



Installation, Upgrades and Additions for Avaya™ CMC1 Media Gateways

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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.

How to Get Help

For additional support telephone numbers, go to the Avaya Web site:

<http://www.avaya.com/support/>

If you are:

- Within the United States, click *Escalation Lists*, which includes escalation phone numbers within the USA.
- Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

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).

Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer 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.

Voice Over Internet Protocol (VoIP)

If the equipment supports Voice over Internet Protocol (VoIP) facilities, you may experience certain compromises in performance, reliability and security, even when the equipment performs as warranted. These compromises may become more acute if you fail to follow Avaya's recommendations for configuration, operation and use of the equipment. YOU ACKNOWLEDGE THAT YOU ARE AWARE OF THESE RISKS AND THAT YOU HAVE DETERMINED THEY ARE ACCEPTABLE FOR YOUR APPLICATION OF THE EQUIPMENT. YOU ALSO ACKNOWLEDGE THAT, UNLESS EXPRESSLY PROVIDED IN ANOTHER AGREEMENT, YOU ARE SOLELY RESPONSIBLE FOR (1) ENSURING THAT YOUR NETWORKS AND SYSTEMS ARE ADEQUATELY SECURED AGAINST UNAUTHORIZED INTRUSION AND (2) BACKING UP YOUR DATA AND FILES.

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.

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 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

The equipment described in this document may contain Class 1 LASER Device(s). These devices comply with the following standards:

EN 60825-1, Edition 1.1, 1998-01
21 CFR 1040.10 and CFR 1040.11.

The LASER devices operate within the following parameters:

- Maximum power output: -5 dBm to -8 dBm
- Center Wavelength: 1310 nm to 1360 nm

Luokan 1 Laserlaite
Klass 1 Laser Apparat

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposures. Contact your Avaya representative for more laser product information.

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 MultiVantage™ Solution 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.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

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.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

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 MultiVantage™ 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



Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Européenne*) 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) 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。

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Write: Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA
Attention: Avaya Account Management

E-mail: totalware@gwsmail.com

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About This Book

This document provides procedures to install, upgrade, or make additions to an Avaya CMC1 Media Gateway, which is housed in the Compact Modular Cabinet (CMC1).

Conventions used in this book

General

The following conventions apply to the Avaya DEFINITY® Server CSI:

- The word “system” is a general term encompassing all references to the Avaya DEFINITY® Server CSI running Avaya MultiVantage™ Software.
- The term “cabinet” generally refers to the Compact Modular Cabinet (CMC1).
- “UUCSS” refers to a circuit pack address in cabinet-carrier-slot order.

Typographic

Other terms and conventions might help you use this book with your MultiVantage system.

- Commands are printed in bold face as follows: **command**.

We show complete commands in this book, but you can usually type an abbreviated version of the command. For example, **list configuration station** can be typed as **list config sta**.

- Screen displays and names of fields are printed in constant width as follows: `screen display`.

A screen is any form displayed on your computer or terminal monitor.

- Variables are printed in italics as follows: *variable*.
- Keys and buttons are printed as follows: KEY.

- To move to a certain field, you can use the TAB key, arrows, or the ENTER key (the ENTER key may appear as the RETURN key on your keyboard).
- If you use terminal emulation software, you need to determine what keys correspond to ENTER, RETURN, CANCEL, HELP, NEXT PAGE, etc.
- In this book we use the terms “telephone” and “voice terminal” to refer to phones.
- We show commands and screens from the newest MultiVantage system and refer to the most current books. Please substitute the appropriate commands for your system and refer to the manuals you have available.
- If you need help constructing a command or completing a field entry, remember to use HELP.
 - When you press HELP at any point on the command line, a list of available commands appears.
 - When you press HELP with your cursor in a field on a screen, a list of valid entries for that field appears.
- The status line or message line can be found near the bottom of your monitor display. This is where the system displays messages for you. Check the message line to see how the system responds to your input. Write down the message if you need to call our helpline.
- When a procedure requires you to press ENTER to save your changes, the screen you were working on clears and the cursor returns to the command prompt.

The message line shows “command successfully completed” to indicate that the system accepted your changes.

Admonishments

Admonishments in this book have the following meanings:



CAUTION:

Denotes possible harm to software, possible loss of data, or possible service interruptions.



WARNING:

Denotes possible harm to hardware or equipment.



DANGER:

Denotes possible harm or injury to your body.

Physical dimensions

- Physical dimensions in this book are in inches (in.) followed by metric centimeters (cm) in parentheses.
- Wire gauge measurements are in AWG followed by the cross-sectional area in millimeters squared (mm²) in parentheses.

Trademarks

All trademarks identified by ® or ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

How to get this book

On the Web

If you have internet access, you can view and download the latest version of this book. To view the book, you must have a copy of Acrobat Reader.

To access the latest version:

1. At your browser, go to the Avaya web site:
<http://www.avaya.com>
2. Select **Support**.
3. Select **Online Services**.
4. Select **Documentation**.
5. Select **Recent Documents**.
6. Scroll down to find the latest release of DEFINITY/MultiVantage documents.
7. Search for the document number to view the latest version of the book.

Non-Web

This book and related books can be ordered directly from:

Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA

+1-800-457-1235 (phone)

+1-800-457-1764 (fax)

Non-800 numbers:
+1 410-568-3680 (phone)
+1 410-891-0207 (phone)

Where to get additional help

For additional support and trouble escalation:

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 *Escalation Lists*, which includes escalation phone numbers within the USA.
 - Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

If you do not have Web access, use the phone numbers below (Table 1).

 **NOTE:**

You may need to purchase an extended service agreement to use some of these resources. See your Avaya representative for more information.

Table 1. Avaya support

Support	Number
■ DEFINITY Helpline (for help with feature administration and system applications)	+1-800-225-7585
■ Avaya National Customer Care Center Support Line (for help with maintenance and repair)	+1-800-242-2121
■ Avaya Toll Fraud Intervention	+1-800-643-2353
■ Avaya Corporate Security	+1-800-822-9009 +1-925-224-3401
■ International Technical Assistance Center (ITAC)	+905-943-8801

For all international resources, contact your local Avaya authorized dealer for any additional help and questions.

Tell us what you think

Let us know what you like or don't like about this book. Although we can't respond personally to all your feedback, we promise we will read each response we receive.

Write to us at: Avaya
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 1300 W. 120th St.
 Westminster, CO 80234 USA

Fax to: 303-538-1741

Send email to: document@avaya.com

Security Issues

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

Login security is an attribute of the MultiVantage Software. Existing passwords expire 24 hours after installation.

For Access Security Gateway (ASG), see [Appendix B, "Access Security Gateway"](#).

Antistatic Protection



CAUTION:

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

Remove/Install circuit packs



CAUTION:

When the power is on:

- *The control circuit packs cannot be removed or installed.*
- *The port circuit packs can be removed or installed.*

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. The License File enables the MultiVantage Software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. *Without a license file, the switch does not provide normal call processing.*

Pre-installation checklist

In order to be properly prepared for the installation, have the items listed in [Table 1-1](#) ready.

Table 1-1. Pre-installation checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Avaya MultiVantage Software on removable media	
3.	Extra formatted removable media	

Continued on next page

Table 1-1. Pre-installation checklist — *Continued*

Item No.	Item	✓
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file): <ul style="list-style-type: none"> <li data-bbox="392 446 1081 510">■ <i>Maintenance for Avaya MultiVantage DEFINITY Server CSI</i> <li data-bbox="392 523 1081 556">■ <i>Administrator's Guide for Avaya MultiVantage Software</i> 	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	Processor faceplate 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): <ul style="list-style-type: none"> <li data-bbox="392 977 906 1006">■ License Installation Tool (LIT) application <li data-bbox="392 1020 646 1049">■ 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/> 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.

NOTE:

If you have problems with a hardware serial number that is not in the SAP database, go to the [“If you have problems with RFA”](#) section.

Have direct connection

If you have a direct connection between RFA and 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.

No direction connection

If you do not have a direct connection between RFA and 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.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 1-2](#)) to have them correct the SAP information.

Table 1-2. RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel:		877-615-4174	Prompt 8
<ul style="list-style-type: none"> ■ U.S. and Canada ■ Variable Workforce Group ■ Avaya contractors 	Avaya Associates Members Contractors		
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayanetwork.com	Prompt 3 Select GSO; select EMEA
APAC RTAC	Direct and Business Partners	+65-6872-8686	

Continued on next page

Table 1-2. RFA Helpdesk contact numbers — *Continued*

Where	Who	Phone number/URL	Prompt or selection
CALA <ul style="list-style-type: none"> ■ Mexico TAC ■ Brazil TAC ■ Columbia TAC ■ Argentina TAC ■ Mexico Call Receipt 	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	

Check Customer's Order

Check the customer's order and the shipping packing lists to confirm that all equipment is present. If any equipment is missing, report this to your Avaya Inc. representative. Check the system adjuncts for damage and report all damage according to local shipping instructions.

Correcting Shipping Errors

1. Red-tag all defective equipment and over-shipped equipment and return according to the nearest Material Stocking Location (MSL) instructions. For international customers, contact your order service agent.
2. Direct all short-shipped reports to the nearest MSL. Contact the appropriate location for specific instructions. For Streamlined Implementation in the United States, call 1-800-772-5409.

Unpack and Inspect



CAUTION:

A fully loaded system weighs 58 lbs (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lbs (13.1 kg).

1. Verify the equipment received. See [Figure 1-1 on page 1-6](#). Actual equipment may vary in appearance and may ship in separate packages.

2. Equipment comcodes are listed in [Table 1-3 on page 1-7](#).
3. Before mounting the cabinets, remove the cabinet doors by opening them and lifting them straight up and off of the hinge pins.

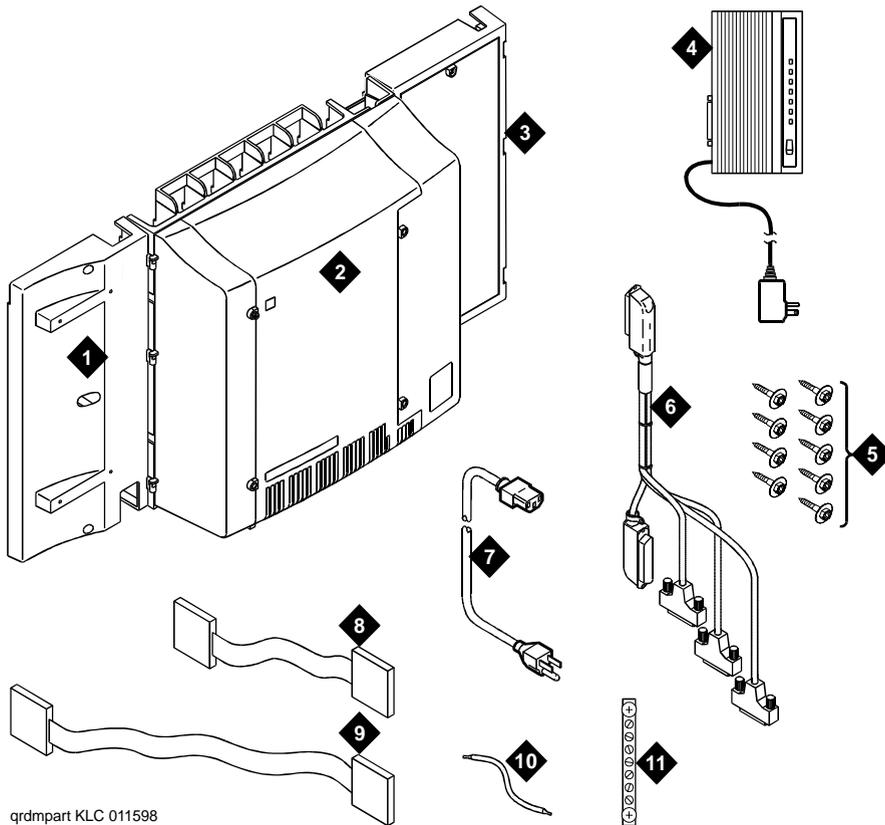


Figure Notes

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Left panel (also acts as a wall-mount <u>template</u> and as a floor mount pedestal) 2. Compact modular cabinet 3. Right panel 4. U.S. Robotics external modem (not shipped with all systems) 5. #12 x 1-inch shoulder screws 6. Processor interface cable (not shipped with all cabinets) | <ol style="list-style-type: none"> 7. AC power cord (NEMA 5-15P or IEC 320) 8. Vertical TDM/LAN bus cable (not shipped with all systems) 9. Horizontal TDM/LAN bus cable (not shipped with all systems) 10. 14-in. (35.5 cm) 6 AWG (#40) (16 mm²) ground wire 11. Single-point ground block |
|--|---|

Figure 1-1. Equipment Packed with the Compact Modular Cabinet

Comcodes for CMC1

Table 1-3 lists the comcodes for equipment used with the CMC1.

Table 1-3. Comcodes for CMC1

Comcode	Description
700225758	Left Panel
847951670	Right Panel
700225360	Right Door
700225766	Left Door
847960002	Processor Interface Cable
108516683	TN2402 Processor Circuit Pack
107784019	TN2182B Tone-Clock — Tone Detector and Call Classifier Circuit Pack
407633999	U.S. Robotics Sportster Model USR 33.6 EXT External Modem
105631527	TDM/LAN Bus Terminator (AHF110)
407772870	Vertical TDM/LAN Bus Cable (WP-91716 List 8)
407772888	Horizontal TDM/LAN Bus Cable (WP-91716 List 9)
706827717	Single-Point Ground Block
H600-487	14-inch (35.5 cm) 6 AWG (#40) (16 mm ²) Green Ground Wire
847987187	CMC 110 Cross-Connect Assembly (Main Distribution Frame)
407676691	120 VAC Power Distribution Unit (145D 6-AC)
107949364	650A Power Supply
700225782	Fan Assembly
407745009	Fan Air Filter
405362641	120 VAC Power Cord (U.S.)
407786623	120 VAC Power Cord (Europe)
407786599	120 VAC Power Cord (United Kingdom)
407786631	120 VAC Power Cord (Australia)
407790591	120 VAC Power Cord (India)
106278062	Apparatus Blank (Circuit Pack Blank) (158P)
108724907	8-Mbyte Mass-Storage Translation Card (White Card)

Continued on next page

Table 1-3. Comcodes for CMC1 — *Continued*

Comcode	Description
108724915	16-Mbyte Mass-Storage Translation Card (White Card)
108724923	48-Mbyte Mass-Storage Translation Card (White Card)
106606536	Integrated Channel Service Unit (ICSU) (120A2)
107988867	DS1 Loopback Jack (T1 Only) (700A)
107152969	75-ohm DS1 Coaxial Adapter (888B)
403613003	157B Connecting Block
406948976	6SCP-110 Protector
107435091	507B Sneak Current Fuse Panel
407216316	220029 Sneak Current Fuse
403613003	157B Connecting Block
103970000	Main Distribution Frame Label (Code 220A)
104307327	C6C cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male to 15-pin male
104307376	C6D cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male on each end
104307434	C6E cable — 100-ft (30.5 m) shielded DS1 cable with 50-pin male to 50-pin female
104307475	C6F cable — 50-ft (15.2 m) shielded DS1 cable with 50-pin male to 3 in. (7.6 cm) stub
102381779	3B1A Carbon Block
104410147	3B1E-W Wide Gap Gas Tube
105514756	3C1S Solid State
102904893	4B1C Carbon Block with Heat Coil
104401856	4B1E-W Wide Gap Gas Tube with Heat Coil
104386545	4C1S Solid State with Heat Coil
406948976	SCP-110 Sneak Current Protector
407216316	220029 Fuse Sneak Current Protector
105581086	4C3S-75 Solid State with Heat Coil
406144907	ITW LINX Gas Tube, Avalanche Suppress
901007120	ITW Linx Ground Bar (used with above)

Continued on next page

Table 1-3. Comcodes for CMC1 — *Continued*

Comcode	Description
406304816	ITW Linx Replacement Fuse
103972758	Data Link Protector (1 circuit)
103972733	Data Link Protector (8 circuits)
407063478	Electrostatic Discharge (ESD) Wrist Strap
107731853	Single-Mode Fiber Optic Transceiver (300A)
106455348	Multi-Mode Fiber Optic Transceiver (9823A)
106455363	Multi-Mode Fiber Optic Transceiver (9823B)
407439975	Multi-mode Fiber Interconnect Cable — 20 ft (6.1 m)
407598325	Single-mode Fiber Interconnect Cable — 20 ft (6.1 m)
105357727	Single-mode Fiber Optic Patch Cord — 2 ft (0.6 m)
106060718	Single-mode 5-dB Attenuator
106060734	Single-mode 10-dB Attenuator

Install the System Cabinets

Set the Carrier Address ID — All Cabinets

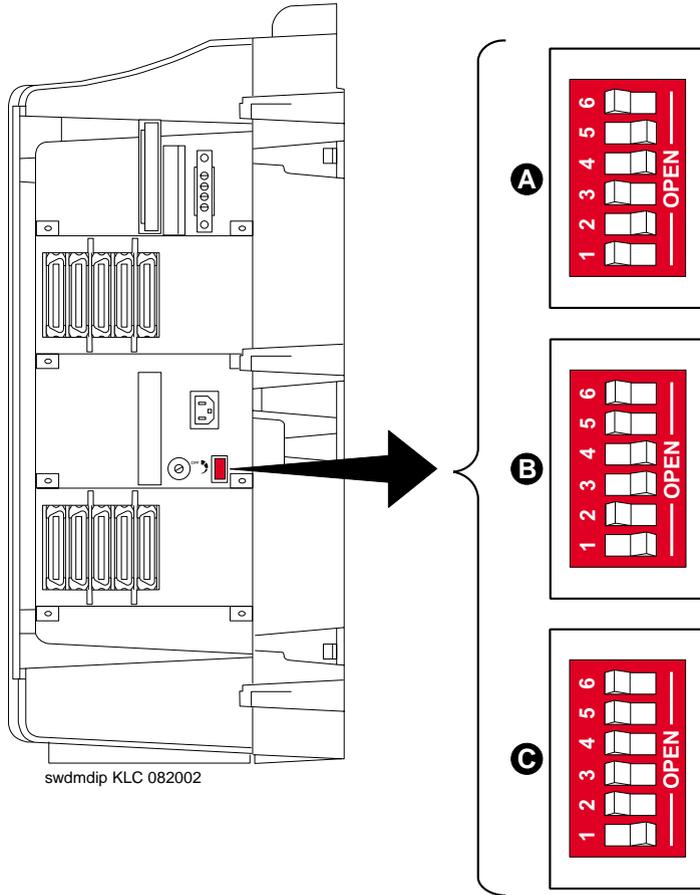


Figure Notes

- a. Carrier A switch settings
- b. Carrier B switch settings
- c. Carrier C switch settings

Figure 1-2. Setting Carrier Address ID (Right Side)

1. Proceed to either [“Floor-Mount the Cabinet”](#) on page 1-11 or to [“Wall-Mount the Cabinets”](#) on page 1-12.

Floor-Mount the Cabinet

The cabinet dimensions (with floor pedestal) are 28.5 in. (72.4 cm) high, 24.5 in. (62.2 cm) wide, and 12 in. (30.5 cm) deep. Maintain a service clearance of 12 in. (30.5 cm) on the left, right, and front of the cabinet.

