types of screws hold the back panels to the cabinet. Remove the #10 screws with a screwdriver or a 1/4-inch socket. Remove the #12 screws with a screwdriver or a 5/16-inch socket.

Remove Circuit Packs from Module Control Carrier A

1. To ensure that power units in the "A" carrier are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the "A" carrier.
3. Remove all circuit packs and power units from carrier "A." Store the circuit packs in the static-proof packaging.
4. Remove all circuit pack blanks.
5. Remove the front trim plate from the "A" carrier by pulling it straight off.

Remove CURL from Module Control Carrier A

1. Remove the CFY1 current limiter (CURL) from the pin-field block marked “CURL” on the “A” carrier. The CURL is reused in the Release 10 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.

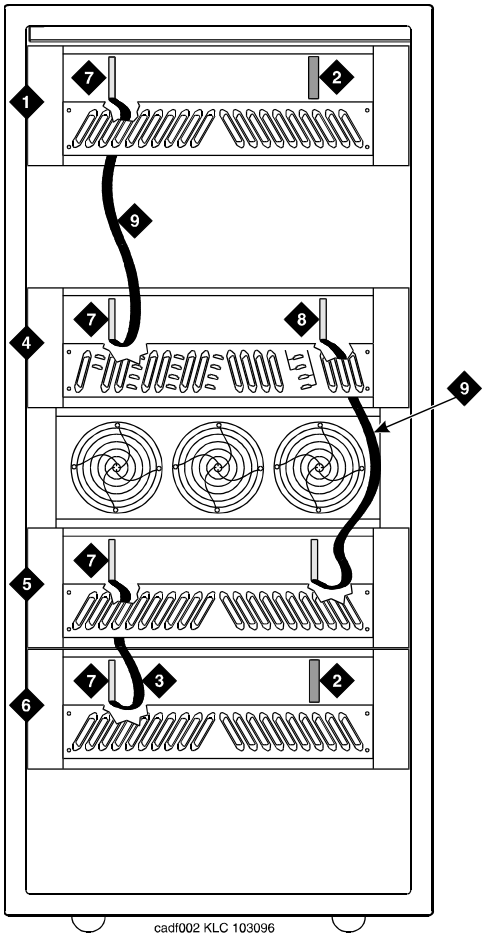


Figure Notes

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)

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.

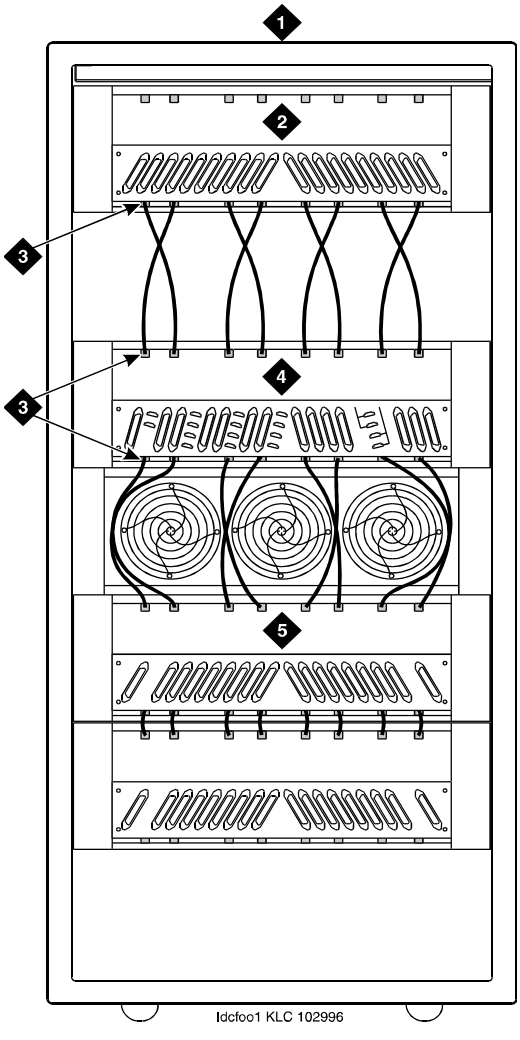


Figure Notes

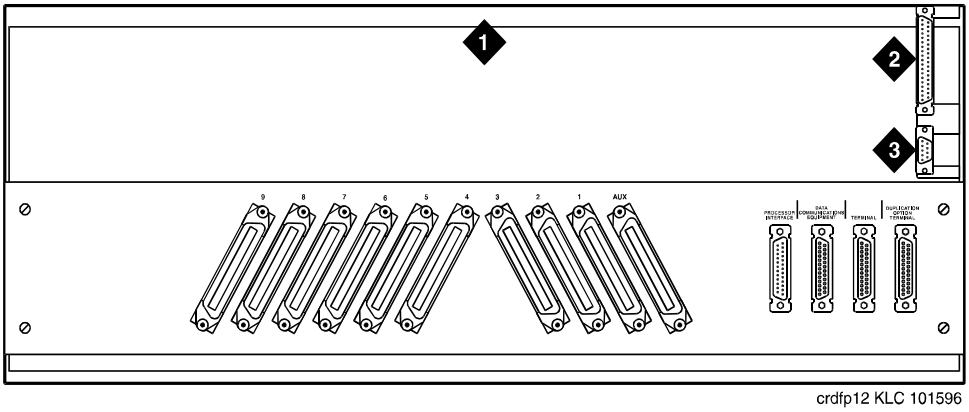
1. Rear of Cabinet
2. Port Carrier (“C” Position)
3. Ground Jumpers
4. Module Control Carrier (“A” Position)
5. Port Carrier (“D” Position)

Figure 4-2. Location of Ground Jumpers

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.



crdfp12 KLC 101596

Figure Notes

1. Rear of Control Carrier
2. P2 Connector
3. P1 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 4-8.

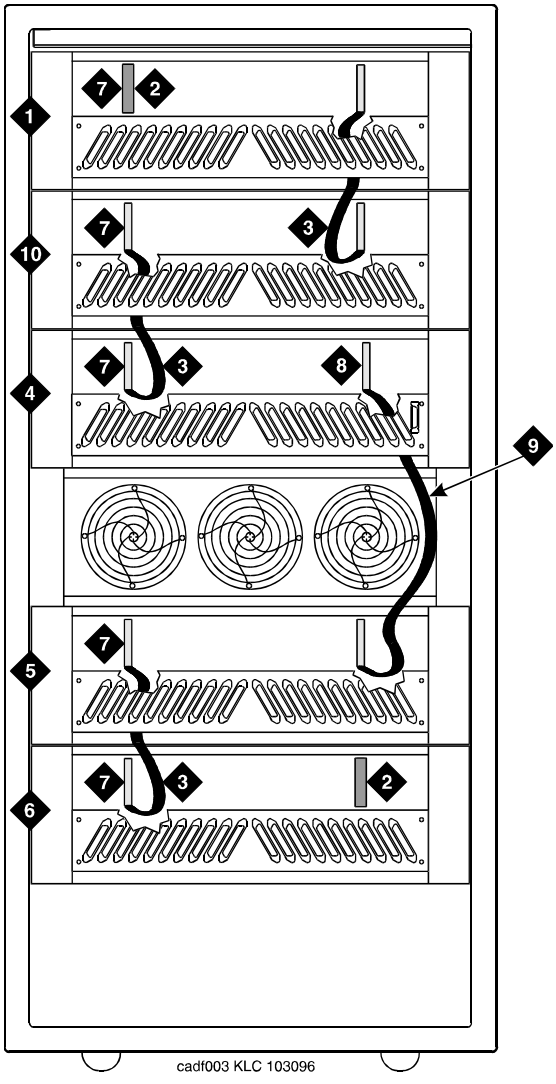


Figure Notes

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. Control Carrier (“B” Position)

Figure 4-4. TDM/LAN Connections for Standard Reliability Release 10 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 4-8. 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 10 carrier will contain the same power supplies as in the existing system. However, a Release 10 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 10 control circuit packs into carrier “A.” Use the new label and the annotated “list configuration all” (provided with the Release 10 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 10 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 4-96.

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 10 system (see *Reference Guide for Circuit Pack Vintages and Change Notices*).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm^2) ground wire from the power-failure transfer unit.

Boot the Release 10 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’’.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Set Daylight Savings Rules

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

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

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

```
                        DAYLIGHT SAVINGS RULES
Rule          Change Day          Month   Date   Time    Increment

0:   No Daylight Savings

1:   Start: first Sunday___ on or after April ___  1 at  2:0001:00
     Stop:  first Sunday___ on or after October __ 25 at  2:00
2:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
3:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
4:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
5:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
6:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
7:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
```

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

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

3. When done, press Enter.

Set Date and Time

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

```
                            DATE AND TIME
DATE
      Day of the Week: Tuesday      Month: February
     Day of the Month: 8             Year: 2000

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

Screen 4-1. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See Table 4-9 for English day of the week names.

Table 4-9. 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 4-10 for English month names. After the month is entered, press Tab to move to next field.

Table 4-10. English Month Names

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

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

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

Set Additional Administration

1. Type **list configuration software-version** and press Enter to compare the version number of the Release 10 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 site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
3. 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.

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 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.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

1. Type **display system-parameters customer-options** and press Enter to set the customer options that were purchased.

   Ensure that the `G3 version:` field is **V10**.

2. 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 ensure that the `Basic Call Setup` field is **y**.

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 4-11 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 4-11. 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 10 system with the optional packet bus.
3. Use 2 or 6 if the PPN and EPN(s) are remotely located. The fiber that previously connected an upgraded G2 universal module (not a traditional module) to the G2 TMS has the correct transceiver connectors and, therefore, can be reused.
4. One pair for each fiber connection. For each connection, install one 9823-type lightwave transceiver in an EPN and 1 in the PPN. A 9823-type transceiver can be reused from each upgraded G2 universal module. Additional transceivers also ship loose with the EPN equipment.

Required Tools

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

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect ground straps and straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve spare #12 and #10 self-tapping screws
- Four spare carrier ground straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Maintenance for R10r*
  - *DEFINITY Enterprise Communications Server Administrator's Guide*

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 4-12 ready.

Table 4-12. Pre-upgrade checklist - High Reliability

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	

Continued on next page

Table 4-12. Pre-upgrade checklist - High Reliability — *Continued*

Item No.	Item	✓
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	License File serial number(s)	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

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 Maintenance for R10r*.

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 a 10 AWG (#25) (2.6 mm^2) wire to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) on the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground and connect.

Disconnect Cables

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a #2 flat blade screwdriver into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect the cables associated with the carrier to be removed.
3. Remove the rear doors from the cabinet.
4. Remove all of the rear panels. Two different types of screws hold the panels to the cabinet. Remove the #10 screws with a screwdriver or a 1/4-inch socket. Remove the #12 screws with a screwdriver or a 5/16-inch socket.)

Remove Circuit Packs from Module Control Carrier A

1. To ensure that power units in the “A” carrier are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the “A” carrier.
3. Remove all circuit packs and power units from carrier “A.” Store the circuit packs in the static-proof packaging.
4. Remove the circuit pack blanks from the empty slots.
5. Remove the front trim plate from the “A” carrier by pulling it straight off.

Remove CURL from Module Control Carrier A

Remove the CFY1 current limiter (CURL) from the pin-field block marked “CURL” on the “A” carrier. The CURL will be reused in the Release 10 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.

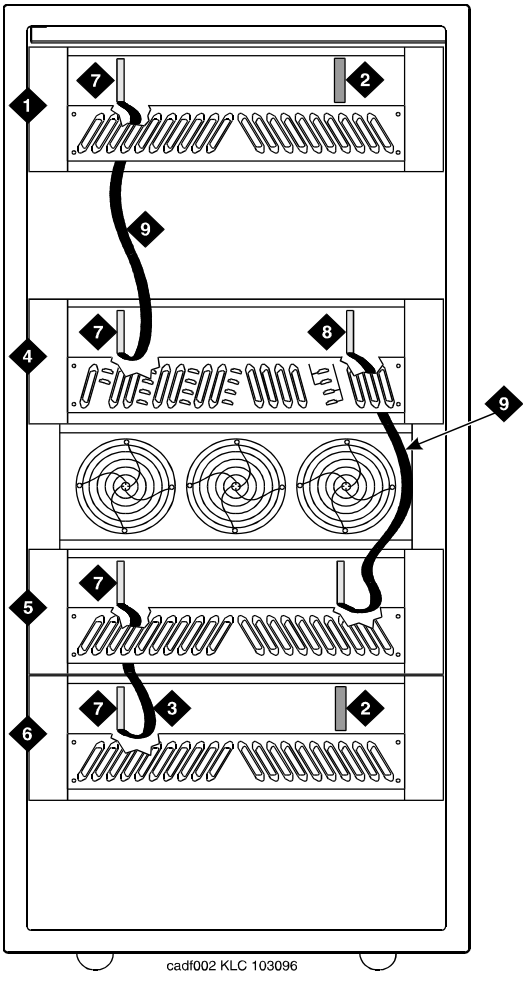


Figure Notes

1. Port Carrier (“C” Position)
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)

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.

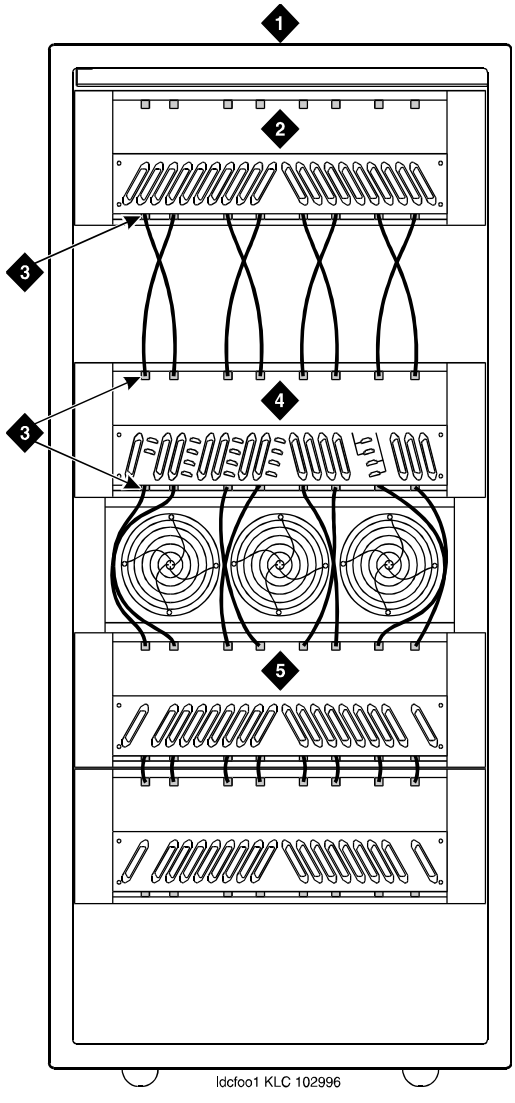


Figure Notes

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

Figure 4-6. Locations of Ground Jumpers

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.

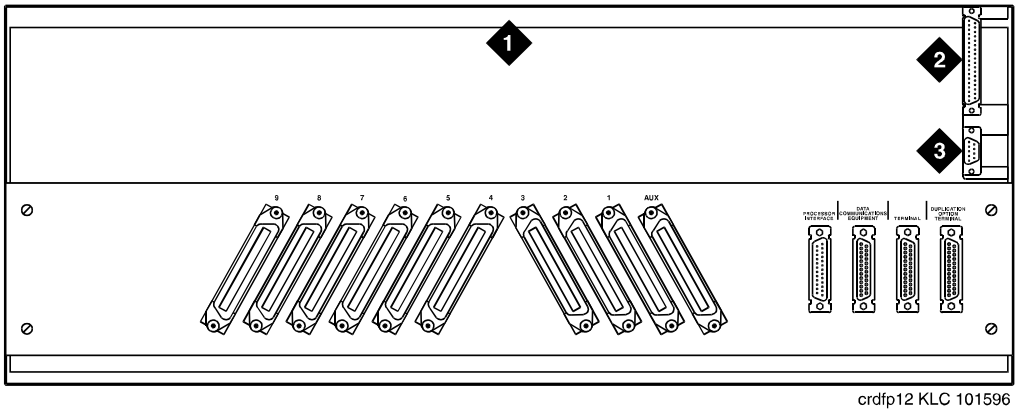


Figure Notes

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 4-13. 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.

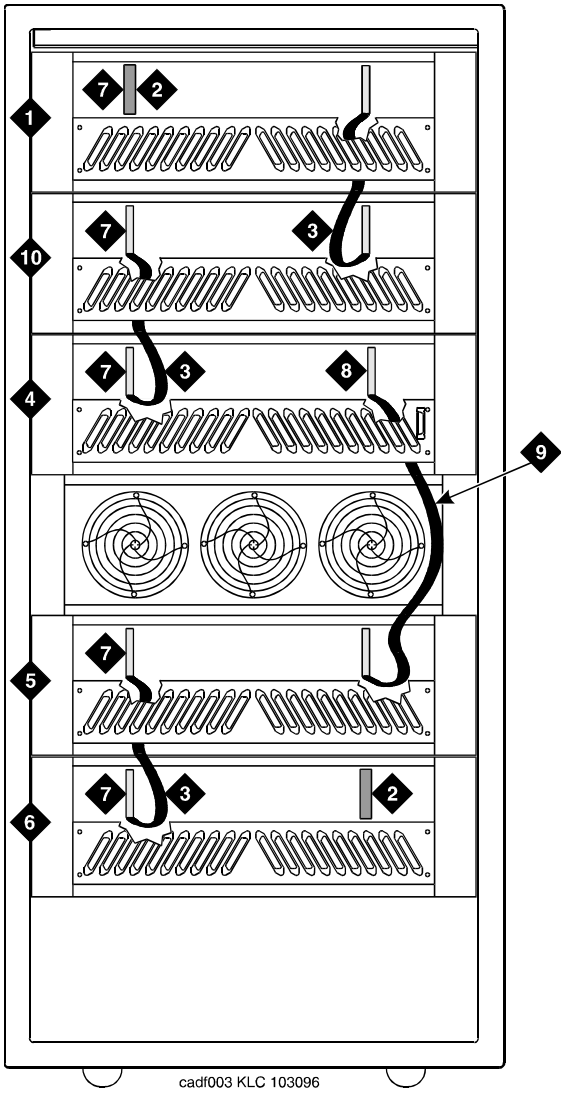


Figure Notes

1. Port Carrier (“C” Position)
2. ZAHF4 TDM/LAN Terminator
3. TDM/LAN Cable (WP91716 L6)
4. Expansion Control Carrier (“A” Position)
5. Port Carrier (“D” Position)
6. Port Carrier (“E” Position)
7. Slot 21
8. Slot 02
9. TDM/LAN Cable (WP91716 L7)
10. Port Carrier (“B” Position)

Figure 4-8. TDM/LAN Connections for High Reliability Release 10 EPN

Table 4-13. 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 10 carrier will contain the same power supplies as in the existing system. However, the new Release 10 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 10 control circuit packs into carrier “A.” Use the new label and the annotated “list configuration all” (provided with the Release 10 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 10 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 4-96.

Complete the Upgrade

Verify Usable Circuit Pack Vintages

Verify that each reused circuit pack conforms to the usable vintage requirements for a Release 10 system (see Reference Guide for Circuit Pack Vintages and Change Notices).

Remove Power-Failure Ground Wire

Remove the 10 AWG (#25) (2.6 mm^2) ground wire from the power-failure transfer unit.

Boot the Release 10 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’’.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                     Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Set Daylight Savings Rules

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

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

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

```
                        DAYLIGHT SAVINGS RULES
Rule           Change Day          Month   Date   Time    Increment

0:   No Daylight Savings

1:   Start: first Sunday___ on or after April ___  1 at  2:0001:00
     Stop:  first Sunday___ on or after October _ 25 at  2:00
2:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
3:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
4:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
5:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
6:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
7:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
```

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

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

3. When done, press Enter.

Set Date and Time

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

```
                          DATE AND TIME
DATE
      Day of the Week: Tuesday      Month: February
     Day of the Month: 8             Year: 2000

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

Screen 4-2. Typical Date and Time Screen

2. Type the day of the week in English (Sunday through Saturday). See Table 4-14 for English day of the week names.

Table 4-14. 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 4-15 for English month names. After the month is entered, press Tab to move to next field.

Table 4-15. 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 10 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 site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
3. Type **status system 1** and press Enter to verify the system is in the "active/standby" mode.
4. 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 Administrator’s Guide*, for instructions on performing the retranslations.

Enable TTI

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

Check Link Status

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

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

1. Type **display system-parameters customer-options** and press Enter to set the customer options that were purchased.

   Ensure that the `G3 version:` field is **V10**.

2. 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 ensure that the `Basic Call Setup` field is **y**.

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

Pre-upgrade checklist

In order to be properly prepared for the upgrade, have the items listed in Table 4-16 ready.

Table 4-16. Pre-upgrade checklist - Crosstalk Reliability

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	

Continued on next page

Table 4-16. Pre-upgrade checklist - Crosstalk Reliability — *Continued*

Item No.	Item	✓
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	License File serial number(s)	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

Upgrade Cabinets

An existing universal module cabinet is always upgraded to an EPN.

Required Hardware

The equipment in Table 4-17 *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 4-17. 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 10 system with the optional packet bus.
3. Required for an EPN in a critical reliability system.
4. Use 4 or 12 if the EPNs and the PPN are remotely located. Assuming acceptable lengths, the fibers previously connecting an upgraded G2 universal module (not a traditional module) to the G2 TMS have the correct transceiver connectors and can be reused.

Required Tools

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

- High-intensity flashlight or AC drop light
- 3/8-inch flat-blade screwdriver with a 10-inch shank (minimum)
- 5/16-inch and 1/4-inch sockets with a ratchet and 10-inch extension
- Long-nose pliers to disconnect grounding straps and straighten backplane pins
- Static-proof or original circuit pack packaging for transporting circuit packs
- Labels for identifying the port circuit packs and cables attached to the rear of cabinets
- Twelve #12 and #10 self-tapping screws
- Four spare carrier grounding straps
- Wrist ground strap
- Repair kit for backplane pins (KS-22876 L2 or equivalent)
- One copy of each of the following manuals:
  - *DEFINITY Enterprise Communications Server Maintenance for R10r*
  - *DEFINITY Enterprise Communications Server 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 Maintenance for R10r*.

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 mm^2) wire either to pin 49 of the connecting block or to pin 49 of the CAP (cable access panel) associated with the power-failure transfer panel.
2. Route the opposite end of the wire to an approved ground source and connect.

Disconnect Cables

1. With the cable retainer in front of you and the part number visible (4B or 4C), locate the slot that is almost vertical. This slot is adjacent to the part number. Insert a flat blade screwdriver with a 1/4-inch blade into the slot and twist. The retainer will snap open easily. Remove the cable.
2. Disconnect previously labeled cables associated with the carrier to be removed.
3. Behind a “DEFINITY style” cabinet, remove the back doors from the cabinet.
4. Behind a previously upgraded cabinet, remove all of the back panels. (Two different types of screws hold the back panels to the cabinet. The #10 screws can be removed with a screwdriver or a 1/4-inch socket. The #12 screws can be removed with a screwdriver or a 5/16-inch socket.)

Remove Circuit Packs from Module Control Carriers A and B

1. To ensure that power units in the “A” and “B” carriers are properly replaced, label each power unit with its slot number.
2. Disconnect the power cords from the power units in the “A” and “B” carriers.
3. Remove all circuit packs and power units from carrier “A.” Store the circuit packs in the static-proof packaging.
4. Remove all circuit packs from carrier “B.” Store the circuit packs in the static-proof packaging.
5. Remove the circuit pack blanks from slots that do not contain circuit packs.
6. Remove the front trim plate from the “B” carrier by pulling it straight off. Then remove the front trim plate from the “A” carrier.

Remove CURL from Module Control Carrier A

Remove the CFY1 current limiter (CURL) from the pin-field block marked “CURL” on the “A” carrier. The CURL will be reused in the DEFINITY ECS Release 10 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.

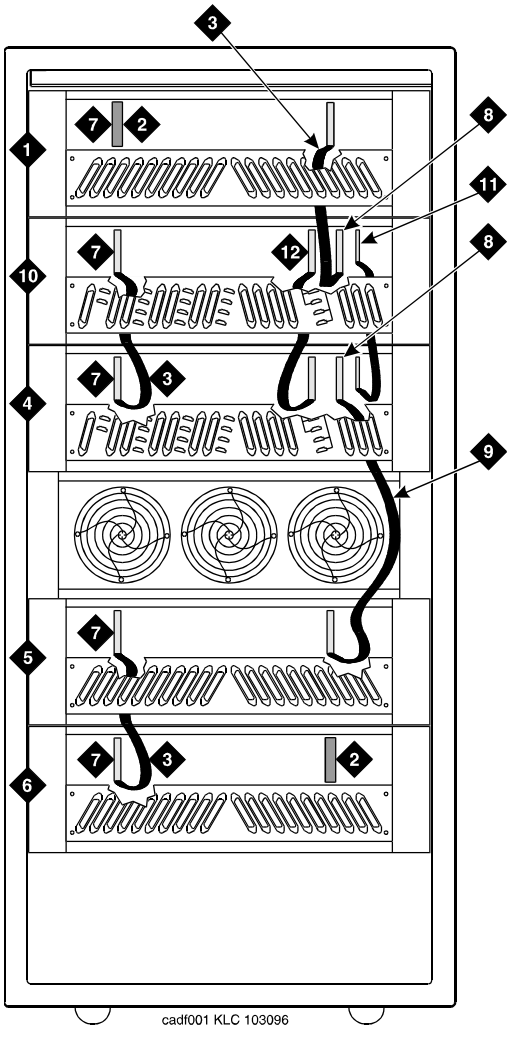


Figure Notes

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

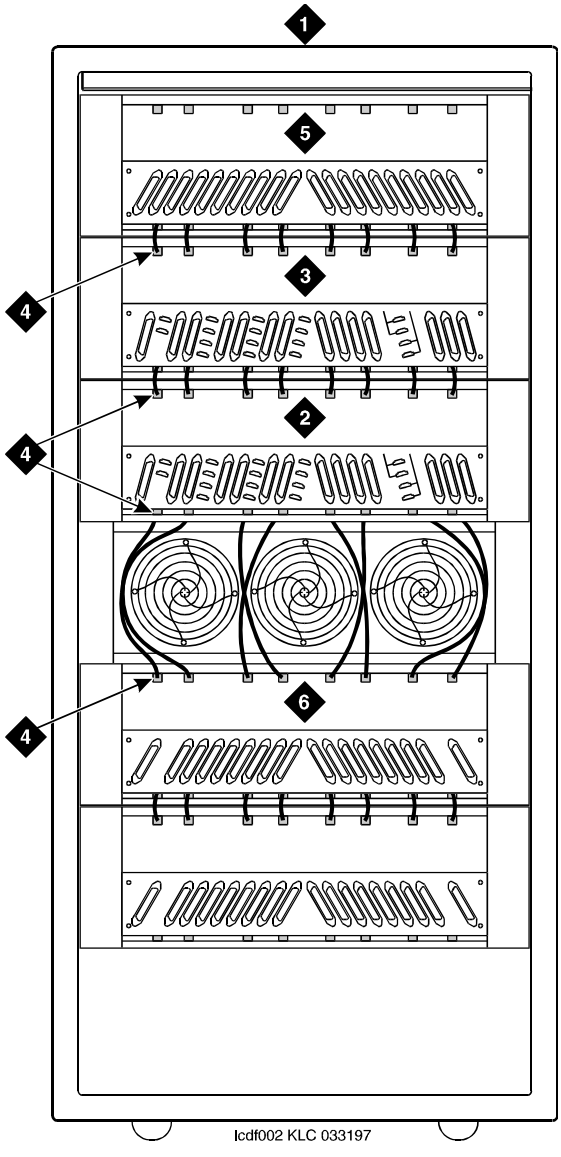


Figure Notes

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

Figure 4-10. Locations of Ground Jumpers

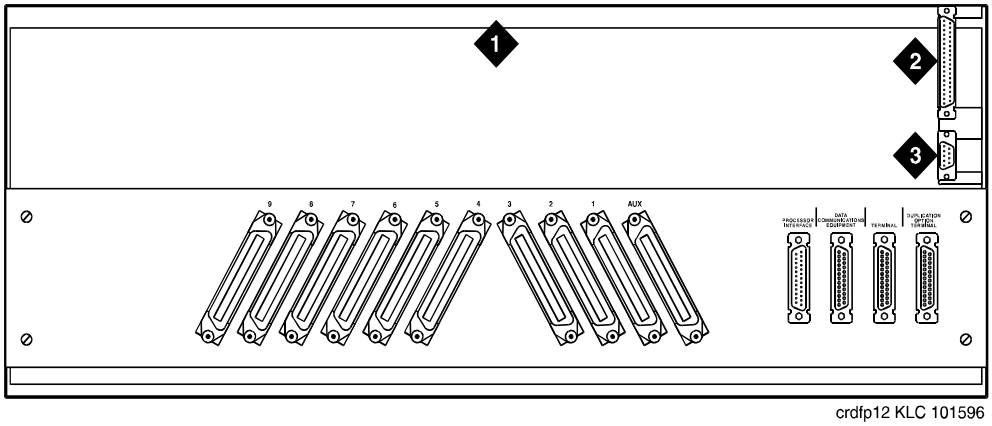


Figure Notes

1. Rear of Control Carrier
2. P2 Connector
3. P1 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 4-18). 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 4-18. 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.

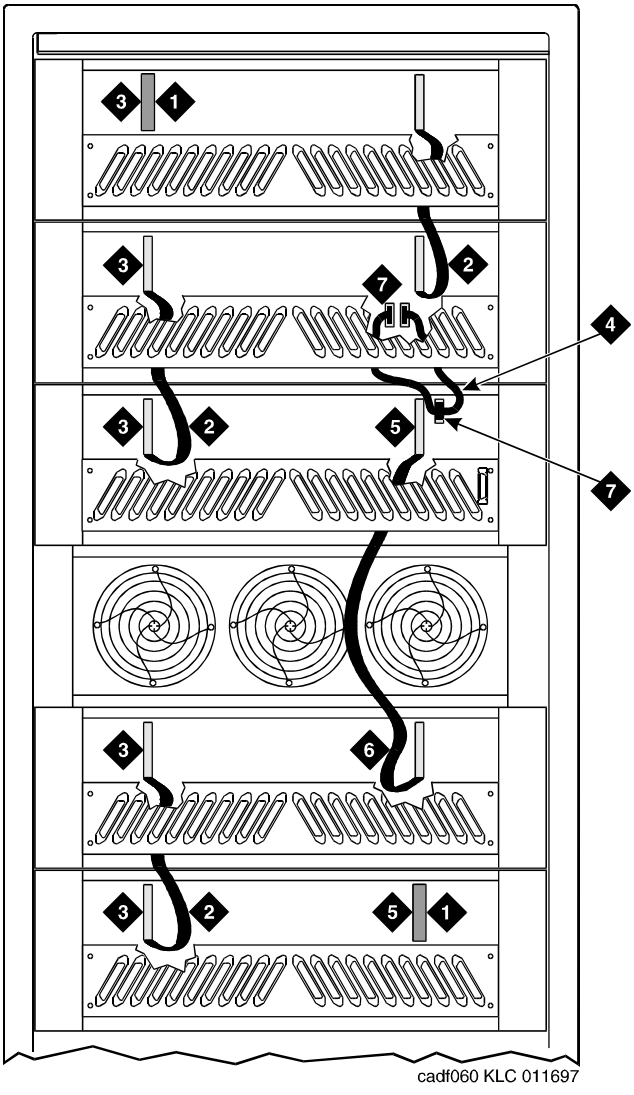


Figure Notes

1. ZAHF4 TDM/LAN Terminator
2. TDM/LAN Cable (WP91716 L6)
3. Slot 21
4. Inter-Carrier Cables (“A” and “B”) H600-204, G1
5. Slot 02
6. TDM/LAN Cable (WP91716 L7)
7. ICCA and ICCB Connectors)

Figure 4-12. TDM/LAN Connections for Critical Reliability Release 10 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 4-19). 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 4-19. Intercarrier Cable Connections

Connect ICC Cables

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

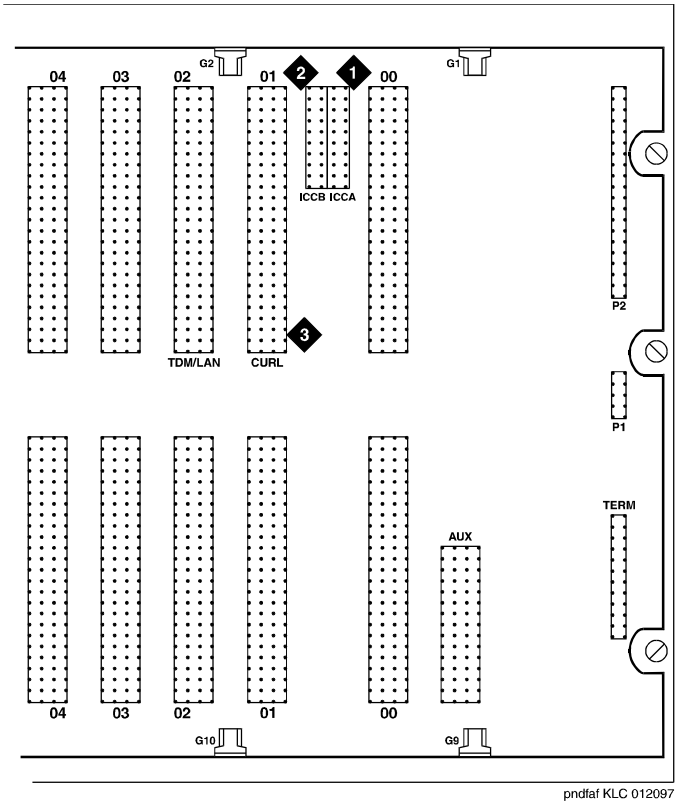


Figure Notes

1. ICCA Connectors
2. ICCB Connectors
3. CURL (Current Limiter) Connectors

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

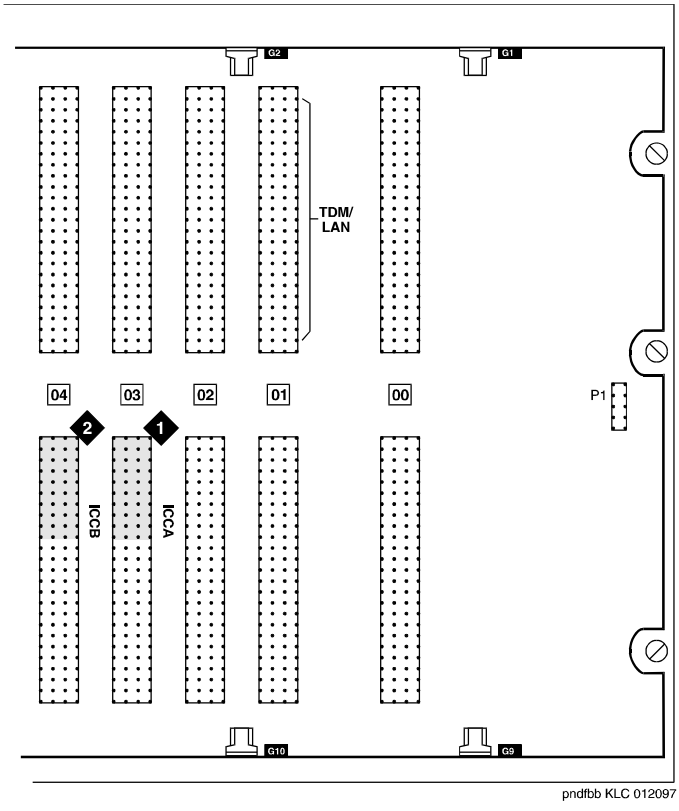


Figure Notes

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 10 control circuit packs into carriers “A” and “B.” Use the new decal and the annotated “list configuration all” (provided with the Release 10 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 10 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 4-96.