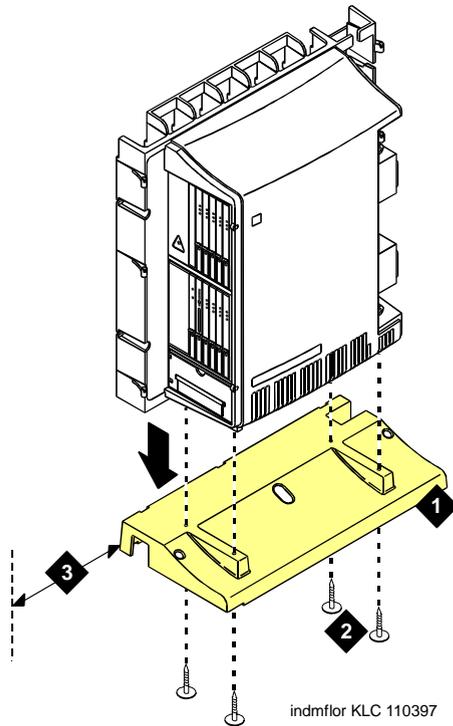


Figure Notes

- | | |
|---|---|
| 1. Left panel (floor-mount pedestal) | 3. 12 in. (30.5 cm) minimum from nearest object (required to service the circuit packs) |
| 2. #12 x 1-in. (2.5 cm) shoulder screws | |

Figure 1-3. Typical Floor Mount Installation

1. Proceed to [“Cable the System”](#) on page 1-26.

Wall-Mount the Cabinets



CAUTION:

A fully loaded system weighs 58 lb (26.3 kg). Use lifting precautions. If the doors, power unit, and circuit packs are removed, the unit weighs only 29 lb (13.1 kg).

Install Plywood Backing onto Wall

The plywood and the hardware to mount the plywood are installer-provided.



NOTE:

The following plywood dimensions account for the extra space needed to install the panels on each side of the cabinet. The cabinet is 24 in. (0.6 m) wide and each panel is 12 in. (0.3 m) wide.

Single-Cabinet Installation

1. Install a 3/4-in. (2 cm) thick sheet of 2 x 4-ft (0.6 x 1.2 m) plywood horizontally onto the wall. See [Figure 1-4 on page 1-13](#).

The top of the plywood must be at least 54 in. (137 cm) from the floor.

2 or 3 Vertically Mounted Cabinets

1. Install a 3/4-in. (2 cm) thick sheet of 4 x 8-ft (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 1-6 on page 1-15](#).

2 Cabinets Vertically Mounted and 1 Cabinet Horizontally Mounted

1. Install a 3/4-in. (2 cm) thick sheet of 4 x 8-ft (1.2 x 2.4 m) plywood vertically onto the wall. See [Figure 1-6 on page 1-15](#).
2. Install a 3/4-in. (2 cm) thick sheet of 2 x 4-ft (0.6 x 1.2 m) sheet of plywood horizontally onto the wall. Position the plywood to the right of the first sheet, across from Cabinet A.

Install Cabinet A — Wall-Mount

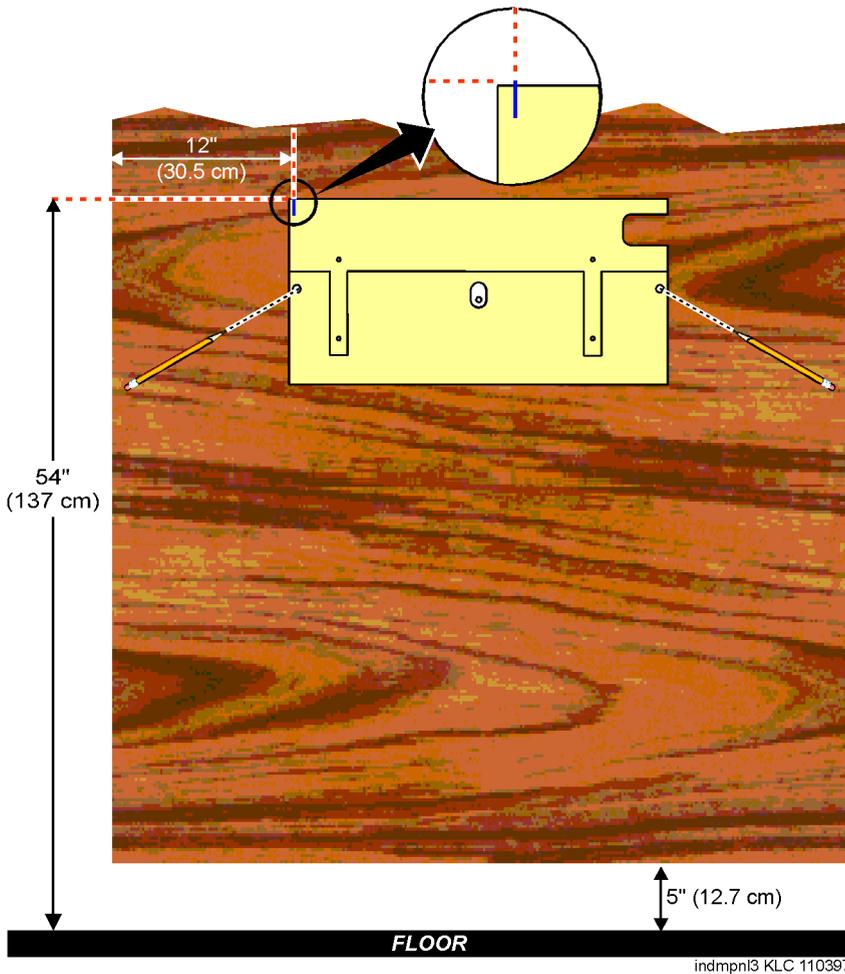
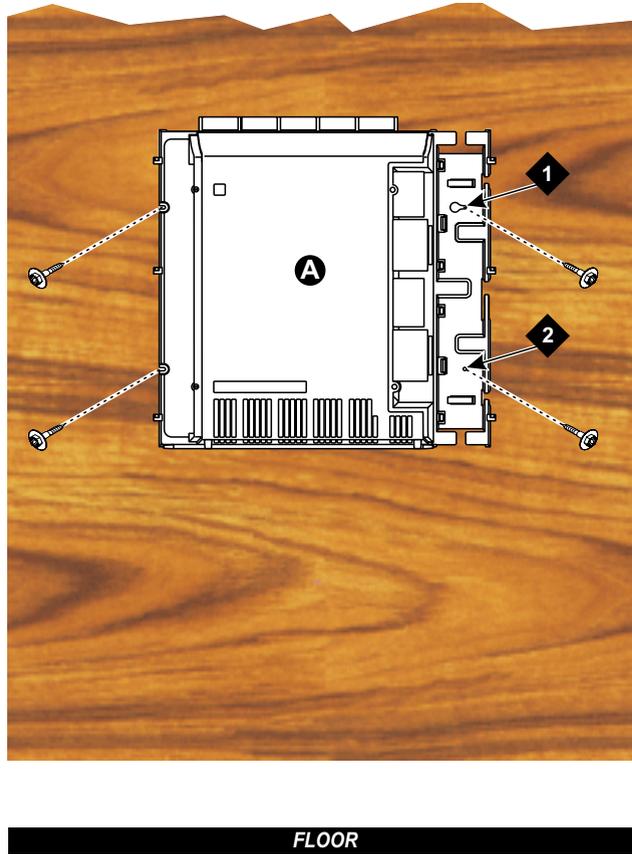


Figure 1-4. Left Panel Used as Mounting Template

1. Place the template on the wall ensuring that the top surface is level.
2. Mark two 1/8-in. (0.3 cm) pilot holes in the mounting hole locations.
3. Remove the template from the wall.
4. Drill the two pilot holes.
5. Thread two #12 x 1-in. shoulder screws partially into the holes.
6. Set the cabinet onto the wall and align the slots with the shoulder screws. See [Figure 1-5 on page 1-14](#). Slide the cabinet to the left to hold it in place. Tighten the screws securely.



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Figure Notes

- 1. #12 x 1-in. shoulder screws
- 2. #12 x 1-inch safety screw

Figure 1-5. Typical Wall-Mount Installation

- 7. Drill two lower mounting holes using the cabinet as a template.
- 8. Thread the 2 lower screws and tighten.

⚠ CAUTION:
Be sure the right bottom safety screw is in place and tight.

Install 2 or 3 Vertically Mounted Cabinets

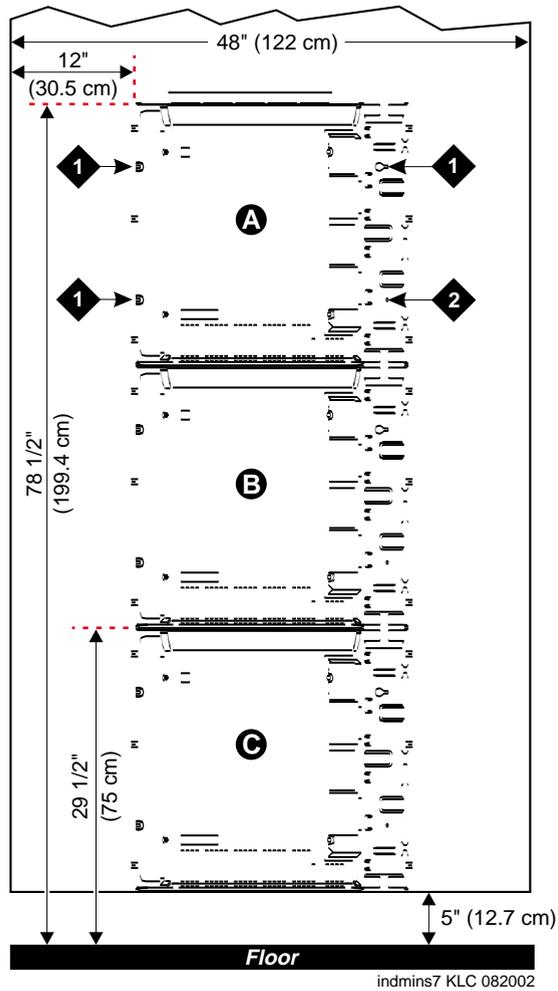


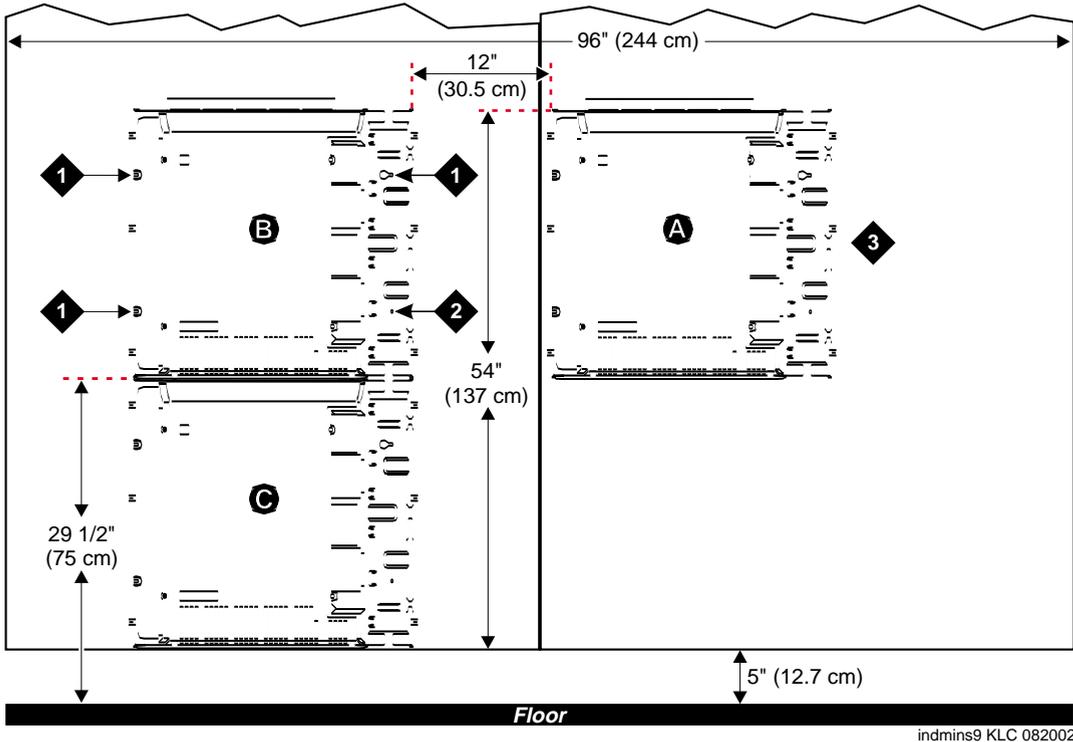
Figure Notes

- 1. #12 x 1-inch shoulder screws
- 2. #12 x 1-inch safety screw

Figure 1-6. Typical Vertical Multicabinet Installation

- 1. Securely tighten the shoulder screws and safety screws.

Install 2 Cabinets Vertically and 1 Cabinet Horizontally



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Figure Notes

- 1. #12 x 1-inch shoulder screws
- 2. #12 x 1-inch safety screw
- 3. Second sheet of plywood

Figure 1-7. Typical 3-Cabinet Installation

- 1. Securely tighten the shoulder screws and safety screws.

Install Left and Right Panels — Wall-Mount

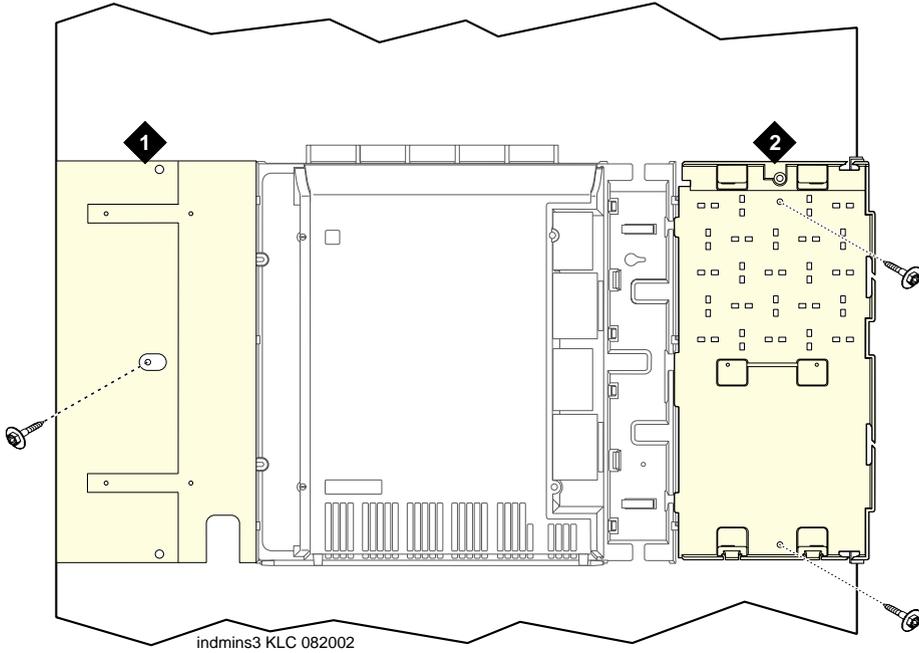


Figure Notes

1. Left panel

2. Right panel

Figure 1-8. Left and Right Panel Installation

1. Align the cutouts in the panels with the cabinet hinges.
2. Drill a 1/8-inch (0.3 cm) pilot hole into the wall and secure the panels with the #12 x 1-inch shoulder screws.

AC Power and Ground

 **CAUTION:**
The system requires a dedicated AC power circuit that is not shared with other equipment and is not controlled by a wall switch. The AC receptacle must not be located under the Main Distribution Frame and must be easily accessible.

 **CAUTION:**
The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet.

 **CAUTION:**
System grounding must comply with the general rules for grounding provided in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.

 **CAUTION:**
AC mains wiring and testing must be performed by a qualified electrician and must conform to Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country of installation.

Check AC Power

Each CMC uses an auto-ranging 85 to 264 VAC power supply, 47 to 63 Hz, 330 W, 4.5 amps (100-120 VAC) or 2.3 amps (200 to 240 VAC), at 500 VA. The AC power source can be 1 phase of 120 VAC with neutral (100 VAC for Japan) with 15 amp circuit breaker, or 1 phase of 220 or 240 VAC (200 VAC for Japan) with 10 amp circuit breaker. The AC cord uses a NEMA 5-15P plug or an IEC 320 plug.

Before powering up the system, check the AC power in the equipment room using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Measure the AC voltage between the hot and neutral side of the receptacle.
2. Depending on the AC power source, verify that the meter reads 90 to 132 VAC or 180 to 264 VAC. If not, have a qualified electrician correct the problem.
3. Measure the voltage between the neutral and ground side of the receptacle.
4. Verify that the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
5. When finished, set the AC mains circuit breakers to **OFF**.

Approved Grounds

An approved ground is the closest acceptable medium for grounding the building entrance protector, entrance cable shield, or single-point ground of electronic telephony equipment. If more than 1 type of approved ground is available on the premises, the grounds must be bonded together as required in Section 250-81 of the National Electrical Code.

Grounded Building Steel — The metal frame of the building where it is effectively grounded by 1 of the following grounds: acceptable metallic water pipe, concrete encased ground, or a ground ring.

Acceptable Water Pipe — A metal underground water pipe, at least 1/2-in. (1.3 cm) in diameter, in direct contact with the earth for at least 10 ft (3 m). The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic water meters) to the point where the protector ground wire connects. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete-encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by 1 of the following types of grounds:

- Other local metal underground systems or structures — Local underground structures such as tanks and piping systems
- Rod and pipe electrodes — A 5/8-in. (1.6 cm) solid rod or 3/4-in. (2 cm) conduit or pipe electrode driven to a minimum depth of 8 ft (2.4 m)
- Plate electrodes — Must have a minimum of 2 ft² (0.185 m²) of metallic surface exposed to the exterior soil

Concrete Encased Ground — An electrode encased by at least 2 in. (5.1 cm) of concrete and located within and near the bottom of a concrete foundation or footing in direct contact with the earth. The electrode must be at least 20 feet (6.1 m) of 1 or more steel reinforcing bars or rods 1/2-in. (1.3 cm) in diameter, or at least 20 ft (6.1 m) of bare, solid copper, 4 AWG (26 mm²) wire.

Ground Ring — A buried ground that encircles a building or structure at a depth of at least 2.5 ft (0.76 m) below the earth's surface. The ground ring must be at least 20 ft (6.1 m) of 2 AWG (35 mm²), bare, copper wire.

Approved Floor Grounds



CAUTION:

If the approved ground is inside a dedicated equipment room, then these connections must be made by a qualified electrician.

Floor grounds are those grounds on each floor of a high-rise building that are suitable for connection to the ground terminal in the riser closet and to the cabinet single-point ground terminal. Approved floor grounds may include:

- Building steel
- The grounding conductor for the secondary side of the power transformer feeding the floor
- Metallic water pipes
- Power-feed metallic conduit supplying panel boards on the floor
- A grounding point specifically provided in the building for the purpose

Uninterruptible Power Supply

An optional UPS (Uninterruptible Power Supply) may be used for power holdover. The type of UPS depends on the holdover requirements. Holdover times vary from less than 10 minutes to up to 8 hours. The UPS must provide surge protection for all connected cabinets.

1. Connect the UPS to an electrical outlet capable of handling the power requirements of all cabinets:
 - a. For 100 VAC, multiply 4.5 amps times the number of cabinets.
 - b. For 120 VAC, multiply 3.8 amps times the number of cabinets.
 - c. For 200 VAC, multiply 2.3 amps times the number of cabinets.
 - d. For 220-240 VAC, multiply 2.0 amps times the number of cabinets.
2. Be sure that Cabinet A (control carrier) is connected to an “unswitched” or “always on” electrical outlet on the UPS.

CMC Power Switch



CAUTION:

The latch only removes DC power from the cabinet. Unseating the power supply removes AC power from the power supply, but not from the cabinet. To remove AC power from the cabinet, pull the AC power cord from the AC appliance connector on the rear of the cabinet. See [Figure 1-9](#).

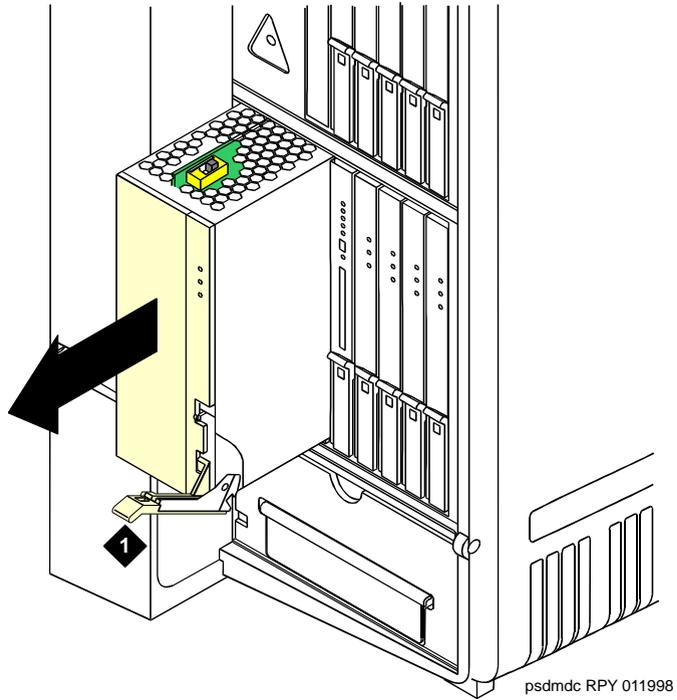


Figure Notes

1. Latch

Figure 1-9. CMC Power Supply

Connect Cabinet Grounds and Other Grounds

The following additional grounding requirements must be met:

- The approved ground wire must be green, 6 AWG (#40) (16 mm²), copper, stranded wire (this is in addition to the ground wire in the AC power cord)
- Bond all approved grounds at the single-point ground to form a single grounding electrode system

Install the Ground Block

1. Mount the ground block as shown in [Figure 1-10](#).
2. Make the cable connections as shown in [Figure 1-11 on page 1-23](#).

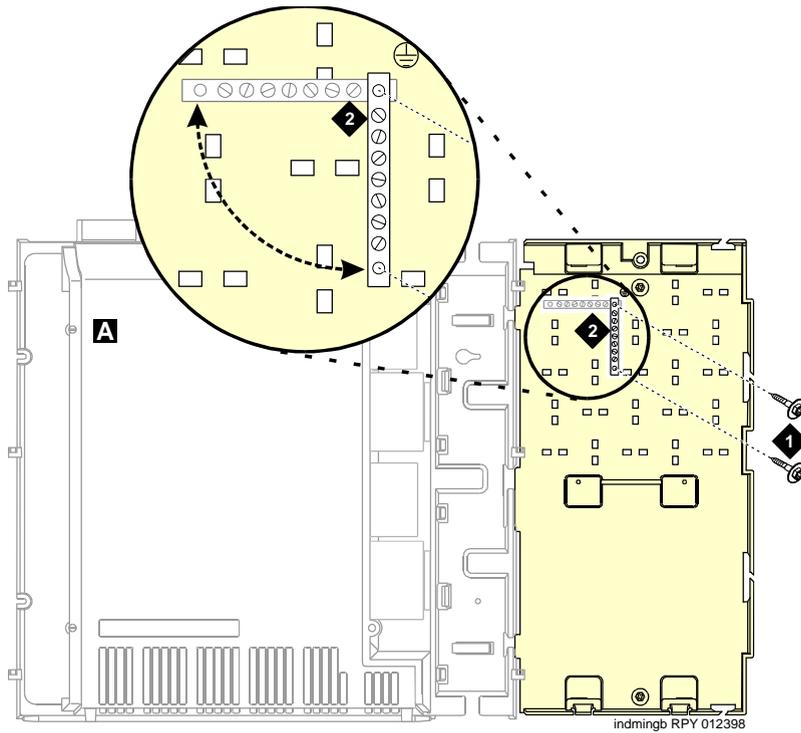


Figure Notes

1. #12 x 1-inch shoulder screws
2. Single-point ground block

Figure 1-10. Ground Block Installation to Right Panel

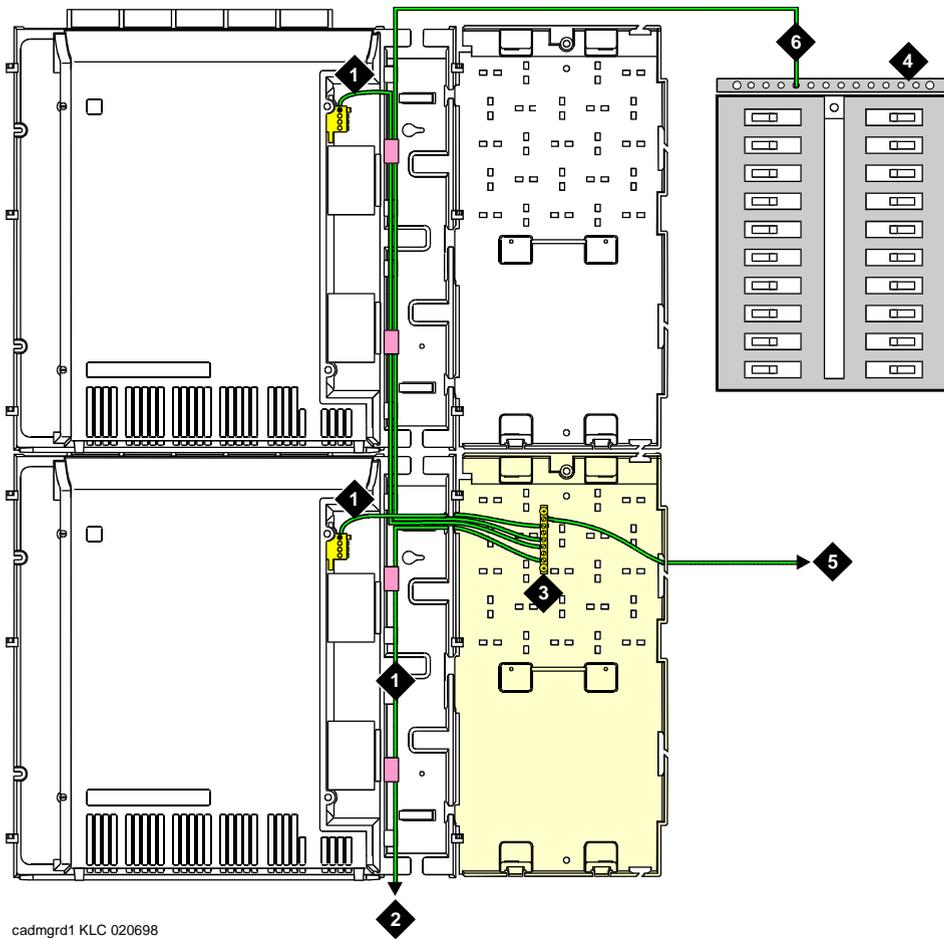


Figure Notes

- | | |
|--|---|
| 1. 6 AWG (#40) (16 mm ²) cabinet ground wire | 4. AC load center single-point ground |
| 2. 6 AWG (#40) (16 mm ²) ground wire to next cabinet | 5. 10 AWG (#25) (6 mm ²) wire to coupled bonding conductor (CBC) |
| 3. Single-point ground block | 6. 6 AWG (#40) (16 mm ²) ground wire from single-point ground block to the AC load center single-point ground |

Figure 1-11. Typical Cabinet Grounding

Install Coupled Bonding Conductor

The Coupled Bonding Conductor (CBC) provides for mutual inductance coupling between the CBC and the telephone cables that are exposed to lightning. The conductor can be a 10 AWG (#25) (6 mm²) wire tie wrapped to the exposed cables, a metal cable shield around the exposed cables, or 6 spare pairs from the exposed cable.

In a high rise building, connect the CBC to an approved building ground on each floor. To provide the coupled bonding protection:

1. Connect 1 end of the conductor to a telephone cable building entrance protector ground that is connected to an approved ground.
2. Route the rest of the conductor next to the exposed telephone cables being protected until they reach the cross-connect nearest to the telephone system.
3. Position the non-exposed telephone cables at least 12 inches (30.5 cm) away from exposed telephone cables whenever possible.
4. Terminate the other end to the single-point ground block provided for the telephone system.

Connect and Route Cabinet AC Power Cords



CAUTION:

The AC power cords may connect to a properly rated power distribution unit, individual AC power receptacles, or to a UPS. See [Figure 1-12 on page 1-25](#).

1. Be sure the circuit breakers at the AC load center are **OFF**.
2. Connect Cabinet A to an “unswitched” or “always on” electrical outlet.

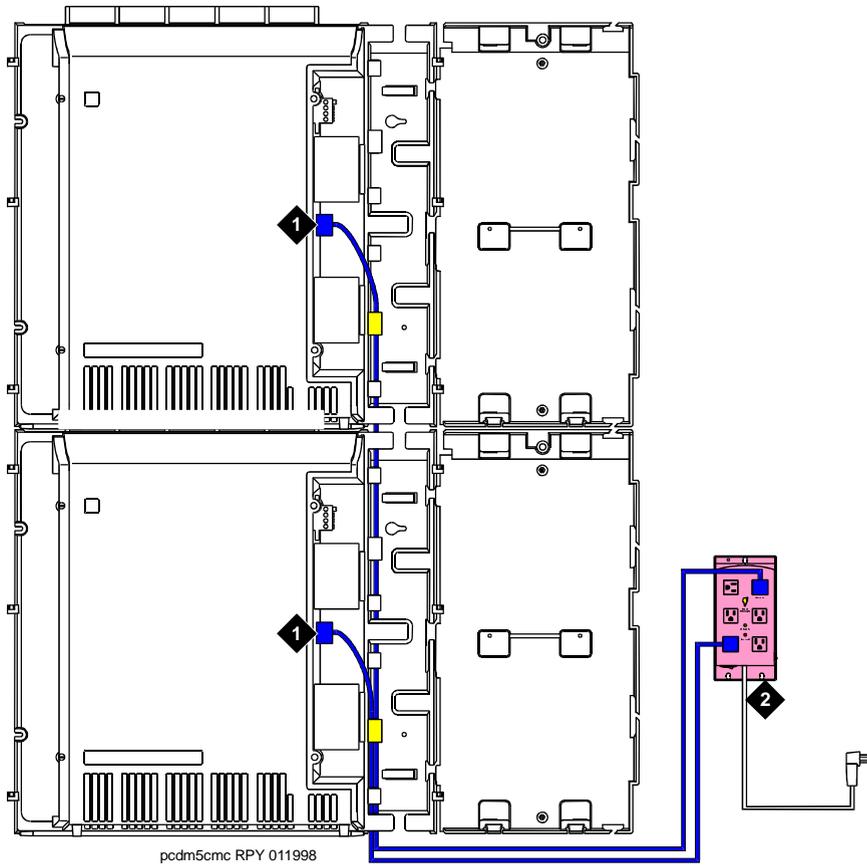


Figure Notes

- 1. Cabinet AC power cord
- 2. Surge-protected AC power distribution unit (120 VAC systems) (optional)

Figure 1-12. Routing AC Power Cords to a Power Distribution Unit

Cable the System

If there is more than one cabinet, you need to interconnect all the cabinets in the system.

Install Processor Interface Cable — Cabinet A Only and TDM/LAN Bus Terminator

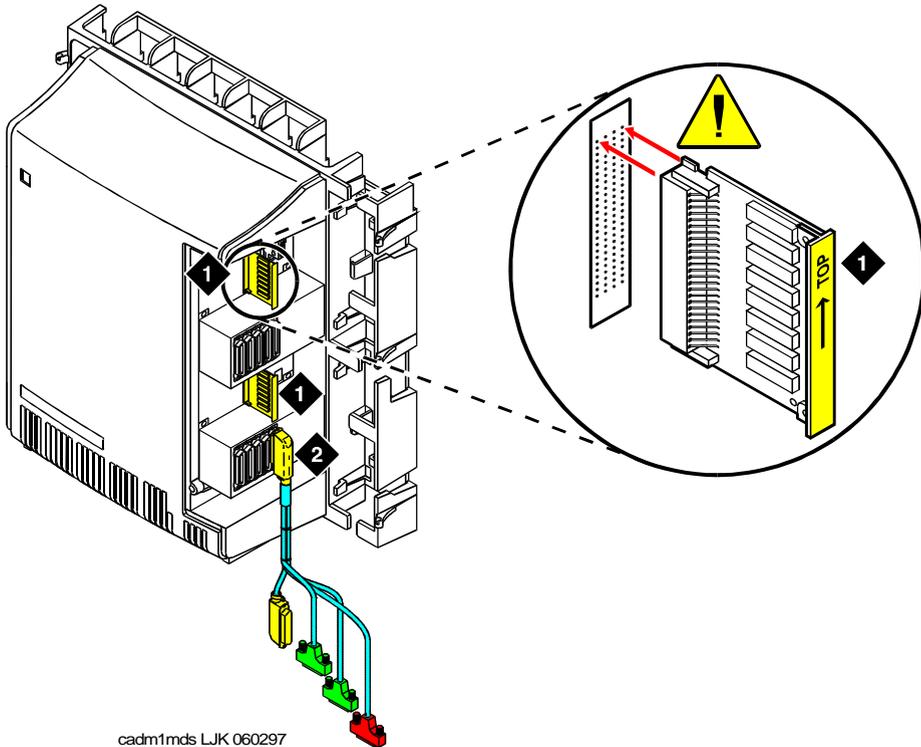


Figure Notes

1. TDM/LAN bus terminator
2. Processor interface cable (cabinet A only)

Figure 1-13. System Cable Connections

1. Connect the Processor Interface Cable to slot 1 of Cabinet A. See [Figure 1-13](#).
2. Install the TDM/LAN bus terminators.

Cable the Multi-Cabinet System — Wall-Mount

Vertically Mounted System

1. Route the TDM/LAN bus cables through the cable trough.
See [Figure 1-14](#).

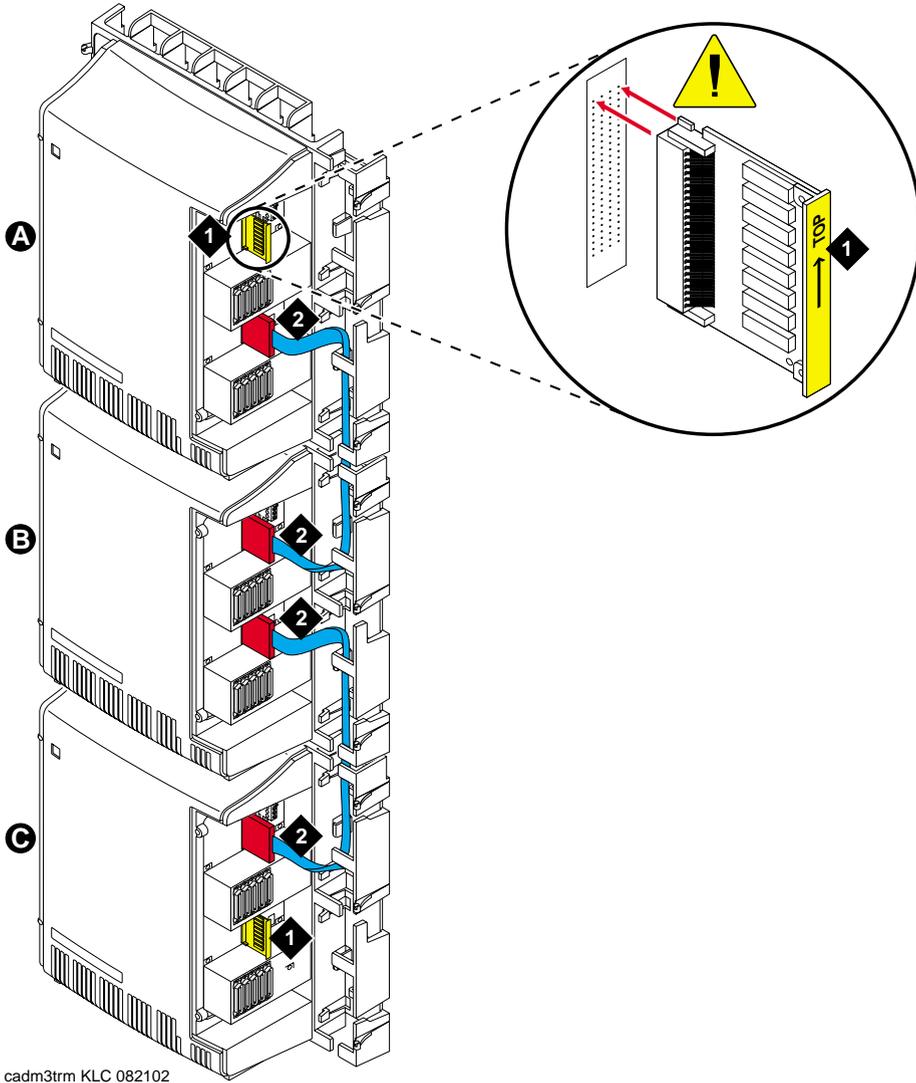


Figure Notes

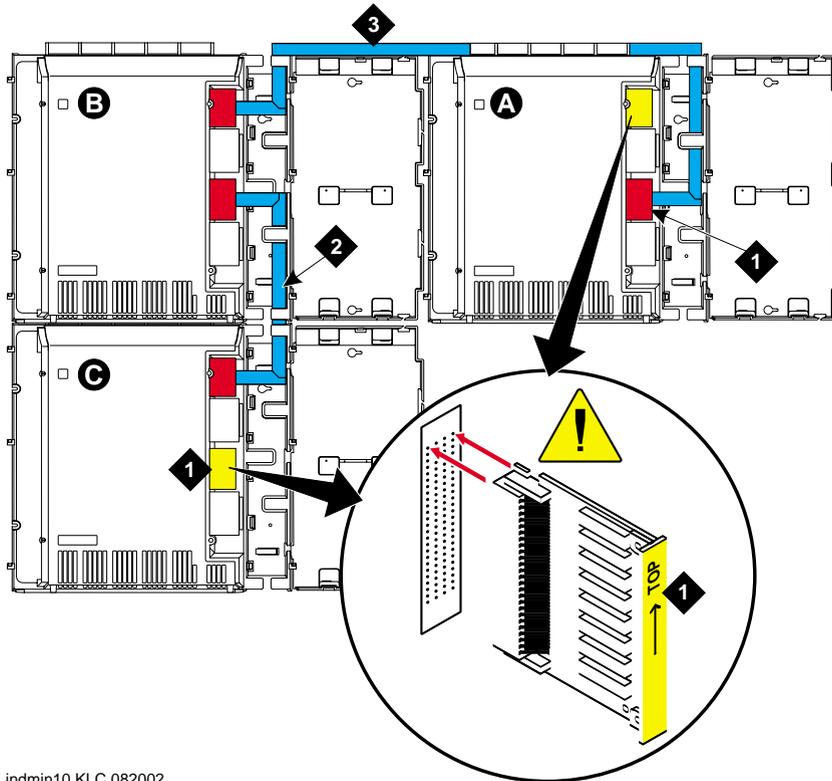
- 1. TDM/LAN bus terminator (at each end of the TDM/LAN bus)
- 2. Vertical TDM/LAN bus cable (List 8)

Figure 1-14. TDM/LAN Bus Cables and Terminators

Vertically and Horizontally Mounted System

Only 1 horizontal TDM/LAN Bus cable is allowed per system. See [Figure 1-15](#).