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 10 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 10 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’’.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Set Daylight Savings Rules

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

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

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

```
                          DAYLIGHT SAVINGS RULES
Rule           Change Day          Month    Date    Time     Increment

0:   No Daylight Savings

1:   Start: first Sunday___ on or after April ___  1 at  2:0001:00
     Stop:  first Sunday___ on or after October _ 25 at  2:00
2:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
3:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
4:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
5:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
6:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
7:   Start: first _________ on or after _________ __ at __:__
     Stop:  first _________ on or after _________ __ at __:__
```

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

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

3. When done, press Enter.

Set Date and Time

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

```
                          DATE AND TIME
DATE
      Day of the Week: Tuesday      Month: February
     Day of the Month: 8             Year: 2000

TIME
     Hour: 20   Minute: 30    Second: XX     Type: 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 4-20 for English day of the week names.

Table 4-20. 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 4-21 for English month names. After the month is entered, press Tab to move to next field.

Table 4-21. 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 10 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 site-data** and press Enter. Use this screen to assign system-specific information (such as building, floor, stations, and so forth).
3. Type **status system 1** and press Enter to verify that the system is in the "active/standby" mode.
4. 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 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.

Resolve Alarms

Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Maintenance for R10si or DEFINITY Enterprise Communications Server Maintenance for R10r*.

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Check Customer Options

1. Type **display system-parameters customer-options** and press Enter to set the customer options that were purchased.

   Ensure that the `G3 version:` field is **V10**.

2. 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 ensure that the `Basic Call Setup` field is **y**.

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 4-96
- ‘‘High Reliability’’ on page 4-105
- ‘‘Critical Reliability’’ on page 4-116

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 10 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.

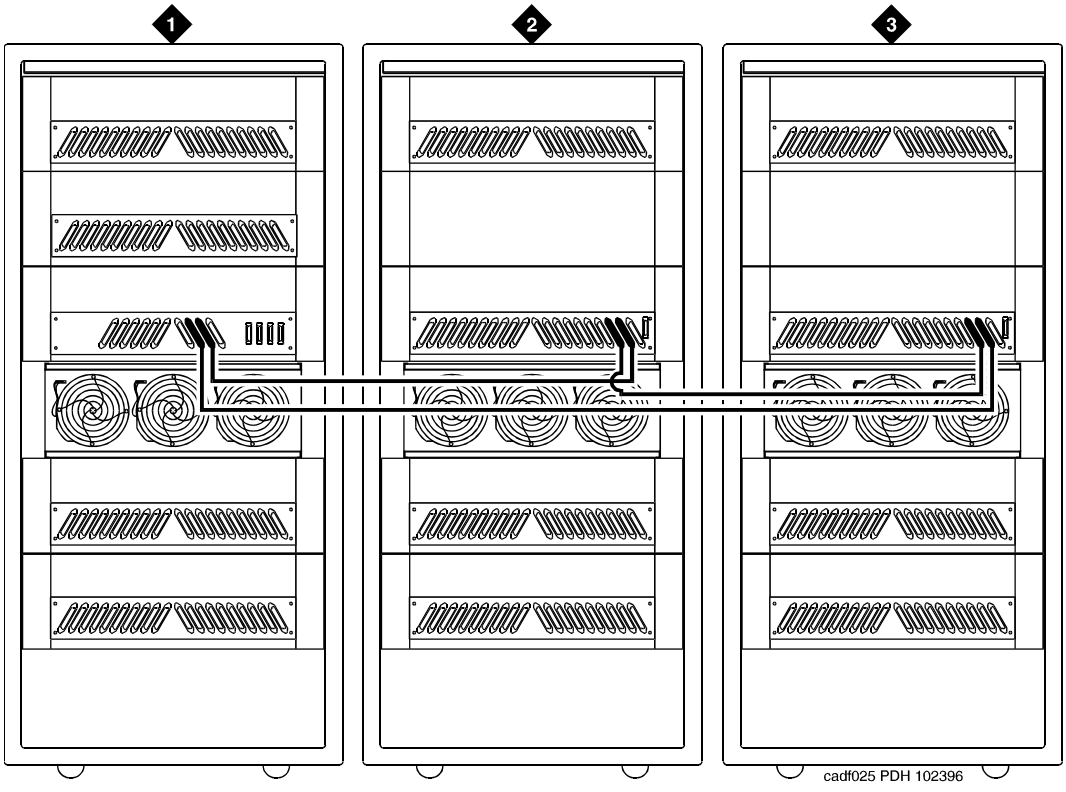


Figure Notes

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 10 with Two or Three Port Networks

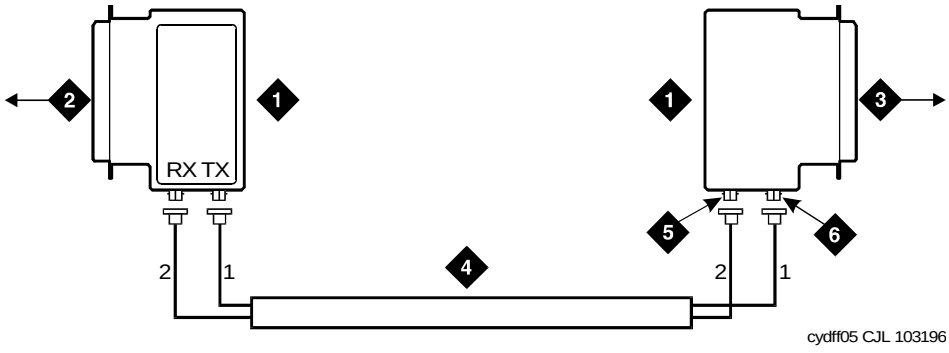


Figure Notes

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

Figure 4-16. Fiber Optic Connections PPN to EPN1

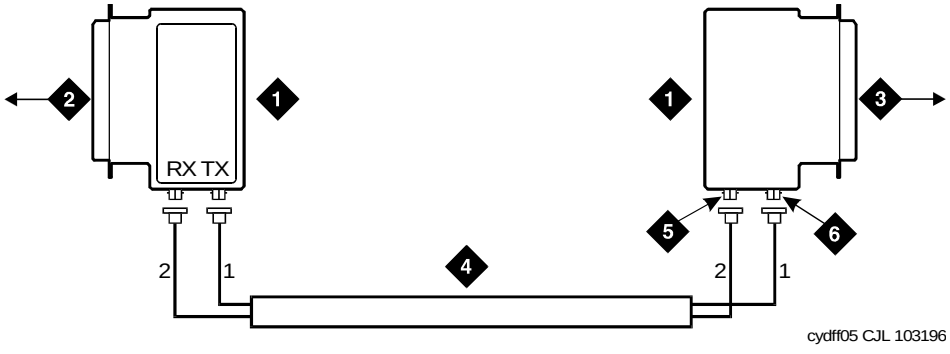


Figure Notes

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

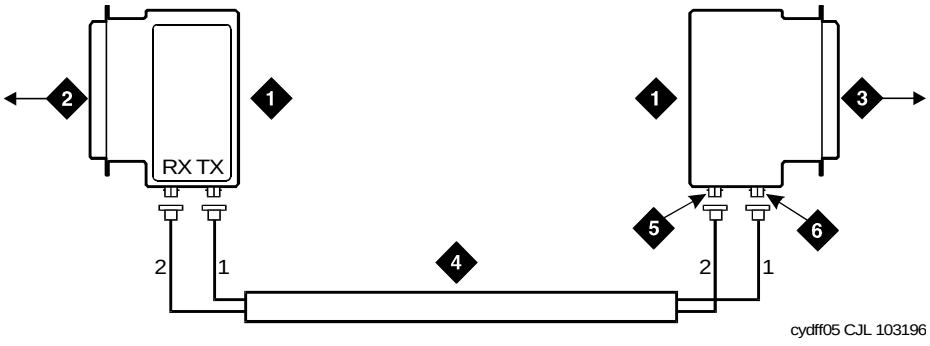


Figure Notes

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

Figure 4-18. Collocated Fiber Optic Connections EPN1 to EPN2

For Either One or Two Fiber-Remoted Expansion Port Networks

1. At control carrier A of PPN cabinet 1. See Figure 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.
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 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.

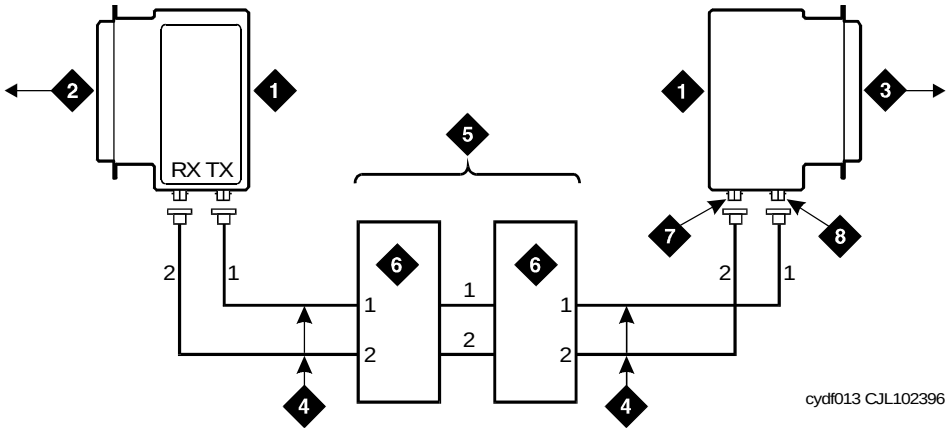


Figure Notes

1. Lightwave Transceiver
2. To EPN1 Carrier A Slot 2A02
3. To EPN2 Carrier A Slot 3A02
4. Fiber Optic Cable
5. Optical Cross-Connect Facility
6. 100A Lightguide Interconnect Unit
7. TX Connector
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 10 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 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.

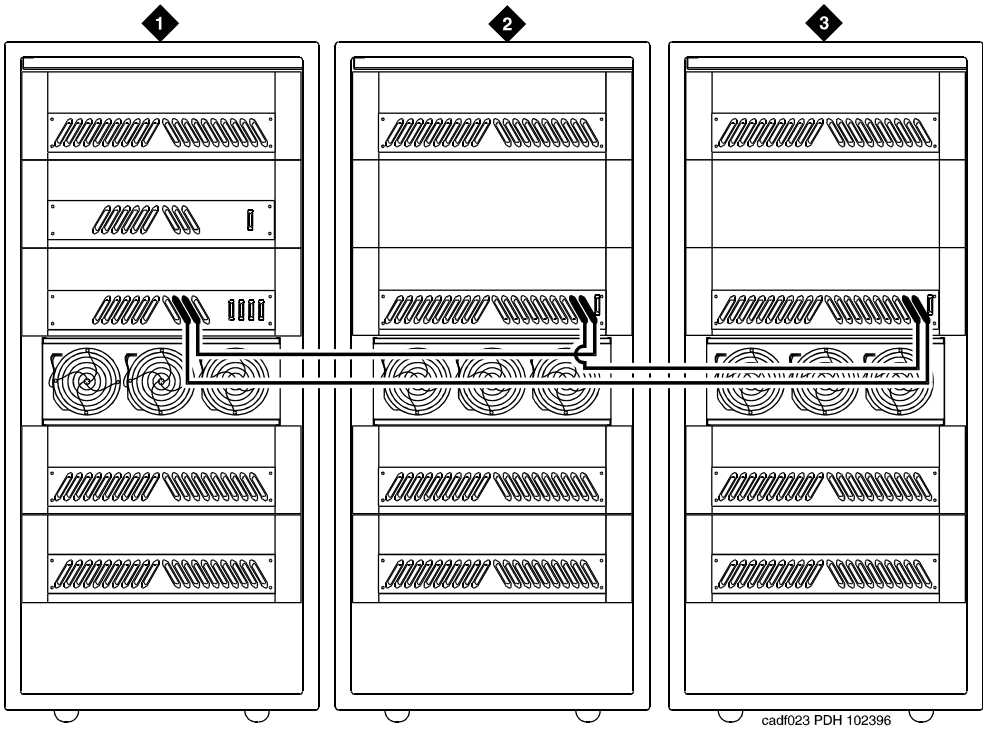


Figure Notes

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 10 with Two or Three Port Networks

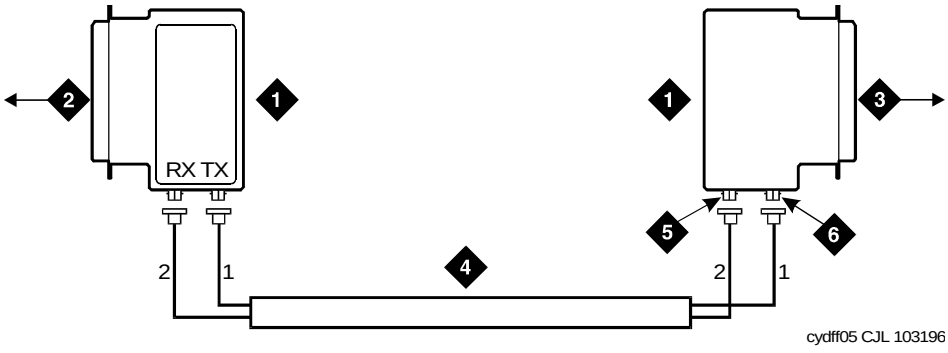


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier C Slot 1C02
3. To EPN 1 Carrier A Slot 2A01
4. Fiber Optic Cable
5. RX Connection
6. TX Connection

Figure 4-21. Fiber Optic Connections PPN to EPN1

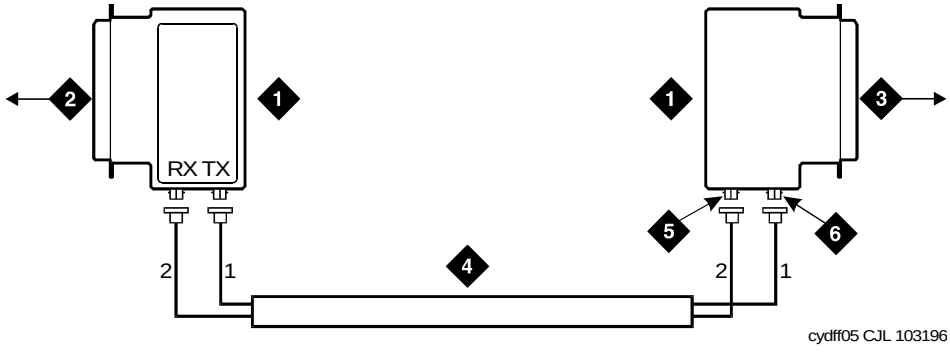


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier A Slot 1D02
3. To EPN 1 Carrier A Slot 3A01
4. Fiber Optic Cable
5. RX Connection
6. TX Connection

Figure 4-22. Fiber Optic Connections PPN to EPN2

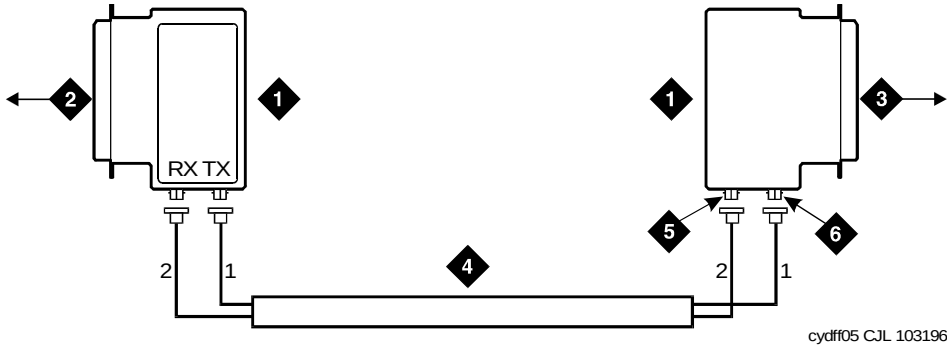


Figure Notes

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

Figure 4-23. Fiber Optic Connections EPN1 to EPN2

For Either One or Two Fiber-Remoted Expansion Port Networks

1. At control carrier A of PPN cabinet 1 (see Figure 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.

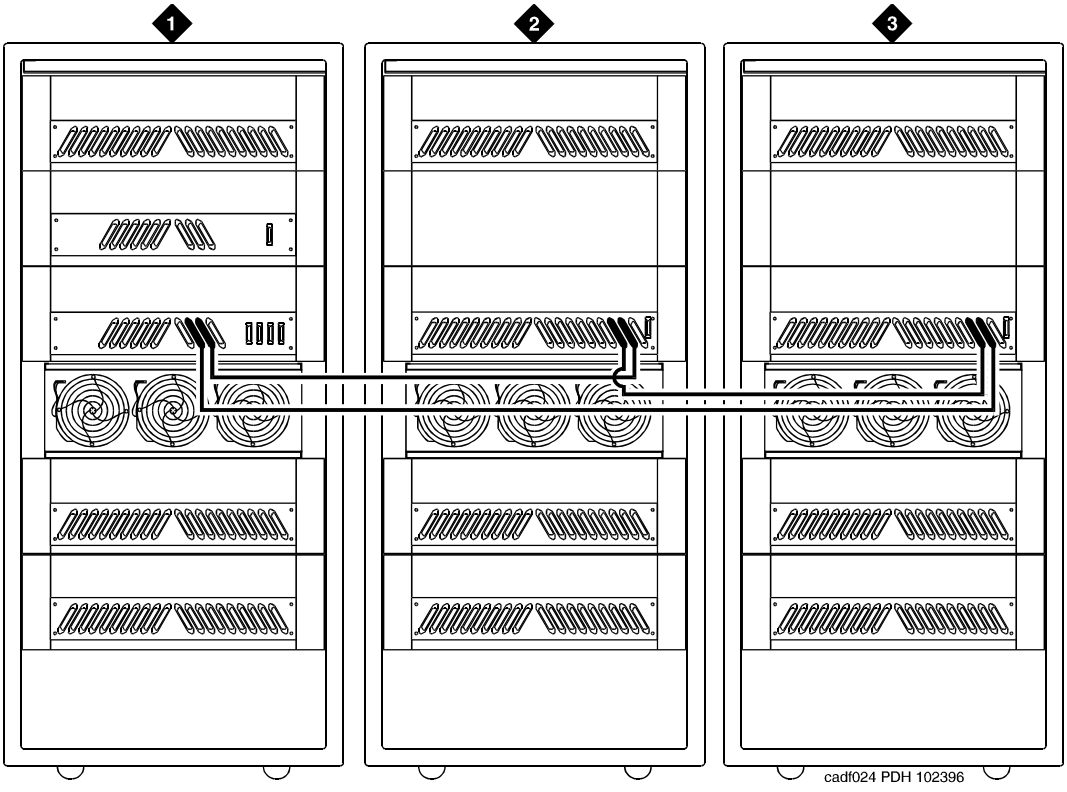


Figure Notes

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 10 with Two or Three Port Networks

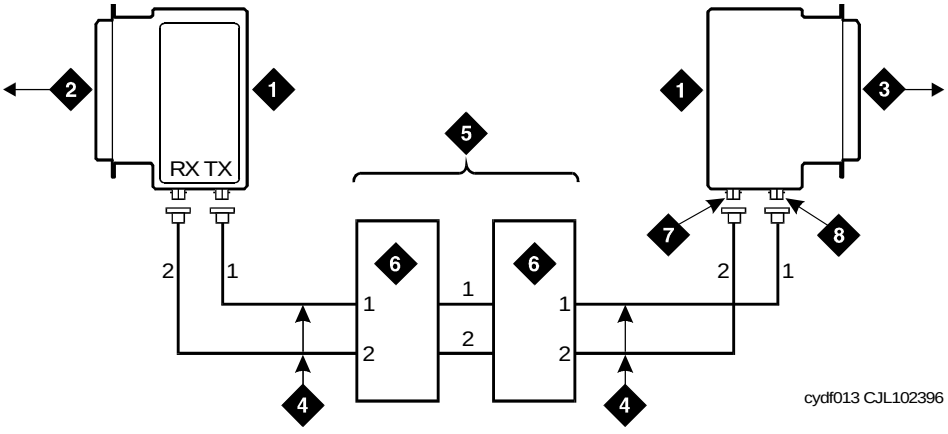


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier C Slot 1C02
3. To EPN 1 Carrier A Slot 2A01
4. Fiber Optic Cable
5. Optical Cross-Connect Facility
6. 100A Lightguide Interconnect Unit (LIU)
7. TX COnnector
8. RX Connector

Figure 4-25. Fiber Optic Connections PPN to EPN1

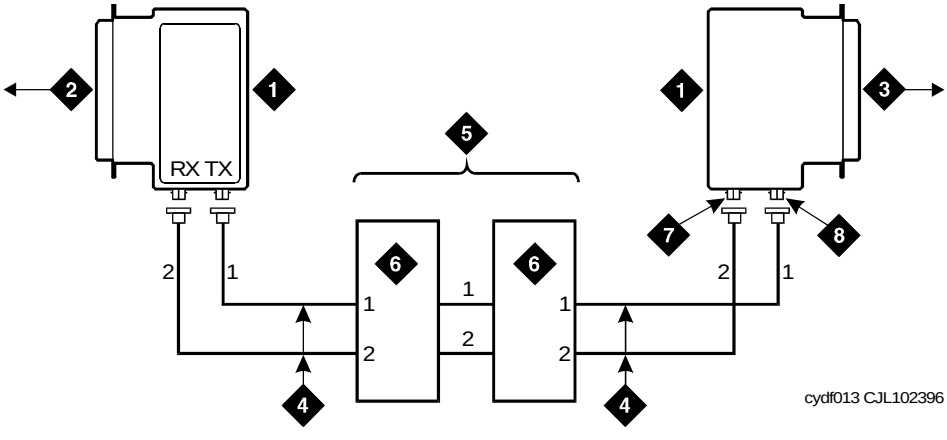


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier D Slot 1D02
3. To EPN2 Carrier A Slot 3A01
4. Fiber Optic Cable
5. Optical Cross-Connect Facility
6. 100A Lightguide Interconnect Unit
7. TX Connector
8. RX Connector

Figure 4-26. Fiber Optic Connections PPN to EPN2

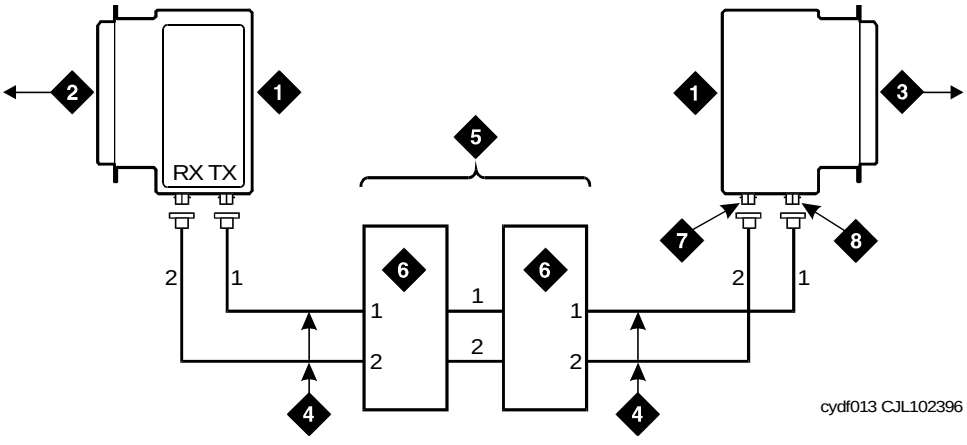


Figure Notes

1. Lightwave Transceiver
2. To EPN1 Carrier A Slot 2A02
3. To EPN2 Cabinet A Slot 3A02
4. Fiber Optic Cable
5. Optical Cross-Connect Facility
6. 100A Lightguide Interconnect Unit
7. TX Connector
8. RX Connector

Figure 4-27. Fiber Optic Connections EPN1 to EPN2

Critical Reliability

Fiber optic cabling terminated to 9823A lightwave transceivers can interconnect PNs up to 4,900 feet (1493 m) apart. Fiber optic cabling terminated to 9823B lightwave transceivers can interconnect PNs up to 25,000 feet (7620 m) apart.

NOTE:
These distance limits are approximate measurements of the *actual* fiber right-of-way (not of the shortest linear distance) between the 2 endpoints.

NOTE:
It is important to label every cable that you install.

NOTE:
Keep track of which fiber attaches to which connector on each lightwave transceiver. This section provides figures offering the suggested way of making these connections.