- 1. Route the TDM/LAN bus cables through the cable trough.



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Figure Notes

- 1. TDM/LAN bus terminator (at each end of the TDM/LAN bus)
- 2. Vertical TDM/LAN bus cable (List 8)
- 3. Horizontal TDM/LAN bus cable (List 9)

Figure 1-15. System Cable Connections

Install Main Distribution Frame (MDF) and External Modem

Install the MDF



CAUTION:

The optional MDF is a special 110 cross-connect field and is smaller than standard 110 cross-connect hardware. Do not install standard 110 hardware inside the right panel.

 **NOTE:**

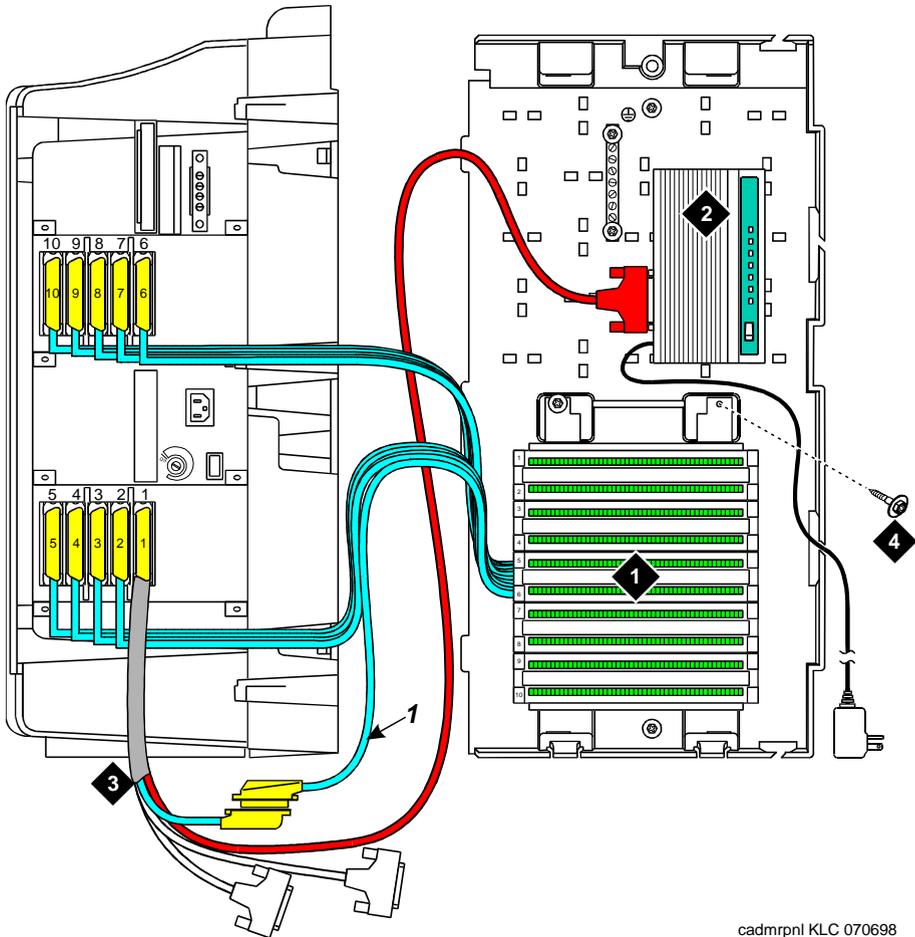
The depth of any equipment installed inside the right panel must not exceed 2.5 inches (6.3 cm), otherwise the right cover panel cannot fit over the right panel.

The optional MDF represents the trunk/auxiliary field.

1. Mount the optional MDF to the right panel using one of the following:
 - For bottom-mount MDFs, refer to [“Bottom-mounted MDF with Modem” on page 1-30](#).
 - For top-mount MDFs (in cabinets other than cabinet A), refer to [“Top-Mounted MDF” on page 1-32](#).
 - For dual-mount MDFs, refer to [“Dual MDFs” on page 1-33](#).

Bottom-mounted MDF with Modem

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the right panel. See [Figure 1-16 on page 1-31](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.



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Figure Notes

- 1. Main distribution frame (MDF)
- 2. External modem
- 3. Processor interface cable (connect P2 to modem, connect J1 to cable 1 on MDF)
- 4. #12 x 1-inch shoulder screw

Figure 1-16. Typical Bottom-Mount MDF and Modem Cable Routing

Top-Mounted MDF

Use this configuration when the cabinet is wall-mounted, and is near the floor. Do not use this configuration for cabinet A.

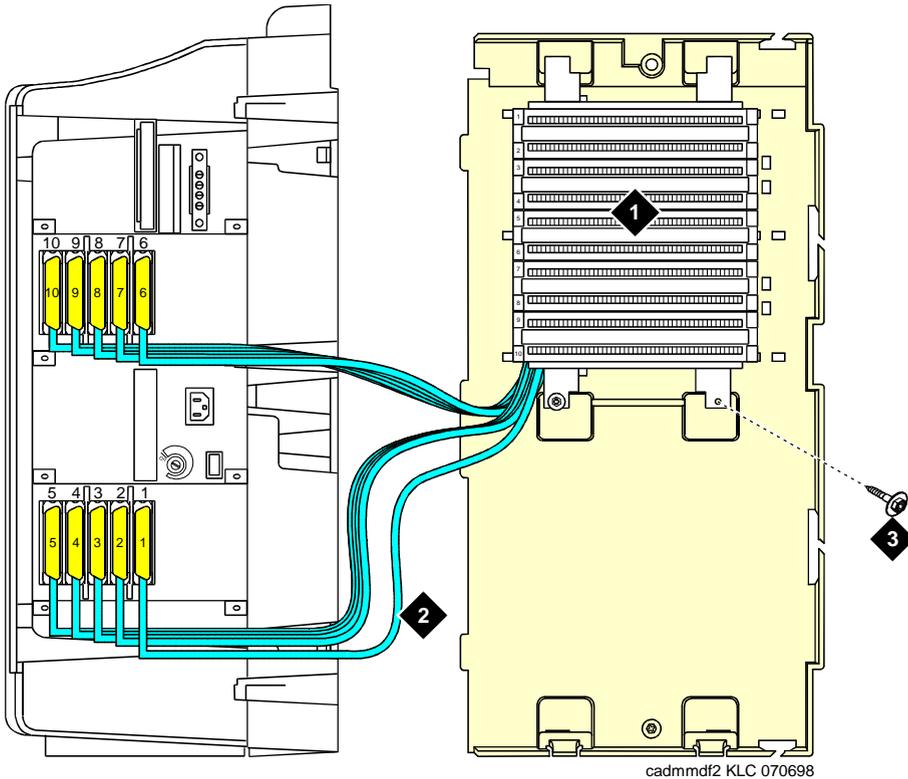


Figure Notes

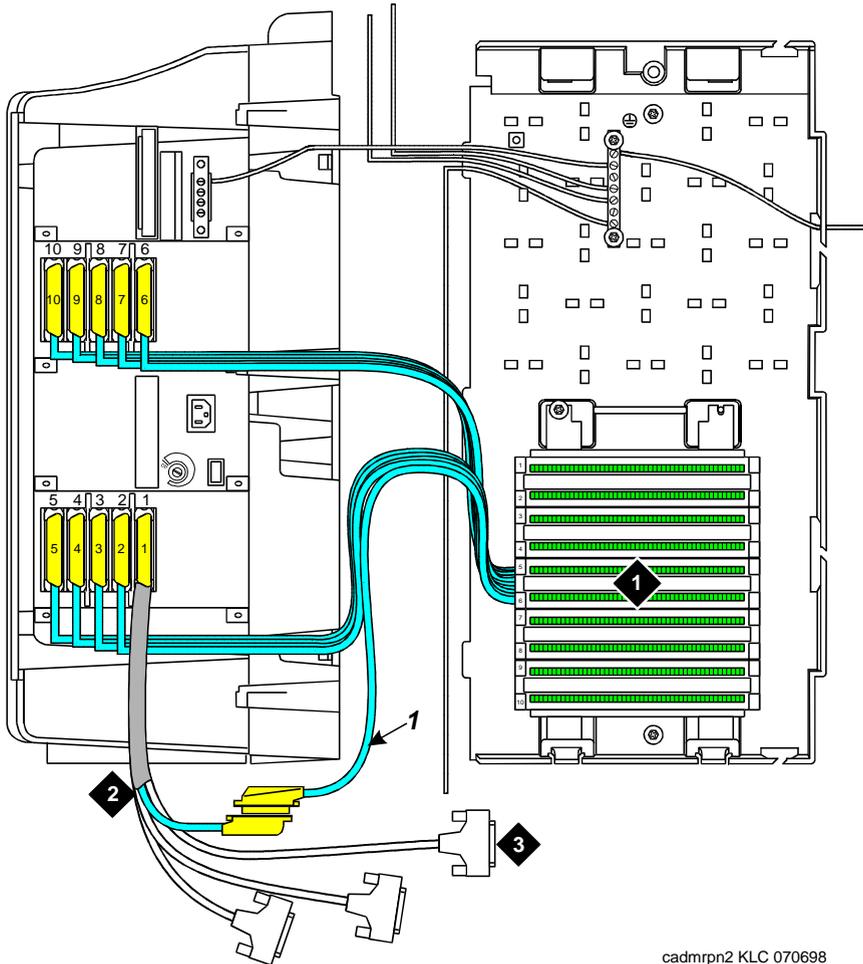
1. Main distribution frame (MDF)
2. Connect cable 1 to slot 1
3. #12 x 1-inch shoulder screw

Figure 1-17. Typical Top-Mount MDF Cable Routing

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the right panel. See [Figure 1-17](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.

Dual MDFs

Use this configuration when mounting two MDFs.



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Figure Notes

1. Main distribution frame (MDF)
2. Connect cable 1 to slot 1
3. To external modem

Figure 1-18. Preliminary Dual-Mount MDF Cable Routing

1. On the rear of the MDF, cut the cable tie securing the top 5 cables to the MDF mounting frame.
2. Mount the MDF to the bottom position on the right panel. See [Figure 1-18 on page 1-33](#).
3. Secure all 10 cables to the bottom left bracket on the MDF with a cable tie.
4. Mount the second MDF to the top position on the right panel. See [Figure 1-19](#).

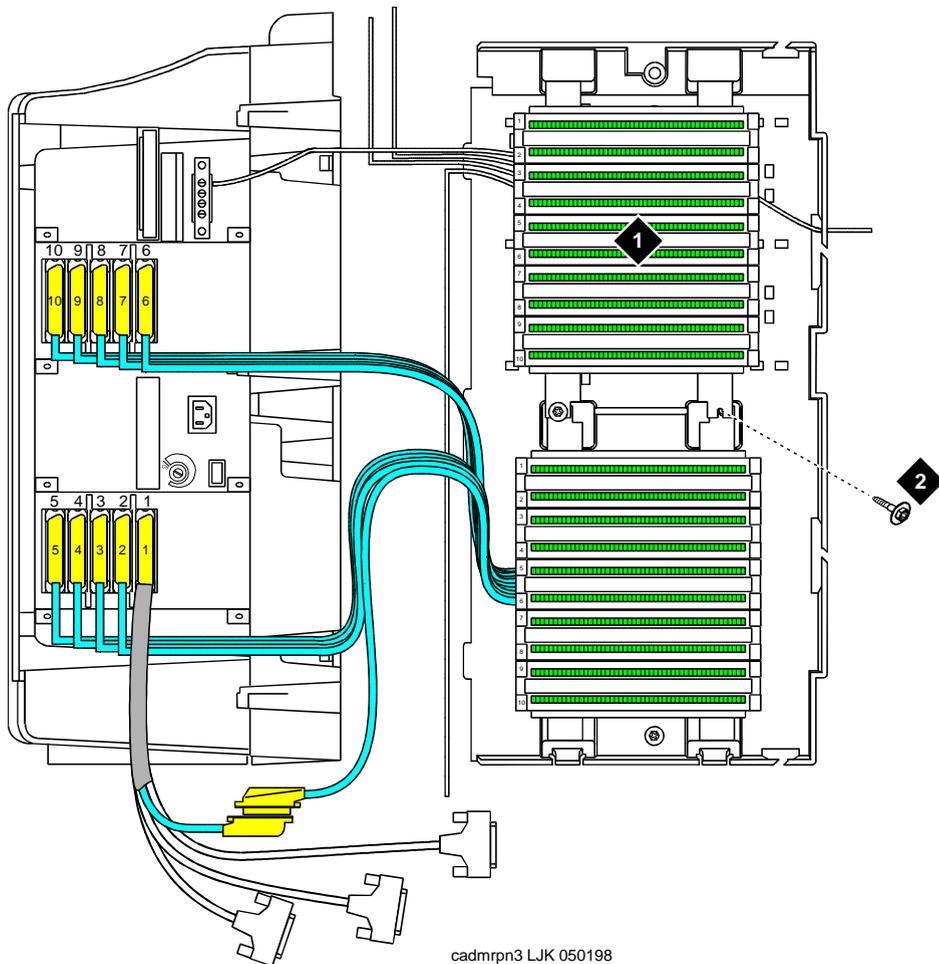


Figure Notes

1. Main distribution frame (MDF)
2. #12 x 1-inch shoulder screw

Figure 1-19. Typical Dual-Mount MDF Cable Routing

Install the External Modem

The U.S. Robotics Sportster Model USR 33.6 EXT external modem is the recommended external modem. Avaya CMC1 Media Gateways operate with this modem set to the factory default settings.

 **NOTE:**

You may use a locally obtained, type-approved external modem (33.6 kbps and V.34 protocol). Contact your Avaya Inc. representative for more information.

1. Use installer-provided hardware to mount the modem. See [Figure 1-16 on page 1-31](#). If top-mounting MDFs or dual-mounting MDFs, mount the external modem to the plywood in a location which allows the standard connection to the interconnect cable.
2. Route the MODEM cable (P2) from the Processor Interface Cable through the cable trough and to the modem.
3. Connect the cable to the modem. Refer to [“Processor Interface Cable Pinout” on page 2-15](#) for the pinout of the modem cable.
4. Plug the modem power cord into an electrical outlet and turn on the modem.
5. Modem setup and administration is performed in [“External Modem Option Settings” on page 1-107](#).

Install Equipment Room Hardware

Refer to *DEFINITY Communications System Generic 1 and Generic 3 Main Distribution Field Design*, 555-230-630, for more information.

Cross-Connect the Cabinets to the MDF

1. Cross-connect the ports on the trunk and line circuit packs to the MDF as required. See [Figure 1-21 on page 1-40](#).

Circuit Pack Installation



CAUTION:

When handling circuit packs or any components of a DEFINITY System, always wear an authorized wrist ground strap. Connect the strap to the ground connector provided on the system cabinet.



NOTE:

Unlike previous releases of DEFINITY, the circuit pack slots in the CMC are not purple or white. This is because all of the circuit pack slots in the CMC are “universal slots.” That is, any slot can contain any type of *port* circuit pack.

Circuit Pack Slot Loading

In general, load the circuit packs so that the number of packs in each cabinet is about equal and the trunks and lines are evenly distributed among the cabinets. See [Figure 1-20 on page 1-37](#).

1. Install the TN2402 Processor circuit pack in slot 1 of Cabinet A.
2. Install the TN2182B Tone-Clock circuit pack in slot 2 of Cabinet A.

Load all port circuit packs starting with Cabinet A first, Cabinet B next, and so forth. Return to Cabinet A and repeat.

3. A TN744D Call Classifier/Tone Detector circuit pack may be required in systems with heavy traffic. Install the TN744D into any port slot. Slot 1 of Cabinet B is preferred.
4. See [Table 1-4 on page 1-38](#) for the recommended circuit pack layout for the control carrier and the port carriers.

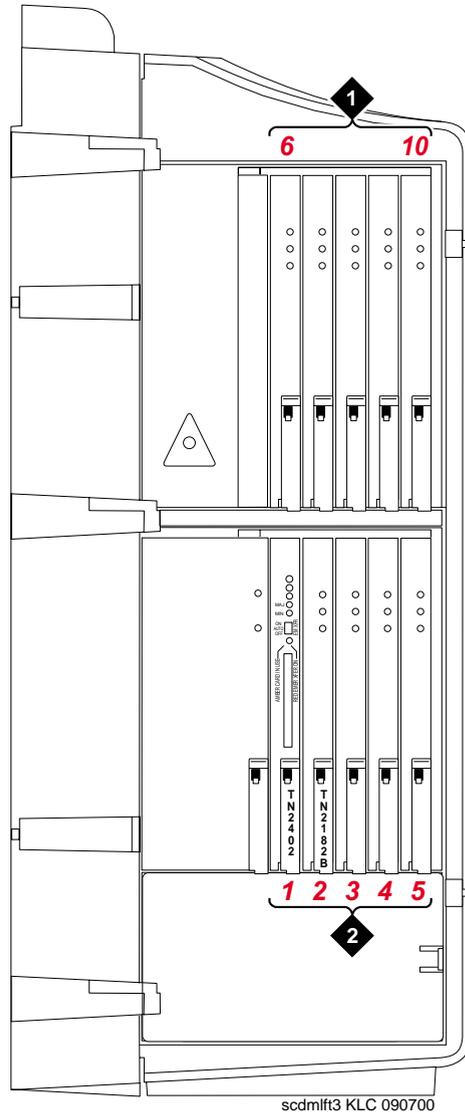


Figure Notes

- 1. Line circuit pack slots
- 2. Trunk circuit pack slots

Figure 1-20. Control Carrier Slot Layout

Table 1-4. Circuit Pack Installation Order (Loading)

Function	Apparatus Code	Load From	Notes
Processor	TN2402	Slot 1 in Cabinet A	
Tone Clock	TN2182B	Slot 2 in Cabinet A	
Call Classifier/ Tone Detector	TN744D	Slot 1 of Cabinet B	If slot is not available, load in first available slot from slot 1.
DEFINITY AUDIX	ED-1E546 (TN566/TN567)	Slots 6-9	TN566 and TN567 require 4 slots with overlap into area to the left of slot 6. In any other position, 5 slots are required.
DEFINITY AUDIX Slim	TN568	Slot 6	TN568 requires 2 slots. If there is a fiber-optic interface and slot 6 is occupied, use slots 7 and 8.
Announcement	TN750C	Lower Left	
Speech Synthesizer	TN725B	Lower Left	
DS1/E1, ISDN PRI	TN464GP, TN767E, TN2242, TN2464BP (Guestworks and BCS only)	Lower Left	Maximum of 8 ISDN-PRI. Total number of ISDN-PRI plus number of ISDN-BRI circuit packs must not exceed 8.
ISDN-BRI Trunk	TN2185	Lower Left	Maximum of 4
CO Trunk	TN747B, TN465C, TN2199, TN2147C, TN2138, TN438B	Lower Left	
DID Trunk	TN753, TN2139, TN2146, TN436B, TN459B	Lower Left	
Tie Trunk	TN760D, TN497, TN2140B	Lower Left	
Auxiliary Trunk	TN763B	Lower Left	
Modem Pool	TN758	Lower Left	
Data Line	TN726	Upper Left	
Digital Line	TN754C, TN2181, TN2224/B, TN2214/B	Upper Left	
Analog Line	TN746B, TN2183, TN2215, TN468B, TN791, TN2214	Upper Left	

Continued on next page

Table 1-4. Circuit Pack Installation Order (Loading) — Continued

Function	Apparatus Code	Load From	Notes
Hybrid Line	TN762B	Upper Left	
Radio Controller	TN789	Upper Left	
ISDN-BRI 4-Wire S/T-NT Line (A-Law)	TN556C	Upper Left	

1. Cross-connect the port circuit packs to the MDF. See [Figure 1-21 on page 1-40](#).

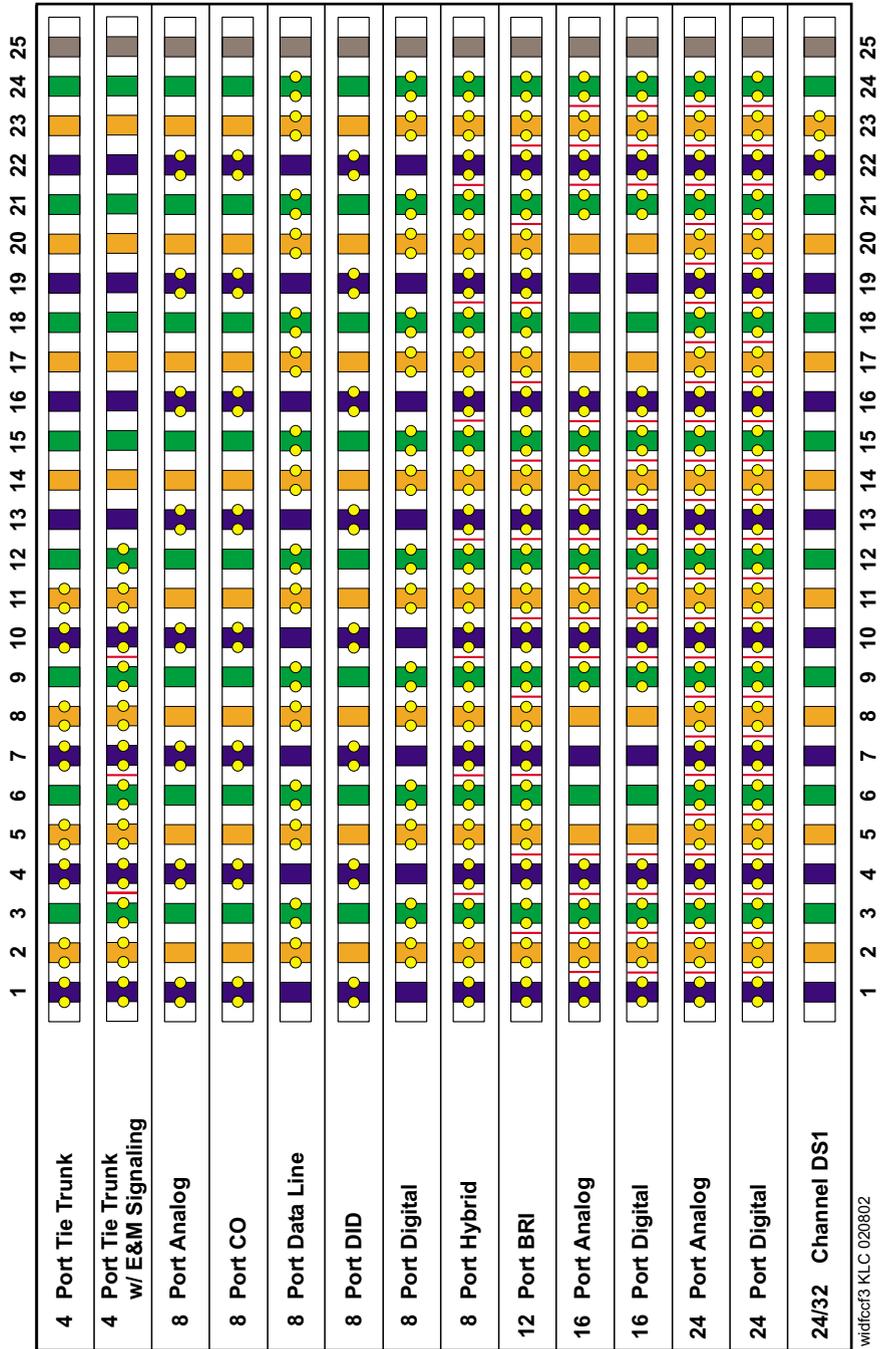


Figure 1-21. Example MDF Connections

Off-Premises Circuit Protection

Protection from hazardous voltages and currents is required for all off-premises (out of building) trunks, lines, and terminal installations. Both over-voltage protection (lightning, power induction, and so forth), and sneak current protection are required. Sneak current protectors must be either UL listed/CSA certified, or must comply with local safety standards.

Sneak current protectors must have a maximum rating of 350 mA, and a minimum voltage rating of 600V, or as required by local regulations. The following devices protect the system from over-voltages:

- Analog trunks use the 507B sneak protector or equivalent. Over-voltage protection is normally provided by the local telephone company.
- Analog voice terminals use one of the following types of combined over-voltage and sneak current protection, or equivalent:
 - Carbon block with heat coil for UL code 4B1C
 - Gas tube with heat coil for UL code 4B1E-W
 - Solid state with heat coil for UL code 4C1S
- DCP and ISDN-BRI terminals use the solid state 4C3S-75 with heat coil protector, or equivalent
- DS1/E1/T1 circuits require isolation from exposed facilities. This isolation may be provided by a CSU (T1), LIU (E1), or other equipment that provides equivalent protection

Install Sneak Fuse Panels

Sneak current protection is required between the incoming RJ21X or RJ2GX network interface and the system for both trunk and off-premises circuit packs. The model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. See [Figure 1-22](#).

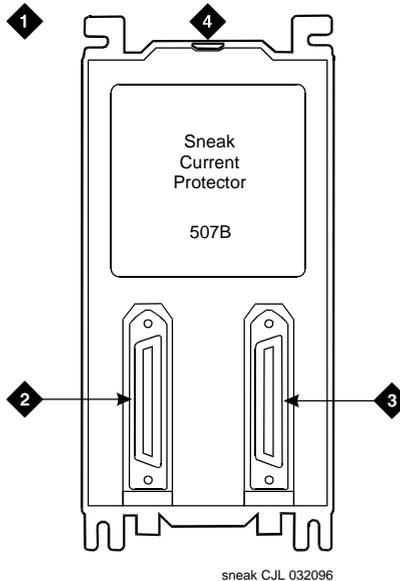


Figure Notes

- | | |
|--|--|
| 1. Sneak current protector (PEC 63210) | 3. 25-pair female connector (Out) |
| 2. 25-pair male connector (In) | 4. 220029 fuses (inside panel). Use a small screwdriver to pry top cover off |

Figure 1-22. Model 507B Sneak Fuse Panel

Approximately 8 inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Connector cables connect the network interface to the sneak fuse panel. Also, use 157B connecting blocks equipped with SCP-110 protectors for sneak current protection.

NOTE:

Sneak current protectors with a rating of 350 mA at 600 V must be UL listed for United States installations and CSA certified for Canadian installations. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 Sneak Fuses (and 2 spares). Use the SCP-110 protectors with 110-type hardware and on the 507B Sneak Fuse Panel. The SCP-110 Protectors can be ordered separately and installed on the 157B connecting block. Fifty protectors are required per block.

1. Install the 507B near the network interface or MDF with locally-obtained #12 x 3/4-inch screws (or equivalent).

Table 1-5 is a pinout of the cable wiring and associated fuse numbers.

Table 1-5. Sneak Fuse Connector Pinout

Connector Pin Numbers	Pair/Fuse Number
26/1	1
27/2	2
28/3	3
29/4	4
30/5	5
31/6	6
32/7	7
33/8	8
34/9	9
35/10	10
36/11	11
37/12	12
38/13	13
39/14	14
40/15	15
41/16	16
42/17	17
43/18	18
44/19	19
45/20	20
46/21	21
47/22	22
48/23	23
49/34	24
50/25	25

Label the Main Distribution Frame

Figure 1-23 shows the graphic symbols used on the supplied labels for the system, cross-connections, information outlets, and cables.

1. Write the floor and building identification on each label as required.
 2. Insert the labels into the plastic holders.
 3. Snap the holders into the appropriate locations on the MDF.
-

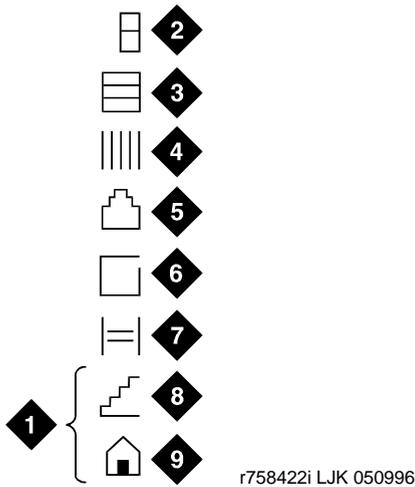


Figure Notes

- | | |
|--------------------------------------|--------------------------|
| 1. Floor and building identification | 6. Site/satellite closet |
| 2. Cabinet | 7. Tie circuit |
| 3. Carrier | 8. Floor |
| 4. Slot | 9. Building |
| 5. Information outlet | |

Figure 1-23. Label Graphic Symbols and Nomenclature

1. Label the cables as required using the supplied labels. Label code number 220A (Comcode 103970000) contains all required labels.

Set Up System Access

To administer the Avaya CMC1 Media Gateway, you must be able to access the system. Avaya CMC1 Media Gateways do not require a dedicated management terminal. A PC/laptop equipped with Avaya Site Administration is the primary support access for system initialization, aftermarket additions, and ongoing maintenance.

The following sections describe

- [Installing and using Avaya Site Administration](#)
- [Connecting a PC](#)

Installing and using Avaya Site Administration

To install Avaya Site Administration, your laptop/PC must meet the minimum requirements described in [Table 1-6](#):

Table 1-6. Minimum requirements for Avaya Site Administration

Operating systems: MS Windows 95 MS Windows 98 MS Windows NT 4.0 MS Windows 2000	Processor/RAM: 486SL/66/16 MB Pentium/32 MB Pentium/64 MB Pentium-class 300 MHz/64 MB
Graphics adapter	SVGA with minimum screen resolution of 800 x 600
Floppy disk drive	3-1/2 in. 1.44-MB floppy disk drive
CD-ROM	CD-ROM drive (required to install Avaya Site Administration from CD)
Available hard disk space	A minimum of 100-MB free hard disk space is required. The requirement for disk space depends on the size and number of configuration data sets.
Printer port	Standard PC or network printer port is required for connecting to a printer to produce station button labels.
Network adapter	May be required for network access to AUDIX and other network-connected systems.

Continued on next page

Table 1-6. Minimum requirements for Avaya Site Administration —

Free serial ports	<p>One free serial port capable of 9600-bps operation is required for a connection to each serial device (ADU, modem, data module) or direct connection to an Avaya CMC1 Media Gateway.</p> <p>We recommend that PCs have at least a 16550A UART or 16550A UART simulator (capable of 56 kbps DTE-speed connections). USB and internal modems should emulate this hardware.</p> <p>A second serial port is required for simultaneous connection to AUDIX through a serial connection.</p>
-------------------	---

To install Avaya Site Administration on your computer:

1. Place the Avaya Site Administration CD in the CD-ROM drive and follow the installation instructions.
2. To start Avaya Site Administration, click on **Start > Programs > Avaya Site Administration**.

Avaya Site Administration supports SAT emulation, which is directly equivalent to using the SAT (see [Figure 1-24 on page 1-47](#)). Avaya Site Administration also supports a whole range of other features, including the graphically enhanced DEFINITY interface (GEDI) (see [Figure 1-25 on page 1-47](#)) and Data Import. For more information refer to these Help menu items:

- Guided Tour
- Show Me

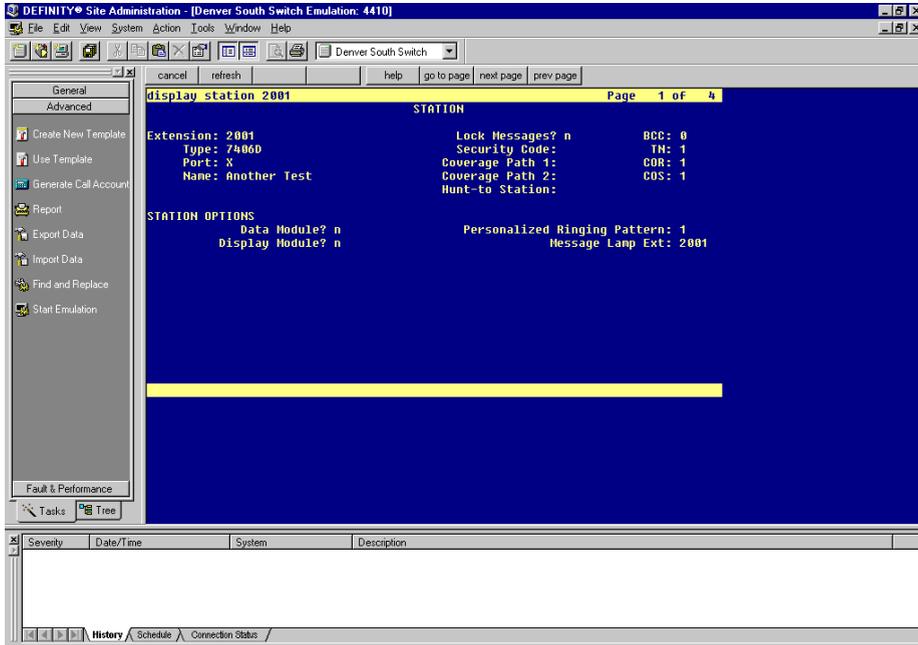


Figure 1-24. Typical Avaya Site Administration screen in SAT emulation mode

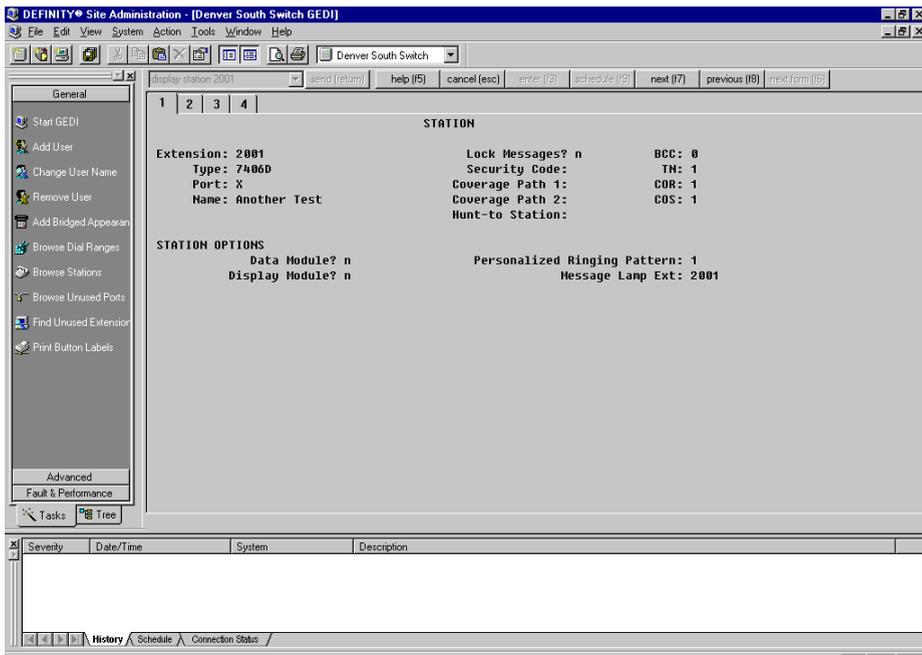


Figure 1-25. Typical Avaya Site Administration screen in GEDI mode

Connecting a PC

You can connect your PC/laptop either directly (50 ft [15 m] or less) or remotely through a data module or a modem.

Direct connection

You can connect directly from the PC if it is 50 ft (15 m) or less from the Avaya CMC1 Media Gateway.

1. Connect the equipment as shown in [Figure 1-26](#).



CAUTION:

For a DC-powered system, install an EIA 116A Isolator (comcode 106005242) in series between the cable and the TERM, DOT, or Terminal Active connector.

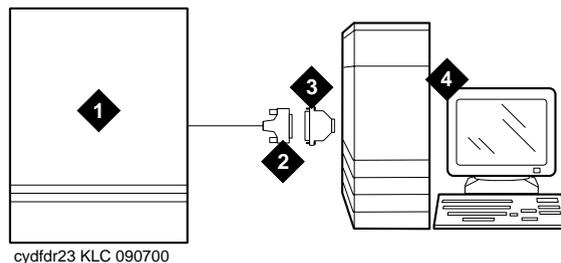


Figure Notes

- | | |
|-------------------------------------|--|
| 1. Avaya CMC1 Media Gateway (PPN) | 3. 9-to-25 pin adapter if needed |
| 2. 50-ft (15-m) M25A cable (RS-232) | 4. Computer with Avaya Site Administration |

Figure 1-26. A typical direct connection

Remote connection

You can remotely access the Avaya CMC1 Media Gateway by:

- [Connecting through a data module](#)
- [Connecting by analog modem](#)

Connecting through a data module

If more than 50 ft (15 m) from the Avaya CMC1 Media Gateway, you can connect the PC through a data module.

1. Connect the equipment as shown in [Figure 1-27](#).

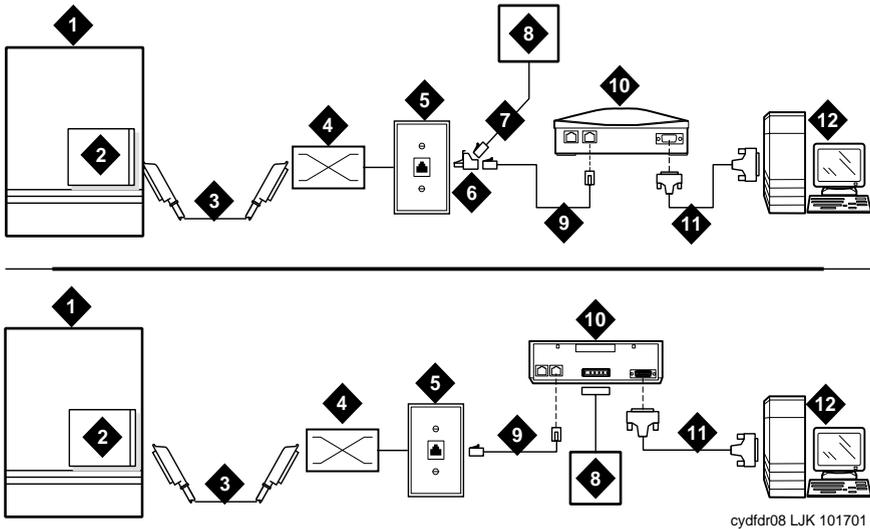


Figure Notes

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Avaya CMC1 Media Gateway 2. Digital line circuit pack 3. B25A 25-pair cable 4. Main distribution frame (MDF) 5. 103A or modular wall jack 6. 400B2 adapter 7. D6AP power cord (8400B+ only) | <ol style="list-style-type: none"> 8. Data module power supply 9. 7-ft (2-m) D8W modular cord 10. Data module (8400B+ [top] or 7400B+ [bottom]) 11. 50-ft (15-m) M25A cable (RS-232) 12. Computer with Avaya Site Administration |
|--|---|

Figure 1-27. A typical remote connection using an 8400B (top) or 7400B (bottom) data module

NOTE:

With a 7400A or 7400B+ data module, use a 4-wire digital line circuit pack. With the 8400B+ data module, use a 2-wire digital line circuit pack.