The connectors on the lightwave transceivers are labeled either “TX” (transmit) or “RX” (receive), while the fibers attached to each connector are numbered either “1” or “2.” A viable fiber connection is only made when both fibers in each cable (“1” and “2”) route from the “TX” connector of a port network to the “RX” connector of its adjacent port network. For an example, refer to Figure 4-29 on page 4-121.

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 10 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.

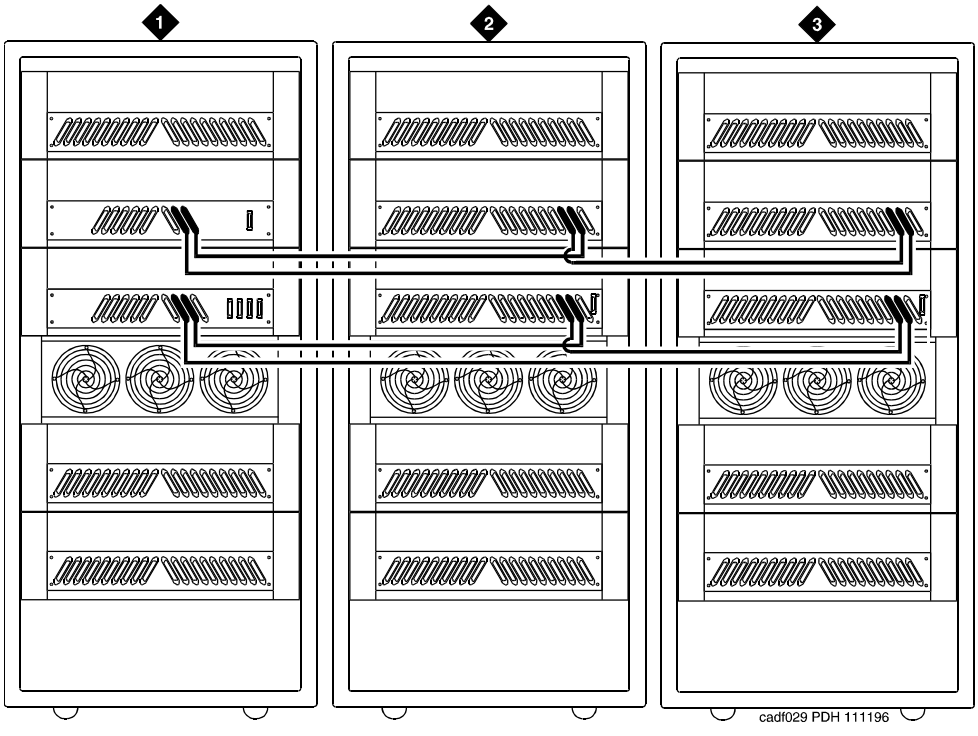


Figure Notes

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

Figure 4-28. Critical Reliability Release 10 with 2 or 3 Port Networks

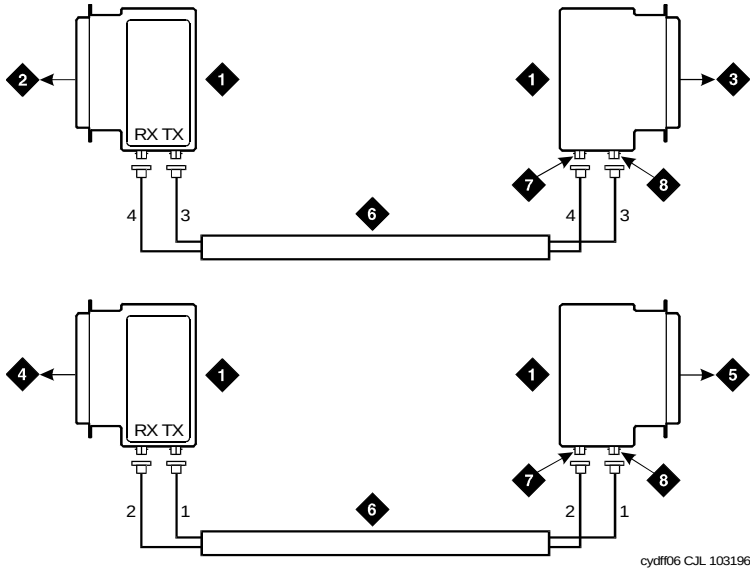


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier A Slot 1A01
3. To EPN1 Carrier A Slot 2A01
4. PPN Carrier B Slot 1B01
5. EPN1 Carrier B Slot 2B02
6. Fiber Optic Cable
7. TX Connector
8. RX Connector

Figure 4-29. Fiber Optic Connections PPN to EPN1

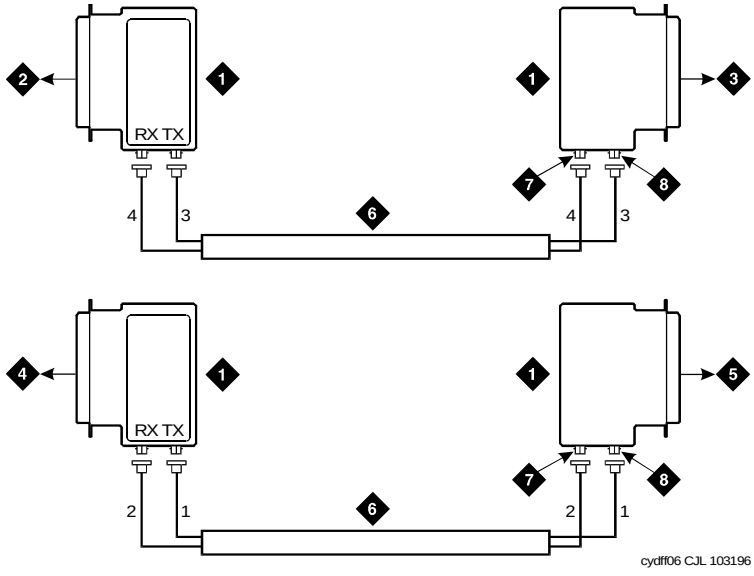


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier A Slot 1A02
3. To EPN2 Carrier A Slot 3A01
4. To PPN Carrier B Slot 1B02
5. To EPN2 Carrier A Slot 3A01
6. Fiber Optic Cable
7. TX Connector
8. RX Connector

Figure 4-30. Fiber Optic Connections PPN to EPN2

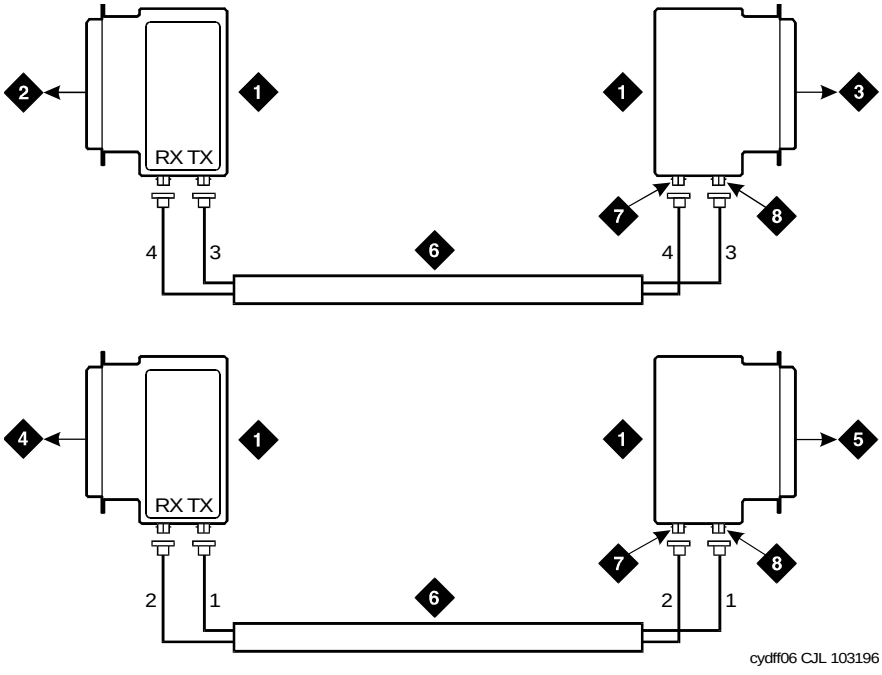


Figure Notes

1. Lightwave Transceiver
2. To EPN1 Carrier A Slot 2A02
3. To EPN2 Carrier A Slot 3A02
4. To EPN1 Carrier B Slot 2B03
5. To EPN2 Carrier B Slot 3B03
6. Fiber Optic Cable
7. TX Connector
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.

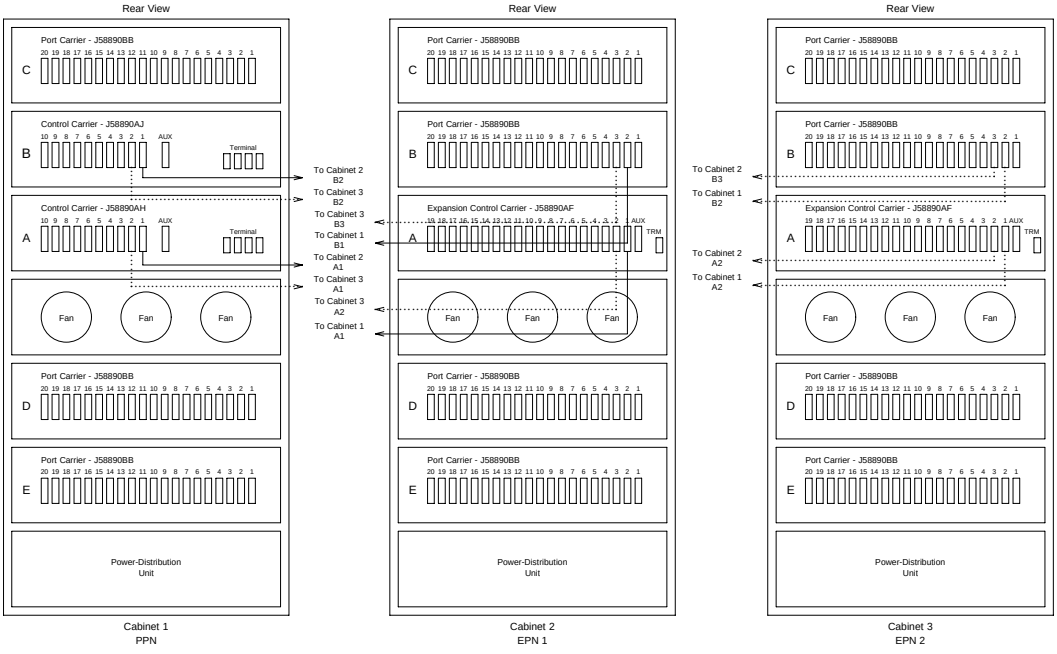


Figure 4-32. Critical Reliability Release 10 with 2 or 3 Port Networks

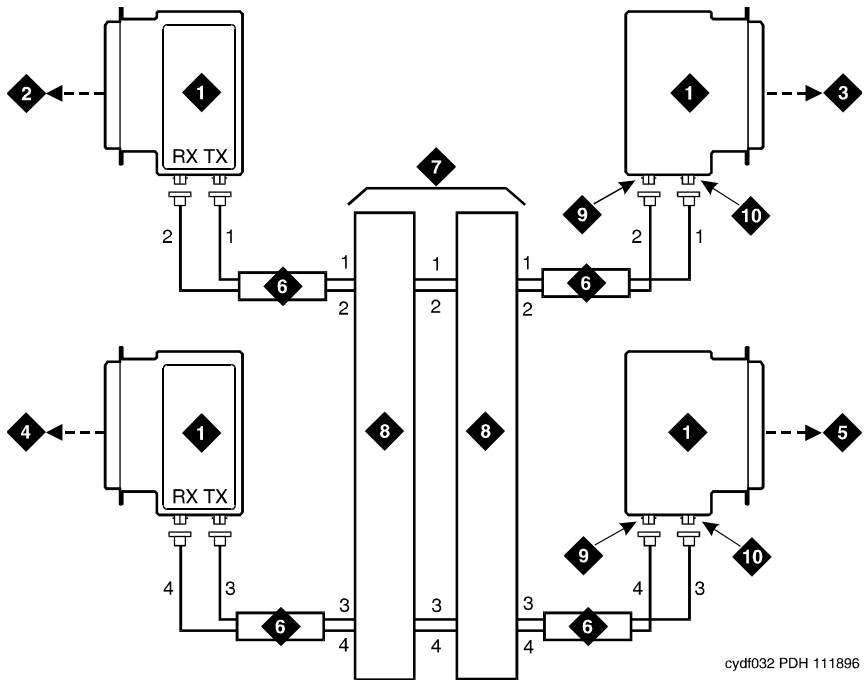


Figure Notes

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

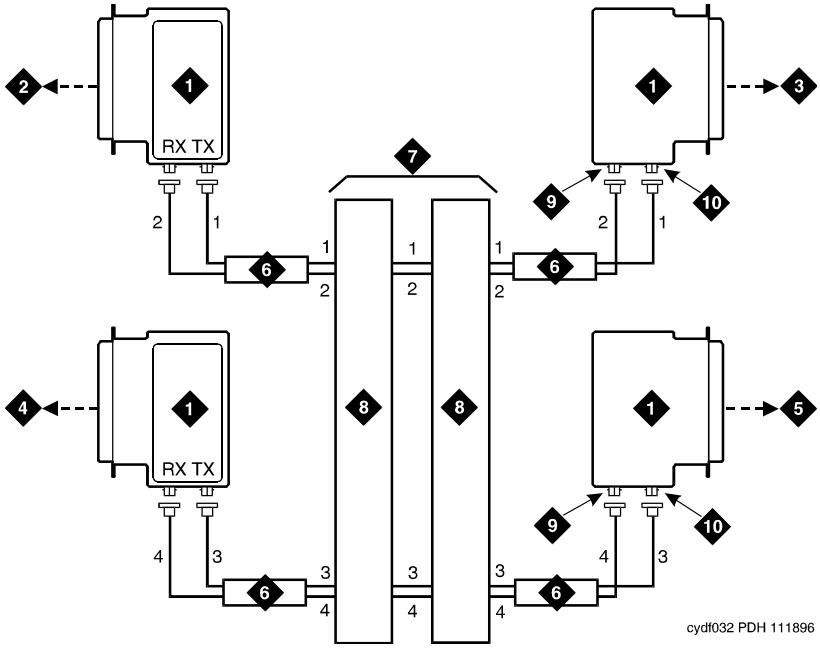


Figure Notes

1. Lightwave Transceiver
2. To PPN Carrier A Slot 1A02
3. To EPN2 Carrier A Slot 3A01
4. To PPN Carrier B Slot 1B02
5. To EPN2 Carrier B Slot 3B02
6. Fiber Optic Cable
7. Optical Cross-Connect Facility
8. 100A Lightguide Interconnect Unit
9. TX Connector
10. RX Connector

Figure 4-34. Fiber Optic Connections PPN to EPN2

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

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, Replace DUPINT Circuit Pack, and Unseat Disk Drive on SPE A’’ on page 1-26 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 ‘‘Install V9 or Later Disk Drive(s)’’ on page 1-35 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 Avaya 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/B 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 5-96.

   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).
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 left-most 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 left-most 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 right-most 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 Maintenance for R10r*, 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 Administrator’s Guide*.

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Maintenance for R10r*.
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.

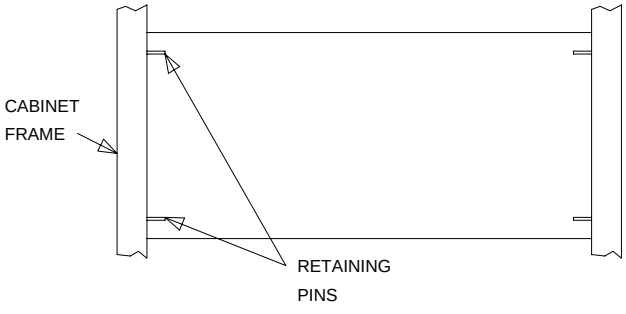


Figure 5-1. Blank Carrier Panel (Rear View)

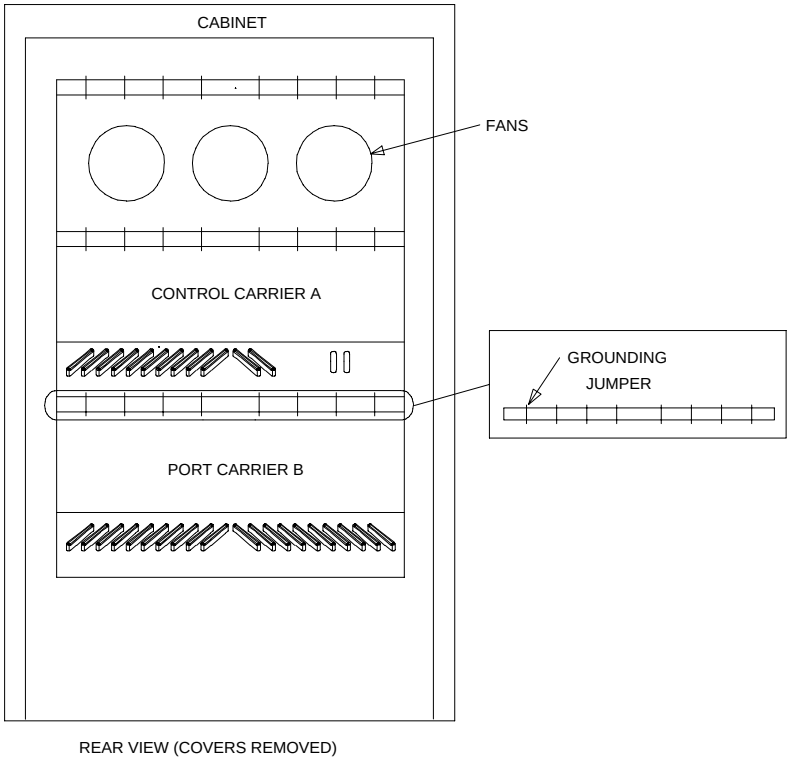


Figure 5-2. Locations of Grounding Jumpers (Small Cabinet)

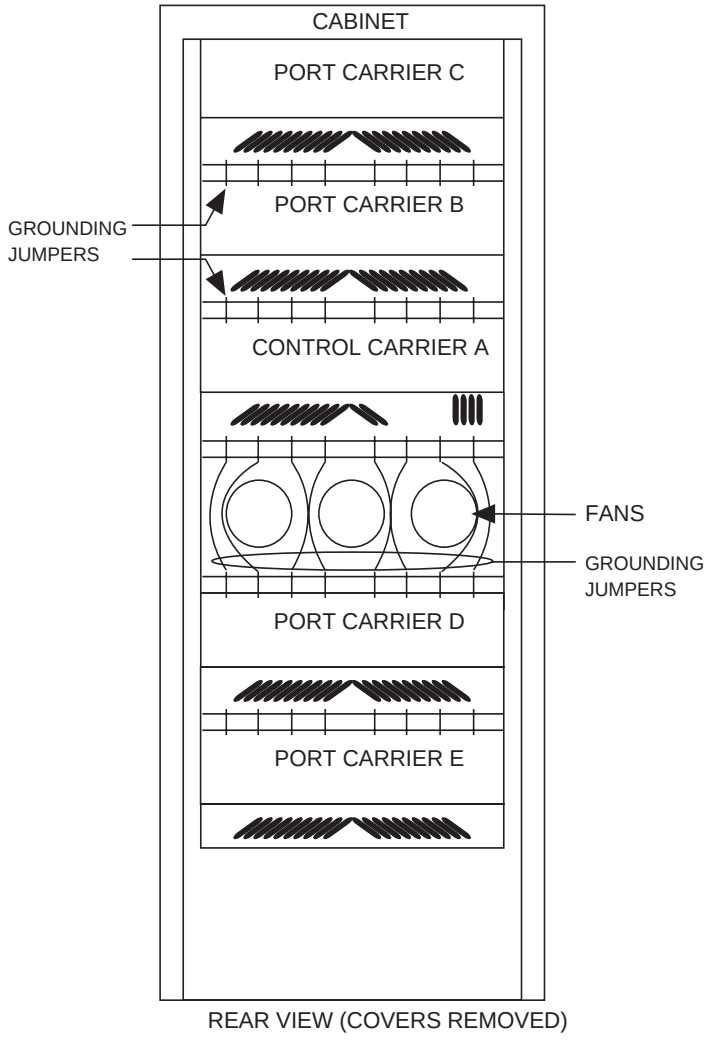


Figure 5-3. Locations of Grounding Jumpers

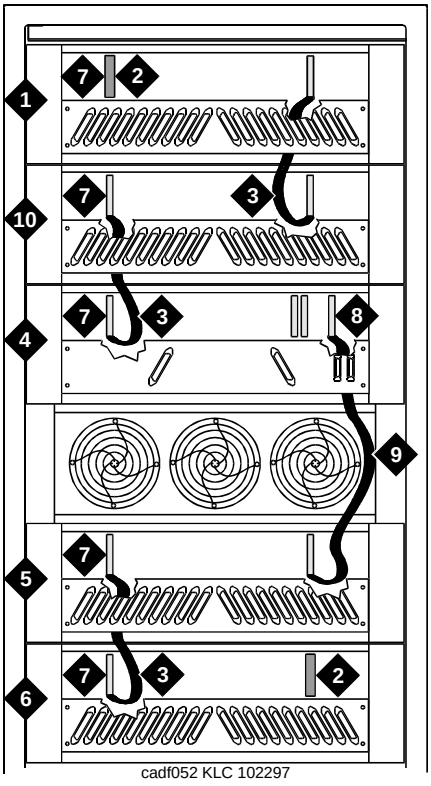


Figure Notes

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 R10r 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.

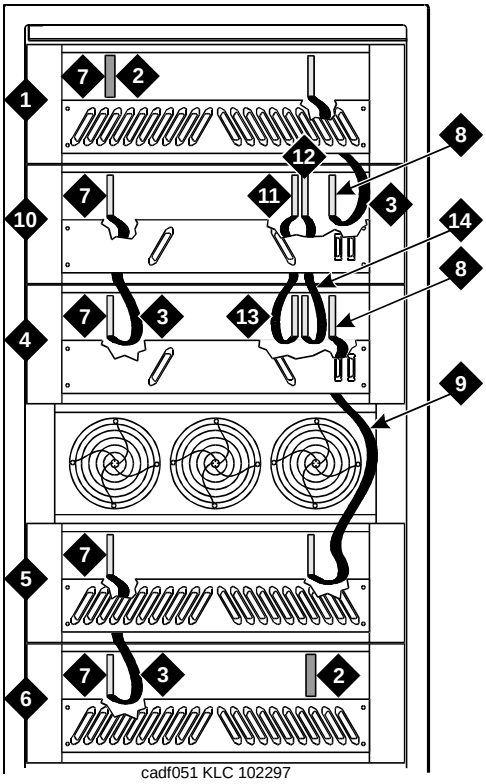
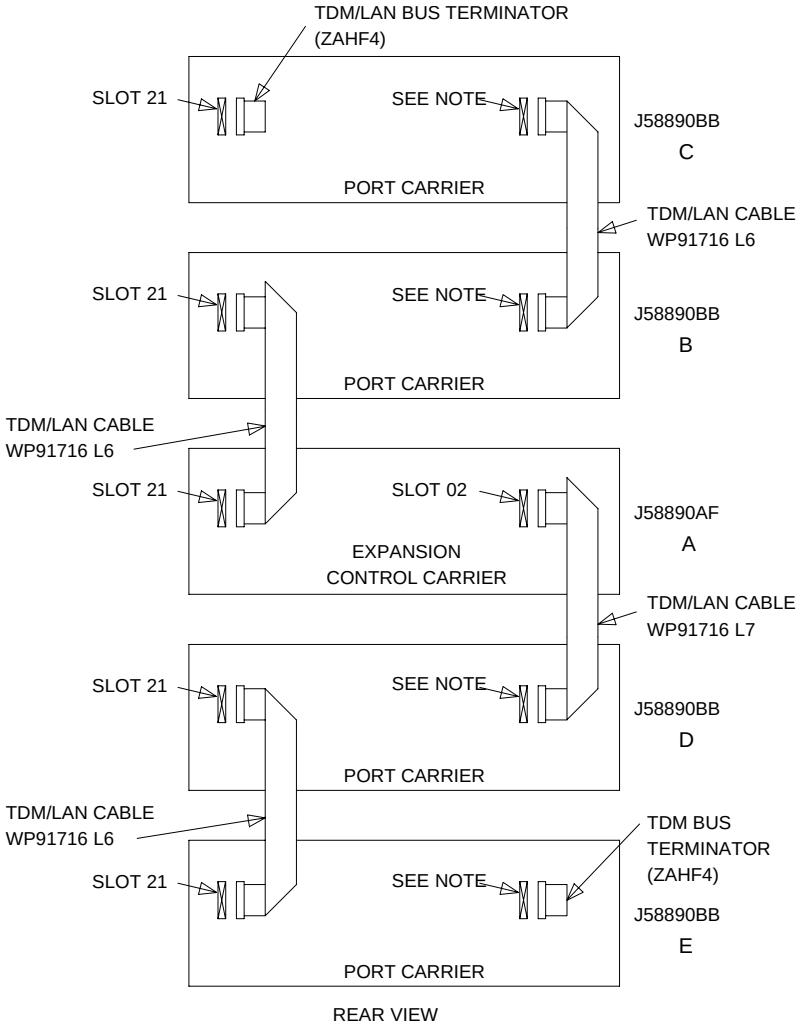


Figure Notes

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)

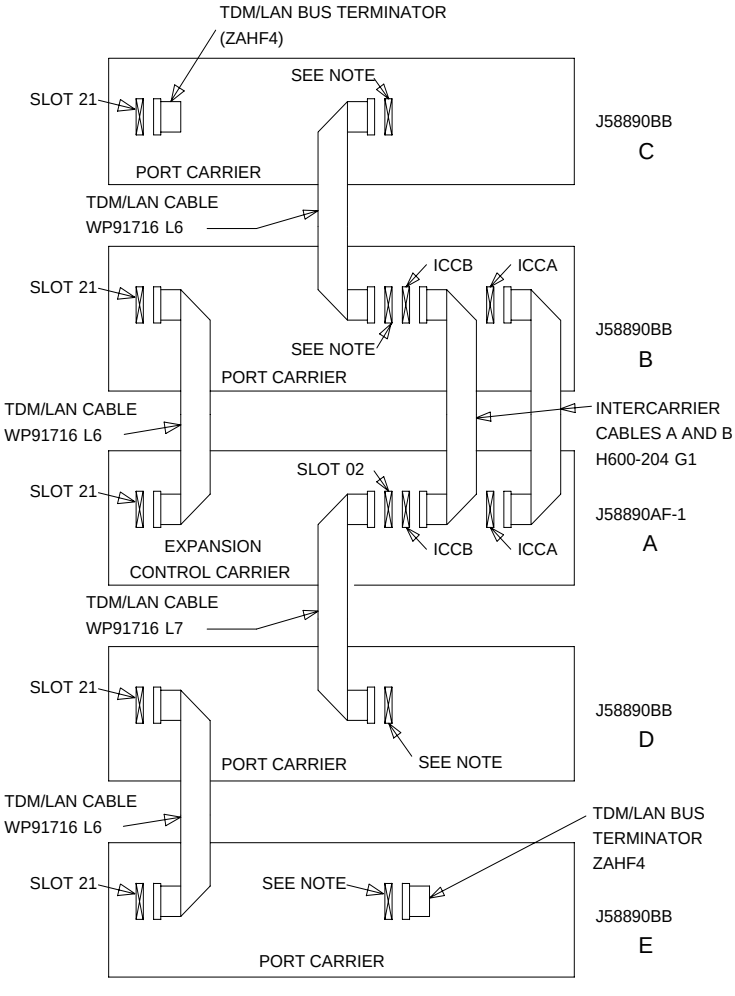
Figure 5-5. TDM/LAN Bus Connections for Critical-Reliability PPN

NOTE:
On port carrier J58890BB-1, connect the TDM cable or TDM terminator to slot 02. On port carriers J58890BB-2 and J58890BB-3, connect the TMD cables or TDM terminator to slot 01. If the port carrier has J58890BB-1 and J58890BB-2 stencilled on it, treat it as a J58890BB-1.



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

Figure 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 Avaya 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 TN75/B Announcement circuit pack, type **display announcements** and press Enter.
4. If administered recorded announcements are listed, type **list configuration software-version** and press Enter. Check screen 2 to 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 5-96.

   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

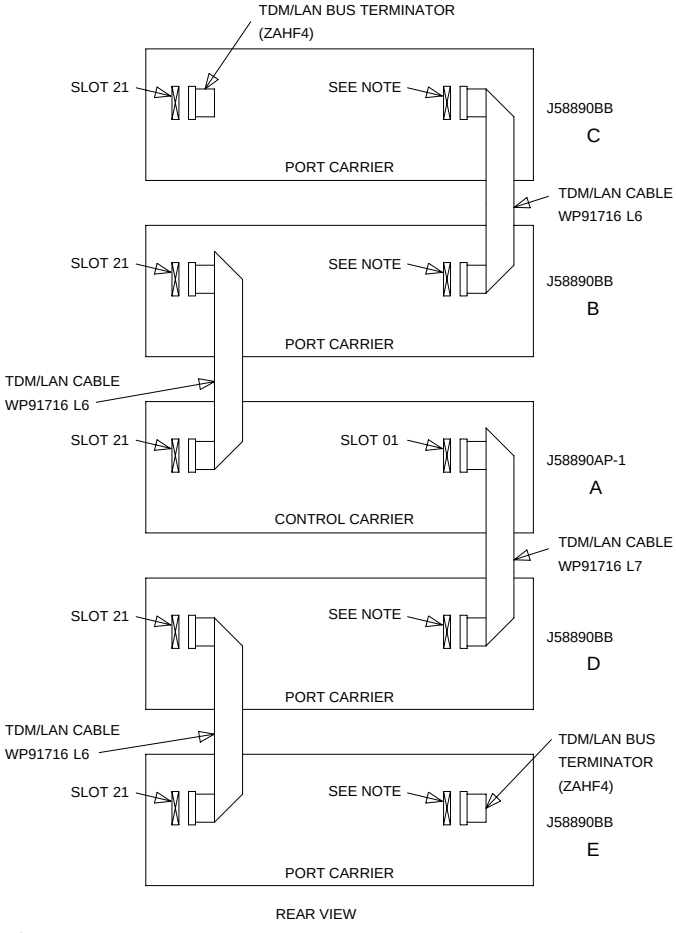
1. Behind the PPN, disconnect and remove the ICCB cable from between carrier “B” and carrier “A.” It will not be reused.

   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.

7. Behind the “B” carrier, remove the 2 screws holding the “B” carrier’s rear connector panel to the cabinet frame. These are frame ground screws.
8. In front of “B” carrier, remove the 4 screws (top 2 first) holding the “B” carrier to the cabinet frame. Use a long-handle screwdriver or 5/16-inch socket with a 10-inch extension.
9. Slide the carrier forward 1 to 2 inches; then, from the back, be sure that no cables or wiring harnesses are caught on the cabinet/carrier framework.

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

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



NOTE:

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

Figure 5-8. TDM/LAN Connections for Standard-Reliability PPN

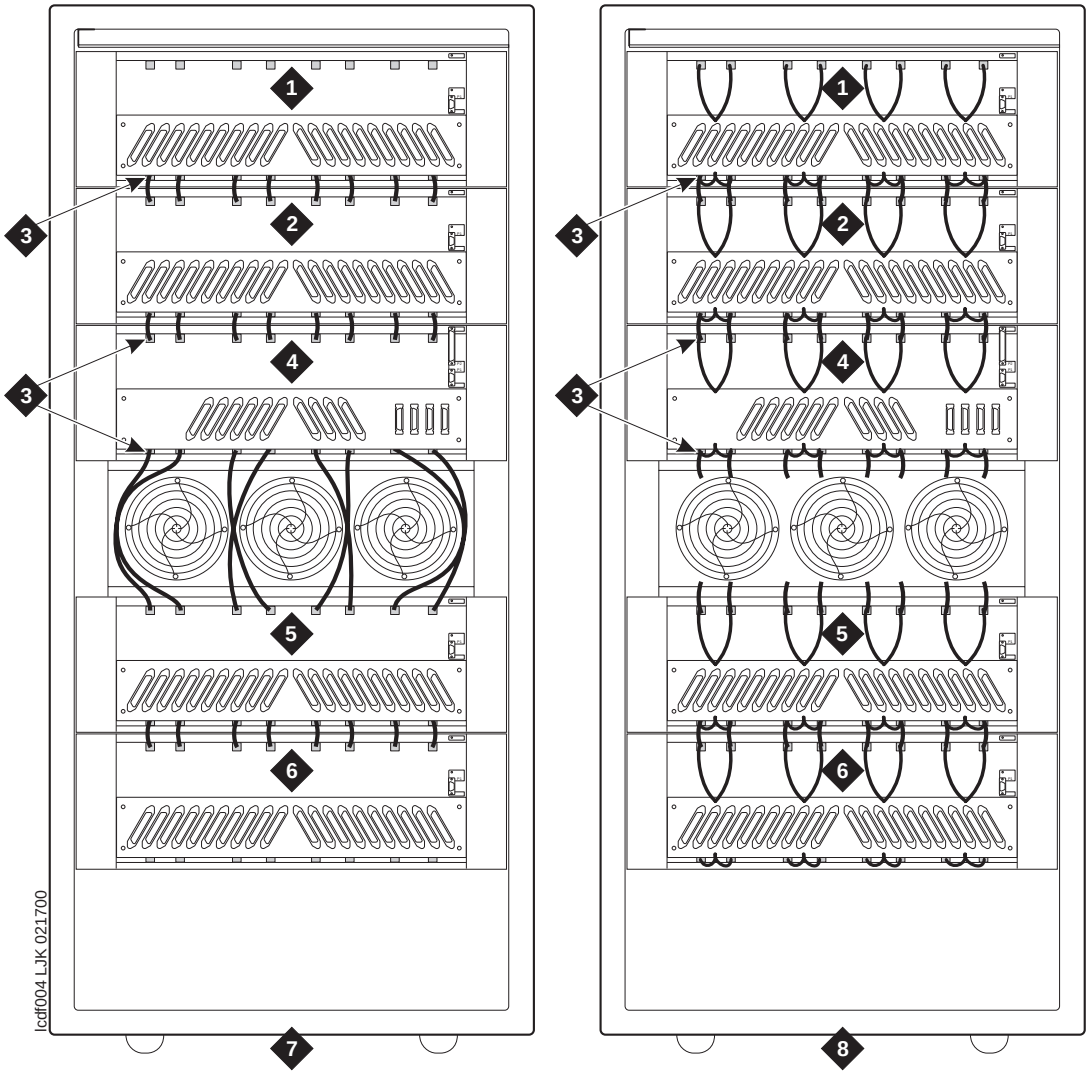


Figure Notes

1. Port Carrier “C”
2. Port Carrier “B”
3. Ground Jumpers
4. Control Carrier “A”
5. Port Carrier “D”
6. Port Carrier “E”
7. Cabinet with standard fan unit and carriers
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 R10r 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.

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 R10r 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.

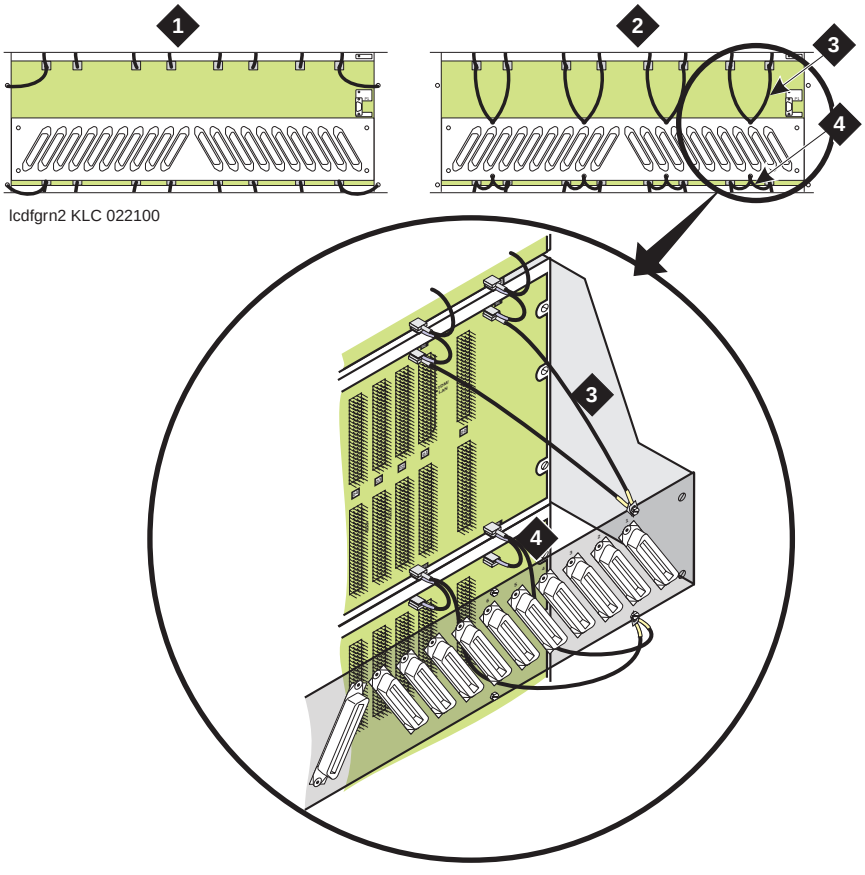
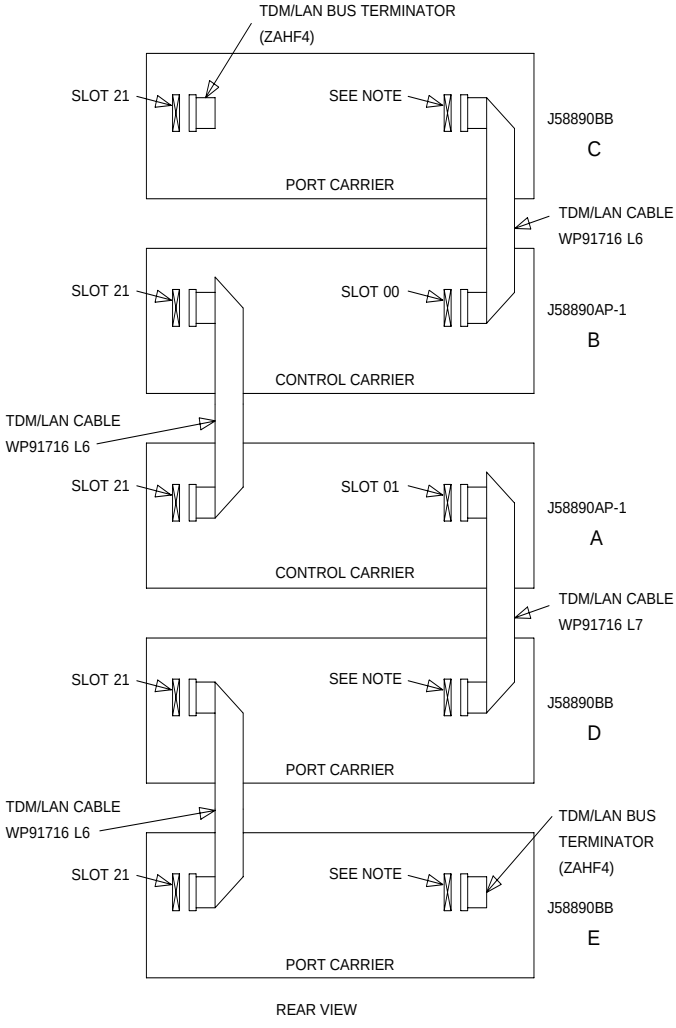


Figure Notes

1. Standard AC-powered Carrier
2. Enhanced Carrier (in R10r PPNs using either AC power [U.S.] or Global power)
3. Top Ground Straps
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.



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

Figure 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.

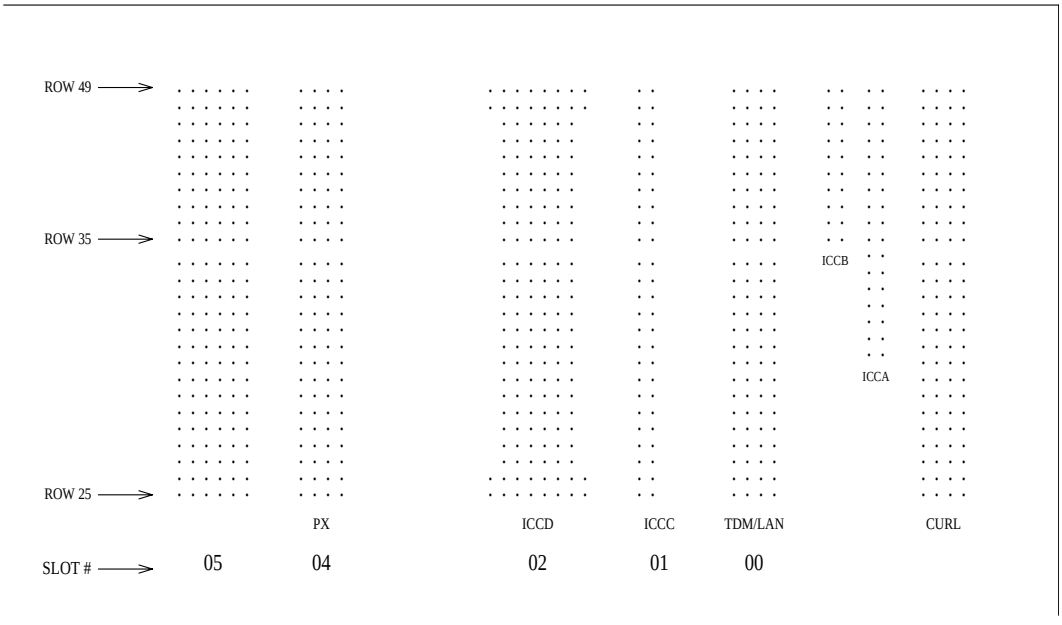


Figure 5-12. ICC Connections for R10r Control Carrier

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 R10r 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 R10r 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.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.

4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

Restart DEFINITY LAN Gateway System

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

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Maintenance for R10r*.
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.

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.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

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.

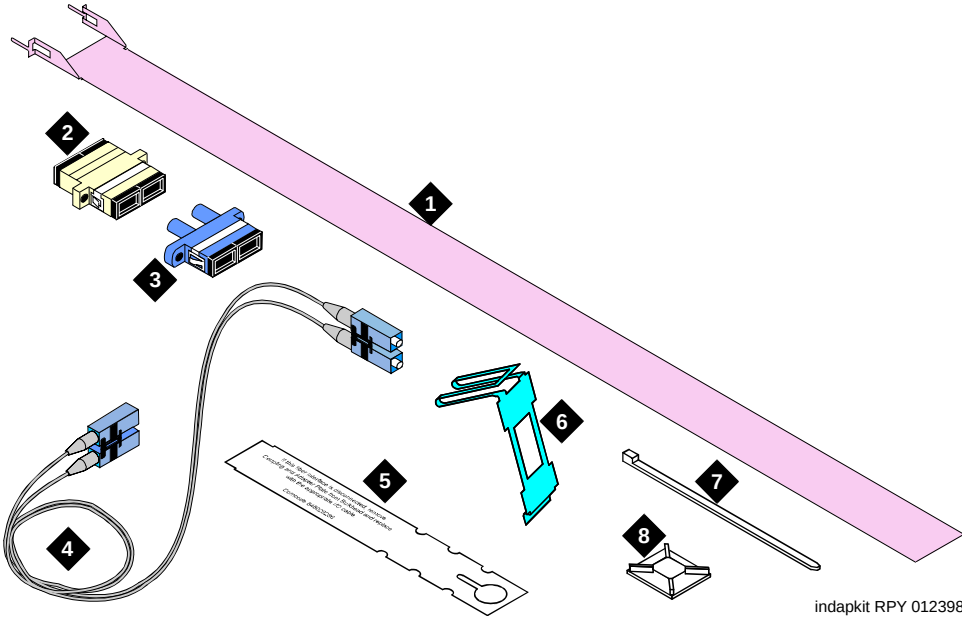


Figure Notes

1. Pass-thru Tool
2. SC-SC Fiber Optic Adapter
3. ST-SC Fiber Optic Adapter
4. Fiber Optic Cable
5. Fiber Optic Cable Disconnect Label
6. I/O Connector Adapter Bracket
7. Cable Tie
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.

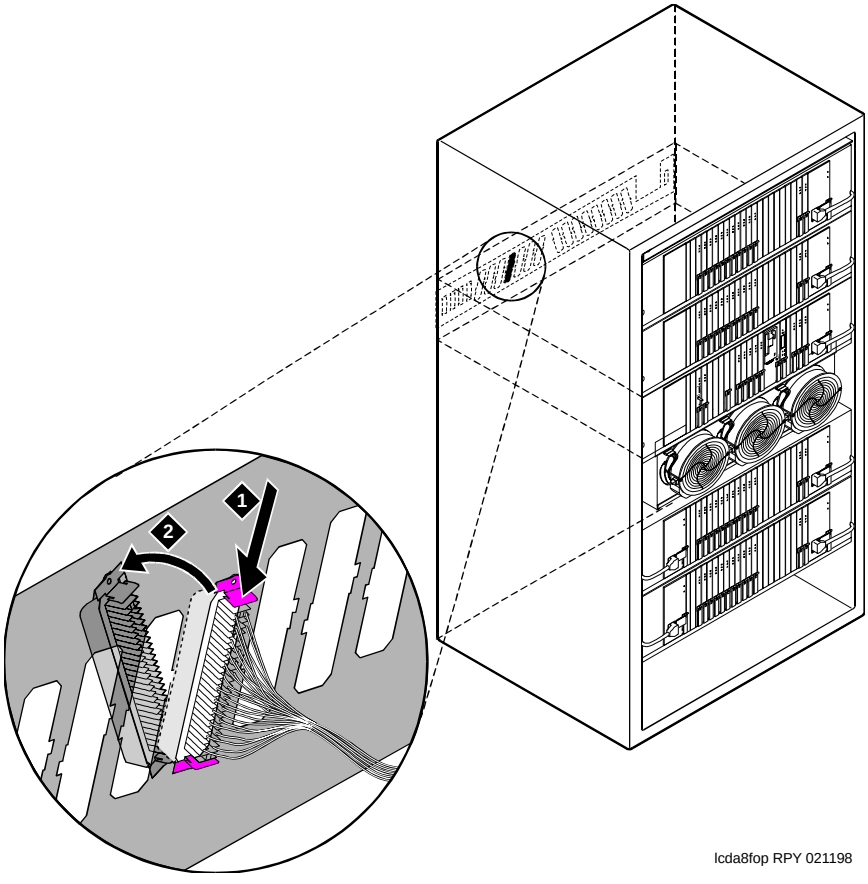


Figure Notes

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.

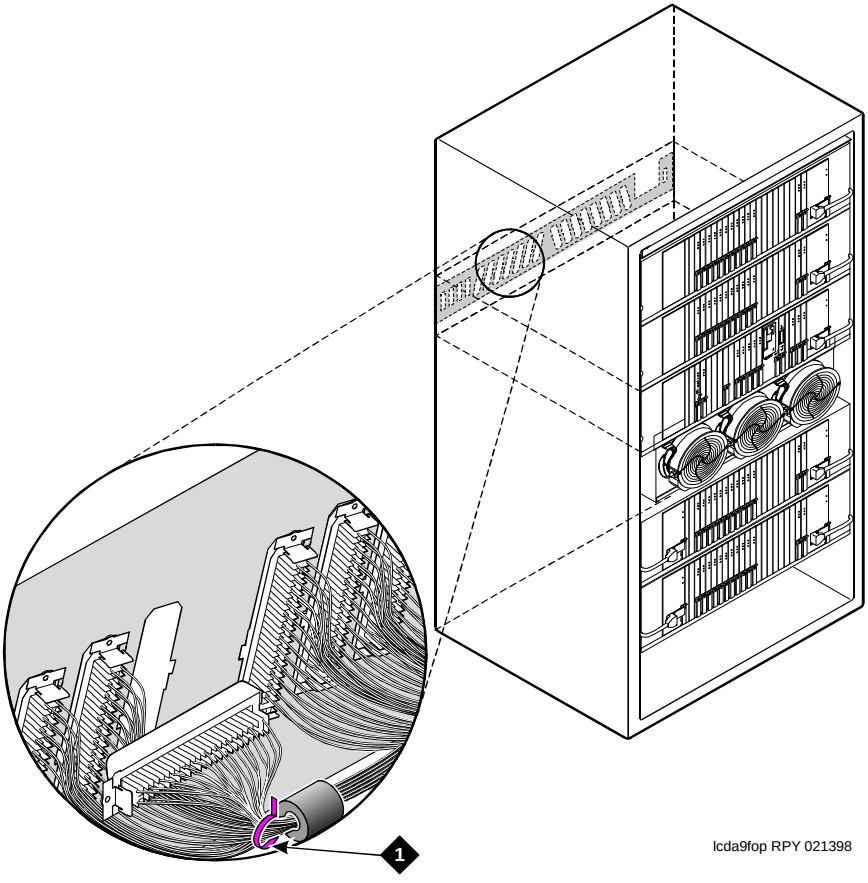


Figure Notes

1. Tie wrap

Figure 5-15. Secure the I/O Cable Connector

8. From the front, remove the fan cover. See Figure 5-16.

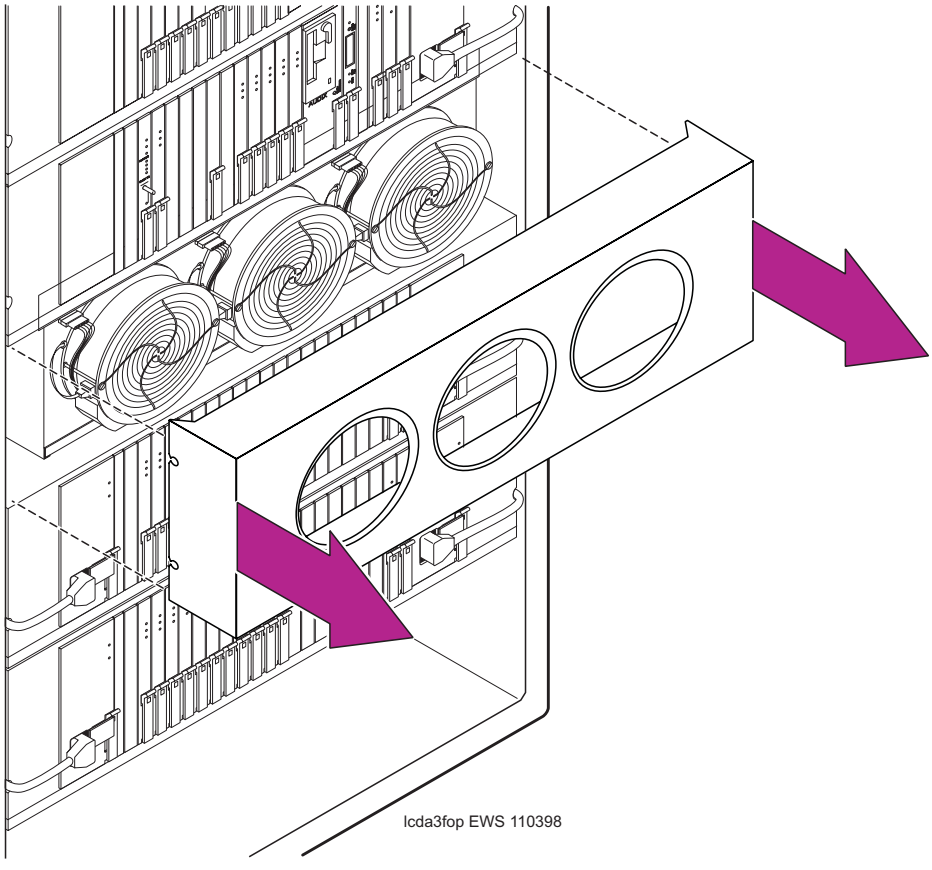


Figure 5-16. Remove the Fan Cover

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.

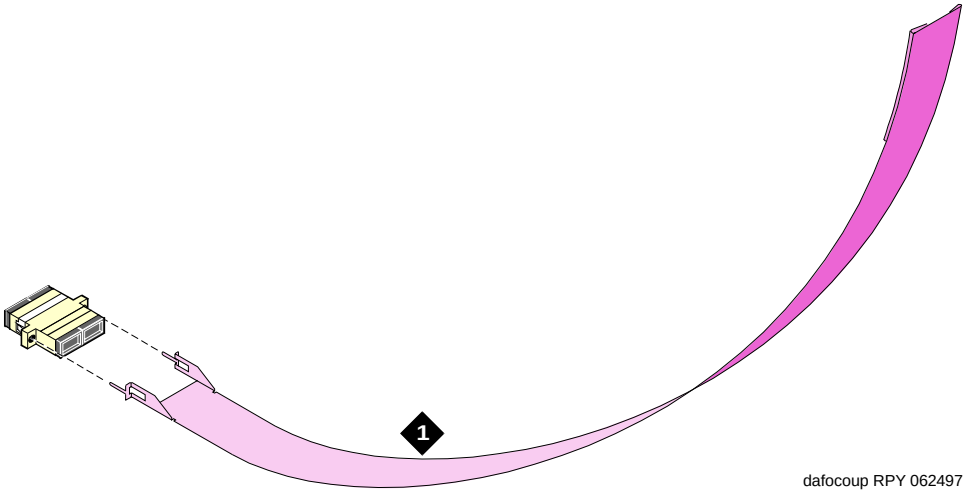


Figure Notes

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.

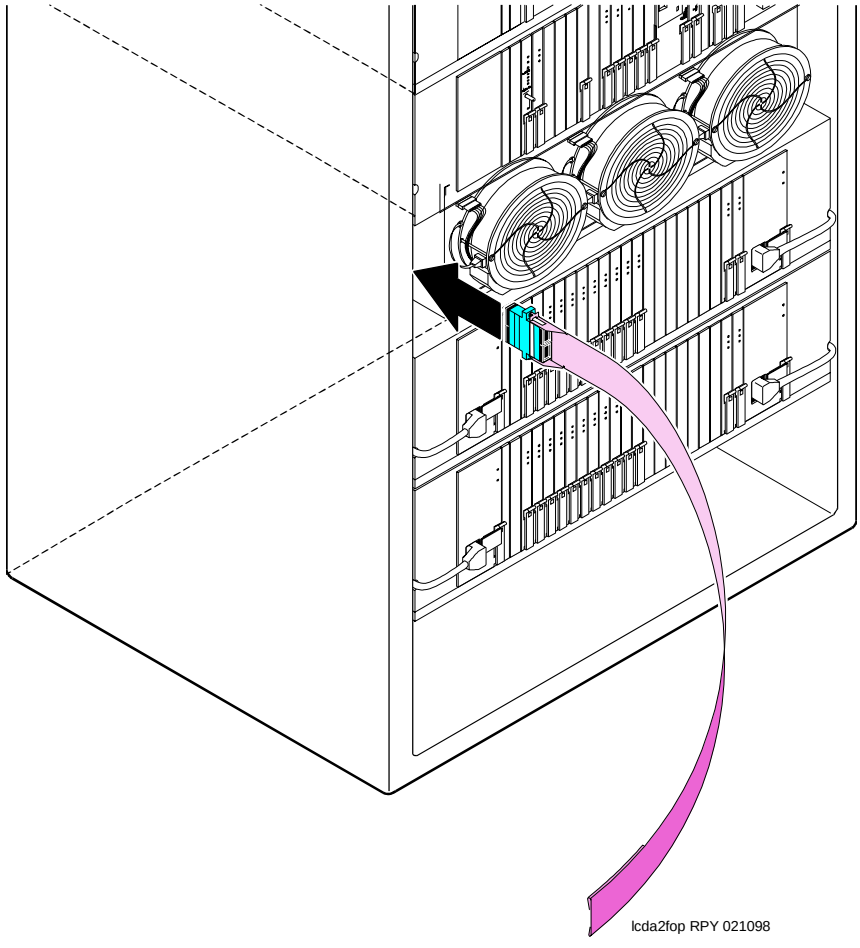


Figure 5-18. Insert the Pass-thru Tool

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.

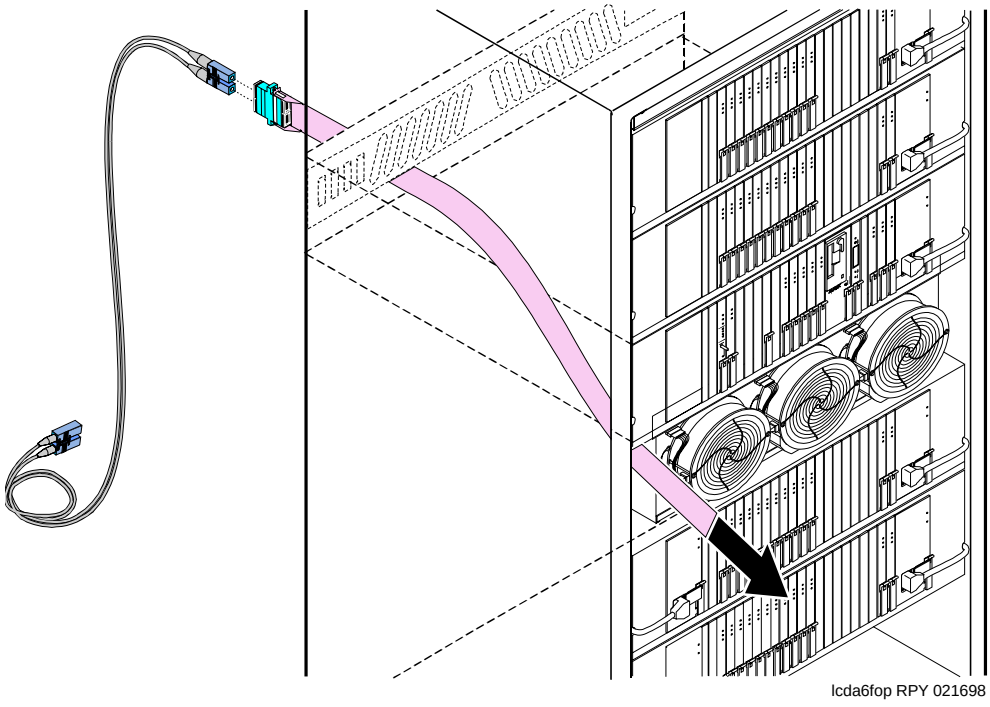


Figure 5-19. Fiber Optic Cable and Adapter

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.

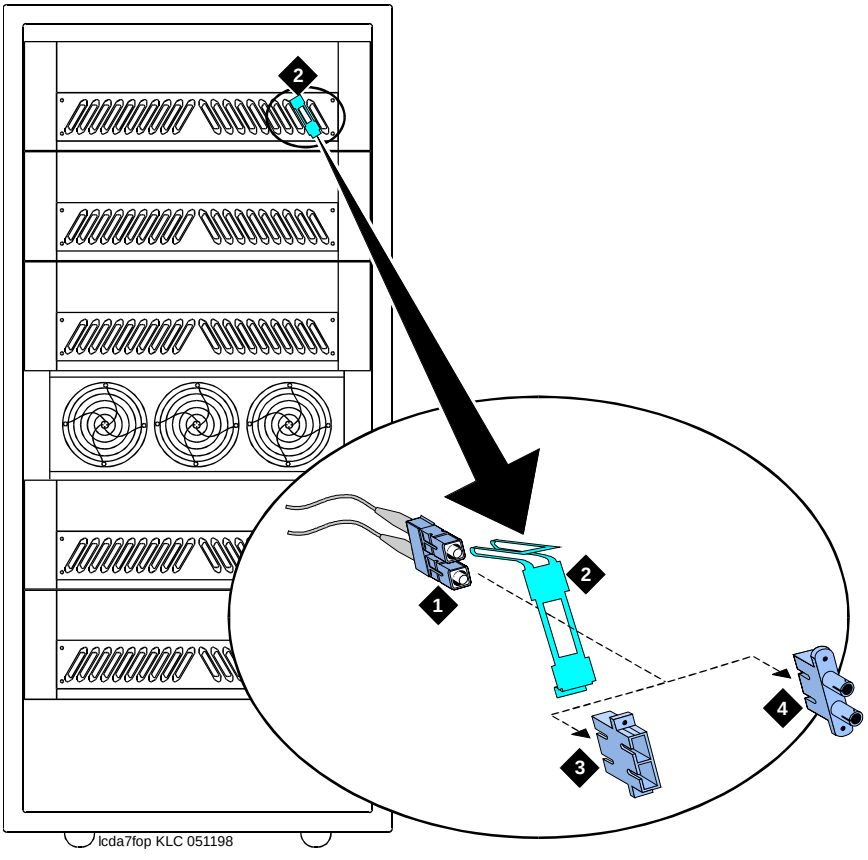


Figure Notes

1. Fiber cable
2. I/O connector adapter bracket
3. SC-SC adapter
4. SC-ST adapter

Figure 5-20. Bracket Attachments

10. Wrap the cable disconnect label around the fiber optic cable. See Figure 5-21.

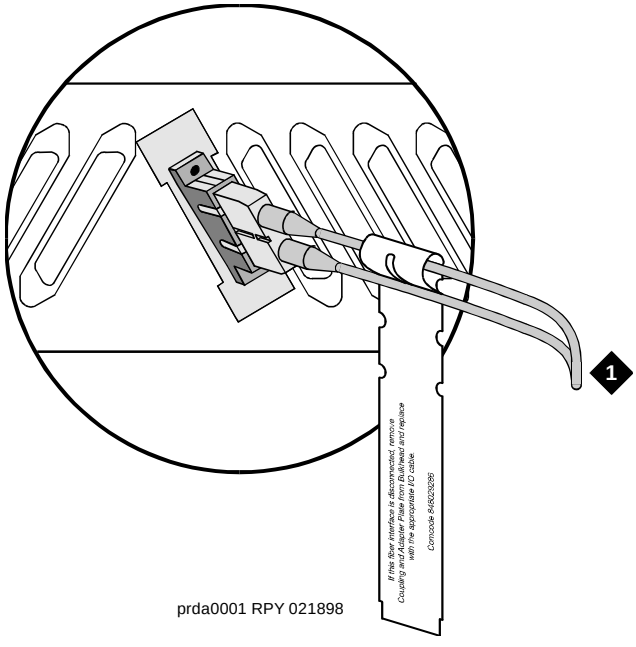


Figure Notes

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.

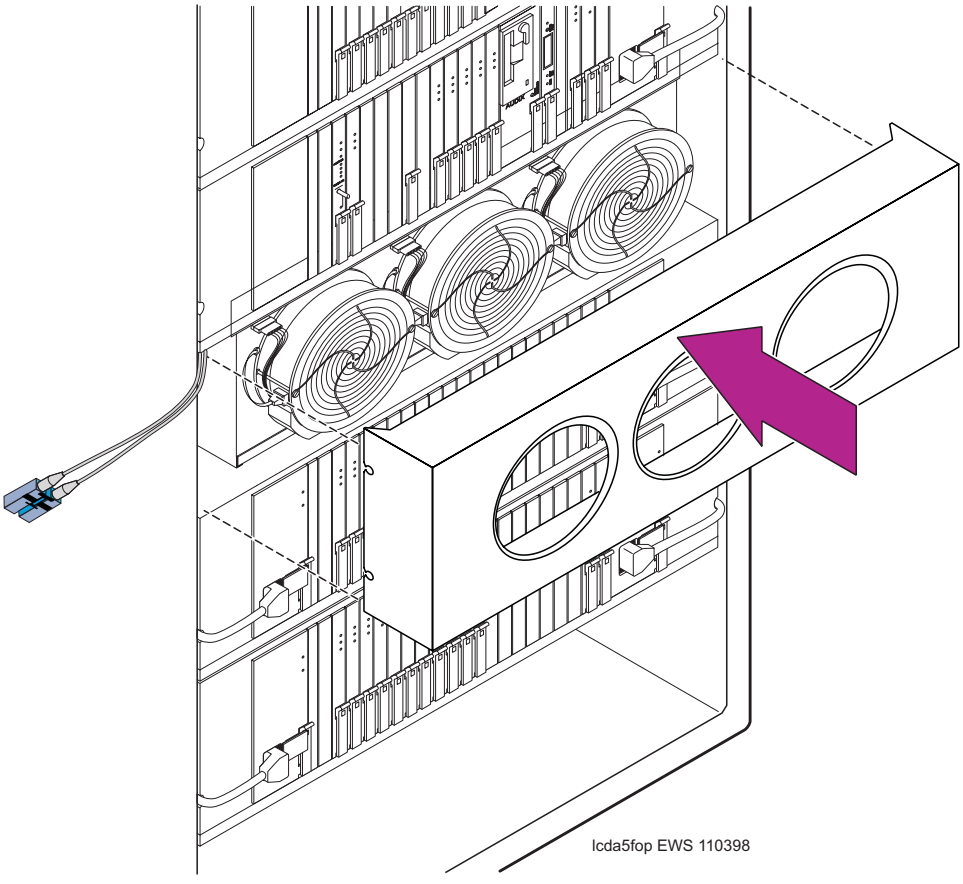


Figure 5-22. Replace the Fan Cover

13. Connect the fiber cable to the angled connector on the front of the circuit pack. See Figure 5-23.

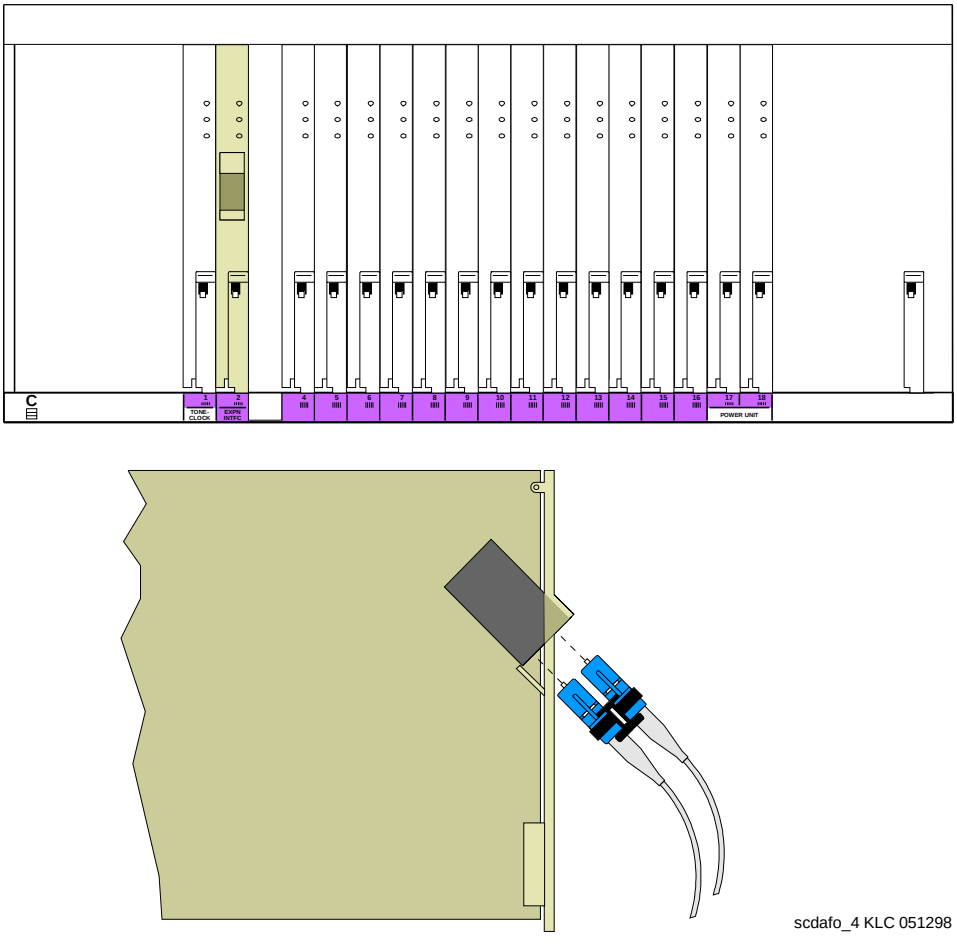


Figure 5-23. Connect Fiber Cable to Circuit Pack

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.

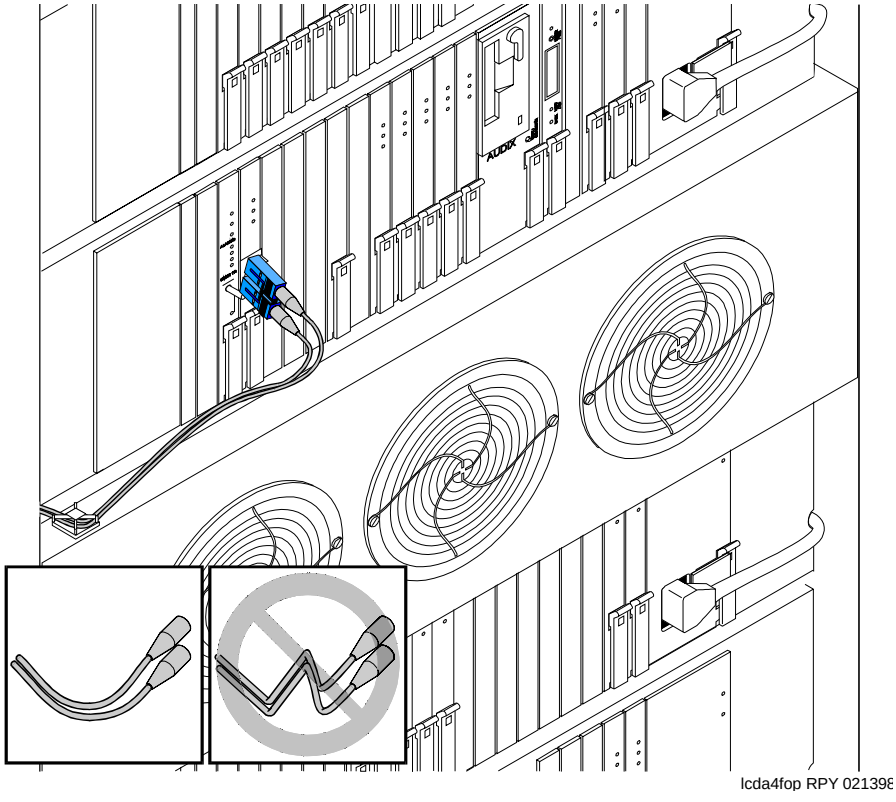


Figure 5-24. Dress the Cable

15. If a circuit pack was removed to access 2 open slots (from ‘‘Cabinet Preparation’’ on page 5-36), 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.

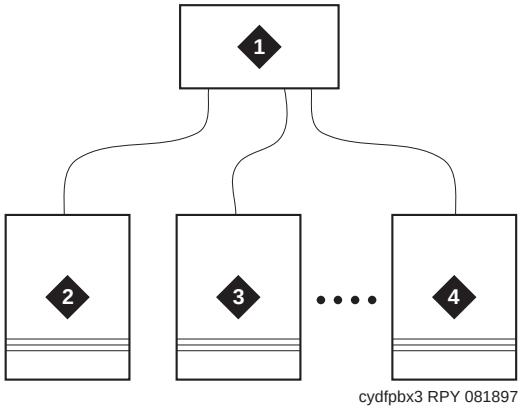


Figure Notes

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.

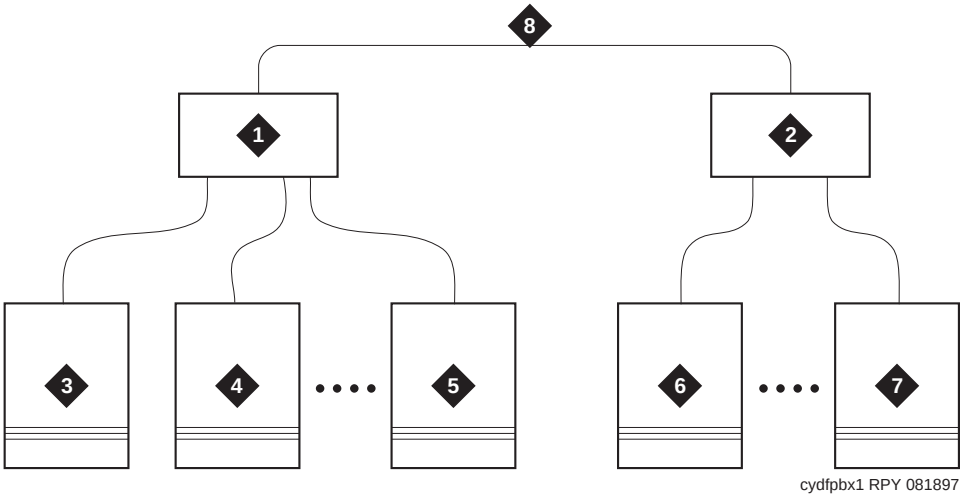


Figure Notes

1. Switch Node (SN) 1
2. Switch Node 2
3. PPN Cabinet
4. EPN Cabinet 1
5. EPN Cabinet 11
6. EPN Cabinet 12
7. EPN Cabinet 23
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.

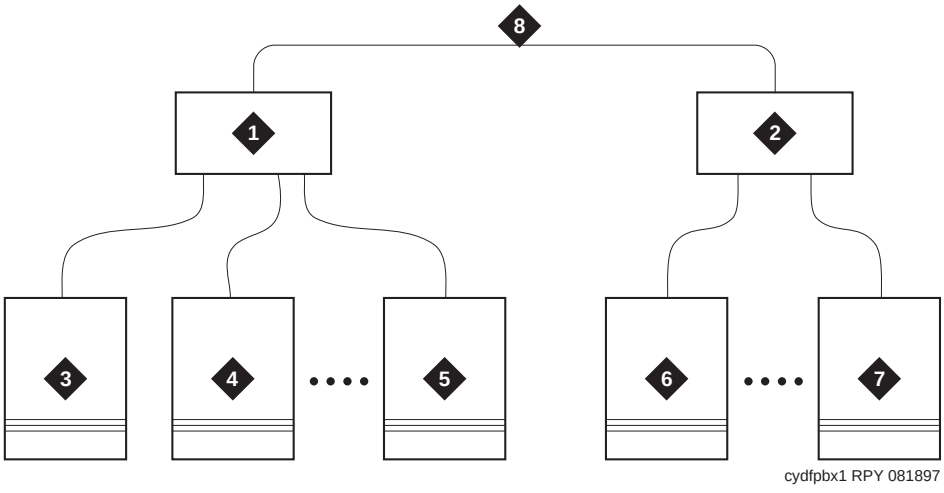


Figure Notes

1. Switch Node (SN) 1
2. Switch Node 2
3. PPN Cabinet
4. EPN Cabinet 1
5. EPN Cabinet 14
6. EPN Cabinet 15
7. EPN Cabinet 29
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.

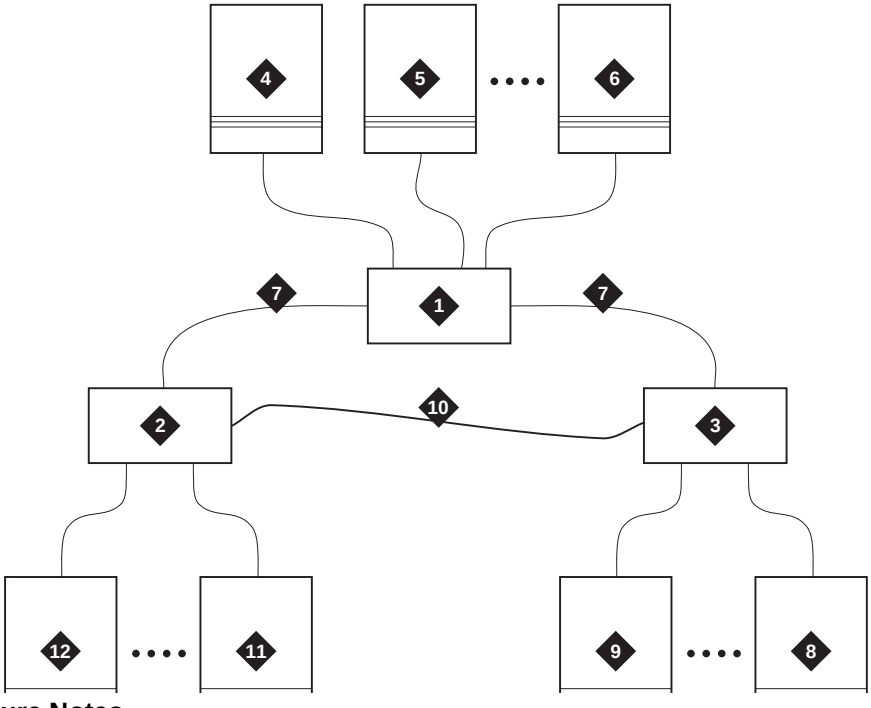


Figure Notes

1. Switch Node (SN) 1
2. Switch Node 2
3. Switch Node 3
4. PPN Cabinet
5. EPN Cabinet 1
6. EPN Cabinet 9
7. Inter-SN Connections (3 fibers)
8. EPN Cabinet 10
9. EPN Cabinet 20
10. Inter-SN Connection (2 fibers)
11. EPN Cabinet 21
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.

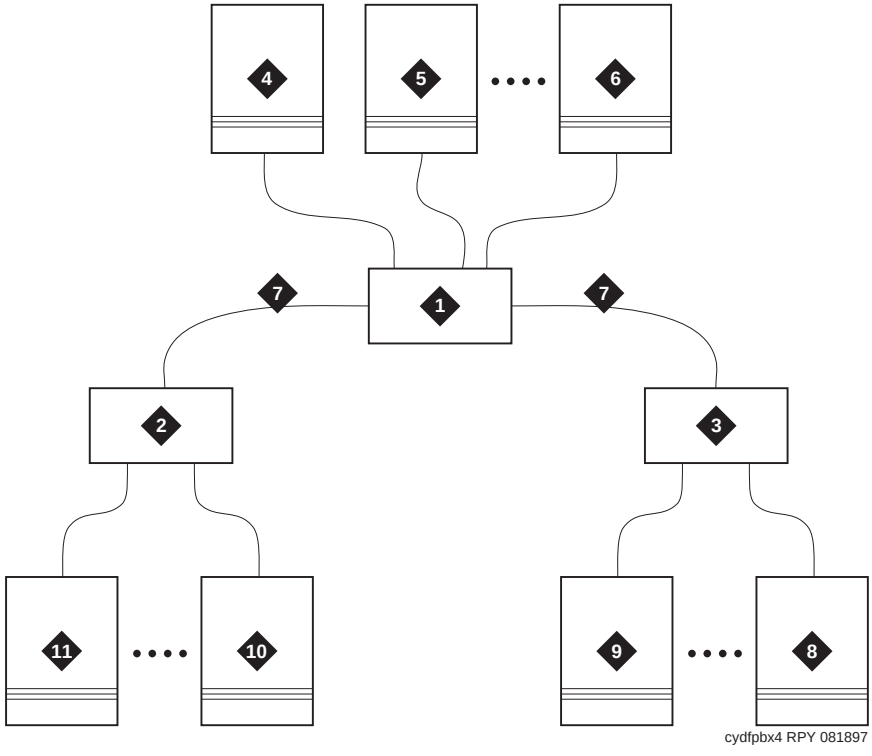


Figure Notes

1. Switch Node (SN) 1
2. Switch Node 2
3. Switch Node 3
4. PPN Cabinet
5. EPN Cabinet 1
6. EPN Cabinet 13
7. Inter-SN Connections (1 fiber)
8. EPN Cabinet 14
9. EPN Cabinet 28
10. EPN Cabinet 29
11. EPN Cabinet 43

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.
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 and TN2501 AP Integrated Announcement circuit packs store 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.

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 5-77.

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.
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.

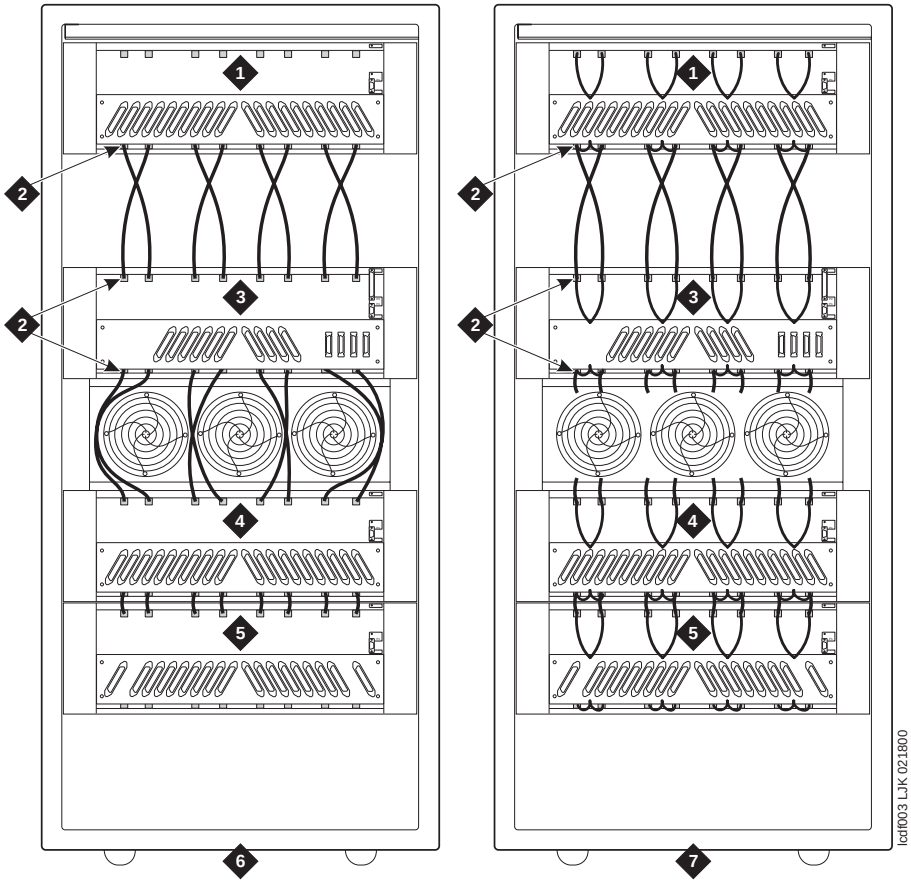


Figure Notes

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)

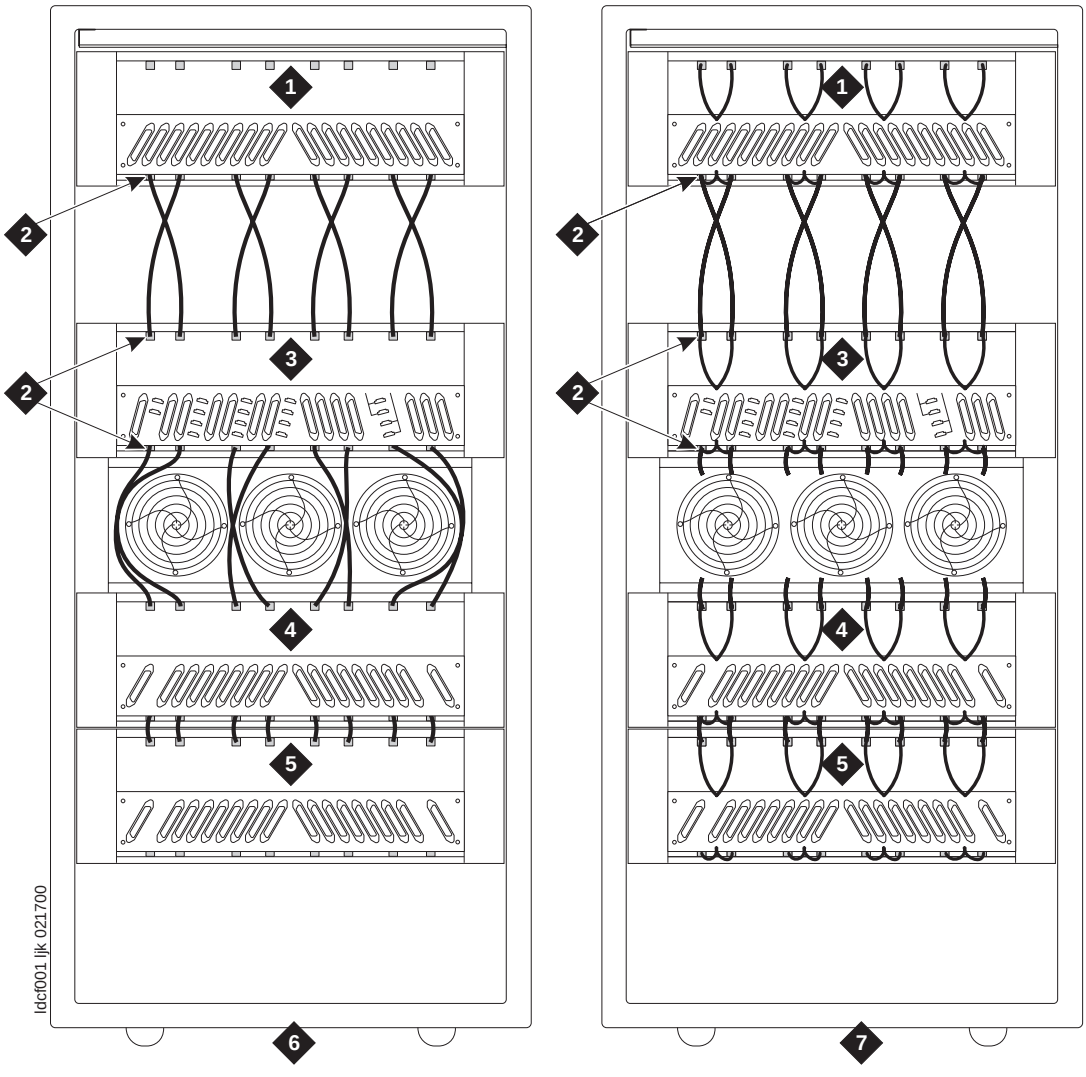


Figure Notes

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)

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.

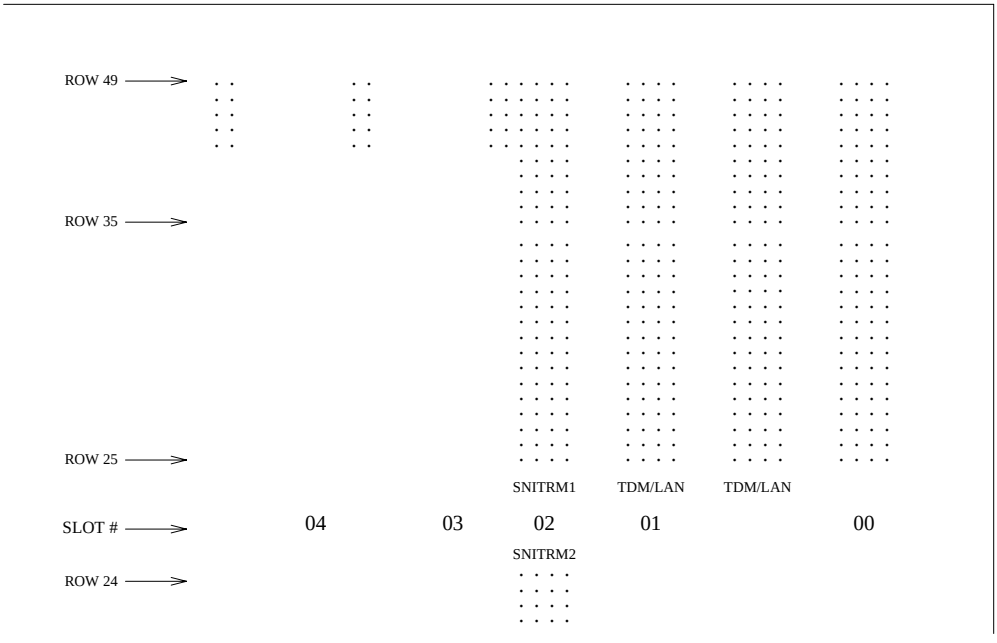


Figure 5-32. ICC Connections for Switch Node Carrier

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.

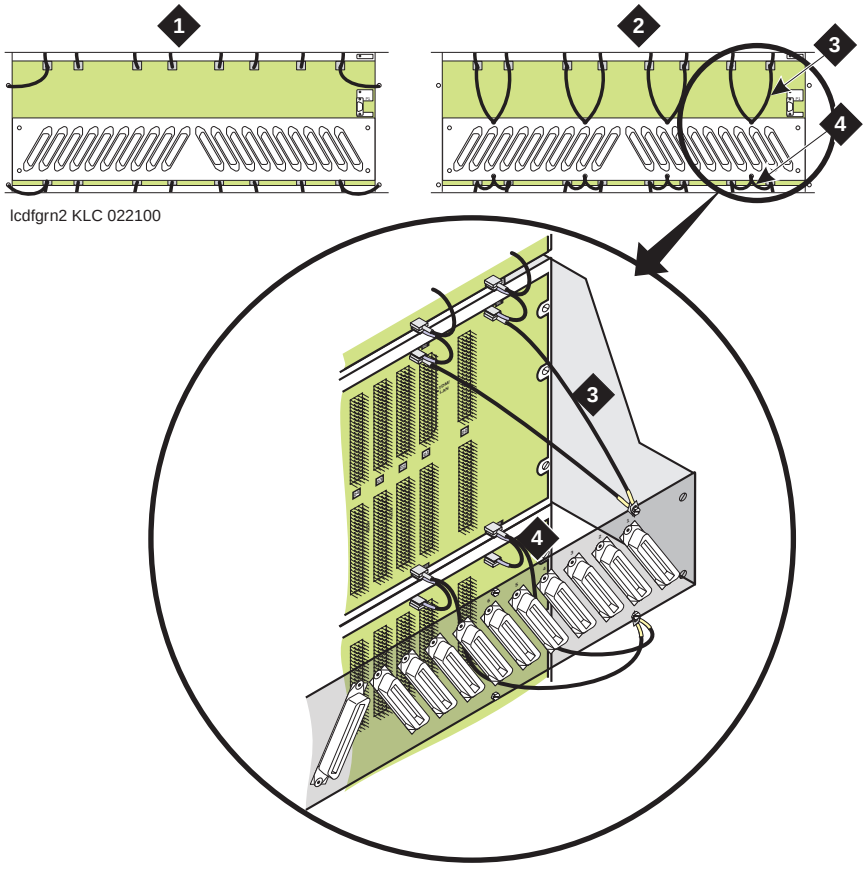


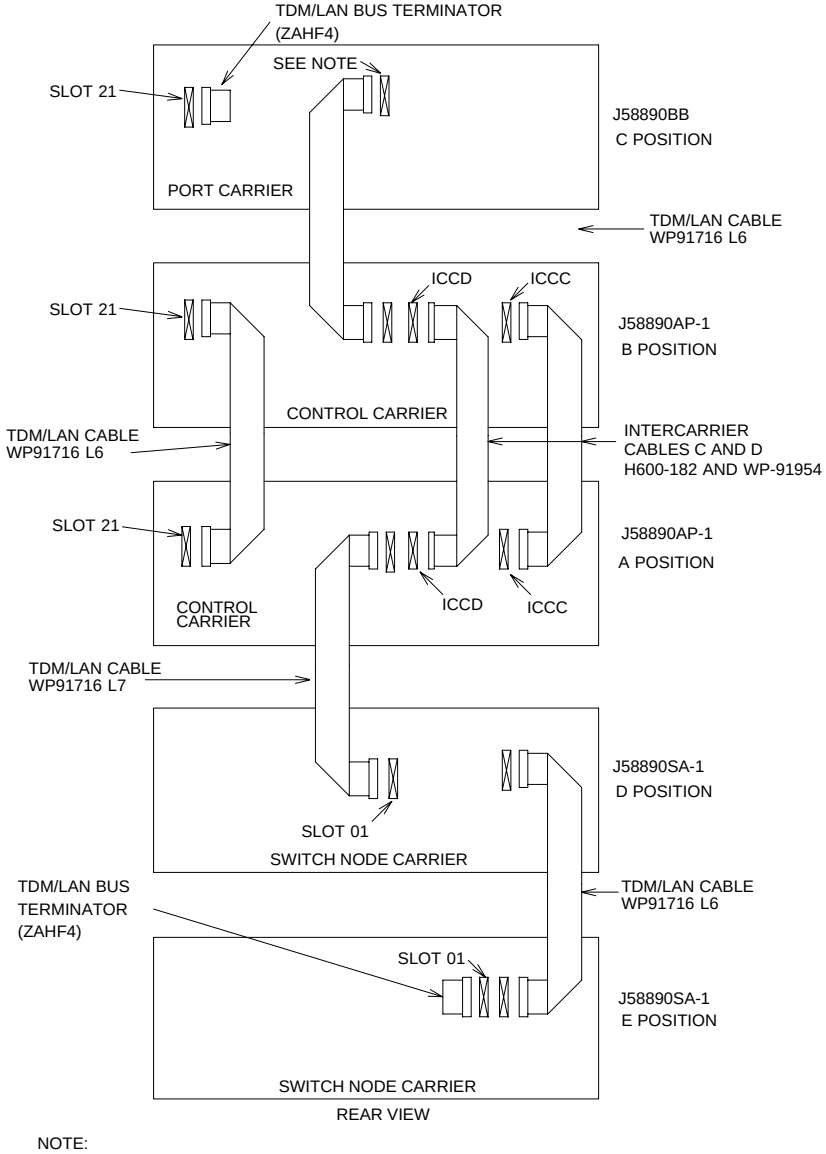
Figure Notes

1. Standard AC-powered Carrier
2. Enhanced Carrier (in R10r PPNs using either AC power [U.S.] or Global power)
3. Top Ground Straps
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.

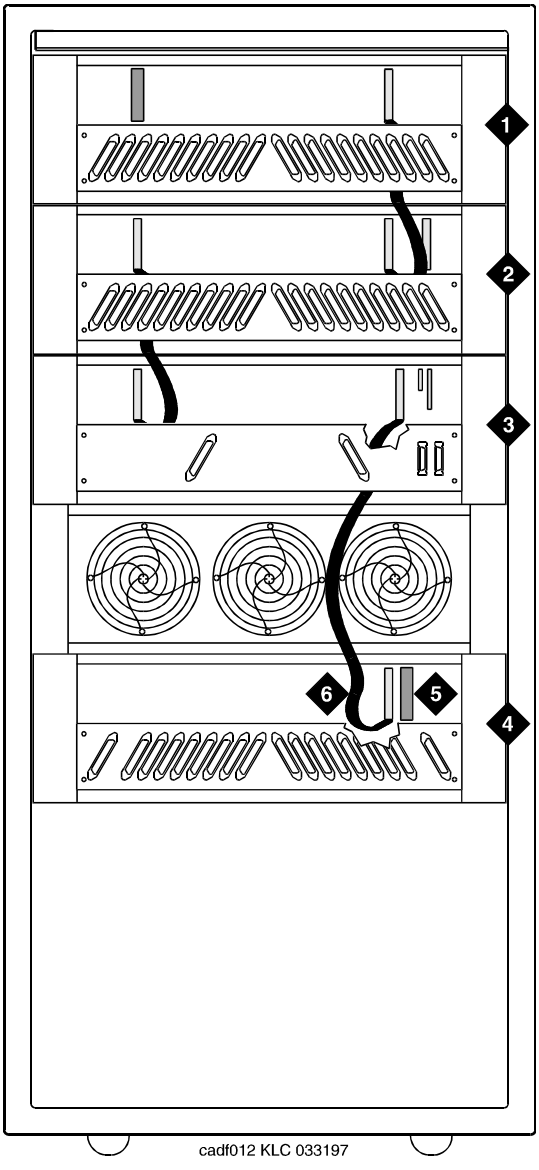
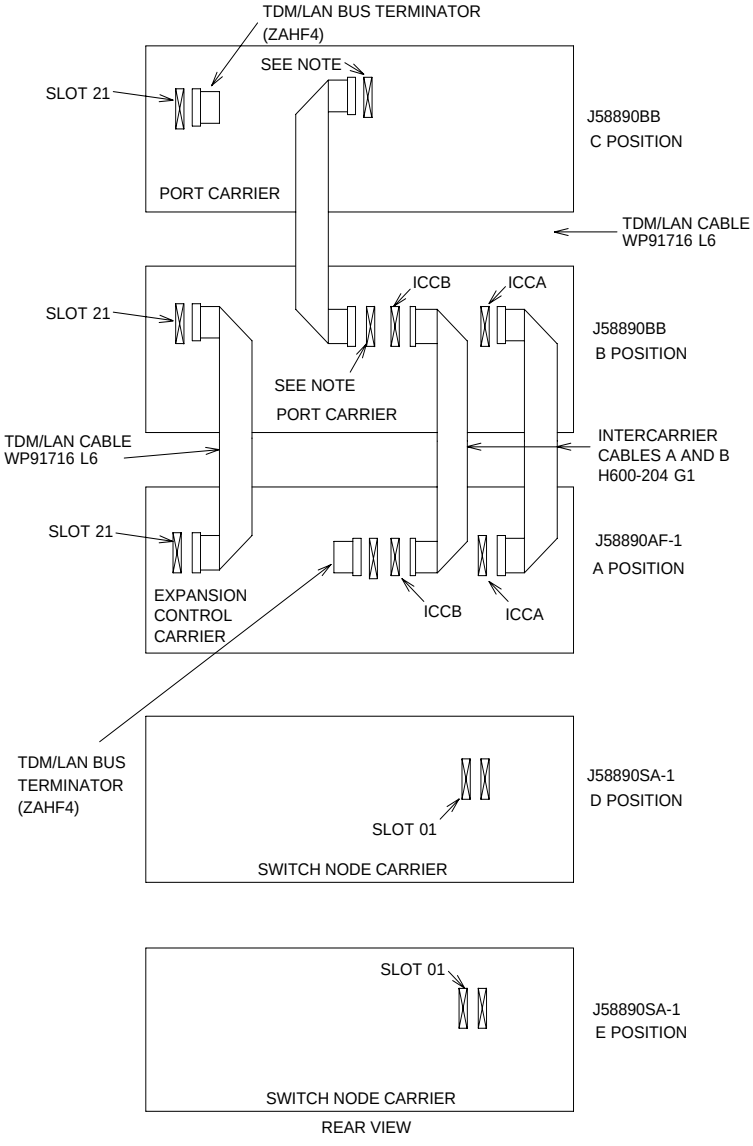


Figure Notes

1. Port Carrier (C Position)
2. Port Carrier (B Position)
3. Processor Carrier (A Position)
4. Switch Node Carrier (D Position)
5. TDM/LAN Bus Terminator (ZAHF4)
6. TDM/LAN Cable (WP91716 L7)

Figure 5-35. TDM/LAN Connections for EPN (Standard Reliability)



NOTE:

ON PORT CARRIER J68890BB-1, CONNECT TDM/LAN CABLE OR TDM/LAN TERMINATOR TO SLOT 02. ON PORT CARRIERS J58890BB-2 AND -3, CONNECT THE TDM/LAN CABLE OR TDM/LAN TERMINATOR TO SLOT 1.

Figure 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.

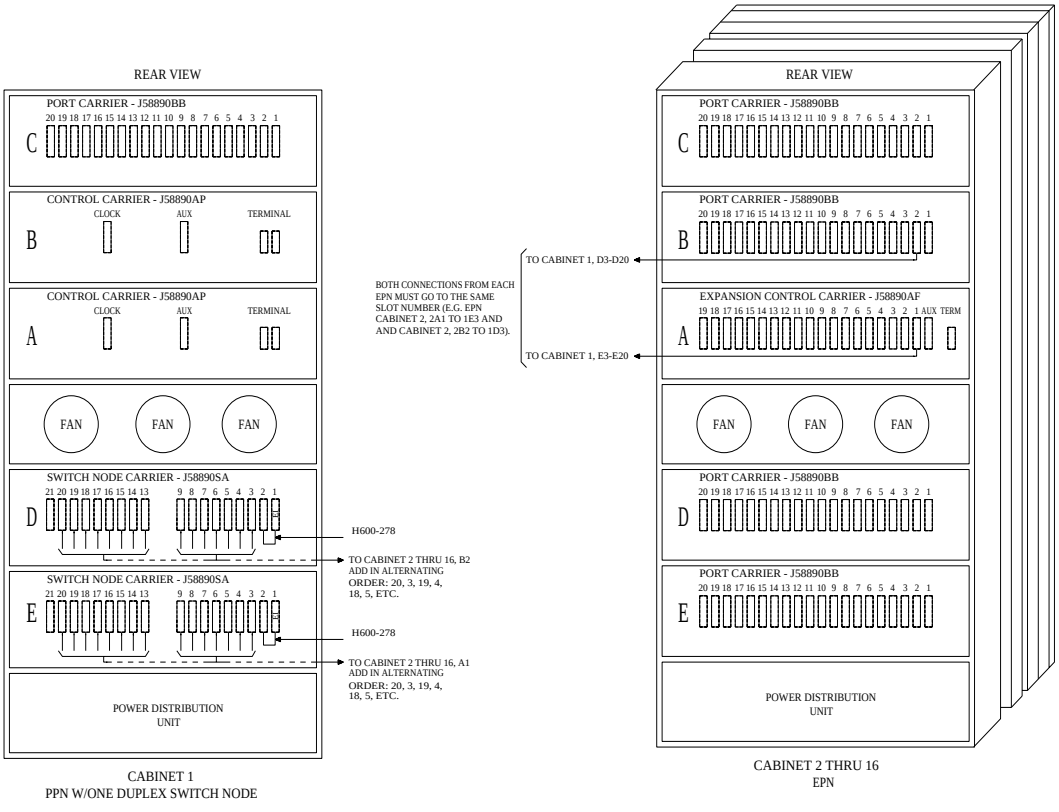


Figure 5-37. Fiber-Optic Connections through Center Stage Switch (Critical-Reliability)

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.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

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 5-77.

Resolve Alarms and Enable Alarm Origination

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Maintenance for R10r*.
2. If the `Alarm Origination Activated` field administration that you previously noted is already set to **y**, be sure to enable Alarm Origination. Otherwise you do not need to enable Alarm Origination (proceed to the next section).
3. Type **change system-parameters maintenance** and press Enter.

   The name of the `Alarm Origination Activated` field was changed to `Alarm Origination to OSS Numbers` to support more than 1 OSS.
4. Type **first-only** in this field to enable Alarm Origination (to the first OSS, which should be INADS).

   Be sure to type **y** in both `Cleared Alarm Notification` and `Restart Notification` fields if they are not enabled already. Press Enter.
5. Type **save translation [spe-a** or **both] disk** and press Enter.

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.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

   NOTE:
   Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - FL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.
6. In the **Product Type** field choose *DEFINITY* for the following products:
7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.
8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the **Customer Type** field, select
   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the **Data Lock** field, choose:
    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing

14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.

15. In the **Alarm Destination** field, choose

    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    *If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

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.