In place of a 7400B+ data module, you can use a 7400A data module. If you do, set the 7400A to DCE Mode.

2. Wire the digital line circuit pack to the wall jack as follows:
 - For a 7400B+, wire to the second and third pair of the wall jack.
 - For an 8400B+, wire to the first pair of the wall jack.

Data module settings

1. Cycle the power to the data module. The unit performs a self test and displays its operating mode.
2. Observe the display.
 - a. If the display reads DCE mode, proceed to the next section.
 - b. If the display reads DTE mode, complete the following steps:
 1. Remove the power cord from the unit.
 2. Remove the cover from the top rear of the unit.
 3. Remove the mode select circuit board and turn it around.
 4. Replace the cover.
 5. Connect the power cord. The unit performs a self test.

NOTE:

The power LED must be steady on. If the power LED is blinking, the data module is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jacks, and data module.

Adding a data module

1. Type **add data-module *number*** or **add data-module next**.
2. In the `Type` field, type **pdm** and press Enter.
3. In the `Port` field, type the location of the digital line circuit pack connected to the data module (for example 01A1503).
4. If system access ports and hunt groups have not been set up, set them up. Refer to *Administrator's Guide for Avaya MultiVantage Software*.

Testing hardware connections

In the following table, find your data module and follow the instructions for testing and troubleshooting it.

Type of Data Module	How to Test and Troubleshoot
8400B+	The red LED should be steady on. If the red and green LEDs are blinking, the unit is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and the 8400B+.
7400B+	The Power and TR LEDs should be steady on. If the Power and Data LEDs are blinking, the unit is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and the 7400B+.
7400A	Set the 7400A to DCE mode. The Power LED must be steady on. The DTR, DSR, DCD, RTS, and CTS settings must be highlighted in the display. If the Power LED is blinking, the data module is not communicating with the Avaya CMC1 Media Gateway. Check the wiring at the MDF, wall jack, and 7400A.

Setting the operating mode

1. Connect an RS-232 cable from the DSA/DNA computer to the data module. If you are using an 8400B+, connect the DSA/DNA computer to the data module using the supplied adapter cable.
2. Using a terminal emulator, connect to the serial port to which the data module is connected, and set the emulation to *vt100* mode.
3. Type **AT** at the prompt and press **Enter**. The data module should return an OK. If it does not, be sure that a standard RS-232 or EIA-232 cable is connected (not a null modem cable).
4. Set the operating mode as described in the following table.

Type of Data Module	How to set the operating mode
8400B+	Type AT&F and press Enter . Type ATS24=1 and press Enter . Type AT&W0 and press Enter to save the operating mode into non-volatile RAM.
7400A 7400B+	Type AT&F and press Enter . Type AT&W0 and press Enter to save the operating mode into non-volatile RAM.

5. Disconnect the terminal from the data module and reconnect the data module to the system cabling.

Setting the 7400B+ options

1. Set the DIP switches for the 7400B+ using [Table 1-7](#). The DIP switches are located inside the unit. To access them
 - a. Remove the power cord from the unit.
 - b. Remove the cover from the top rear of the unit.
 - c. Set the dip switches.
 - d. Replace the cover.
 - e. Connect the power cord. The unit performs a self test.
2. If any switches were set in step 1, cycle the power to the data module so that the firmware can read the new switch settings.

Table 1-7. DIP Switch Settings (7400B+)

Option	DIP Switch	Setting
No Telephone Connected	1	On
Data Metering	5	Off
Suppress Touch-tone/Dial Tone	6	Off
Speakerphone Disable/Enable	7	Off
Busyout on Local Loop	8	Off
Unused DIP Switches	2, 3, and 4	Off

Connecting by analog modem

You can connect a PC/laptop to the Avaya CMC1 Media Gateway through a modem.

1. Connect the equipment as shown in [Figure 1-28](#).

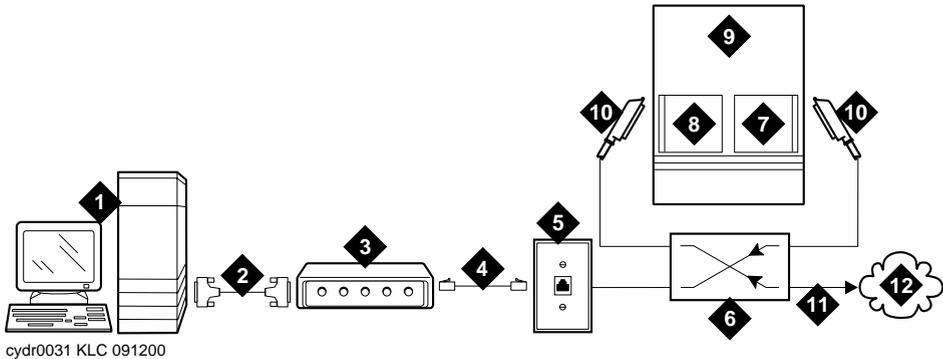


Figure Notes

- | | |
|--|---|
| 1. Computer with Avaya Site Administration | 8. Analog trunk circuit pack
Packet data line
Data line |
| 2. 50-ft (15-m) M25A cable (RS-232—
9-25 pin adapter if needed) | 9. Avaya CMC1 Media Gateway |
| 3. Analog modem | 10. B25A cable |
| 4. 7-ft (2-m) D2W modular cord | 11. Analog line |
| 5. 103A or modular wall jack | 12. Central office |
| 6. Main distribution frame (MDF) | |
| 7. Analog line circuit pack | |

Figure 1-28. A typical remote connection through a modem

Follow these steps to connect to the Avaya CMC1 Media Gateway through a modem.

1. Connect the computer to the modem.
2. Connect an analog telephone line to the left most analog-line port on the modem.
3. Make sure that the modem's DIP switches are set as shown in [Table 1-8 on page 1-54](#).

Table 1-8. 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

4. Plug the modem into an AC power outlet.
5. Turn on the modem.
6. Set the following port settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	hardware

Set Ringing Option

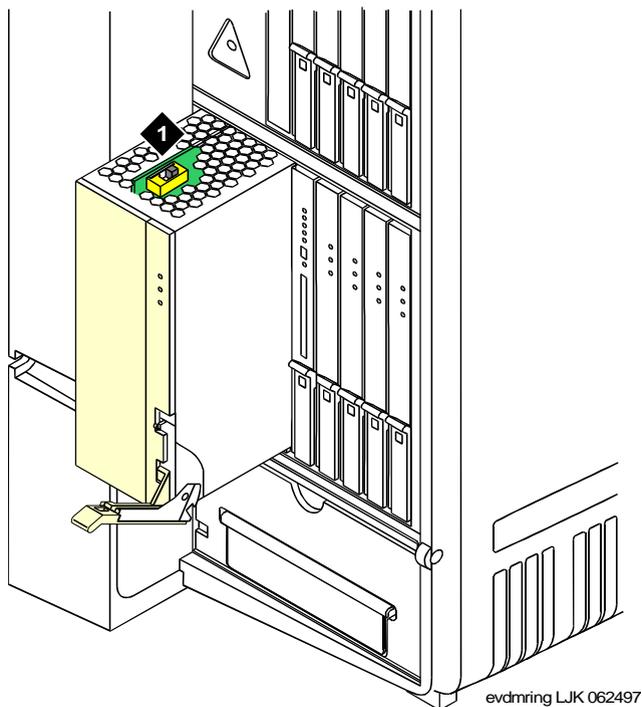


Figure Notes

1. Ringing option switch

Figure 1-29. Ringing Option Selection

1. Check the ringing option for the country of installation (20 Hz, 25 Hz, or 50 Hz). See [Figure 1-29](#).
2. Set the slide switch to the proper setting. Refer to the label on the side of the power unit.

Activate and Administer the System

⇒ NOTE:

The Avaya Avaya CMC1 Media Gateway is a PPN cabinet only. Cabinet A is the control carrier and Cabinets B and C are port carriers.

Power Up System

Single Cabinet Installations

1. Insert the translation card into the slot in the TN2402 Processor circuit pack.
2. Fully seat the 650A Power Unit in the cabinet.
3. Set the circuit breaker at the AC load center to ON. This starts the system reboot process. In about 2 minutes, verify the screen displays: `Login:`

Multi-Cabinet Installations

1. Insert the translation card into the slot in the TN2402 Processor circuit pack.

⇒ NOTE:

Power up the port carriers first and the control carrier last.

2. Set the circuit breakers at the AC load center to ON.
3. Insert the power supplies into the port cabinets.
4. Insert the power supply into the control carrier. This starts the system reboot process. In about 2 minutes, verify the terminal screen displays: `Login:`

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.

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 Avaya CMC1 Media Gateway.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN. The Feature-Related System Parameters screen displays.
2. In the `Emergency Numbers - Internal` field (optional) type a valid extension.



NOTE:

This number cannot be a hunt group or ACD number.

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.



NOTE:

This number cannot be a hunt group or ACD number.

5. Press ENTER to save the changes.

System Administration



NOTE:

To use Access Security Gateway (ASG), see [Appendix B, "Access Security Gateway"](#).

Log into the System

1. Verify the screen displays: `Login:`
2. Login as **craft** and press Enter.
3. Type the default password and press Enter. The password does not display as it is typed. The screen displays the MultiVantage Software version and the terminal types.

`Terminal Type (513, 715, 4410, 4425, VT220): [513]`

4. Enter the type of management terminal (such as 715) and press Enter.

Check System Status

The system status may suggest problem areas. Refer to *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

1. Type **status system all-cabinets** and press Enter.
2. Verify the screen displays a service state of `in` for all appropriate areas.

Check Customer Options

Refer to *Administrator's Guide for Avaya MultiVantage Software* to view a sample screen.

Certain features are part of MultiVantage Software and do not require activation. They default to **y** (yes) on the Optional Features form.

- ARS/AAR Partitioning
- Emergency Access to Attendant
- Hospitality (Basic)
- Service Observing

1. Type **display system-parameters customer-options** and press Enter.
2. Using the customer order, ensure that the optional features purchased by the customer (as shown by PEC codes on the customer order) are enabled.

NOTE:

For detailed mapping of SAP material codes to DEFINITY features, capacities, release, platform, and offer category, go to the RFA website Information Page, in the **Help Info** section, click on the "Material Code/Feature Job Aid" link.

Set Country Options

Some country options need to be set to turn off the red alarm LEDs.

1. Enter **change system-parameters country options** and press Enter. A screen similar to [Screen 1-1](#) displays on the terminal. The cursor is set on the Companding Mode field.

```
change system-parameters country-options                               Page 1 of 23
                           SYSTEM PARAMETERS COUNTRY-OPTIONS

      Companding Mode: Mu-Law           Base Tone Generator Set: 1
      440Hz PBX-dial Tone? n           440Hz Secondary-dial Tone? n
      Analog Ringing Cadence: 1        Set Layer 1 timer T1 to 30 seconds? n
      Analog Line Transmission: 1
      Display Character Set: Roman
      Howler Tone After Busy? n        Disconnect on No Answer by Call Type? n

TONE DETECTION PARAMETERS
      Tone Detection Mode: 6
      Interdigit Pause: short
```

Screen 1-1. Typical System Parameters Country-Options Screen

2. The default (United States) companding mode is mu-Law. If the country uses A-Law companding, type A-Law. Press Enter when finished.

⇒ NOTE:

Other items eventually need to be entered on this screen, but this is all that is needed to turn the red alarm LEDs off.

3. Set the country codes as needed in the following fields. Refer to [Table 1-9 on page 1-60](#) for the country codes. The United States country code (1) is shown in the example above.
 - Digital Loss Plan
 - Analog Ringing Cadence
 - Analog Line Transmission

Table 1-9. Country Codes

Country	Code	Country	Code
USA	1	Germany	13
Australia	2	Czechoslovakia	14
Japan	3	Russia	15
Italy	4	Argentina	16
The Netherlands	5	Greece	17
Singapore	6	China	18
Mexico	7	Hong Kong	19
Belgium	8	Thailand	20
Saudi Arabia	9	Macedonia	21
United Kingdom	10	Poland	22
Spain	11	Brazil	23
France	12	Nordic	24
		South Africa	25

4. If all red LEDs remain on, reseal any *port* circuit packs displaying red LEDs.
5. If the red LEDs remain on, refer to *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

**NOTE:**

Ignore the red LED on any TN767 or TN464 DS1 circuit pack until after it is administered. Refer to [Chapter 2, “Completing Installation and Cable Pinouts”](#) to set the switches on these circuit packs.

**NOTE:**

Alarms appear in the Alarm Log when power is applied to the system before all equipment connecting to port circuit packs is installed. Some alarms are logged when power is applied, but resolve quickly. If no equipment is connected to the port circuit packs, alarms associated with these ports can take up to 4 hours to log, but clear automatically after all equipment is installed and operating correctly.

Change Craft Password

The password for the craft login *must* be changed by the installing technician to prevent unauthorized administration changes.



CAUTION:

*After the password is changed, the new password must be safeguarded so no unauthorized administration changes can be made. This password **MUST NOT BE REVEALED** to the customer or to any unauthorized person.*

1. Login as **craft** using the default password.
2. Type **change password craft** and press Enter. See [Screen 1-2](#). The cursor is positioned on Password for Login Making Change:

```
change password craft                                Page 1 of 1
                                     PASSWORD ADMINISTRATION

Password of Login Making Change:

LOGIN BEING CHANGED                                Login Name: craft

LOGIN'S PASSWORD INFORMATION
      Login's Password:
Reenter Login's Password:
```

Screen 1-2. Typical Change Password Screen

3. Type the default password for the craft login and press Enter.
4. Enter the new password. Valid passwords consist of a combination of 4 to 11 alpha or numeric characters. Use at least 1 letter and 1 number.
5. In the Reenter Login's Password: field, type the new password again and press Enter.

Set Daylight Savings Rules

You can set up to 15 customized daylight savings time rules. If you have telephone equipment 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.

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

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

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

Screen 1-3. Daylight Savings Rules screen

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. Enter **set time** and press Enter.

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

Screen 1-4. Date and Time screen

2. In the `Day of the Week:` field, type the day of the week in English (Sunday through Saturday). See [Table 1-10](#) for English day of the week names.

Table 1-10. 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. In the `Month:` field, type the current month in English (January through December). See [Table 1-11](#) for English month names.

Table 1-11. 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. In the `Day of the Month:` field, type the day of month (1 through 31).
5. In the `Year:` field, type the current year.
6. In the `Hour:` field, type the current hour for a 24-hour clock.
7. In the `Minute:` field, type current minute (0 through 59). Seconds cannot be set.
8. If the area observes daylight savings, set the `Daylight Savings Rule:` field to the appropriate rule.



NOTE:

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

9. Press `Enter` to effect the changes.

Circuit Pack Administration

After the equipment is installed (including circuit packs), the circuit packs must be administered. Refer to *Administrator's Guide for Avaya MultiVantage Software* for more information.

The following describes general administration information:

- Use the Circuit Packs form to administer circuit packs to carrier slots. The circuit packs must be installed (or assigned using the Circuit Packs form) before administering voice terminals, attendant consoles, or trunks.
- Each page of the form represents 1 carrier in the cabinet shown on the command line. All carriers and slots appear even if they are not included in the hardware.
- It is not necessary to fill in the Circuit Packs form if the circuit packs are installed at the time of administration.
- 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.
- When a circuit pack in a slot differs from what has been administered on the form, a “#” displays between the “Sfx” and “Name” fields.

Set System Maintenance Parameters

CAUTION:

To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

1. Enter **change system-parameters maintenance** and press Enter.
2. Enter the alarm notification and scheduled maintenance information into each field on Page 1 of the form.
3. Enter the appropriate information on Page 2 of the form.
4. Press Enter when finished.

Administer the Attendant Console

If no attendant console is installed, proceed to [Save Translations](#).

1. Enter **display system-parameters country-options** and press Enter. Verify the system's companding mode for its local stations (usually, A-Law for Europe and mu-Law for North America and Japan).
2. If necessary, enter **change terminal-parameters 603/302B1** to change the default system-level parameters and audio levels for these terminals.

NOTE:

For information about changing the default parameters and audio levels, refer to *DEFINITY Application Notes* available through the ITAC (International Technical Assistance Center).

3. Administer other forms listed under "Attendant Console" in *Administrator's Guide for Avaya MultiVantage Software*.

To administer an Avaya SoftConsole, see *Administrator's Guide for Avaya MultiVantage Software*.

Save Translations

1. Enter **save translation** and press Enter. This copies the current system translations onto the translation card and takes about 10 minutes.
2. Remove the original translation card and replace with the backup card.
3. Repeat Step 1 for the backup translation card.
4. Remove the backup card and replace with the original translation card.
5. Label the backup card with the date and time of the backup and store in a secure place.

Add Translations

1. Refer to *Administrator's Guide for Avaya MultiVantage Software* to add new terminals.

Install and Wire Telephones and Other Equipment

NOTE:

Only 1 pair of wires is available for emergency transfer, and 1 pair of wires is available for attendant console power.

This section provides wiring examples of installation procedures. These are examples only and actual wiring procedures may vary at each site.

The system can connect to all DTE terminals. The system can have RS-232 (or EIA-232) or DCP interfaces.

All wiring pinouts for port circuit packs are in the tables at the end of this chapter.

Refer to [Figure 1-21 on page 1-40](#) for punch-down information for common circuit packs. The figure shows the colors of the punch-downs and is best viewed from CD-ROM or on-line.

After installing the hardware, the data for the system and telephone features is administered. These procedures are provided in *Administrator's Guide for Avaya MultiVantage Software*.

DCP, analog, and ISDN-BRI

The 302C1 Attendant Console describes a typical telephone connection. This information is typical of the 603E, 84xx (4-wire), and 94xx telephones. The attendant console always requires auxiliary (adjunct) power (-48 VDC). See [Figure 1-30 on page 1-67](#). Only 1 console can be powered by the system through the AUX connector. The primary console should be powered from the system so it has the same power failure backup as the system.

The maximum cabling distance for the console powered from the cabinet is 350 feet (100 m) using 24 AWG (#5) (0.26 mm²) wire.

The general steps to connect a telephone are:

1. Choose a device to connect such as a 302C1 Attendant Console.
2. Choose the port circuit pack and its carrier and slot number, such as TN754B, Cabinet 1, Carrier A, Slot 06.
3. Choose a port circuit on the port circuit pack, such as Port 05.

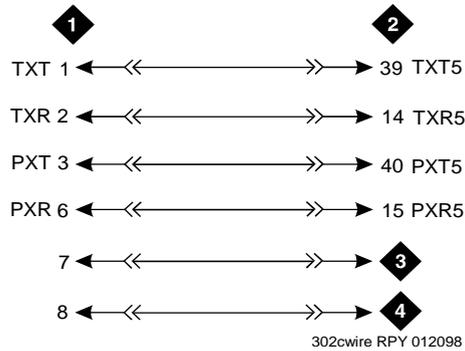


Figure Notes

- | | |
|-------------------------------------|-------------------------------|
| 1. 302C1 attendant console | 3. -48 VDC from adjunct power |
| 2. 4-wire digital line circuit pack | 4. Ground from adjunct power |

Figure 1-30. 302C1 to Digital Line Circuit Pack Wiring

4. Install cross-connect jumpers to wire the terminal to the port circuit pack. See [Figure 1-30](#). This pinout is for a 4-wire Digital Line circuit pack.

Connect Adjunct Power

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See [Figure 1-31](#).

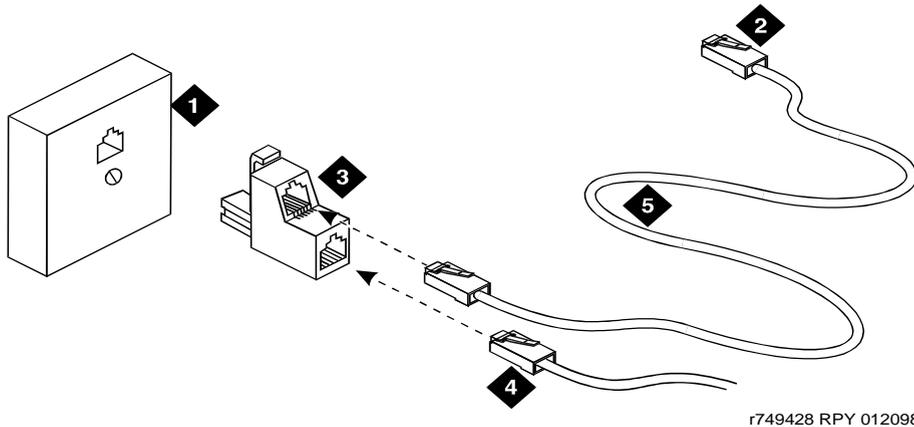


Figure Notes

- | | |
|---|---|
| 1. Surface-mounted information outlet | 4. To telephone |
| 2. To individual power unit (such as 1151A or 1151A2) | 5. Destination service access point (DSAP) power cord |
| 3. 400B2 adapter | |

Figure 1-31. 400B2 Adapter Connecting to a Modular Plug

Adjunct power can be provided from the equipment room or equipment closet with 1145B power unit. The AUX connector (J1) on the processor interface cable can provide power for 1 attendant console. See [Table 2-7 on page 2-15](#).

Adjunct power can be provided locally at the telephone or console by the 1151A or 1151A2 Power Supply.

Analog Station or 2-Wire Digital Station Example

This example is typical of the 2-wire digital stations, 2-wire analog stations, analog CO trunks, DID trunks, and external alarms. See [Figure 1-32](#).



Figure Notes

1. 2500-type analog station
2. 2-wire analog line circuit pack

Figure 1-32. 2500-Type Analog Telephone Wiring

1. Choose a peripheral to connect (such as a 2-wire digital station).
2. Choose the port circuit pack to use and its carrier and slot number. For example, TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
3. Choose a port circuit on the port circuit pack, for example port 3.
4. Install cross-connect jumpers to connect the pins from the 2-wire station to the appropriate pins on the port circuit pack.
5. Administer using *Administrator's Guide for Avaya MultiVantage Software*.

Analog Tie Trunk Example

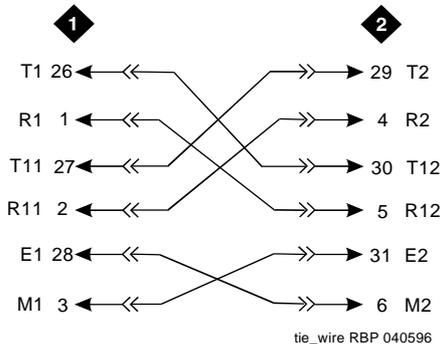


Figure Notes

1. External trunk or adapter
2. Tie trunk circuit pack

Figure 1-33. Analog Tie Trunk Wiring

1. Before installing the Tie Trunk circuit pack, set the option switches as described in [Chapter 2, "Completing Installation and Cable Pinouts"](#).
2. Install cross-connect jumpers to connect the pins from the Tie Trunk circuit pack to the appropriate leads on the external tie trunk. Names of the tie trunk leads must be determined from the manufacturer or supplier of the external trunk circuit. The example in [Figure 1-33](#) shows a DEFINITY System tie trunk connected to a DEFINITY System tie trunk.
3. Administer on the Trunk Group Screen. See *Administrator's Guide for Avaya MultiVantage Software*.

Digital Tie Trunk Example

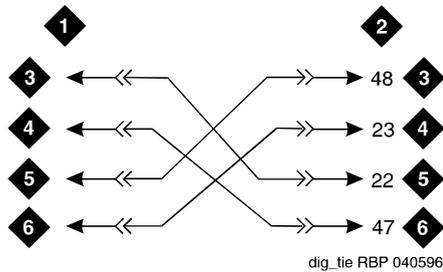


Figure Notes

- | | |
|--|------------------------------|
| 1. External trunk | 4. LO (Balanced output pair) |
| 2. DS1 interface circuit pack, position 1C06 | 5. LI |
| 3. LO | 6. LI (Balanced input pair) |

Figure 1-34. Digital Tie Trunk Wiring

1. Before installing the DS1 Interface circuit pack, set the option switches according to [Chapter 2, "Completing Installation and Cable Pinouts"](#).
2. Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the external digital trunk.
3. Administer the DS1 Interface circuit pack on the DS1 and Trunk Group Screens. See *Administrator's Guide for Avaya MultiVantage Software*.

DS1 Tie Trunk Example

DS1 tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between 2 collocated systems or between the system and a data network. The following cables can be used:

- **C6C connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 15-pin male connector on the other end. Use to connect a DS1 tie trunk circuit pack to a Channel Service Unit.
- **C6D connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on each end. Use to connect a DS1 tie trunks in collocated cabinets.
- **C6E connector cable** — 100-foot (30.5 m) shielded cable with a 50-pin male connector on 1 end and a 50-pin female connector on the other end. Use as an “extension” cable between the DS1 tie trunk circuit pack and other connector cables.
- **C6F connector cable** — 50-foot (15.2 m) shielded cable with a 50-pin male connector on 1 end and a 3 inch (7.62 cm) stub on the other end. Use to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections. See [Table 1-12](#) for a pinout.

Table 1-12. Pinout of C6F Cable

Wire Color	Lead Designation	Pin Number
White/Green	LI (High Side)	47
Green	LI	22
White/Brown	LO	48
Brown	LO (High Side)	23
White/Slate	LBACK2	49
Slate	LBACK1	24

Collocated DS1 Tie Trunks

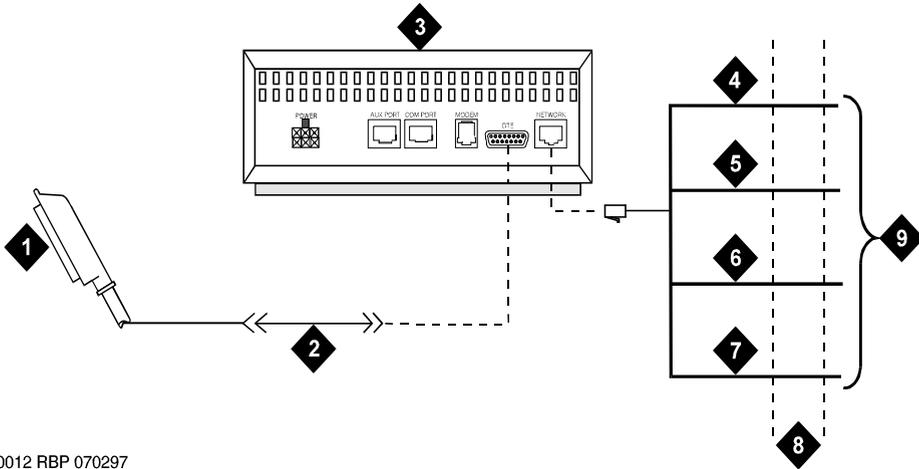
Two DS1 tie trunk circuit packs can be in collocated systems. A DS1 tie trunk circuit pack in 1 system can connect to a DS1 tie trunk in another system. Use a C6D cable if the distance is less than 50 feet (15.24 m). If the distance is greater than 50 feet (15.24 m), use a C6E cable.

⇒ NOTE:

The maximum distance between cabinets is 1310 feet (399.3 m).

DS1 Tie Trunks Using T1 Channel Service Unit

Figure 1-35 shows a DS1 tie trunk connected to an external T1 Channel Service Unit (CSU). A 120A2 enhanced Integrated Channel Service Unit (ICSU) can be used in place of a T1 external CSU. The CSU or ICSU interfaces the DS1 tie trunks with the 1.544 Mbps digital facility. Contact your Avaya Inc. representative for maximum cabling distances.



0012 RBP 070297

Figure Notes

- | | |
|--|----------------------------|
| 1. To DS1 tie trunk circuit pack | 5. Ring (R) |
| 2. C6C cable (If distance is over 50 feet (15.24 m), use C6E cable.) | 6. Tip 1(T1) |
| 3. T1 external CSU or 120A2 ICSU | 7. Ring1 (R1) |
| 4. Tip (T) | 8. 1.544 Mbps T1 interface |
| | 9. To T1 carrier |

Figure 1-35. Typical Connections to Channel Service Unit

3-Pair and 4-Pair Modularity

Figure 1-36 shows 3-pair and 4-pair modularity from the port circuit pack to the voice or data terminal. Most terminals connect to an information outlet (modular jack) installed at the work location.

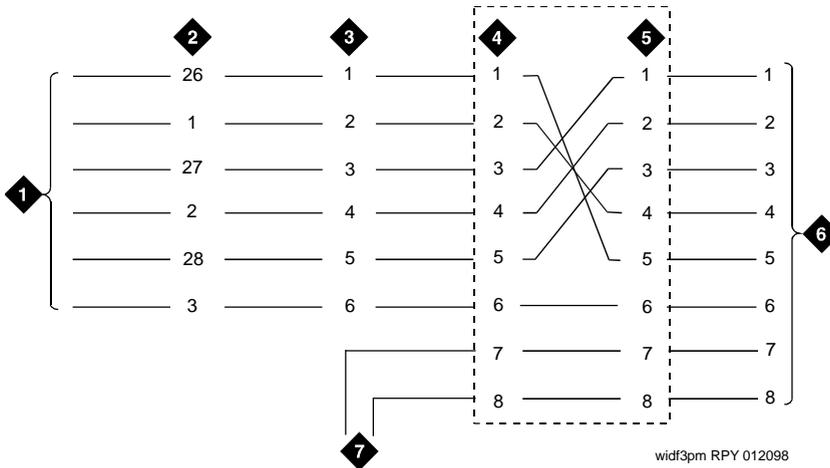


Figure Notes

- | | |
|--|---|
| <ul style="list-style-type: none"> 1. Port circuit pack 2. 25-pair connector pins (3-pair modularity) 3. MDF pins (3-pair modularity) 4. Input to information outlet (4-pair modularity) | <ul style="list-style-type: none"> 5. Output from information outlet (4-pair modularity) 6. Voice or data terminal pins 7. Adjunct power |
|--|---|

Figure 1-36. 3-Pair and 4-Pair Modularity

Adjunct Power Connections

Figure 1-37 shows typical connection locations for adjunct power.

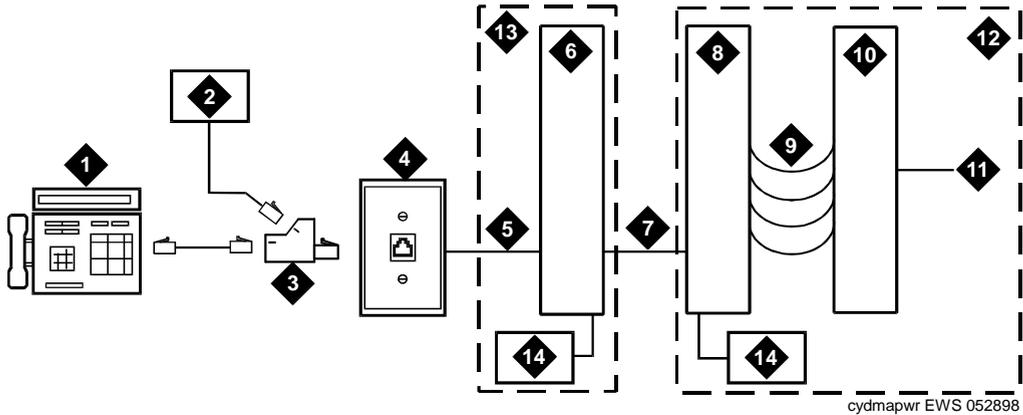


Figure Notes

- | | |
|---|--|
| 1. Typical display telephone | 9. 100P6A patch cord or jumpers |
| 2. Individual power supply (Such as 1151A)
(Not used if item 14 is used) | 10. System side of MDF |
| 3. 400B2 adapter | 11. 25-pair cable to digital line circuit pack |
| 4. Information outlet (modular jack) | 12. Equipment room |
| 5. 4-pair D-Inside Wire (DIW) cable | 13. Satellite location |
| 6. Satellite site or adapter location | 14. Bulk power supply (Such as 1145B).
Install at satellite location or equipment
room (not both). |
| 7. 25-pair D-Inside Wire (DIW) cable | |
| 8. Station side of MDF | |

Figure 1-37. Example Adjunct Power Connections

Local and Phantom Power

An attendant console's maximum distance from the system is limited. See [Table 1-13](#).

Table 1-13. Attendant Console Cabling Distances

Enhanced Attendant Console (302C1)	24 AWG Wire (0.26 mm ²)		26 AWG Wire (0.14 mm ²)	
	Feet	Meters	Feet	Meters
With Selector Console				
Phantom powered	800	244	500	152
Locally powered	5000	1524	3400	1037
Without Selector Console				
Phantom powered	1400	427	900	274
Locally powered	5000	1524	3400	1037

Auxiliary Power

The nonessential functions of an attendant console and its optional 26A1 or 24A1 selector console derive power from an auxiliary power source. Provide auxiliary power for an attendant console through this cable so the console remains fully operational during short power outages.

NOTE:

Only 1 console can derive auxiliary power from the system and through the auxiliary cable located in the trunk/auxiliary field.

A console's maximum distance from its auxiliary power source is:

- 800 feet (244 m) for a 302A1
- 350 feet (107 m) for a 301B1 and 302C1

An attendant console can also derive auxiliary power from:

- Individual 1151A or 1151A2 power supply
- MSP-1 power supply
- 258A-type adapters
- Bulk power supplies such as the 1145A1

Administer IP Stations and Trunks

For complete information on administering IP stations and trunks, see *Administrator's Guide for Avaya MultiVantage Software*.

Install Attendant Console — Optional

To install a DCP attendant console:

1. Position the attendant console in the desired location and connect the modular cord to the information outlet.
2. Install labels per the Attendant Console form and Display Module form assignments.
3. Install a Digital Line circuit pack in the assigned carrier slot (if required).
4. Administer the Attendant Console forms in *Administrator's Guide for Avaya MultiVantage Software*.

Hard-Wire Bridging



CAUTION:

Bridging or paralleling these endpoints can cause electrical damage to the consoles or cause the circuit pack to remove power from the consoles.

Analog type hard-wire bridging is not allowed for 4-wire (only) DCP endpoints. This is because hard-wire bridging provides no way of combining the digital output of 2 bridged DCP sets. Also, a bridged endpoint causes the added load to degrade the DCP signal.

Dual Wiring of 2-Wire and 4-Wire Endpoints

Do not simultaneously wire a 2-wire and 4-wire endpoint to the same equipment location in an MDF, even though they connect to different colored wire pairs. The system uses separate circuit packs to interface 2- and 4-wire endpoints, and none are capable of interfacing both.

Install 26B1 Selector Console — Optional

1. Connect the supplied 3-foot (0.9 m) D8AC cable to the modular jack on the bottom of the 26B1 Selector Console.
2. Route the cable to the attendant console and connect to the DXS/BLF jack.
3. Attach labels according to the Attendant Console form.
4. Administer the console using *Administrator's Guide for Avaya MultiVantage Software*.

Connect External Alarms and Auxiliary Connections



NOTE:

The AUX connector is part of the Processor Interface cable assembly (J1).

Alarm Input

Alarms can be generated on adjunct equipment, sent to the DEFINITY System, and recorded and reported as “external alarms.” A typical major alarm *input* is from a UPS.

1. Connect 1 major alarm *input* wire pair and 1 minor alarm *input* wire pair to the auxiliary field from the AUX connector (J1 on Processor Interface Cable). See [Table 1-14](#).

Table 1-14. Alarm Inputs at AUX Connector

Alarm Input Type	Color	AUX Connector
Major	White-Blue	AP1 (Pin 26)
	Blue-White	Ground (Pin 1)
Minor	White-Orange	AP2 (Pin 27)
	Orange-White	Ground (Pin 2)

Alarm Output

The system provides a relay contact that can operate a customer-provided alarm, such as a light or bell. The circuitry and power source are customer- provided. The alarm device must not exceed a rating of more than 30 VAC RMS or 60 VDC at 0.75 Amps.

1. Connect the external alarm *output*. See [Table 1-15](#).
2. Give this information to your Avaya representative for troubleshooting purposes.

Table 1-15. Alarm Output at AUX Connector

Alarm Output Type	Color	AUX Connector
EXTALMA	Violet-Green	(Pin 48)
EXTALMB	Green-Violet	Ground (Pin 23)

Emergency Transfer and Auxiliary Power

⇒ NOTE:

Only 1 emergency transfer power panel and 1 auxiliary power connection is provided per system.

Connect emergency transfer power and auxiliary power as shown in [Table 1-16](#). Auxiliary power includes power to an attendant console or adjunct device.

Table 1-16. Emergency Transfer and Auxiliary Power

Power Type	Color	AUX Connector
Emergency Transfer	Black-Blue	XFER48 (Pin 36)
	Blue-Black	Ground (Pin 11)
Auxiliary (Adjunct) -48 VDC	Brown-Yellow	ACC48A (Pin 19)
	Yellow-Brown	Ground (Pin 44)

Telephone Pin Designations

[Table 1-17](#) provides port circuit pack and telephone pin designations.

Table 1-17. Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C1, 8400-Series, 603E, 9403, 9434	2-wire; 302C1, 8400-Series, 603E, 9403, 9410, 9434	8510T BRI (with adjunct speaker phone)	Analog Station, Modem	Z3A1 & Z3A2 ADU, Data Module
1	TXT				TXT
2	TXR			T	TXR
3	PXT		TXT	R	PXT
4		T	PXR		
5		R	PXT		
6	PXR		TXR		PXR
7	-48VDC	(-48VDC)	(-48VDC)		
8	GRD	GRD	GRD		
circuit pack	4-wire digital (8 port)	2-wire digital (16 or 24 port)	4-wire BRI Trunk Side	Analog line (16 or 24 port)	Data Line
PX	PBX transmit	T Tip (A)			
TX	Terminal transmit	R Ring(B)			

CAMA/E911 Installation

Configuration

The CAMA/E911 feature will only work in conjunction with TN429C CO trunk circuit packs (or later suffix).

Port Networks (PNs) that include TN429C circuit packs used to interface to CAMA trunks may require some CPTR resources to be either TN744D V2 or TN2182B circuit packs, since TTR/CPTR or General Purpose Tone Receiver (GPTR) resources are selected from the pool available in the PN when needed.

Hardware Setup

1. Insert the TN429C or later CO trunk circuit pack in any available port slot.
2. Be sure the TN744D Call Classifier - Detector circuit pack is Vintage 2 or later.
3. Wire the CAMA trunk to the MDF (the trunk from the CO). Refer to the pinouts in [Table 2-13 on page -22](#).

Administration Setup

1. At the prompt, type **add trunk next** and press Enter.

```

Page 1 of 11

TRUNK GROUP

Group Number: 1          Group Type: cama          CDR Reports: y
Group Name:  cama Trunk Group - E911  COR: 1          TN: 1          TAC: 701
Direction:  outgoing          Outgoing Display? y  CESID I Digits Sent: 0
                               Busy Threshold: 99

TRUNK PARAMETERS
Trunk Type:  wink-start
Outgoing Dial Type:  rlmf
Trunk Termination:  rc

```

Screen 1-5. CAMA Trunk Group form (page 1)

2. On the Trunk Group screen (page 1), in the `Group Type:` field, enter **cama**.
3. In the `Group Name:` field, enter the desired name.
4. In the `TAC:` field, enter the desired trunk access code.