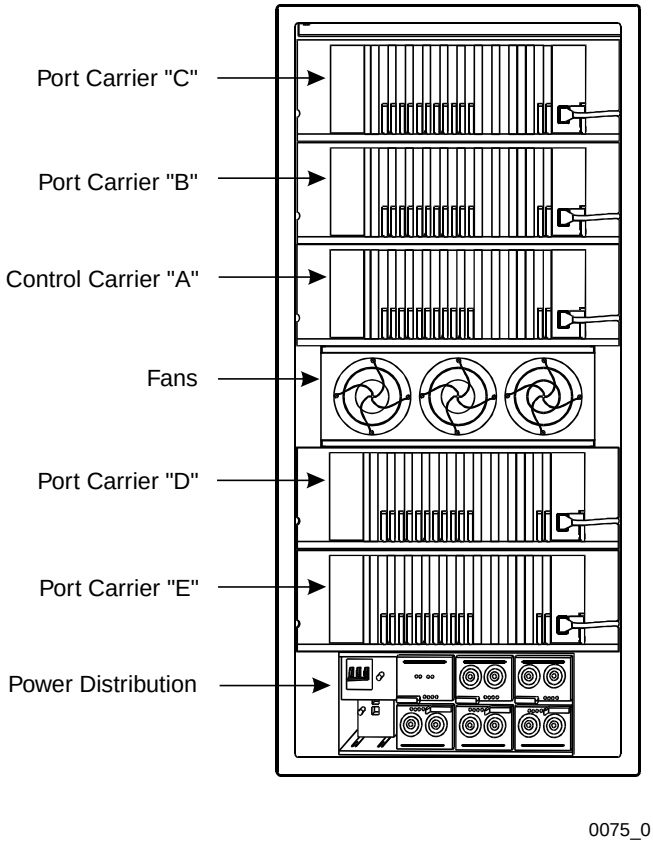


Figure 5-38. Typical Multicarrier EPN Cabinet

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 Installation and Test for Multicarrier Cabinets*.
2. Connect the approved ground to the new cabinet as instructed in *DEFINITY Enterprise Communications Server Installation and Test for Multicarrier Cabinets.*

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

Interconnect Cabling Release 10r

For fiber optic cabling information and comcode numbers, refer to *DEFINITY Enterprise Communications Server 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)

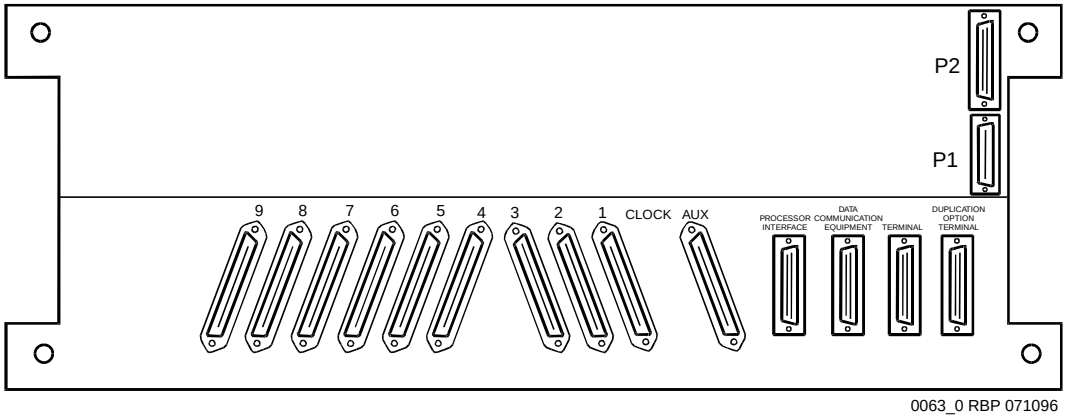


Figure 5-39. Rear of J58890AH Control Carrier (PPN)

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.
3. Route the fiber cable to the Expansion Control Carrier in Cabinet 3.

4. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 1.
5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 2.
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 2.
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1.
11. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 2.
12. Route the fiber cable to the Port Carrier in position B in Cabinet 1.
13. Install a 9823A lightwave transceiver onto Slot 2 on the Port Carrier in position D in Cabinet 1.
14. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 1. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

Direct-Connect New EPN to Existing PPN and EPN (High or Critical Reliability)

For the following connection example, the PPN cabinet is called Cabinet 1, the first EPN cabinet (next to the PPN cabinet) is called Cabinet 2, and the last EPN cabinet is called Cabinet 3.

1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2.
2. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Label the cable to make the connections to Cabinet 2 easier.
3. Route the fiber cable to the Expansion Control Carrier in Cabinet 2.
4. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 1.

5. Connect the 20-foot fiber optic cable from the Port Carrier in Cabinet 1 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 2. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
6. At the rear of the Expansion Control Carrier in Cabinet 2, install a 9823A lightwave transceiver onto Slot 2.
7. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver. Be sure to label the cable.
8. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 2.
9. Connect the 20-foot fiber optic cable from Cabinet 2 to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.
10. At the rear of the Expansion Control Carrier in Cabinet 3, install a 9823A lightwave transceiver onto Slot 1.
11. Connect a 20-foot fiber optic cable to the TX and RX connectors on the transceiver on the Expansion Control Carrier in Cabinet 3.
12. Route the fiber cable to the Port Carrier in position D in Cabinet 1.
13. At the rear of the Port Carrier in position D in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2.
14. Connect the 20-foot fiber optic cable from Cabinet 3 to the TX and RX connectors on the transceiver on the Port Carrier in Cabinet 1. Be sure the cable connected to the TX connector on 1 transceiver is connected to the RX connector on the other transceiver and vice versa.

Interconnect Cabling Release 10r

For more fiber optic cabling information, refer to *DEFINITY Enterprise Communications Server Installation and Test for Multicarrier Cabinets*.

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

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

NOTE:
For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

1. At the rear of the Port Carrier in position B in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1B02). See Figure 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).

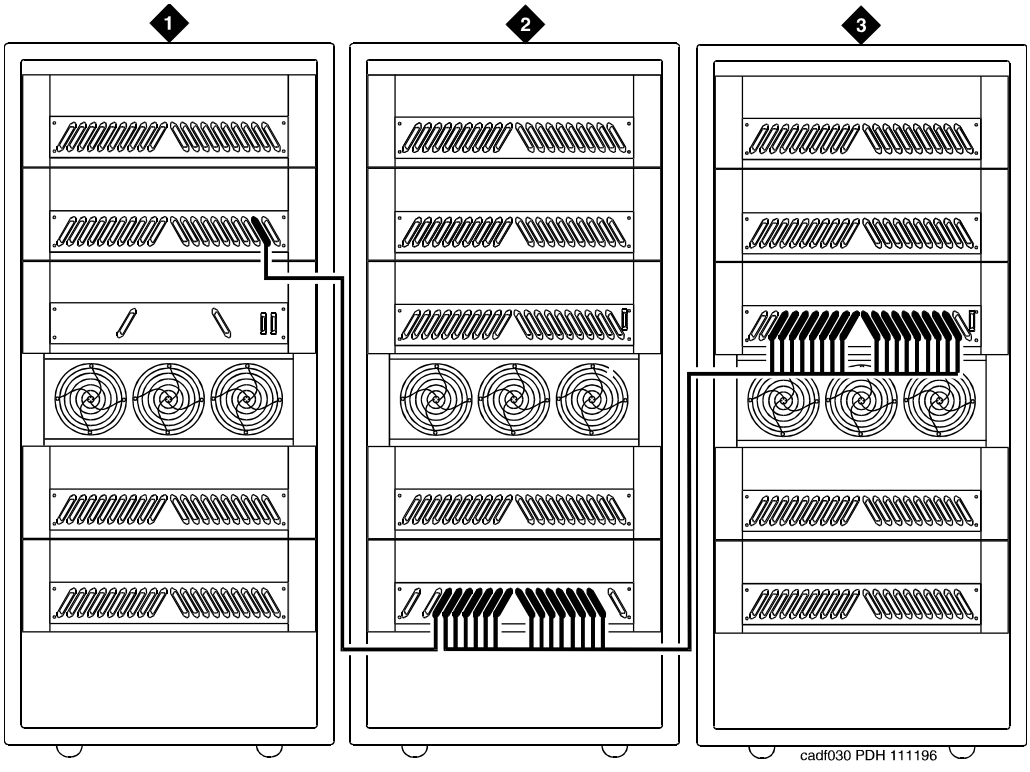


Figure Notes

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 10r with SNC in EPN

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

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

NOTE:
For the following example, add links to PNs in alternating order, for example: 20 and 2, 19 and 3, 18 and 4, and so forth.

1. At the rear of the Port Carrier in position C in Cabinet 1, install a 9823A lightwave transceiver onto Slot 2 (1C02). See Figure 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).

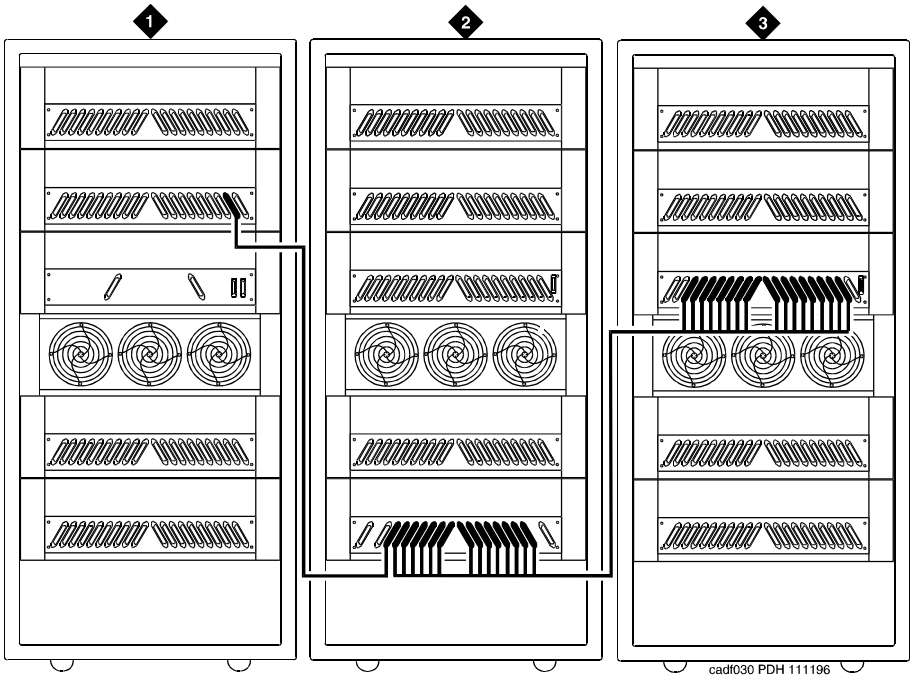


Figure Notes

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 10r 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.

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.

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).

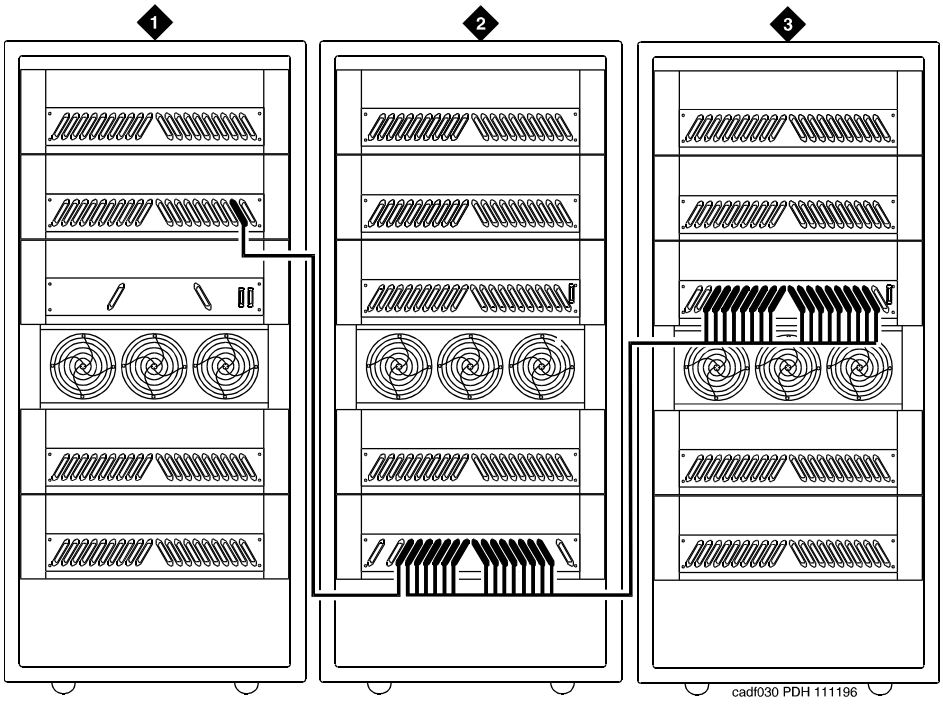


Figure Notes

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 10r 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 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.

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.
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 5-95.

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 Crtl 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 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 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 10, 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.

Some examples of port circuit packs 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—TN799**C** Control Lan (C-LAN) circuit pack—with an Ethernet data module administered.
- Target port circuit packs with P designation
- DEFINITY ECS Release 10 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)
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 Web site (http://support.avaya.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 10 is the TN799 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 *UUCSS*17** 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 R10r, 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 R10si or R10csi, 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:

1. 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                                                        Assigned Ports
Number Board Type              Code     Vintage    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 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.

1. Type **list configuration board *UUCSS*** and press Enter to identify the ports associated with a particular DS1 board. Note the total number of ports.
2. Type **display port *UUCSSpp***, where ***pp*** is the port number of one of the ports, and press Enter to find the trunk group number.
3. 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.

4. 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 1C12                                        Page   1
                                LIST DIRECTORY

  Board                File/Directory                    Creation       Size
 Location                   Name                      Date      Time     Kb

  01C12   F:fwdlimg464gv01                          2000/01/01 00:00:00  367
  01C13   F:fwdlimg2302av01                         2000/02/29 23:59:59  493




D = Directory F = File
```

Schedule Download

1. Type **change firmware download** and press Enter.

```
change firmware download                                  Page   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          Target          Target          Target          Target
   Location        Location        Location        Location        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                                    Page   1 of    1
                              STATUS FIRMWARE DOWNLOAD
   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          Target          Target          Target          Target
   Location St     Location St     Location St     Location St     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:

1. 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.

1. Type **remove file board *UUCSS filename*** and press Enter to remove image files from the source board.
2. 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 (56K baud) but not when it detects a 2100-Hz *straight* tone generated by low-speed modems (9.6K baud).

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 Administrator's Guide.*

Echo cancellation must first be purchased, then enabled by the License File.

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, get a License File with this field enabled.
2. Type **[add | change] trunk-group [next | number]** and press Enter.

```
add trunk-group next                                Page   2 of 11   SPE A
                           TRUNK FEATURES

             ACA Assignment? n                        Measured: both
             Internal Alert? n                Maintenance Tests? y
           Data Restriction? n
             Glare Handling: none

               Used for DCS? n
      Suppress # Outpulsing? n
Seize When Maintenance Busy: neither-end



Incoming Tone (DTMF) ANI: no              Per Call CPN Blocking Code:
         Connected to CO? n              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                          Name: Echo Cancel t23
            Bit Rate: 2.048                  Line Coding: hdb3

      Signaling Mode: CAS

        Interconnect: pbx              Country Protocol: 1

Interface Companding: mulaw                         CRC? n
           Idle Code: 11111111



      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**.
   - 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 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 Administrator’s Guide*.

Add Tie Trunks

Requirements

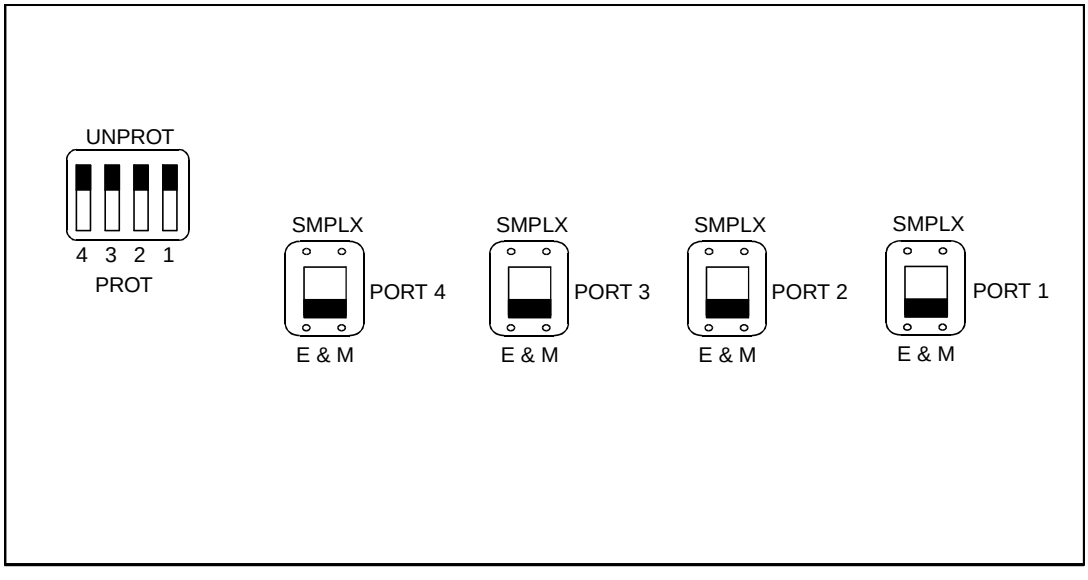
Each tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of international tie trunk circuit packs.

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 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/SMPLX 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 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 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 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.
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 Announcement Circuit Packs

Systems with multiple announcement circuit packs have the following types:

- TN750/B announcement
- TN750C integrated announcement
- TN2501AP integrated announcement

Customers upgrading from older circuit packs to Release 10 can mix multiple circuit pack types according to the system limits.

TN2501AP

The TN2501AP, a new integrated announcement circuit pack

- offers up to 1 hour of announcement storage capacity.
- requires shorter backup and restore times.
- is firmware downloadable.
- plays announcements over the TDM bus, similar to the TN750C.
- has 33 ports, including
  - 1 dedicated telephone port for recording and playing back announcements (port number 1).
  - 1 ethernet port (port number 33).
  - 31 playback ports (ports 2–32).
- 10/100 Mb ethernet interface, allowing announcement and firmware file portability over your LAN (FTP server functions).
- supports .wav announcement files (see Important File Specifications).
- works in r, si, csi, DEFINITY ONE, and Avaya IP600 models.

Important File Specifications

Voice Announcement over LAN (VAL) requires that announcement files are in the following .wav formats:

- CCITT A-Law or CCITT μ-Law companding format (do not use PCM)
- 8KHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

You must convert other wave (.wav) file formats to those listed above. Telephone access creates the correct file formats.

Caveats

Remember the following points when using the TN2501AP integrated announcement circuit pack for the first time or when replacing the TN750C circuit pack:

- Despite the feature name, announcements are not played over the LAN but can be transferred to and from the TN2501AP circuit pack over the LAN.
- You cannot save or restore announcements to a TN2501AP circuit pack to/from
  - — a TN750C circuit pack.
  - — flash cards.
  - — tape.
  - — magneto optical disks.

  See ‘‘Important File Specifications’’ on page 6-25 for information about converting a professionally-recorded announcement to a VAL-compatible file format.

Configurations

Figure 6-2 shows the configuration options for the TN2501AP (VAL) circuit pack within a system.

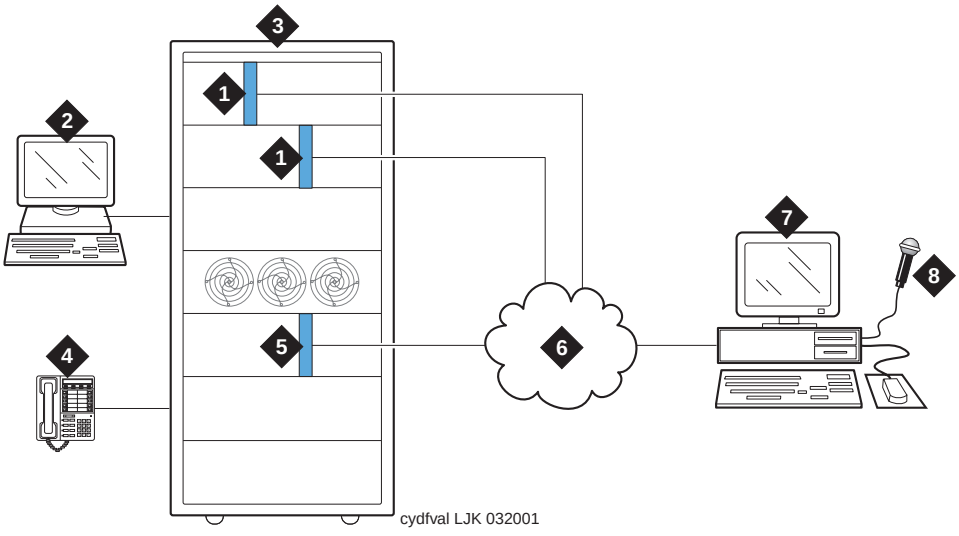


Figure Notes

1. TN2501AP VAL announcement circuit pack
2. System access terminal (SAT)
3. Switch
4. Phone for recording announcements
5. TN799 (C-LAN) is required when using IP SAT or VAL Manager.
6. Your LAN (See LAN cable)
7. computer or remote recording studio for
   - recording and storing announcements (see Important File Specifications)
   - FTP client application
   - VAL Manager application (PC only)
8. Microphone

Figure 6-2. VAL configuration options

Faceplate LEDs

Figure 6-3 shows the 9 LEDs on the TN2051AP faceplate. Descriptions of each LED are in Table 6-3.

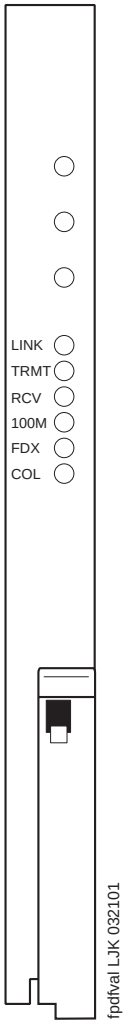


Figure 6-3. TN2501AP faceplate LEDs

The following table lists the TN2501AP faceplate LEDs, the type of behavior (on, off, flashing, or intermittent), and a description of the condition.

Table 6-3. TN2501AP LEDs

LED	Behavior	Description
Red	On solid	Circuit pack failure or a major or minor on-board alarm
Green	On solid	Firmware is self-downloading to the circuit pack or testing in progress.
Amber	On solid	Firmware is self-downloading to the circuit pack. **CAUTION:** *You can lose the resident firmware image file if you reset the circuit pack during firmware download. If this happens, FTP a new firmware image file to the VAL circuit pack and perform the Firmware download procedure again.*
Amber	Fast flash (100ms on/ 100ms off)	Occurs during circuit pack insertion or circuit pack reset which the announcement files are being copied from FLASH to RAM. If you reset the circuit pack during this time, your announcement files remain intact.
Amber	Slow flash (200ms on/ 200ms off)	Flashes during autosave while copying announcement files from RAM to FLASH. **CAUTION:** *You can lose the announcements on the circuit pack if you reset it during an autosave.*
LINK	On/off	Active ethernet link
TRMT	Intermittent	Transmit
RCV	Intermittent	Receive
100M	On/off	Off = 10MB ethernet connection
		On = 100MB ethernet connection
FDX	On/off	Off = half-duplex connection
		On = full duplex connection
COL	On/off	Off = no collision detected
		On = collisions detected

Other hardware

To establish LAN connections the TN2501AP circuit pack requires a

- Backplane Adapter that attaches to the Amphenol connector on the back of the cabinet, corresponding to the TN2501AP integrated announcement circuit pack slot.
- LAN cable that attaches to the Backplane Adapter.

LAN cable

The TN2501AP circuit pack does not include cables to connect the circuit pack to your LAN. The following table lists the cable category and connection port.

Ethernet connection speed	Cable	Connection description
10 Mbps	Category 3	Connects through the RJ45 jack
100 Mbps	Category 5	Connects through the RJ45 jack

Installing the TN2501AP Circuit Pack

Switch administration before hardware installation

Before installing the hardware, check your system for the following administration:

1. At the SAT, type **display system-parameters customer-options** and press RETURN.

   The System Parameters Customer Options screen appears.

2. Ensure that the `G3 Version` field is set to **V9** (or higher).
3. Verify that `Maximum VAL Boards` field is set to 1 or greater, up to the maximum number allowed in the system.

   NOTE:
   Any value greater than the default (1) means that you have the Enhanced offer.

4. If either field is incorrect, get a License File that has the correct information.

Hardware installation

WARNING:
To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

1. Remove connector (if any) from the back of the switch cabinet corresponding to the TN2501AP circuit pack slot.
2. Insert the circuit pack into any port slot and close the latch securely.

   At first, both the red and green LEDs are on steady, then the green LED flashes. If there are announcements on the circuit pack, the amber LED flashes while the announcements are copied from FLASH to RAM. After approximately 3-5 minutes, all of the top 3 LEDs go out, although this time is longer if there are announcements already recorded on the circuit pack.

   NOTE:
   If the TN2501AP or TN750 circuit packs are at the system limit and you insert a VAL circuit pack, the red LED on that circuit pack stays on, indicating that the system does not accept it.

3. Connect the Backplane Adapter to the Amphenol connector on the back of the switch cabinet, corresponding to the TN2501AP circuit pack slot.
4. Connect the LAN cable to the RJ-45 connector on the Backplane Adapter.

Switch administration after hardware installation

Use the following SAT commands to ensure that the system recognizes the TN2501AP circuit pack and to administer its IP connections:

list configuration board

Use this command to ensure that the switch recognizes the TN2501AP circuit pack after it is latched in the carrier slot.

1. At the SAT, type **list configuration board *board-location*** and press RETURN.

   The System Configuration report appears.

```
list configuration board 1c08                                        SPE A

                              SYSTEM CONFIGURATION

Board                                                    Assigned Ports
Number    Board Type              Code     Vintage    u=unassigned t=tti p=psa

01C08     VAL-ANNOUNCEMENT        TN2501AP HW00 FW001 01 02 03 04 05 06 07 08
                                                      09 10 11 12 13 14 15 16
                                                      17 18 19 20 21 22 23 24
                                                      25 26 27 28 29 30 31 32
                                                      U



Command successfully completed
```

Screen 6-1. System Configuration screen (list configuration board)

2. Verify the following field values:
   - Board Type shows **VAL-ANNOUNCEMENT**
   - Code is **TN2501AP**

change node-names ip

Use this command to administer the circuit pack's node name.

1. At the SAT, type **change node-names ip** and press RETURN.

   The IP Node Names screen appears.

```
change node-names ip                                    Page   1 of   1   SPE A
                                IP NODE NAMES
    Name              IP Address          Name              IP Address
Tiki                172.22 .22 .79                            .   .   .
cdr_1               192.168.22 .63                            .   .   .
default             0  .0  .0  .0                            .   .   .
iolan               172.22 .22 .68                            .   .   .
lulu_cl1            172.22 .22 .71                            .   .   .
lulu_cl2            172.22 .22 .77                            .   .   .
riki                172.22 .22 .20                            .   .   .
rsat4               172.31 .5  .49                            .   .   .
rsat5               172.23 .23 .40                            .   .   .
st10clan#1          192.168.22 .21                            .   .   .
st12clan            172.22 .22 .67                            .   .   .
st12prowler#1       172.22 .22 .75                            .   .   .
VAL#1               172.22 .22 .120                           .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
                       .   .   .                              .   .   .
( 12 of 12  administered node-names are displayed)
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

Screen 6-2. IP Node Names screen (change node-names ip)

2. Type a unique name in the Name field.

   NOTE:
   This name is recognized only within the switch, and does not need to match the node name on your network.

3. Enter the IP Address.

   You can get this information from the network manager.

4. Press ENTER to save the changes.

change ip-interfaces

Use this command to administer an IP interface, which associates the circuit pack with an IP address.

1. At the SAT, type **change ip-interfaces** and press RETURN.

   The IP Interfaces screen appears.

```
change ip-interfaces                                    Page   1 of   6   SPE A

                                  IP INTERFACES

Enable                                                                      Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y   C-LAN  01C16 TN799  C st12clan        255.255.0  .0   172.22 .22 .254 1
   y   MEDPRO 01E04 TN2302   st12prowler#1  255.255.0  .0   172.22 .22 .254 1
   y   VAL    01C08 TN2501   VAL#1           255.255.0  .0   172.22 .22 .254
   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      .   .   .
```

Screen 6-3. IP Interfaces screen (change ip-interfaces)

2. Set the Enable Eth Pt field to **y**.
3. Set the Type field to **VAL**.
4. Type the circuit pack location in the Slot field (UUCSS). In the example above the slot is 01C08, meaning Cabinet 1, carrier C, slot 8.

   If a TN2501AP circuit pack is not at this location when you submit the screen, the system prompts you to enter a VAL circuit pack location.

   The Node Name field is the same as the one previously administered. (See change node-names ip*)*

   NOTE:
   If you press Help, a list of administered node names appears (including the name you administered with the change node-names ip command), and you can select from the list.

5. Set the Subnet Mask field according to your network requirements.
6. Gateway Address is usually the same as the TN2501AP circuit pack's IP address, usually with the fourth octet changed. Be sure to set this address according to your network requirements.

7. Leave the Net Rgn (Network Region) field at its default value. This field is not used for VAL.
8. Press ENTER to save the changes.

add data-module

Use this command to administer the data module that is associated with the TN2501AP ethernet port.

1. At the SAT, type **add data-module *extension/next*** and press RETURN.

   The Data Module screen appears.

```
add data-module 30006                                  Page   1 of   1   SPE A
                              DATA MODULE

  Data Extension: 30006           Name: VAL#2 Data Module
            Type: ethernet
            Port: 1b0333
            Link: 5




Network uses 1's for Broadcast Addresses? y
```

Screen 6-4. Data Module screen (add data-module *extension*)

2. Set the Type field to **ethernet**.
3. Set the Port field to correspond to the circuit pack location.

   In the example above, 1b0333 means Cabinet 1, Carrier B, Slot 3, Port 33.

   NOTE:
   The port number (final two digits) is always **33** for the TN2501AP circuit pack.

4. Set the Link field to an unassigned or next-available link number.
5. Set the Network uses 1's for Broadcast Address? field according to the your network requirements.
6. Type a unique name in the Name field.
7. Press ENTER to save your changes.
8. If your system uses IP routing, continue with the add ip-route section.

   Otherwise, go to the Test the IP connections section.

add ip-route

Use this command to administer IP routes to the TN2501AP circuit pack. This administration is optional.

Test the IP connections

Use the **ping** and **status link** commands to test the new IP connections that you have administered.

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 Administrator’s Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

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 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 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

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 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.

DCS requires a special signaling connection to carry the information needed to make the DCS features work. This signaling connection, or link, between two switches in a DCS network is implemented either:

- over a PGATE channel using the X.25 protocol.
- over an ISDN-PRI D-channel.
- over a TCP/IP (either PPP or 10Base-T Ethernet) connection.

NOTE:
The P board suffix designation means the circuit pack is firmware-downloadable. 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 Administration for Network Connectivity*

Add Circuit Packs

A TN464GP, TN767C, or TN760 DS1 circuit pack is required for PPP connections. A TN799 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. For a pinout of TN799, see Table 6-4.

Table 6-4. TN799 Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Enter Added Translations

1. Type d**isplay system-parameters customer-options** and press Enter.
2. Ensure that the DCS field is **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 Administrator's Guide*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

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

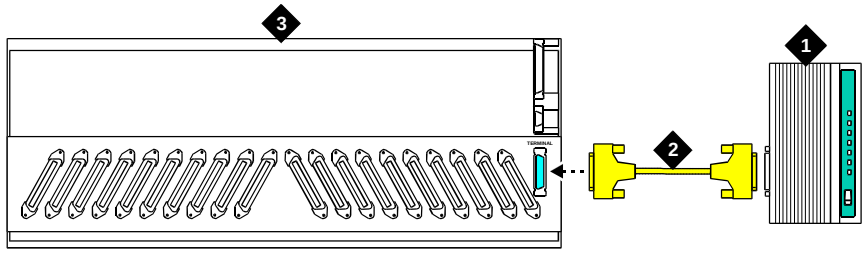


Figure Notes

1. U.S. Robotics External Modem
2. RS-232 Cable
3. Expansion Port Network

Figure 6-4. Connect External Modem to EPN

1. Connect an RS-232 cable to the modem. See Figure 6-4.

   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 firmware-downloadable. 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 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 Administration for Network Connectivity*.

NOTE:
Although the TN2302AP IP Media Processor works with the TN799B C-LAN circuit pack, you need a TN799 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.

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

[1]The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the LAN. See Figure 6-5.

[2]You 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.

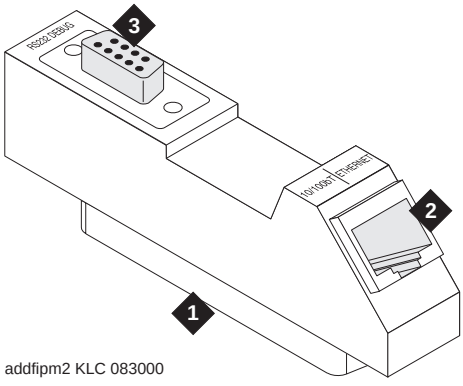


Figure Notes

1. Amphenol connector to backplane connector corresponding to TN2302AP slot
2. To Ethernet
3. 9-pin connector for maintenance

Figure 6-5. 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 6-6).

   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.

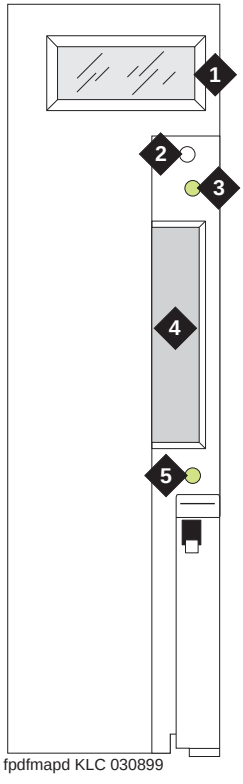


Figure 6-6. TN2302AP IP Interface faceplate

Initial Administration Steps for C-LAN and IP Media Processor

NOTE:
Refer to the *DEFINITY Enterprise Communications Server 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                                        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                         .   .   .
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                                       Page   1 of   2

                                  IP INTERFACES
 Inter-region IP connectivity allowed?  n
Enable                                                                  Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address 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      .   .   .
   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 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 right-most backplane slot. For convenience use the same right-most 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 right-most 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 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 6-46 and ‘‘Test the External Connection to the LAN’’ on page 6-48.

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-interfaces                                        Page   1 of   2

                                  IP INTERFACES
 Inter-region IP connectivity allowed?  n
Enable                                                                  Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address 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       .   .   .
   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 right-most slot. For convenience use the same right-most 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 right-most 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 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 6-46 and ''Test the External Connection to the LAN'' on page 6-48.

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'' on page 6-82).

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 uninterruptable 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 6-7. Look for the label where the bundle enters the amphenol connector.

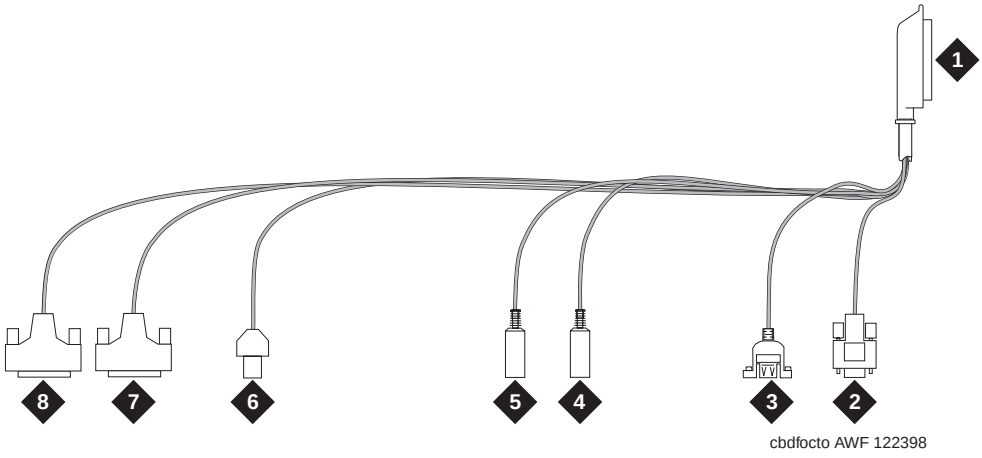


Figure Notes

1. Amphenol connector to connector corresponding to TN802B slot
2. To VGA monitor
3. To USB (not used)
4. To keyboard
5. To mouse
6. To ethernet
7. 25-pin male connector to modem
8. 25-pin male connector to COM2

Figure 6-7. 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 6-8.
3. Make sure that the modem's DIP switches are set as shown in Figure 6-8 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.

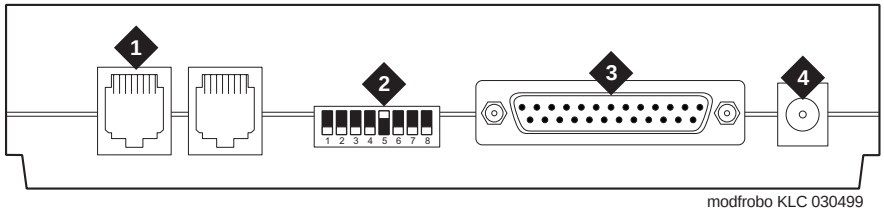


Figure Notes

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

Figure 6-8. 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 6-9) 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.

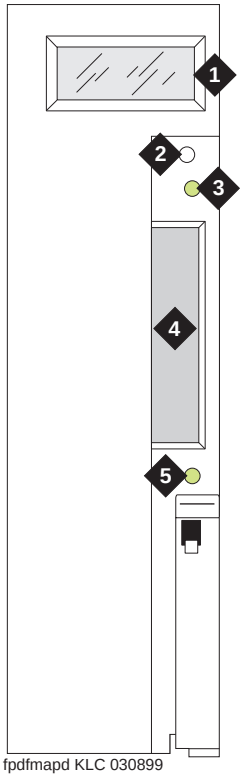


Figure Notes

1. LCD display
2. Reset button (recessed)
3. Red board status LED
4. PCMCIA card slot
5. Yellow PCMCIA disk-in-use LED

Figure 6-9. 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 6-10) 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 6-62

   NOTE:
   For an initial installation, the TN802B IP Interface needs to be administered first (see ‘‘Administer the IP Interface’’ on page 6-62).

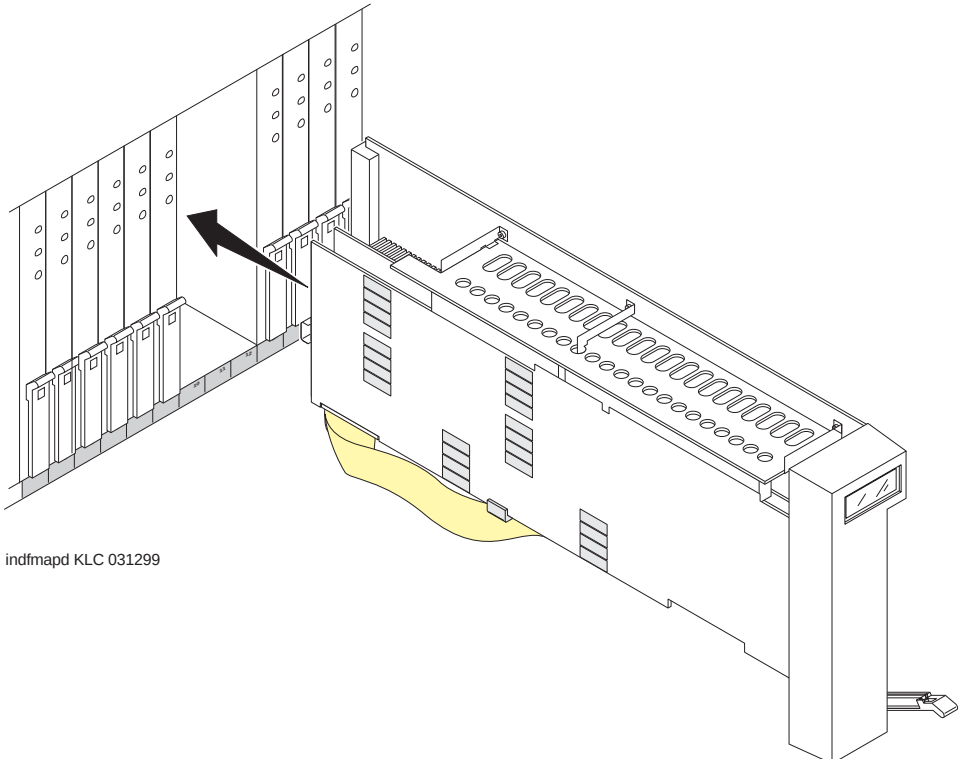


Figure 6-10. J58890MA-1 L30 IP Interface Assembly

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
                                            11:  MEDPRO      RESERVED-IP
01: TN754          DIGITAL LINE            12:  MEDPRO      RESERVED-IP
02: TN758          POOLED MODEM            13:  TN802  B      MAPD BOARD
03: TN2144        ANALOG LINE              14:
04: TN746  B      ANALOG LINE              15:
05                                         16:
06: TN771  C      MAINTENANCE/TEST
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-interfaces                                      Page   1 of   2


 Network regions are interconnected?  n
  En-                                                                  Net
 abled Type    Slot   Code Sfx Node Name       Subnet Mask     Bcast/Gway
Addr Rgn
   n   C-LAN  01A09 TN799    clan-a1        255.255.255.0   192.168.1 .100 1
   y   MEDPRO 01A13 TN802  B med-a1         255.255.255.0   192.168.1 .21  1
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
```

Test the External Connection to the LAN

To test the external IP connections, ping the IP Interface server, and ping a known computer connected to your network. If everything is configured correctly, the `Result` column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN802B IP Interface and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

```
ping ip-address 192.168.10.21

                          PING RESULTS

  End-pt IP         Port       Port Type  Result    Time(ms)  Error Code

  192.168.10.21     01A13       MEDPRO   PASS       10        1124
```

2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press Enter. The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network.

Installing in IP Trunk Mode

NOTE:
IP Trunk mode should only be used to maintain compatibility with existing Release 7 IP Trunk or ITS-E installations. We strongly recommend that MedPro mode be used whenever possible.

Prepare for Installation

Have the following equipment on site before your shipment arrives:

- A mouse, keyboard, and VGA monitor for use during the installation of the server. You also need AC power outlets for the modem and monitor.
- Three adjoining, unoccupied port slots in the DEFINITY ECS

  The TN802B IP Interface slides into only 1 slot, but its faceplate occupies 3 slots.
- A 10 BaseT or 10/100 BaseT Ethernet connection into the customer's local area network (LAN)
- A valid, unused IP address on the customer's LAN that can be assigned to the IP Interface server. You also need the subnet mask, default gateway, domain name, and so forth from the customer's network administrator.
- An analog telephone line reserved for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

If non-U.S. customer:

- Modem comparable to a U.S. Robotics, Inc. Sportster Model USR 33.6 EXT.
- A cable from the modem to the TN802B external cable assembly.

We recommend that you protect the cabinet where the IP Interface is installed with an uninterruptable 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 6-11. Look for the label where the bundle enters the amphenol connector.

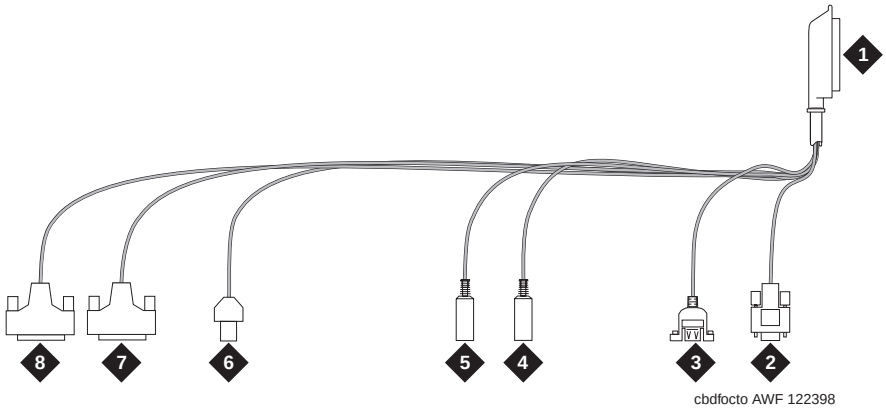


Figure Notes

1. Amphenol connector to connector corresponding to TN802B slot
2. To VGA monitor
3. To USB (not used)
4. To keyboard
5. To mouse
6. To ethernet
7. 25-pin male connector to modem
8. 25-pin male connector to COM2

Figure 6-11. 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 left-most analog-line port on the modem as shown in Figure 6-12.
3. Make sure that the modem's DIP switches are set as shown in Figure 6-12 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.

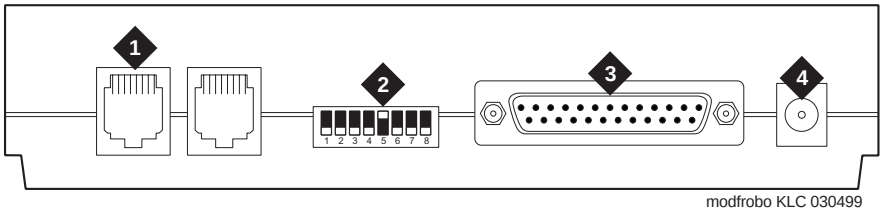


Figure Notes

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

Figure 6-12. External Modem Connections for U.S. Robotics Sportster

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 6-13) 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.

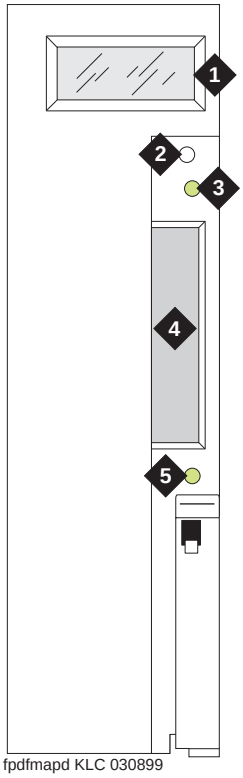


Figure Notes

1. LCD display
2. Reset button (recessed)
3. Red board status LED
4. PCMCIA card slot
5. Yellow PCMCIA disk-in-use LED

Figure 6-13. 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 right-most of the three slots you reserved for it (see Figure 6-14).

   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.

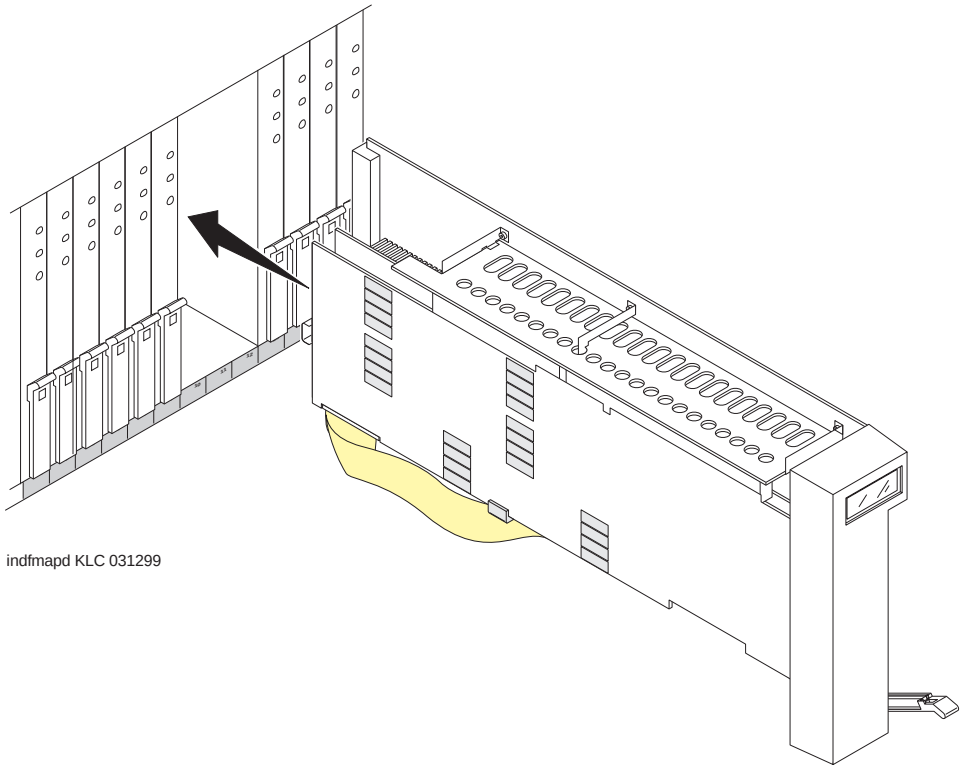


Figure 6-14. J58890MA-1 L30 IP Interface Assembly

Test the Modem

1. Check for dial tone.
2. Contact Avaya 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-packs                                    Page   1 of   5
                          CIRCUIT PACKS

        Cabinet: 1                              Carrier: A
                                              Carrier Type: processor

 Slot Code  Sf Mode   Name                Slot Code  Sf Mode   Name
                                           11:   DSMAPD      RESERVED-IP
01: TN754         DIGITAL LINE            12:   DSMAPD      RESERVED-IP
02: TN758         POOLED MODEM            13:   TN802  B      MAPD BOARD
03: TN2144       ANALOG LINE              14:
04: TN746  B     ANALOG LINE              15:
05                                        16:
06: TN771  C     MAINTENANCE/TEST
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.

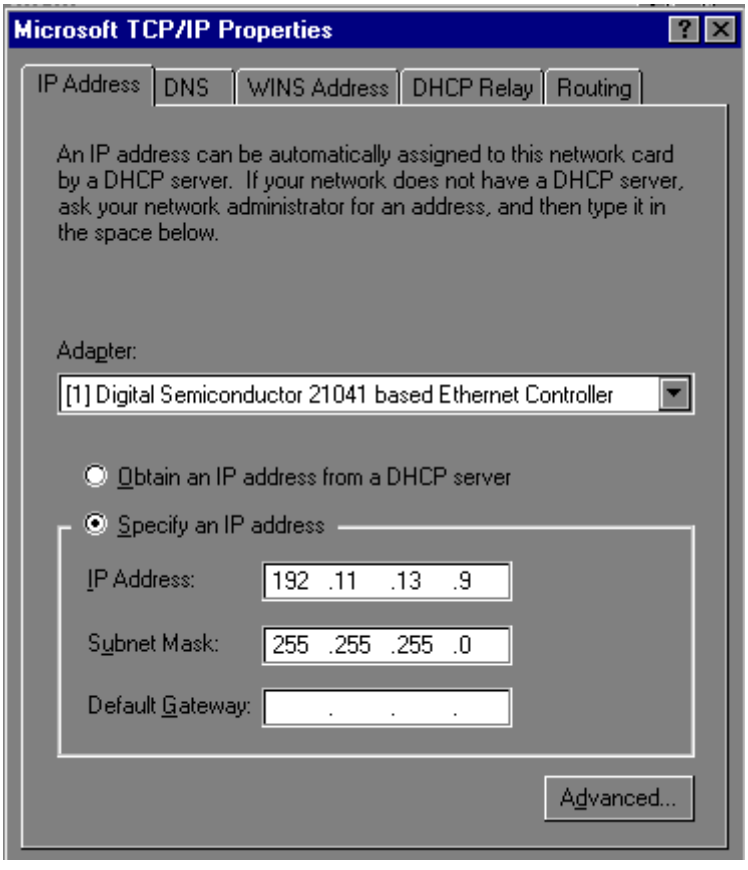
Assign Server and Domain Names. The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within 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**.

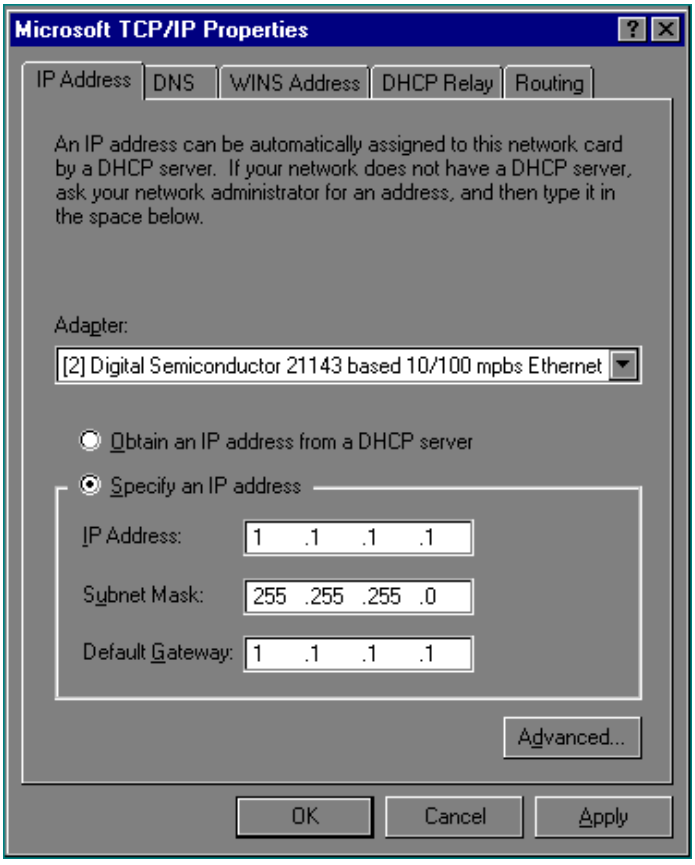
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window**.**



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].

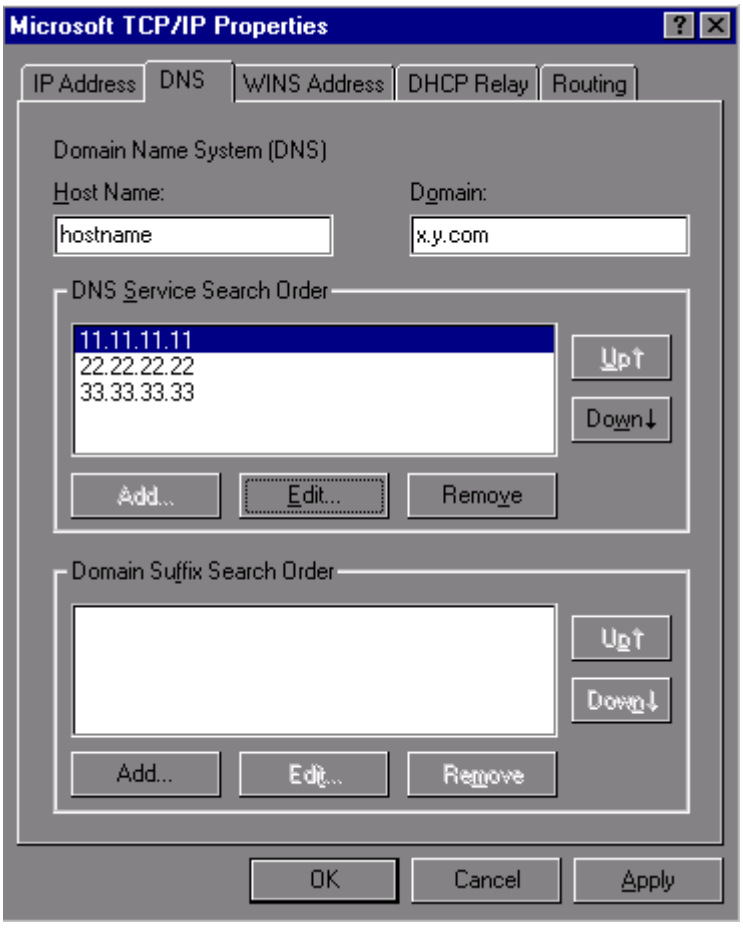


7. Type a valid IP address for the IP Interface server in the `IP Address:` field.
8. Type the appropriate subnet mask in the `Subnet Mask:` field.

NOTE:
Not all networks require steps 9 through 18. Check with the local network administrator to determine which are required.

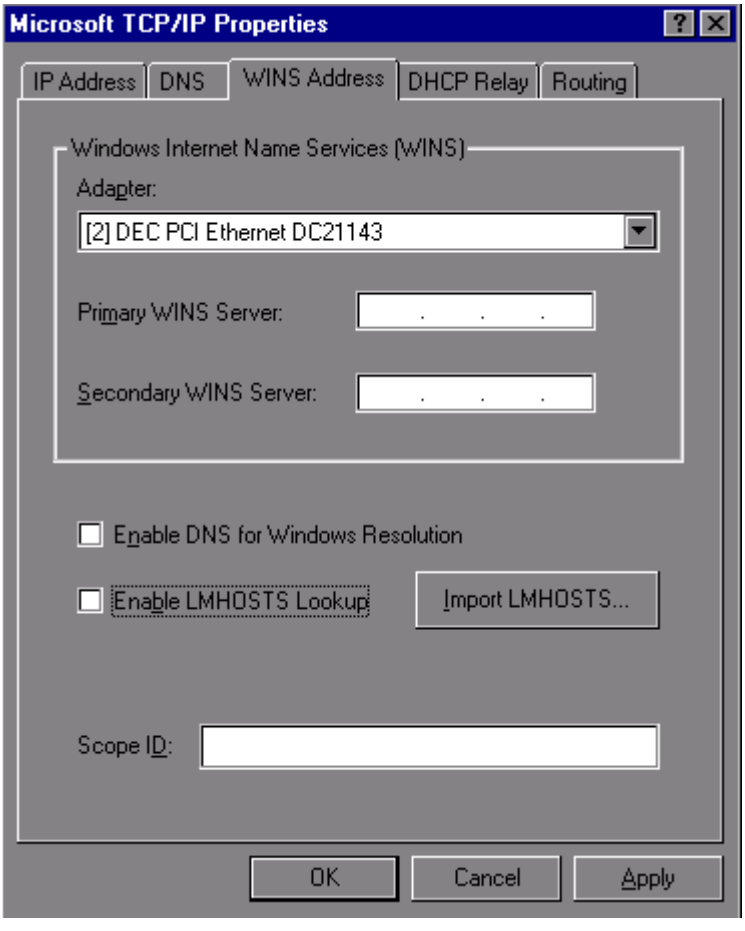
9. If you use gateways, type the IP address of the default gateway for the IP Interface server in the `Default Gateway:` field.

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.
   - I f 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 drop-down menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test
4. At the command prompt, type **ping *nnn.nnn.nnn.nnn*** (which is the IP address of another external computer beyond the gateway).
   - If you have connectivity, the system responds with the following message:

     ```
     Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms
     TTL=###
     ```

   - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
5. Type **exit** and press Enter.

Test the IP Interface Onboard LAN Connections. To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B IP Interface.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping *192.11.13.9*** (which is the IP address of the internal IP Interface server).
   - If everything is configured correctly, the system responds with the following message:

     ```
     Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
     ```

   - If no response, verify the IP address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping *192.11.13.8*** (which is the IP address of the internal processor).
   - If you have connectivity, the system responds with the following message:

     ```
     Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
     ```

   - If no response, verify the IP settings for Adapter [1].
4. Type **exit** and press Enter.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (pre installed 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 6-13) 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, reseat the circuit pack to restart the system.
7. Log in using **ctrl alt del**

Upgrading IP trunks to H.323 trunks

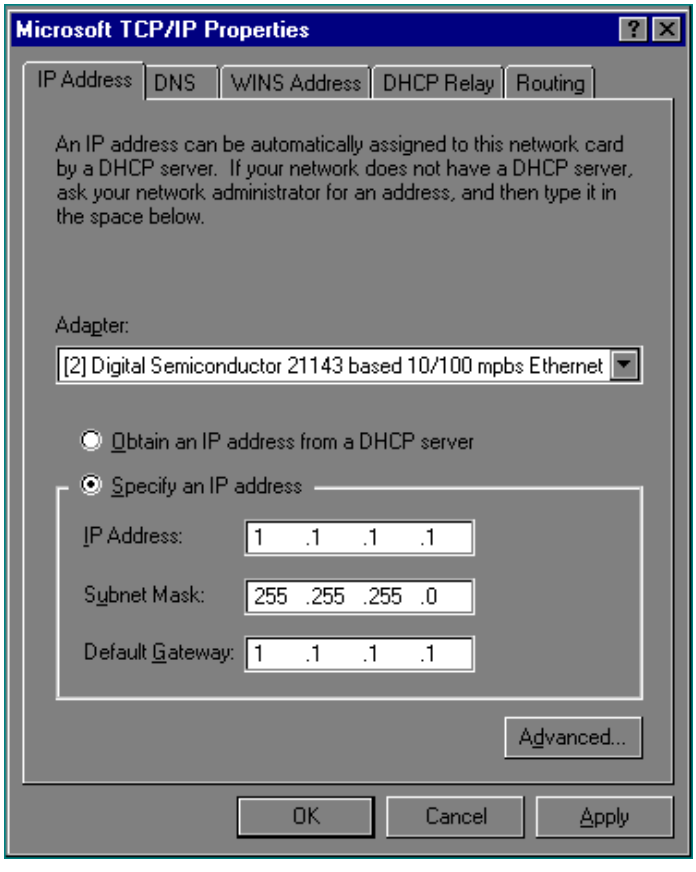
If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to ‘‘Upgrade to TN802B’’ on page 6-82.

To upgrade an existing IP trunk (R7) to an H.323 trunk (R8) requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.

4. Click the **Properties** option in the Network window**.** Write down the IP address, subnet address, and gateway address shown for adaptor [2] (see example below).

NOTE:
Do not use the addresses for adapter [1].



5. When done, click **OK, OK**.

Upgrade to TN802B

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 6-13) until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), reseat 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
                                           11:  MEDPRO      RESERVED-IP
01: TN754          DIGITAL LINE           12:  MEDPRO      RESERVED-IP
02: TN758          POOLED MODEM           13:  TN802  B      MAPD BOARD
03: TN2144        ANALOG LINE             14:
04: TN746  B      ANALOG LINE             15:
05                                        16:
06: TN771  C      MAINTENANCE/TEST
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. A 700A DS1 loopback jack must be installed with this device.

Checking for required components

The integrated channel service unit (ICSU) package contains:

- 120A CSU module
- 700A DS1 loopback jack
- Cable H700-383

  4-pair modular cord
  Group 2, 50-ft (15.2-m) cable (standard)
- Cord DW8A-DE

  4-pair modular cord to alarm contacts
- DS1 circuit pack

  The basic ICSU requires a TN464E or TN767D or later suffix. The enhanced ICSU requires a TN464F or TN767E or later suffix. The enhanced ICSU can also be used with the TN2464 or TN2313.

Installing the 120A CSU

See Figure 6-15.

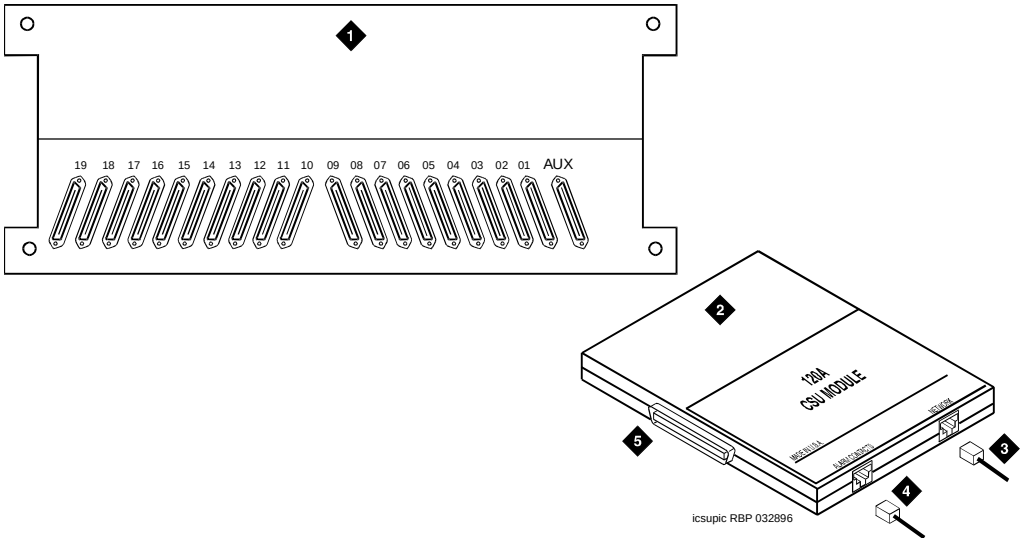


Figure Notes

1. Rear of carrier containing DS1 circuit pack
2. 120A CSU
3. 4-pair cord to network interface (H700-383)
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. To 25-pair connector on rear of carrier containing DS1 circuit pack

Figure 6-15. 120A Channel Service Unit Module

CAUTION:
Do not plug the 120A into any circuit pack other than a TN464F or TN767E (or later release/vintage) or TN2464 or Tn2313. Do not connect the 120A to any interface other than a 700A DS1 loopback 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 H700-383 cable to the 120A and to the 700A loopback 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 H700-383 cable pinouts. Table 6-11 provides the cable lengths for each cable group number.

Table 6-10. H700-383 cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	
7	Shield			
7				Not assigned
8				Not assigned

Table 6-11. 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 6-16. 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 6-16 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.

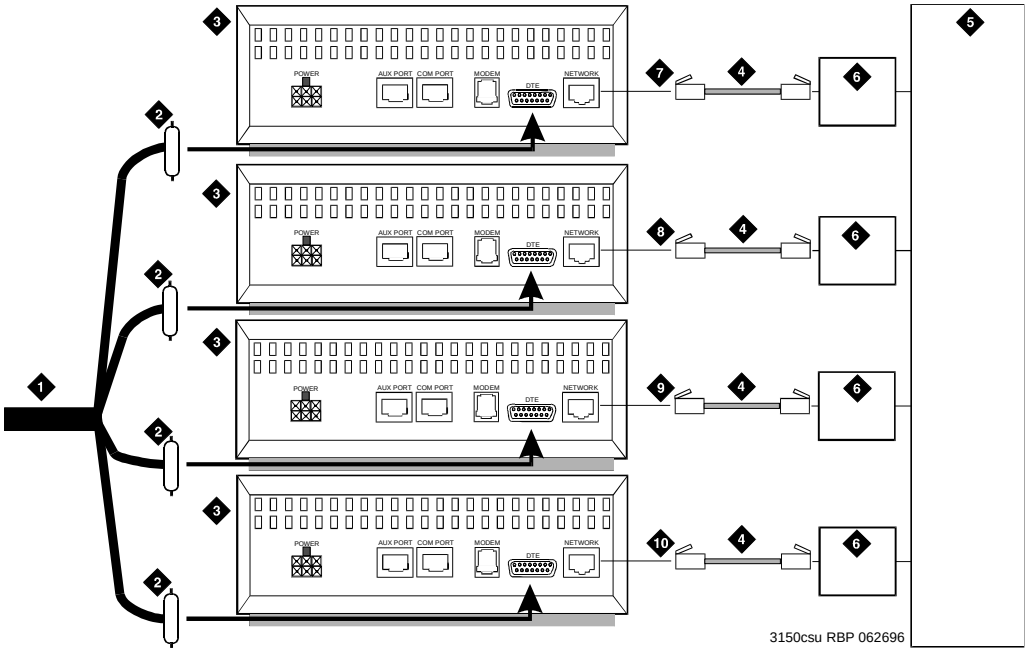


Figure Notes

1. H600-348 quad cable
2. 15-pin male “D” connectors (to DTE jacks on CSU)
3. Channel service unit (CSU)
4. H600-307 cable (RJ-48C to RJ-48C)
5. Network interface
6. Smart jack (if provided)
7. Cable A
8. Cable B
9. Cable C
10. Cable D

Figure 6-16. 3150/3170 Channel Service Unit Connections

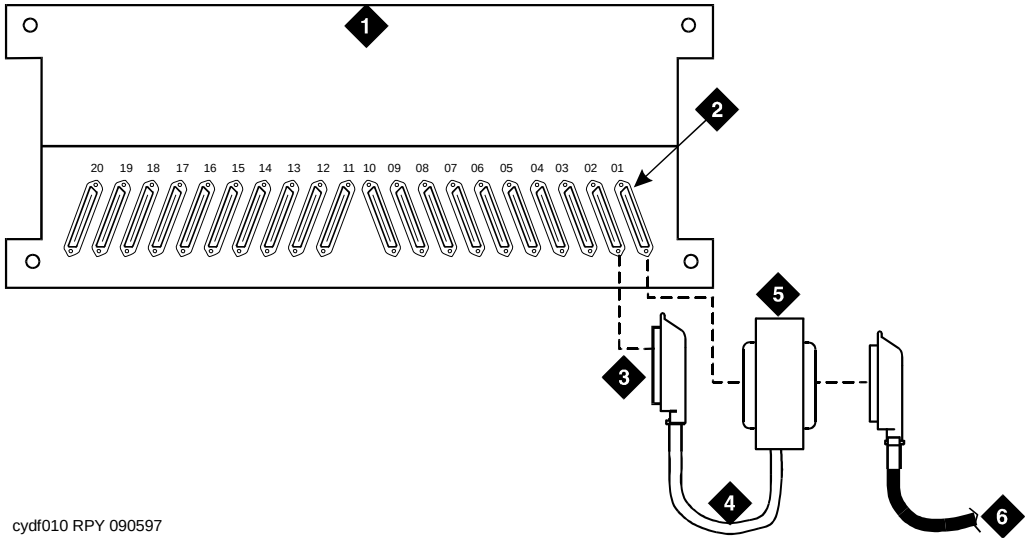


Figure Notes

1. Port carrier
2. DS1 converter connector
3. 50-pair female connector to DEFINITY System
4. 14-Inch (35.57 cm) “Y” cable
5. 50-Pin Male/50-pin female double-headed connector cable
6. Quad cable (with 50-pin male connector) connects to the channel service unit.

Figure 6-17. 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

Upgrading from R9r to R10r

7

This section provides the information necessary to upgrade the software from a DEFINITY ECS Release 9r system to a Release 10r system. The following hardware must already be installed in the system:

- TN1657 disk drive, Vintage 9 or later
- TN2211 optical drive, Vintage 1 or later
- UN332C MSSNET circuit pack, Vintage 5
- UN330B Duplication Interface circuit packs, Vintage 3 or later
- TN1650B memory circuit packs, any vintage, for a total of 4 per control carrier.

The procedures for this software upgrade apply to Standard, High, or Critical reliability systems.

For more help refer to the following books:

— *DEFINITY Enterprise Communications Server Maintenance for R10r*, particularly Chapter 4, “Initialization and Recovery.”

— *DEFINITY Enterprise Communications Server Administrator’s Guide*

Read This First

Service Interruption

The upgrade process requires a non–call-preserving service interruption in a Standard reliability system and no non–call-preserving service interruption for High or Critical reliability systems. The service interruption must be closely coordinated with the customer and the local account team. The service outage for standard reliability is 2 to 15 minutes, depending on the size of the installation.

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 can 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

Before starting the upgrade, always check the *Software Release Letter* that accompanies the system removable media. Translation corruption occurs if incompatible software is loaded. Also check the Minimum Vintage Table, which is included with the letter, before starting the upgrade.

Usable Circuit Packs

Every circuit pack used in the Release 10r 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 10 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. The upgrade outage can place the SREPNs into survive mode. After the upgrade, you need to switch them back to normal mode. Refer to *DEFINITY ECS Installation and Maintenance for Survivable Remote EPN*.

Wireless Systems

If the system uses Wireless Business System, you need to re-enable the radio controllers after the upgrade. Refer to Chapter 1, “UTAM Disablement” in the *DEFINITY Wireless Business System Maintenance* book. Refer also to Chapter 2, “Switch Administration” in *DEFINITY Wireless Business System Installation and Test.*

NOTE:
This activity can only be performed with the init login.

Customer Requirements

If the DEFINITY ECS has a TN750B or earlier announcement circuit pack, customers are required to back up the announcements *before* the upgrade. The Avaya field technician will not do this step.

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.

Task Table

Table 7-1 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 Standard, High, or Critical Reliability systems with a few exceptions, which are noted in the applicable steps.

Table 7-1. Upgrade tasks: R9r to R10r

✓	Task Description	Page
	Pre-upgrade checklist	7-95
	Duplicate System Software	7-98
	Verify System Status	7-98
	Record all Busyouts	7-98
	Check Clock Synchronization	7-99
	Check for Translation Corruption	7-99
	Check SPE	7-99
	Disable TTI	7-100
	Check TTI Status	7-100
	Save Translations to Disk Drive (pre-upgrade)	7-100
	Save Translations to Removable Media (pre-upgrade)	7-101
	Verify Software Versions and Translation Timestamp	7-101
	Disable Scheduled Maintenance and Alarm Origination	7-102
	Busyout MMI Circuit Packs	7-102
	Upgrade the Software	7-103
	Deliver or Install the License File	7-103
	Administer No-License/Emergency Numbers	7-104
	Set Daylight Savings Rules	7-104
	Set Date and Time	7-105
	Set Locations (if necessary)	7-107
	Enable TTI	7-107
	Release MMI (High/Critical reliability only)	7-108
	Check for Translation Corruption	7-108

Continued on next page

Table 7-1. Upgrade tasks: R9r to R10r — *Continued*

✓	Task Description	Page
	Verify the Upgrade	7-108
	Save Translations to Removable-Media	7-109
	Save Announcements to Removable-Media	7-109
	Enable Scheduled Maintenance and Alarm Origination	7-110
	Register the Switch for Maintenance	7-110
	Save Translations to Disk	7-114
	Save Translation to Back Up Disk	7-114
	Busy Out Trunks	7-114
	Resolve Alarms	7-114
	Set Core Dump Vector	7-114
	Verify Survivable Remote EPNs	7-114
	Return Replaced Equipment	7-115

Pre-upgrade checklist

In order to be properly prepared when you are in the RFA system, have the items listed in Table 7-2 ready.

Table 7-2. Pre-upgrade checklist: R9r to R10r

Item No.	Item	✓
1.	Software Release Letter	
2.	Release 10 system software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	

Continued on next page

Table 7-2. Pre-upgrade checklist: R9r to R10r — *Continued*

Item No.	Item	✓
5.	Documentation (book or PDF file) for the current release: ■ *DEFINITY Enterprise Communications Server Maintenance for R10r* ■ *DEFINITY Enterprise Communications Server Administrator's Guide*	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	MSSNET serial number(s); type **list config license** (**long**)	
9.	Transaction Record number	
10.	System Identification (SID) number	
11.	Switch telephone number or IP address	
12.	Access to the RFA Information page for these items (if not already installed on your PC): ■ Features Extraction Tool (FET) application ■ FET documentation ■ License Installation Tool (LIT) application ■ LIT documentation	
13.	Adobe Acrobat Reader application installed on your PC (to read FET and LIT documentation)	
14.	Internet Explorer 5.0 or higher installed on your laptop/PC	
15.	Intranet access to your designated RFA portal (see Go to the RFA website).	

Go to the RFA website

The Remote Feature Activation (RFA) website automates some of the upgrade procedures, including generating a License File.

1. At your laptop/PC browser, go to the appropriate website:
   - *Associates*: **http://associate2.avaya.com/sales_market/services/** or the services portal: **http://usservices.avaya.com/**
   - *Business Partners* go to the appropriate regional Business Partner portal:
     - United States: **http://www.avaya.com/businesspartner/**
     - Canada: **https://www.avaya.ca/BusinessPartner**
     - Brazil: **http://www.avaya.com.br/Home.asp**
     - CALA: **https://cala-businesspartner.avaya.com/mnc/index.html**
     - EMEA: **https://emea-businesspartner.avaya.com/**
     - APAC: **http://www.avaya-apac.com/bp**
   - *Contractors* go to **http://www.avaya.com/services/rfa/**
   - If you are unable to access RFA using your recommended portal, try: **http://rfa.avaya.com**
2. Using your SSO, log in to the RFA website.
3. Follow the links to the RFA Information page.
4. Complete the information necessary to create a License File.

If you have a direct connection to the switch:

1. Using your RFA Job Aids, run the Features Extraction Tool (FET) from the RFA website to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. The FET creates and uploads the Switch Configuration File automatically.
4. Do not deliver the License File at this time. You will deliver and install it later in this upgrade procedure.

If you do not have a direct connection to the switch:

1. Run the Features Extraction Tool (FET) from your laptop/PC to create a Switch Configuration File.
2. When prompted, type in the Transaction ID number.
3. Use the FET instructions to create a new switch connection profile.
4. Create the Switch Configuration File.
5. Upload the Switch Configuration File to the RFA website.
6. Deliver the License File to your laptop/PC for installation later in this procedure.

Duplicate System Software

In case the upgrade fails for any reason:

1. Ensure that the customer's previous systems software is on site.

Verify System Status

1. Type **display alarms** and press RETURN.
2. If there are alarms, take the necessary corrective actions.
3. Type **display errors** and press RETURN.
4. Examine the error log and record any Error Code 18 alarm that identifies existing busyouts. After the upgrade you will restore the busyouts as they were.
5. Execute the following commands to see whether the switch has administration:
   - **list station**
   - **list trunk-group**
   - **list hunt-group**
   - **list data-module**
   - **list announcements**

If any command does not complete successfully, escalate the problem immediately. After the upgrade you will check the same administration to ensure that the translations are intact.

Record all Busyouts

1. Type **display errors** and press ENTER. Look for type 18 errors and record any trunks that are busied out, so you can return them to their busy-out state after the upgrade.

Check Link Status

1. Enter **display communication-interface links** and press RETURN.
2. Note all administered links.
3. Type **status link *number*** and press RETURN for each administered link.

   Check the following fields for the values listed:

   - `Link Status` = connected
   - `Service State` = in service

   NOTE:
   For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to

   1. Type **list signaling group** and press RETURN.

      Note the signaling groups listed by number.

   2. For each of the signaling groups listed, type **status signaling group <*number*>** and press RETURN.
4. If any of the links are not up, take the necessary corrective action to restore the link before continuing with the upgrade.

Check Clock Synchronization

1. Type **status sync** and press RETURN to verify that the clock synchronization is good. If not, contact the network to resolve.

Check for Translation Corruption

1. Type **newterm** and press RETURN.
2. If you do not get a login prompt, but instead see the following message

   Warning: Translation corruption detected

   then follow the normal escalation procedure for translation corruption before continuing the upgrade.

Check SPE

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

   Check these fields for the corresponding values:

   - Maj/Min alarms = `0`
   - `Service State` = `in service`

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 show something other than the above, see Chapter 4, “Initialization and Recovery” in *DEFINITY Enterprise Communications Server Maintenance for R10r*. Do not continue with the upgrade until all SPE-related errors are resolved.

Disable TTI

NOTE:
Do this step only if 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 RETURN.

   Scroll to the second page.

2. Set the `Terminal Translation Initialization (TTI) Enabled?` field to **n** and press RETURN to de-activate the TTI feature. If the field is already `n`, cancel the command.

Check TTI Status

1. Type **status tti** and press RETURN.
2. Check the `Percent Complete` field.

   If the value is `100`, then go on to the next section.

   If the value is less than 100, repeat Steps 1 and 2, until the `Percent Complete` field reads `100`.

Save Translations to Disk Drive (pre-upgrade)

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

Save Translations to Removable Media (pre-upgrade)

1. Type **save translation *removable-media*** and press RETURN to write all translation information from the disk drive to the removable media, which takes about 1 minute.

Verify Software Versions and Translation Timestamp

Standard Reliability:

1. Type **list configuration software-version** and press RETURN.

High or Critical reliability:

1. Type **list configuration software-version long** and press RETURN.

All:

2. In the UPDATE FILE section, check the `Update State` field for a software patch:
   - If there is a patch number, then a patch has been applied.
   - If the field is `none in memory`, there is no software patch in system memory.

   NOTE:
   If you need to restore the system to the old software version, you must also download a patch onto the system.\

3. In the SOFTWARE VERSION section note the current software version listed in the `Memory Resident` field.

   NOTE:
   Ensure that the memory, removable media, and disk software loads and translations are current and that the current software version is compatible with this software-only upgrade path from Release 9r to Release 10r.

Disable Scheduled Maintenance and Alarm Origination

To prevent scheduled daily maintenance from interfering with the upgrade:

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

   or

   If scheduled maintenance is not in progress, set the `Start Time` field to a time after the upgrade will be 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 can generate alarms, resulting in unnecessary trouble tickets.

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

Busyout MMI Circuit Packs

High and Critical Reliability only if necessary

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 TN787 Multimedia Voice Conditioner ports.

1. Type **display system-parameters customer-options** and press RETURN. On screen 2 or 3 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 RETURN to locate all MMI (TN787) circuit packs.
3. If there are MMI circuit packs, type **busyout board UUCSS** for each MMI circuit pack.

Upgrade the Software

1. Replace the original removable media in the optical drive with the new software load.

Standard Reliability:

1. Type **list configuration software-version** and press RETURN to verify the correct software release.
2. Type **restore disk install** and press RETURN to install the software on the switch.

High or Critical Reliability:

1. Type **list configuration software-version long** and press RETURN to verify the correct software release.
2. Type **restore disk install both** and press RETURN to install the software on the both SPEs.

   This takes approximately 5 minutes.

For all reliabilities:

1. Type **upgrade software *software release string*** and press RETURN to upgrade the switch to the new software.

   This takes approximately 20 minutes.

Deliver or Install the License File

If you have a direct switch connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

   NOTE:
   This procedure sends the License File to the switch and installs it.

If you do not have a direct connection:

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.

   The Feature-Related System Parameters screen displays:

```
change system-parameters features

                        FEATURE-RELATED SYSTEM PARAMETERS

SYSTEM-WIDE PARAMETERS
                      Switch Name: Albania
     Emergency Numbers - Internal: XXXXXX External: XXXXXXXXXXXXXXXXXXXX
  No-License Incoming Call Number: XXXXX

MALICIOUS CALL TRACE PARAMETERS
               Apply MCT Warning Tone? n   MCT Voice Recorder Trunk Group:

SEND ALL CALLS OPTIONS
            Send All Calls Applies to: station
        Auto Inspect on Send All Calls? n

UNIVERSAL CALL ID
      Create Universal Call ID (UCID)? n      UCID Network Node ID:
```

2. In the `Emergency Numbers - Internal` field (optional) type a valid extension (up to 5 digits).
3. In the `Emergency Number - External` field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.
4. In the `No-License Incoming Call Number` field (optional) type a valid extension (up to 5 digits).
5. Press ENTER to save the changes.

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**, meaning no daylight savings transition.

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

```
                    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 __:__
```

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** in the `Increment` field means to move the clock forward or back by one hour at the transition point.

   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 RETURN to bring up the Date and Time screen.

```
set time
                          DATE AND TIME
        DATE
            Day of the Week: Monday       Month: July
           Day of the Month: 2             Year: 2001

        TIME
            Hour: 20  Minute: 30   Second: 55  Type: standard
                      Daylight Savings Rule: 1

WARNING: Changing the date or time impacts BCMS, CDR and MEASUREMENTS
```

2. Type the day of the week in English (Sunday through Saturday). Use the following table for 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). Use the following table for English month names. After the month is entered, press TAB to move to next field

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. 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 you have entered all of the information.
11. Type **display time** and press RETURN to verify date/time data.

Set Locations (if necessary)

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 RETURN.

```
                                                          Page 1 of 3
LOCATIONS

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

 Number   Name                    Timezone   Daylight-Savings        Number Plan
                                  Offset     Rule                    Area Code

    1     Main_________________   + 00:00    _1                      303
    2     _____________________   _ __:__    __                      ___
    3     _____________________   _ __:__    __                      ___
    4     _____________________   _ __:__    __                      ___
    5     _____________________   _ __:__    __                      ___
    6     _____________________   _ __:__    __                      ___
    7     _____________________   _ __:__    __                      ___
    8     _____________________   _ __:__    __                      ___
    9     _____________________   _ __:__    __                      ___
   10     _____________________   _ __:__    __                      ___
   11     _____________________   _ __:__    __                      ___
   12     _____________________   _ __:__    __                      ___
```

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 save the changes.

Enable TTI

NOTE:
Perform this step only if you disabled TTI in the Disable TTI section.

1. Type **change system-parameters features** and press RETURN to change the TTI field back to its value before the upgrade.
2. Go to the second page and set the `Terminal Translation Initialization (TTI) Enabled?` field to **y** and press ENTER.

Check TTI Status

1. Type **status tti** and press RETURN.
2. Check the `Percent Complete` field.

   If the value is `100`, then go on to the next section.
3. If the value is less than 100, repeat Steps 1 and 2 until the `Percent Complete` field is 100.

Release MMI (High/Critical reliability only)

1. Type **release board UUCSS** and press RETURN to release the circuit packs that you busied-out in the Busyout MMI Circuit Packs section.

Check for Translation Corruption

1. Type **newterm** and press RETURN.
2. If you do not get a login prompt and see the following message:

   Warning: Translation corruption detected

   follow the normal escalation procedure for translation corruption before continuing the upgrade.

Verify the Upgrade

1. Type **status system 1** and verify that the system is in a normal state.

   Check these fields for the corresponding values:

   - Maj/Min alarms = `0`
   - Service State = `in service`
2. Type **display alarms** and press RETURN.

   If there are alarms, take the necessary corrective actions.
3. Type **list configuration software-version** and press RETURN.

   In the SOFTWARE VERSION section verify that the `Memory Resident` field matches the new software version.
4. Type **display communication-links** and press RETURN.

   Ensure that the link administration is the same as before the upgrade.

5. Type **status link *number*** and press RETURN for each administered link.

   Check these fields for the corresponding values:

   - `Link Status` = connected
   - `Service State` = in service

   If any of the links are not up, take the necessary corrective action to restore the link

6. Type **list signaling-group** press RETURN.

   Check the system to ensure that the signaling group administration is the same as before the upgrade.

7. For each signaling group, type **status signal *number*** and press RETURN.

   Ensure that the `Group State` field is in-service.

   If the system had ISDN-PRI D-channel links administered, check that those links are in-service.

8. Execute the following commands to ensure that the administration is the same as before the upgrade:

   - **list station**
   - **list trunk-group**
   - **list hunt-group**
   - **list data-module**

Save Translations to Removable-Media

1. Type **save translations removable-media** and press RETURN to copy upgraded translations from the disk drive to the removable media, which takes about 2 minutes.
2. When the system asks you whether to preserve the License File or not, respond with **Yes**.

Save Announcements to Removable-Media

Perform this step only if necessary after the upgrade.

1. If the PPN contains TN750/B or earlier integrated announcement circuit pack, type **save announcements removable-media** and press RETURN to copy announcements from the disk drive to the removable media.

Enable Scheduled Maintenance and Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Enable the scheduled maintenance.
3. If you changed the `Start Time` or `Stop Time` field, change it back to the original time.
4. Re-enable alarm origination.

Register the Switch for Maintenance

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

NOTE:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1. At your laptop/PC, direct your browser to this URL:

   http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

   You can also save this URL in your *Favorites* or *Bookmarks* list.

   The ART User Menu displays.

2. Click on the *Register a Product* button.

   The Enter Network Password dialog box appears.

3. Type your ART **User Name** and **Password** in the indicated fields.

   NOTE:
   ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

   a. Go back to the ART User Menu and click on the *Administer My User ID/Password* button.

   b. Follow the instructions on the User ID and Password page to create your ART user ID and password.

   Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

   The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4. Type the Installation Location or Sold-To data in the **IL/Sold-To Number** field.

   NOTE:
   Sold-To number are replacing IL numbers as customer-site identifiers in the Maestro database.

   - Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
   - IL numbers are 10-12 letters or digits.

5. In the **Session Type** field, select:
   - *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.
   - *UPGRADE REGISTRATION* for all subsequent product registrations.

6. In the **Product Type** field choose *DEFINITY* for the following products:
   - G1
   - System 75
   - G3r
   - G3si
   - Prologix (G3csi)
   - GuestWorks

7. Click on the *Start Product Registration* button.

   If the data you have entered matches a Maestro database record, the Customer Verification page appears.

8. Verify the information in the **Customer Name** and **Customer Address** fields.

   NOTE:
   If the information is not what you expected, ensure that you entered the customer's IL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

   a. Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

   CAUTION:
   DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

   b. Return to the ART User Menu page to begin a new session.

   If the IL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

9. In the Customer Type field, select

   - *GOODYEAR, MOTEL 6, STATE FARM*
   - *IN CINCINNATI BELL SERVICE AREA*
   - *OTHER*

   NOTE:
   This verification might be done automatically in the future.

10. Click on the *Continue Upgrade Registration* button.

    The DEFINITY Product List page appears.

11. Look in the product table (first column heading is "#") to find the row for the product that you want to register. Click on the number in the far-left column ("#") of the correct row.

    NOTE:
    It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

    If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

    Four new fields appear.

12. In the Data Lock field, choose:

    - *YES* for products with ASG enabled
    - *NO* for all others

13. In the **Dialing Type** field choose the dialing type that the product will use to report alarms:
    - *DON'T CHANGE* to leave the product's dialing type unchanged
    - *TONE* for DTMF dialing
    - *PULSE* for rotary or pulse dialing
14. In the **Alarm Origination** field choose:
    - *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
    - *YES* to enable alarm origination.
    - *NO* for no alarm origination.
15. In the **Alarm Destination** field, choose
    - *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
    - *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).
16. Click on the *Continue Registration* button at the bottom of the page.

    ART begins automatically registering the product and displays progress messages to indicate the current status.

    CAUTION:
    DO NOT exit your browser or click on the Refresh, Back, Stop, or Home buttons while ART displays these progress messages.

    If you have to abort your registration, click on the ***Abort Session*** *button that appears with one of the progress messages.*

    If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.
17. Review the information displayed in the report.

    If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.
18. Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Save Translations to Disk

1. Type **save translation** and press RETURN to copy upgraded translations from the removable media to the disk drive, which takes about 2 minutes.
2. When the system asks you whether to preserve the License File or not, respond with **Yes**.

Save Translation to Back Up Disk

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

Standard Reliability:

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

High or Critical Reliability:

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

Busy Out Trunks

1. Busy out trunks that were busied out before the upgrade (see Record all Busyouts).

Resolve Alarms

1. Type **display alarms** and press RETURN to examine the alarm log.
2. Resolve new alarms since the upgrade using *DEFINITY Enterprise Communications Server Maintenance for R10r*.

Set Core Dump Vector

1. Type **set vector f spe-maint** and press RETURN 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 Avaya.

Troubleshooting R10r Upgrade

See ‘‘Troubleshooting guidelines’’ on page B-1 in Chapter B, ‘‘Troubleshooting an Upgrade’’.

Fiber Link Administration

A

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 10 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 10r, 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

```
                                                              Page 1 of 1
                          FIBER LINK ADMINISTRATION
Fiber Link #: 1

Is one endpoint remoted via a DS1 Converter Complex? ___
             ENDPOINT-1                                ENDPOINT-2
              (A-PNC)                                   (A-PNC)
           Board Location: _____                     Board Location: _____
               Board Type: xxx                           Board Type: xxx

Fiber Translation:                                   Converter?
Type of Tranceivers:                                 Converter Type:
```

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.
- **Fiber Translation** — Enter multi-mode or single-mode. This field is used for faster remote diagnosis.
- **Converter** — Enter y or n. This field is used for faster remote diagnosis.

- **Type of Tranceivers** — Enter A or B. This field is used for faster remote diagnosis.
- **Converter Type** — Enter Avaya or other. Appears when the converter field on the Fiber Link Administration screen is set to y.

Duplicated Fiber Link Administration.

```
add fiber-link next                                        Page 1 of 3
                        FIBER LINK ADMINISTRATION

Fiber Link #: 1
Is one endpoint remoted via DS1 Converter Complex? yes

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


     ENDPOINT-1                              ENDPOINT-2
     (B-PNC)                                 (B-PNC)
Board Location: 01D01                  Board Location: 02A02
Board Type: ei                         Board Type: ei
DS1CONV Board Location: 01C01          DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574              DS1CONV Board Type: TN574
```

Screen 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 remoted via DS1 Converter Complex?** — Enter **yes** to specify that a DS1 converter complex is used to remote one endpoint. If **yes** is entered, A-PNC and B-PNC DS1 Converter (DS1CONV) Attributes must be administered on Pages 2 and 3 (respectively) of the form.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.

DS1C Converter Complex Administration for TN574 Circuit Packs.

```
add fiber-link next                                              Page 2 of 3

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

DS1CONV Board Location: 01B01              DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574                  DS1CONV Board Type: TN574

                        DS1 CONVERTER FACILITIES

                             A         B         C         D
         Facility Installed? yes       no        no        no
       Passes Far-end Clock? yes       yes       yes       yes
    Digital Data Compatible? yes       yes       yes       yes
               Line Coding:  ami-zcs   ami-zcs   ami-zcs   ami-zcs
              Framing Mode:  esf       esf       esf       esf
DS1CONV-1 Line Compensation:  1         1         1         1
DS1CONV-2 Line Compensation:  1         1         1         1

Facility A Circuit ID: 09876543
```

Screen 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 remoted via a DS1 Converter Complex field is **y**.

NOTE:
When you administer DS1 Converter TN1654 circuit packs, different fields display.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the first endpoint of the fiber link. This is entered on Page 1 and displays on Page 2.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the first endpoint.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the second endpoint of the fiber link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the second endpoint. This field is updated via the Change Circuit-packs command.
- **Facility Installed** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex. Default is **yes** for Facility A.
- **Passes Far-end Clock** — Enter "**yes**" in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far end converter circuit pack or the network (such as when the signal is converted from digital to analog and then back to digital), enter "**no**." Default is **yes** for Facility A.

  This field determines whether the DS1 converter circuit pack can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.
- **Digital Data Compatible** — Enter **yes** (default) in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least Facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter **no**.

- **Line Coding** — Enter the line coding format, **ami-zcs** (default), or **ami-basic**, **b8zs**, or **hdb3** in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

  When ami-zcs line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ami-zcs line coding results in data corruption. The DS1CONV circuit pack protects the packet facility (one of up to four facilities dynamically allocated by the DS1CONV circuit pack) from corruption through a special escape mechanism.

  When b8zs line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

  NOTE:
  Note that although the esf framing mode and b8zs line coding are the preferable modes of operation, you should confirm that the DS1 facilities support them before selecting this line coding.

- **Framing Mode** — Enter the framing format, **esf** (default) or **d4**, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

  NOTE:
  The D4 format is supported by the Converter circuit packs, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use is discouraged.

- **DS1CONV-1 Line Compensation** — Enter the line compensation (**1** to **5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see Table 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: 01C01              DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574                  DS1CONV Board Type: TN574

                       DS1 CONVERTER FACILITIES

                             A        B        C         D
        Facility Installed?  yes      no       no        no
      Passes Far-end Clock?  yes      yes      yes       yes
   Digital Data Compatible?  yes      yes      yes       yes
              Line Coding:   ami-zcs  ami-zcs  ami-zcs   ami-zcs
            Framing Mode:    esf      esf      esf       esf
DS1CONV-1 Line Compensation:  1        1        1         1
DS1CONV-2 Line Compensation:  1        1        1         1

Facility B Circuit ID: 01112343
```

Screen 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 Location: 02B01
DS1CONV Board Type: TN1654                 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: 01B01              DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                 DS1CONV Board Type: TN1654

                         DS1 CONVERTER FACILITIES

                              A        B        C         D
          Facility Installed? yes      yes      yes       no
                    Bit Rate: 2.048
 Facility Startup Idle Code: 11101000
                 Line Coding: hdb3     hdb3     hdb3      hdb3
                         CRC? yes
            Line Termination:


Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
Facility C Circuit ID: 434566335
```

Screen 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 next                                              Page 3 of 3

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

DS1CONV Board Location: 01C01              DS1CONV Board Location: 02C01
DS1CONV Board Type: 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

Troubleshooting an Upgrade

B

The information in this appendix is a compilation of the most commonly-reported troubles that Avaya Tier 4 Support has received and can help you correct some problems that you could encounter while upgrading a system.

You can help

This appendix is periodically updated with new information. If you have troubleshooting or error recovery information that you can share with other technicians, please FAX your comments to us at 1-303-538-1741 (United States).

Troubleshooting guidelines

Before escalating a problem, try these general troubleshooting procedures:

- Software compatibility
- Only one side upgrades
- Removable media problems
- No handshake
- No shadowing
- No Translations after upgrade
- Software corruption
- Catastrophic failure
- Message Waiting lamps on

Software compatibility

In the Software Release Letter:

1. Check the software compatibility section to ensure that software version that you are upgrading *from* is compatible with the software version that you are upgrading *to*.
2. If the from and to versions are incompatible, you must get different system software for the upgrade.

Only one side upgrades

This problem indicates that the software version on the standby side is incorrect.

1. Perform a “hot-swap” of the disk drives by moving the standby disk drive to the active side and vice-versa.
2. Insert the Release 10 system software removable media into the active drive.
3. Type **list configure software** and press Enter to verify the removable media contains the required Release 10 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* by disconnecting the power supply connections, first from the left side and then the right side of the standby SPE.

Removable media problems

This section includes

- General guidelines
- Power interruptions
- Defective removable media

General guidelines

Use the following guidelines when troubleshooting and resolving removable media (R-MEDIA) problems:

- 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.

- Systems with duplicated SPEs can have DUPINT interactions.

  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.

Power interruptions

1. Check the Alarm and Error Logs for power-related problems. Power interruptions
2. Clear these according to the procedures outlined in *DEFINITY Enterprise Communications Server Release 10 Maintenance for R10r*.

   NOTE:
   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.

Defective removable media

If you suspect defective removable media (tape or optical disk):

1. Test the removable media:

   R7 and higher: type **test removable-media *UUCSS* long**

   R7 or earlier: type **test tape *UUCSS* long**)

2. Press Enter.

3. If the 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).

Disk drive vintage

If upgrading from G3V4 and earlier system to Release 10r:

1. Type **list configuration *UUC*** and press Enter.
2. Check the vintage of the TN1657 disk drive. The disk drive *must* be Vintage 9 or higher.

No handshake

1. Note the LEDs on the standby UN331B/C processor circuit pack.
2. If the yellow LED is *not* lit and/or the red alarm LED *is* lit on the standby processor, move the management terminal connection to the STANDBY SPE terminal connector on the back of the PPN cabinet.
3. Reboot the standby SPE by toggling the SPE-SELECT switches to the auto position one at a time.

   This automatically reboots the standby SPE.
4. Watch the progress of the bootup hardware tests on the system administration terminal.

   If the tests fail, refer to the *DEFINITY ®Enterprise Communications Server Release 10 Maintenance for R10r* Volume 1, Chapter 4 "Initialization and Recovery."

   If the message on the management terminal reads:

   ********** SPE DOWN MODE **********

   one of the following prompts appears, indicating which SPE is locked to standby and whether the SPE is down:

   SPE_A_LOCKED>
   SPE_B_LOCKED>
   SPE_A_DOWN_LOCKED>
   SPE_B_DOWN_LOCKED>
5. Refer to *DEFINITY ® Enterprise Communications Server, Release 10 Maintenance for R10r* ,Chapter 4, "Initialization and Recovery," in the “SPE DOWN Interface” section.
6. Type **d** and press Enter to display alarms.
7. Run the specified test(s) to determine the cause of the SPE-DOWN condition.

No shadowing

1. Note the LEDs on the standby UN331B/C processor circuit pack.
2. If the yellow LED is flashing on the standby processor, toggle the DUPINT switches from ACTIVE to AUTO one at a time.
3. Move the management terminal connection to the STANDBY SPE terminal connector on the back of the PPN cabinet.
4. Type **list configuration software memory** and press Enter for both SPEs.
5. In the SOFTWARE VERSION sections for each SPE verify that the `Memory Resident` fields are identical.
6. Verify that the translations dates are identical. *Both must match!*

If they do not match

1. Lock the active SPE.
2. Unseat the TN1657 disk drive from the standby carrier.
3. Take the removable media (optical disk) from the active SPE and insert it in the standby SPE's optical drive.
4. Type **power down reset** to reboot the standby SPE from the optical disk.
5. Wait for the flashing yellow LED on the standby SPE.
6. Unlock the DUPINT switches.
7. Type **status spe** and press Enter to verify that shadowing is up.

If they do match

1. Follow the troubleshooting procedures in *DEFINITY ®Enterprise Communications Server, Release 10 Maintenance for R10r,* Chapter 4, "Initialization and Recovery."

No Translations after upgrade

Two reasons for this can be:

- Translations not saved to removable media
- Save translation command failed

Translations not saved to removable media

You must recover the translations from the disk drive. The fastest and easiest way is to remedy this is to:

1. Re-insert the old disk drives with the old translations stored on them into the carriers.
2. Type **busyout host-adapters [a|b]** and press Enter.
3. Type **reset host-adapters [a|b]** and press Enter.
4. Type **release host-adapters [a|b]** and press Enter.
5. Type **reset system 3** and press Enter.
6. Unseat the TN1657 disk drives.
7. Type **save translation removable-media** and press Enter.

   This saves the translations to the removable media (optical disk).

Save translation command failed

If the **save translation** command fails during an upgrade:

1. Install the backup removable media (tape or optical disk) into the drive. The backup must contain the translations *before the upgrade*.
2. Type list configuration software-versions and press Enter.

   Verify that the software version is Release 10 and that shadowing is up.
3. Type **copy translation disk both** and press Enter.

   Copy the translations from the backup removable media (about 30 minutes).
4. Type **reset system 3** and press Enter.

   In the reboot process the system reads the translations from the backup removable media.

Software corruption

1. Log into the switch.
2. If you get the error message:

   WARNING: translation corruption detected

   escalate the trouble (see "Where to get additional help" on page B-14).

Catastrophic failure

If an upgrade fails and you must take the customer to go back to previous software version,

1. Leave the new hardware in place, including the 4th memory board.
2. Insert the old TN1657 disk drives with previous translations stored and boot image.
3. Type **busyout host-adapters [a|b]** and press Enter.
4. Type **reset host-adapters [a|b]** and press Enter.
5. Type **release host-adapters [a|b]** and press Enter.
6. Unseat the TN2211 optical drives.
7. Type **reset system 4** and press Enter to reboot the system from the disk drive (previous-version software and translations). All previous software versions will run on the 4 memory board configuration.
8. Reinsert the TN2211 optical drive.
9. Type **busyout host-adapters [a|b]** and press Enter.
10. Type **reset host-adapters [a|b]** and press Enter.
11. Type **release host-adapters [a|b]** and press Enter.

    Wait for shadowing to come up:
12. Place a new optical disk in the drive.
13. Type **backup disk full** and press Enter.

    The contents of the the TN1657 disk drive are copied to the backup optical disk
14. After recovery to the previous software, escalate the trouble (see ‘‘Where to get additional help’’ on page B-14).

Message Waiting lamps on

If the Message Waiting Lamp is on after removing an EPN, this means that all affected port-related translations were not unadministered before removing the 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.

Troubleshooting License File problems

Problems with License Files occur when

- The processor serial number does not match the serial number in the License File.
- The current switch software version does not match the version number in the License File.
- The feature usage does not match the License File

License checks occur when

- Initializing the switch software (new or upgrade).
- Hourly when the switch is running normally.

Mismatches between the License File and the license file serial number, the software version, or the feature mask generate error messages to alert you to the License Mode.

Alarms and visual indicators

Alarming strategy

Whenever the system detects a problem with the License File or there is no License File installed, the system generates a major alarm that is logged in the Hardware Error Log. To view the log:

1. At the SAT, type **display errors** and press RETURN.

   The Error Report screen appears.

2. Type **lic-file** in the `Category` field or select it from the help menu for that field.

3. Press ENTER.

   The Hardware Error Report -- Active Alarms screen appears.

4. Check the report for LIC-ERR or NO-LIC errors in the `Mtce Name` (Maintenance Name) field.

5. If there is also a number in the `Err Type` (Error Type) field, record that number and look up its meaning in the respective maintenance object.

Feature button assignments

You can use the station screen (**change station**) to change the settings for the system phones, including adding a feature button assignment specifically for an "RFA Major Alarm" that lights when the system enters License-Error mode. The system allows you to program up to

- 20 buttons per system (csi & si).
- 30 buttons per system (r).

For complete instructions for administering the RFA Major Alarm button, see the *DEFINITY ECS Release 10 Administrator's Guide*, Chapter, 4, "Managing Phones."

Log in warning messages

If the system is in either License-Error or No-License modes, anyone logging on to the System Access Terminal (SAT) receives a warning message, depending on the conditions.

- When "License Error: Serial Number Mismatch" (or some other description) appears, the system is telling you that
  - The switch is in License-Error mode.
  - The system detected a license file serial number mismatch between the License File and the actual hardware in the switch.
- When "Call Processing Will Be Blocked in Approximately xxx hours" appears, the system is telling you that
  - The switch is in License-Error Mode.
  - The 6-day countdown timer has started and you have xxx hours before you enter No-License mode.
- When "Call Processing Blocked" appears, the system is telling you that
  - The switch is in No-License Mode.
  - The switch allows only incoming and outgoing calls to pre-administered numbers.

License modes

Table B-1 shows the 3 license modes, descriptions, and repair procedures.

Table B-1. Error messages and repair procedures

License Mode	Description	Explanation and repair procedure
License-Normal	No mismatches between license and switch; stable running condition	None needed
License-Error	Warning mode; call processing supported, 6-day countdown timer begins.	If you initially log in to the SAT and you get a message that says: `License-Error: xxxxx; Call Processing Will Be Blocked in Approximately X hours,` the 'xxxx' tells you why you are in License-Error mode, and call processing functions normally for 'X' hours, at which time the system goes into No-License mode. One of the following conditions is present: ■ Active processor serial number does not match the License File. ■ Standby processor cannot be contacted or standby processor serial number does not match the License File. ■ The License File has expired. ■ Feature usage does not match the License File. ■ This is WAN Spare Processor (WSP) or a Survivable Remote EPN (SREPN) that is providing primary service. ■ A duplicated G3r has initialized after a call-preserving software upgrade, and a new license has not been installed. Clear the License-Error mode by ■ Correcting the error or mismatch that caused going into this mode. ■ Installing a valid License File that is consistent with the switch.

Continued on next page

Table B-1. Error messages and repair procedures — *Continued*

License Mode	Description	Explanation and repair procedure
No-License	Outgoing and incoming calls only to administered emergency numbers.	If you initially login to the SAT if you get a message that says: `No-License: xxxxx; Call Processing Blocked`, the 'xxxx' tells you why you are in No-License mode, and no call processing is allowed. Calls in progress continue but all new originations are denied. One of the following conditions is present: ■ No License File is installed in the system. ■ The License-Error timer expired. ■ A Survivable Remote Processor detects a port circuit pack in its port network other than an Expansion Interface pack. ■ A **reset system 3 preserve-license** command has executed and the Offer Category in translations does not match the License File. Clear No-License mode by: ■ correcting the error or mismatch that caused going into this mode. ■ installing a valid License File that is consistent with the switch.

Initialization and periodic checking

When the switch initializes and hourly after that, the system checks all License File parameters. Table B-2 shows the error messages that you can encounter as a result of these periodic checks and the associated License-Error and No-License modes.

Within the License File is the feature mask, an information set that controls which features are enabled or not on the Customer Options and Special Applications forms. Each of the approximately 150 feature mask entries is one of three types (examples in parentheses):

- Type I features with a simple on/off state (DCS Call Coverage)
- Type II features with an alphanumeric setting values associated with them (Logged-in ACD Agents)
- Type III the IP product ID string name, the IP release value, and the capacity.

Table B-2. Error messages indicating a change of mode

If the system goes into this mode	And reports this error message	It means that
No-License	License File is Missing or Corrupted	■ License could not be decrypted. ■ Checksum did not match, data possibly lost. ■ Mismatched settings: — Offer Category — Version — Call Center Release — Model — "*" and "#" in vector collect step do not match the License File. ■ IP product defined in translations but not defined in the License File.
No-License	The License has Expired	The license has expired.
No-License	Software Version Mismatch	The current software version does not match the software version in the License File.
No-License	Offer Category Mismatch	The Offer Category in translation does not match the Offer Category in the License File.
License-Error	Serial Number Mismatch	The processor serial number does not match the serial number(s) in the License File. In duplicated configurations the system checks the processor serial numbers in both the active and standby SPEs.

Continued on next page

Table B-2. Error messages indicating a change of mode — *Continued*

If the system goes into this mode	And reports this error message	It means that
License-Error	Feature Usage Exceeds Limits	The value of the Used field for any TYPE II or TYPE III field on the Customer Options forms (pages 1, 5, 6, and 9) is greater than the value of the field. To more quickly identify the which of these TYPE II and TYPE III features is causing the error, compare the Used field with the value of the field itself (the License File value). **NOTE:** Before usage is checked if the value of the field is not between the upper and lower values in the License File, the value of the field is changed in translation to the lower value in the License File.
License-Error	Survivable Remote Used as PPN	**G3si only**: the License File indicates that this is a Survivable Remote that is serving as a PPN.
License-Error	Survivable Remote Serving as Active Processor	**G3si only**: the License File indicates that this is a Survivable Remote that is serving as an active processor.
License-Error	Software Upgrade Requires New License	**G3r only**: the switch reports this message immediately after an upgrade. You have 2 hours in which to install the License File.
License-Error	WAN Spare Serving as Active Processor	**G3r only**: the license indicates that this is a WAN Spare Processor (WSP) that is serving as an active processor.

Where to get additional help

Other documents in the DEFINITY library

Other books in the DEFINITY library You can find general information on troubleshooting associated with maintenance procedures in:

- Chapter 5, “Alarms, Errors and Troubleshooting,” in *DEFINITY Enterprise Communications Server Release 10 Maintenance for R10r*.
- *DEFINITY Enterprise Communications Server Release 10 Installation for Adjuncts and Peripherals*
- *DEFINITY Made Easy: Multicarrier Cabinet Installation* CD
- *DEFINITY Made Easy: Single-Carrier Cabinet Installation* CD
- *DEFINITY Enterprise Communications Server Release 10 Installation, Upgrades, and Additions for Compact Modular Cabinets*
- *DEFINITY ONE Communications Systems Release 10 Installation and Upgrades*
- *DEFINITY Enterprise Communications Server Release 10 Administrator’s Guide*
- *DEFINITY Made Easy: Upgrades for R10si CD*

Trouble escalation

For additional support telephone numbers:

1. At your browser, go to the Avaya web site:

   http://www.avaya.com

2. Click on *Support*.
3. If you are:

   - Within the United States, click on *Escalation Lists US and International*.
   - Outside the United States, click on *Global Escalation List*.

   These lists contain phone numbers for the Centers of Excellence in each Avaya-defined region.

Access Security Gateway

C

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 authenication 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").
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

EFP
Electronic power feed

EI
Expansion interface

EIA
Electronic Industries Association

EIA-232
A physical interface specified by the EIA. EIA-232 transmits and receives asynchronous data at speeds of up to 19.2 kbps over cable distances of up to 50 feet. EIA-232 replaces RS-232 protocol in some DEFINITY applications.

electronic tandem network (ETN)
A tandem tie-trunk network that has automatic call-routing capabilities based on the number dialed and the most preferred route available. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension.

Electronics Industries Association (EIA)
A trade association of the electronics industry that establishes electrical and functional standards.

emergency transfer
If a major system failure occurs, automatic transfer is initiated to a group of telephones capable of making outgoing calls. The system operates in this mode until the failure is repaired and the system automatically returns to normal operation. Also called power-failure transfer.

EMI
Electromagnetic interference

end-to-end signaling
The transmission of touch-tone signals generated by dialing from a voice terminal to remote computer equipment. These digits are sent over the trunk as DTMF digits whether the trunk signaling type is marked as tone or rotary and whether the originating station is tone or rotary. Example: a call to a voice-mail machine or automated-attendant service. A connection is first established over an outgoing trunk. Then additional digits are dialed to transmit information to be processed by the computer equipment.

enhanced private-switched communications service (EPSCS)
An analog private telecommunications network based on the No. 5 crossbar and 1A ESS that provides advanced voice and data telecommunications services to companies with many locations.

EPN
Expansion-port network

EPROM
Erasable programmable read-only memory

EPSCS
Enhanced Private Switched Communications Services

ERL
Echo return loss

Erlang
A unit of traffic intensity, or load, used to express the amount of traffic needed to keep one facility busy for one hour. One Erlang is equal to 36 CCS. See also CCS or hundred call seconds.

ESF
Extended superframe format

ESPA
European Standard Paging Access

ETA
Extended Trunk Access; also Enhanced Terminal Administration

ETN
Electronic tandem network

ETSI
European Telecommunications Standards Institute

expansion archangel (EAA)
A network-control microprocessor located on an expansion interface (EI) port circuit pack in an expansion port network. The EA provides an interface between the EPN and its controlling switch-processing element.

expansion-archangel link (EAL)
A link-access function on the D-channel (LAPD) logical link that exists between a switch-processing element and an expansion archangel (EA). The EAL carries control messages from the SPE to the EA and to port circuit packs in an expansion port network.

expansion control cabinet
See expansion control carrier.

expansion control carrier
A carrier in a multicarrier cabinet that contains extra port circuit packs and a maintenance interface. Also called expansion control cabinet in a single-carrier cabinet.

expansion interface (EI)
A port circuit pack in a port network that provides the interface between a PN's TDM bus/ packet bus and a fiber-optic link. The EI carries circuit-switched data, packet-switched data, network control, timing control, and DS1 control. In addition, an EI in an expansion port network communicates with the master maintenance circuit pack to provide the EPN's environmental and alarm status to the switch-processing element.

expansion port network (EPN)
A port network (PN) that is connected to the TDM bus and packet bus of a processor port network (PPN). Control is achieved by indirect connection of the EPN to the PPN via a port-network link (PNL). See also port network (PN).

extension-in
Extension-In (ExtIn) is the work state agents go into when they answer (receive) a non-ACD call. If the agent is in Manual-In or Auto-In and receives an extension-in call, it is recorded by CMS as an AUX-In call.

extension-out
The work state that agents go into when they place (originate) a non-ACD call.

external measurements
Those ACD measurements that are made by the External CMS adjunct.

extension
A 1- to 5-digit number by which calls are routed through a communications system or, with a Uniform Dial Plan (UDP) or main-satellite dialing plan, through a private network.

external call
A connection between a communications system user and a party on the public network or on another communications system in a private network.

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) andIntegrated 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 alsoIntegrated Services Digital Network (ISDN) andIntegrated 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 alsoBX.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
Sofware 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-UUI
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.25and 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

UUI
User-to-user information

V

VAR
Value-added reseller

VDN
See vector directory number (VDN).

vector directory number (VDN)
An extension that provides access to the Vectoring feature on the switch. Vectoring allows a customer to specify the treatment of incoming calls based on the dialed number.

vector-controlled split
A hunt group or ACD split administered with the vector field enabled. Access to such a split is possible only by dialing a VDN extension.

VIS
Voice Information System

VLSI
Very-large-scale integration

VM
Voltmeter

VNI
Virtual nodepoint identifier

voice terminal
A single-line or multiappearance telephone.

W

WATS
See Wide Area Telecommunications Service (WATS).

WCC
World-Class Core

WCR
World-Class Routing

WCTD
World-Class Tone Detection

WFB
Wireless fixed base

Wide Area Telecommunications Service (WATS)
A service in the United States that allows calls to certain areas for a flat-rate charge based on expected usage.

wideband
A circuit-switched call at a data rate greater than 64 kbps. A circuit-switched call on a single T1 or E1 facility with a bandwidth between 128 and 1536 (T1) or 1984 (E1) kbps in multiples of 64 kbps. H0, H11, H12, and N x DS0 calls are wideband.

wideband access endpoint
Access endpoints, extended with wideband switching to include wideband access endpoints. A wideband access endpoint consists of one or more contiguous DS0s on a line-side T1 or E1 facility and has an extension. The Administered Connections feature provides call control for calls originating from wideband access endpoints.

wink-start tie trunk
A trunk with which, after making a connection with a distant switching system for an outgoing call, the system waits for a momentary signal (wink) before sending the digits of the called number. Similarly, on an incoming call, the system sends the wink signal when ready to receive digits.

work mode
One of four states (Auto-In, Manual-In, ACW, AUX-Work) that an ACD agent can be in. Upon logging in, an agent enters AUX-Work mode. To become available to receive ACD calls, the agent enters Auto-In or Manual-In mode. To do work associated with a completed ACD call, an agent enters ACW mode.

work state
An ACD agent may be a member of up to three different splits. Each ACD agent continuously exhibits a work state for every split of which it is a member. Valid work states are Avail, Unstaffed, AUX-Work, ACW, ACD (answering an ACD call), ExtIn, ExtOut, and OtherSpl. An agent's work state for a particular split may change for a variety of reasons (example: when a call is answered or abandoned, or the agent changes work modes). The BCMS feature monitors work states and uses this information to provide BCMS reports.

write operation
The process of putting information onto a storage medium, such as a hard disk.

WSA
Waiting session accept

WSS
Wireless Subscriber System

Z

ZCS
Zero Code Suppression

Index

Numerics

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

V

W

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