5. In the `Outgoing Display:` field, enter `y`.
6. In the `CESID I Digits Sent:` field, enter the number directed by the Central Office (CO) or the Public Safety Answering Point (PSAP).
7. Scroll to page 3 of the form.

```
Page 3 of 11

TRUNK GROUP

ADMINISTRABLE TIMERS

Outgoing Disconnect (msec): 400
Cama Outgoing Dial Guard (msec): 75
Outgoing Glare Guard (msec): 1000

Cama Wink Start Time (msec): 5000
Outgoing Seizure Response (sec): 4
Disconnect Signal Error (sec): 30

Outgoing End of Dial (sec): 1
```

Screen 1-6. Administrable Timers form (page 3)

8. On the Administrable Timers screen (page 3), you may need to adjust these fields according to your CO. Scroll to page 5.

```
Page 5 of 11

TRUNK GROUP

Administered Members (min/max): 1/2
Total Administered Members: 2

GROUP MEMBER ASSIGNMENTS
  Port  Code  Sfx  Name

1: 01C0401 TN429  C
2: 01C0402 TN429  C
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
```

Screen 1-7. Group Member Assignments form (page 5)

9. On the Group Member Assignments screen, in the Port field, add the trunk members and press Enter when finished.
10. At the prompt, type **change feature-access-code** and press Enter.

Page 1 of 5

FEATURE ACCESS CODE (FAC)

Abbreviated Dialing List1 Access Code: ____

Abbreviated Dialing List2 Access Code: ____

Abbreviated Dialing List3 Access Code: ____

Abbreviated Dial - Prgm Group List Access Code: ____

Announcement Access Code: ____

Answer Back Access Code: ____

Auto Alternate Routing (AAR) Access Code: ____

Auto Route Selection (ARS) Access Code 1: 9__ Access Code 2: ____

Automatic Callback Activation: ____ Deactivation: ____

Call Forwarding Activation Busy/DA: ____ All: ____ Deactivation: ____

Call Park Access Code: ____

Call Pickup Access Code: ____

CAS Remote Hold/Answer Hold-Unhold Access Code: ____

CDR Account Code Access Code: ____

Change Coverage: ____

Data Origination Access Code: ____

Data Privacy Access Code: ____

Directed Call Pickup Access Code: ____

Emergency Access To Attendant Access Code: ____

Extended Call Fwd Activate Busy D/A: ____ All: ____ Deactivation: ____

Facility Test Calls Access Code: ____

Flash Access Code: ____

Screen 1-8. Feature Access Code (FAC) form (page 1)

11. The Feature Access Code (FAC) screen (page 1) appears.
12. In the Auto Route Selection (ARS) Access Code 1: field, administer the ARS access code (in the example above, type **9**) and press Enter (must match dial plan).
13. At the prompt, enter **change ars analysis <9>** and press Enter.

24. At the prompt, type **change route-pattern <number>** (the route pattern to be changed; in the example below, the route pattern is 11) and press Enter.

Page 1 of X

Pattern Number: 11

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Digits	Del	Inserted Digits	IXC
1:	1	0	—	—	—	—	—	_____	user
2:	—	—	—	—	—	—	—	_____	user
3:	—	—	—	—	—	—	—	_____	user
4:	—	—	—	—	—	—	—	_____	user
5:	—	—	—	—	—	—	—	_____	user
6:	—	—	—	—	—	—	—	_____	user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering	LAR							
0	1	2	3	4	W	Request	Format								
1:	y	y	y	y	y	n	y	none_____	both	ept	outwats-bnd_____	BAND: _____	_____	_____	none
2:	y	y	y	y	y	n	n		rest		_____		_____	_____	next
3:	y	y	y	y	y	n	n		rest		_____		_____	_____	rehu
4:	y	y	y	y	y	n	n		rest		_____		_____	_____	none
5:	y	y	y	y	y	n	n		rest		_____		_____	_____	none
6:	y	y	y	y	y	n	n		rest		_____		_____	_____	none

Screen 1-10. Route Pattern form (Page 1)

25. On the Route Pattern screen, in Grp. No. field, enter the CAMA trunk group number.
26. In the FRL field, enter 0.



NOTE:

For the following step, if the Central Office (CO) wants KP11ST as the dialed digit string, then leave blank. If the CO wants KP911ST, then insert a "9" in the Inserted Digits field.

27. Administer the Inserted Digits field if needed and press Enter.

28. At the prompt, type **change route-pattern <number>** (the route pattern to be changed; in the example below, the route pattern is 12) and press Enter.

Page 1 of X

Pattern Number: 12

Grp. No.	FRL	NPA	Pfx Mrk	Hop Lmt	Toll List	No. Del Digits	Inserted Digits	IXC
1:	1	0				1		user
2:								user
3:								user
4:								user
5:								user
6:								user

BCC	VALUE	TSC	CA-TSC	ITC	BCIE	Service/Feature	Numbering	LAR					
0	1	2	3	4	W	Request	Format						
1:	y	y	y	y	n	y none		both ept	outwats-bnd	BAND: _____	_____	_____	none
2:	y	y	y	y	n	n		rest	_____	_____	_____	next	
3:	y	y	y	y	n	n		rest	_____	_____	_____	rehu	
4:	y	y	y	y	n	n		rest	_____	_____	_____	none	
5:	y	y	y	y	n	n		rest	_____	_____	_____	none	
6:	y	y	y	y	n	n		rest	_____	_____	_____	none	

Screen 1-11. Route Pattern form (page 1)

29. On the Route Pattern screen, in Grp. No. field, type the CAMA trunk group number and press Enter.
30. In the FRL field, type 0.



NOTE:

For the following step, if the Central Office (CO) wants KP911ST as the dialed digit string, then leave blank. If the CO wants KP11ST, then delete one digit.

31. Administer No. Del Digits field if needed and press Enter.
32. At the prompt, type **change cama-numbering** and press Enter.

CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100_____

Ext Len	Ext Code	CESID	Total Length	Ext Len	Ext Code	CESID	Total Length
4_	101_	5381234_	7_	—	—	—	—
4_	1_	555_	7_	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Screen 1-12. CAMA Numbering Format form

- 33. In the CAMA Numbering - E911 Format screen (page 1), in System CESID Default: field, enter your own system default and press Enter. This is the number outpulsed when the extension code is not found in the CAMA Numbering table. See [Screen 1-12](#).
- 34. In the Ext Len, Ext Code, CESID, and Total Length fields, fill out to your own CAMA numbering plan and press Enter. Be sure to cover all extensions.
- 35. At the prompt, type **change cor <number>** (the class of restriction (COR) to be changed) and press Enter. Change all CORs that are defined for stations in order to remove any calling party restrictions for 911 calls.

```

CLASS OF RESTRICTION

COR Number: 10
COR Description: supervisor

FRL: 0                                APLT? y
Can Be Service Observed? n           Calling Party Restriction: none
Can Be A Service Observer? n         Called Party Restriction: none
Time of Day Chart: 1                 Forced Entry of Account Codes? n
Priority Queuing? n                   Direct Agent Calling? n
Restriction Override: none           Facility Access Trunk Test? n
Restricted Call List? n              Can Change Coverage? n
Unrestricted Call List?
Access to MCT? y                     Fully Restricted Service? n
Category For MFC ANI: 7              Hear VDN of Origin Annc.? n
Send ANI for MFE? n_                Add/Remove Agent Skills? n
Hear System Music on Hold? y         PASTE (Display PBX Data on Phone)? n
Automatic Charge Display? n
Can Be Picked Up By Directed Call Pickup? n
Can Use Directed Call Pickup? n

```

Screen 1-13. Class of Restriction form (page 1)

36. On the Class of Restriction screen (page 1), in the Calling Party Restriction: field, type **none** and press Enter.
37. Type **Save Translation** and press Enter.

Install the BRI Terminating Resistor

The resistors balance the cable plant between the receiver and the transmitter on the interface. When using the TN2198 ISDN-BRI 2-Wire U Interface circuit pack, an NT1 is required. A terminating resistor is always required near the terminal when the BRI S-type interface circuit pack (TN556 BRI 4-Wire S-NT Line circuit pack) is used (see *#5ESS Switch Integrated Services Digital Network Customer Premises Planning Guide*, 533-700-100).

The resistor is built into the NT1 and can be 1 of 3 values, depending on the configuration and the distance from the NT1 to the ISDN terminal. The resistor value is controlled from the NT1. A terminating resistor adapter may be needed near the terminal and can be placed in the satellite closet or work location.



CAUTION:

Observe the following cautions when installing the terminating resistor block (440A4 or 110RA1-12):

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

- *Never touch uninsulated wires or terminals unless the telephone line has been disconnected at the network interface.*
- *Use caution when installing or modifying telephone lines.*

Terminating Resistor Adapter

Figure 1-38 shows an 8-pin 440A4 terminating resistor adapter. The adapter has an 8-wide plug at 1 end, a short cord, and an 8-wide jack at the opposite end.

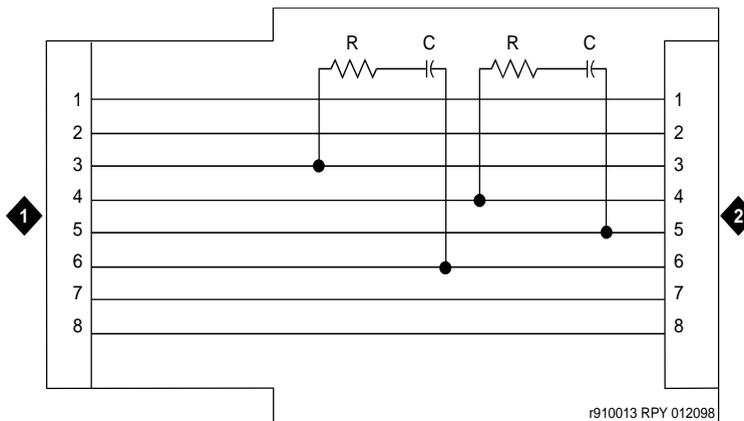


Figure Notes

1. 8-wide plug

2. 8-wide jack

Figure 1-38. 8-Wide Terminating Resistor Adapter (440A4)

Closet Mounted (110RA1-12)

The 110RA1-12 terminating resistor block consists of twelve 2-pair circuits and provides the 100 Ohm termination used for ISDN-BRI circuits.

Figure 1-39 shows the wiring of the 110RA1-12. Three rows of 110D-4 connector blocks contain resistors and capacitors. The bottom row is designated as the input row and the top and middle rows are designated as the output rows. The circuit assembly is mounted on a standard 110A-100 pair mounting base.

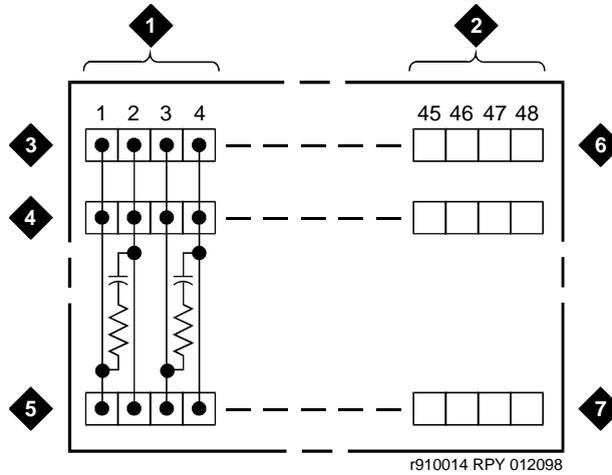


Figure Notes

- 1. Circuit 1
- 2. Circuit 12
- 3. Output row "A"
- 4. Output row "B"
- 5. Input row "C"
- 6. Only first circuit shown to all 12 circuits (2APR) per block
- 7. 110D-4 connector block

Figure 1-39. Terminating Resistor Block (110RA1-12)

Figure 1-40 shows the wiring connections for the 110RA1-12 terminal block. The TN556 BRI switch port is terminated to bottom row C.

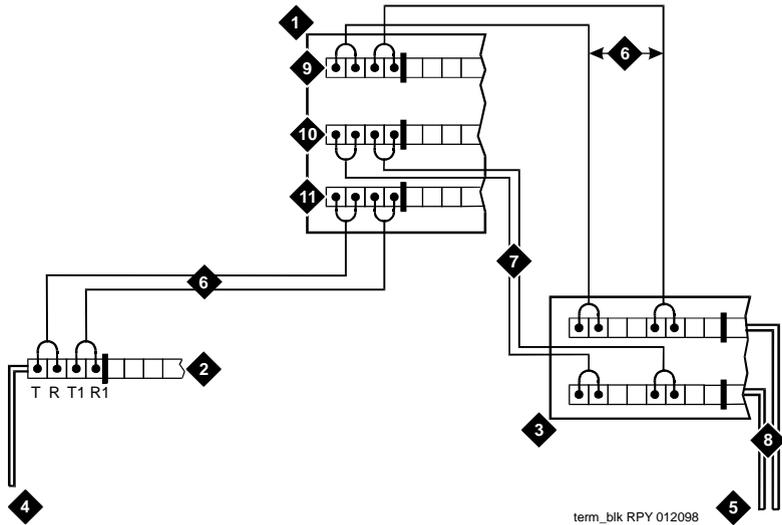


Figure Notes

- | | |
|---|-----------------------------|
| 1. Part of terminating resistor block | 7. Basic multi-point option |
| 2. White or purple field | 8. 4-pair horizontal cables |
| 3. Part of 4-pair blue field | 9. Row "A" |
| 4. From ISDN T-interface circuit (2-pair) | 10. Row "B" |
| 5. To ISDN S/T-interface terminals | 11. Row "C" |
| 6. 2-pair cross-connect | |

Figure 1-40. Typical Installation of Terminating Resistor Block

For point-to-point wiring, the top row connects to the blue station field. The pair connects from the 110RA1-12 to the standard 4-pair circuit. Pair 1 from the 110RA1-12 is connected to Pair 1 of the station field, and Pair 2 is connected to Pair 3 of the station field.

Two terminal basic multi-point applications are accommodated by connecting row B (output) to the second terminal common to the multi-point circuit.

Install Multi-point Adapters

Use multi-point adapters to provide signal fanout of the T-interface. BR851-B or the 367A perform fanout at the work station. These adapters support more than 1 ISDN terminal per horizontal 4-pair D-inside wire (DIW). To support multiple horizontal runs, a MDF with multiple common rows performs fanout in the satellite closet. The 110RA1-12 provides fanout for two horizontal runs and contains the 100 ohm terminating resistor. Use this for basic multi-point or point-to-point with terminating resistor in the closet. Other fanout blocks include the 110AB1-025M and the 110AB1-050M.

BR851-B Adapter (T-Adapter)

The BR851-B supports 2 terminals on 1 multi-point BRI at the work station and is used to fanout transmission and power. See [Figure 1-41](#).

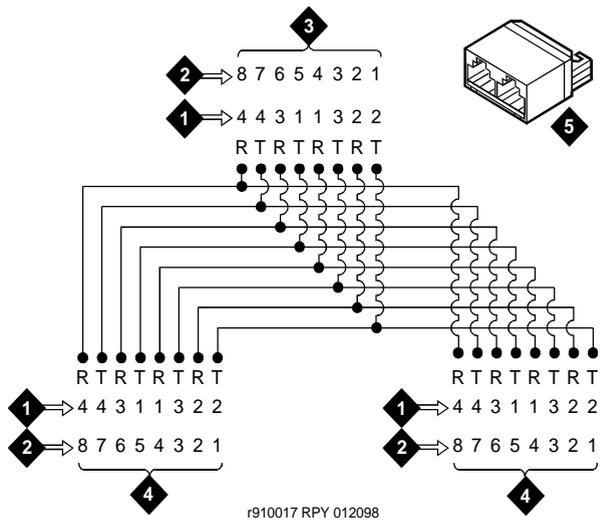


Figure Notes

- | | |
|------------------------|-----------------------------|
| 1. Wire pairs | 4. Female |
| 2. Pin numbers | 5. T-Type adapter (BR851-B) |
| 3. Modular plug (male) | |

Figure 1-41. Wiring Diagram of BR851-B

367A Adapter

The 367A adapter provides fanout for up to 7 terminals. See [Figure 1-42](#).

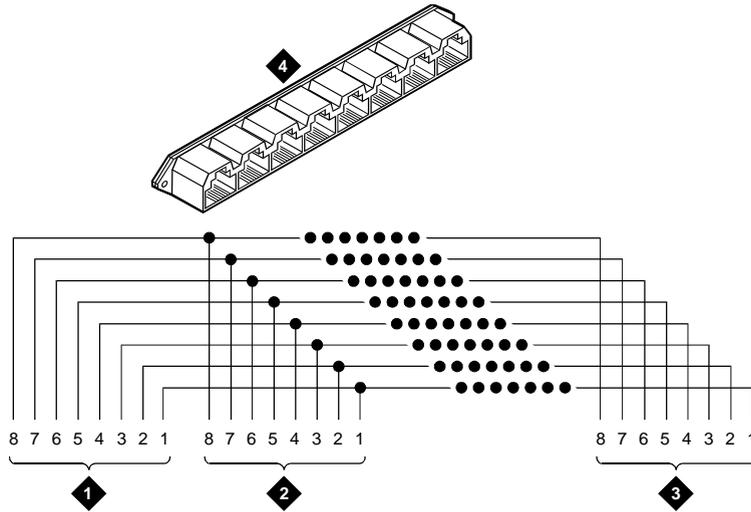


Figure Notes

- 1. Jack 1
- 2. Jack 2
- 3. Jack 8
- 4. 367A adapter

Figure 1-42. Wiring Diagram of 367A Adapter

Basic Multi-point Installation Distances

Figure 1-43 provides cabling information for fanout of ISDN-BRI multi-point installations. In Figure 1-43, the terminating resistor is located in the satellite closet. All distances assume 24 AWG (#5) (0.26 mm²) D-Inside Wire (DIW).

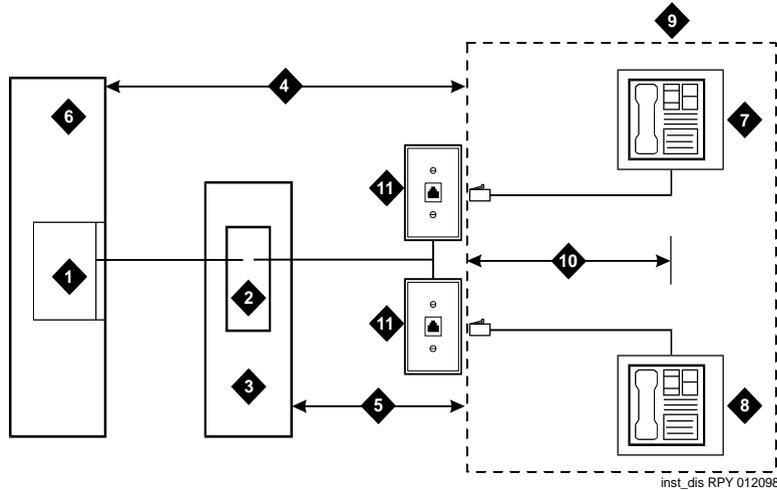


Figure Notes

- | | |
|--|---|
| 1. S-interface source (TN556) | 6. System cabinet |
| 2. Terminating resistor | 7. Terminating endpoint 1 |
| 3. Satellite closet | 8. Terminating endpoint 2 |
| 4. Maximum distance from S-interface source to work location (1600 feet) (488 m) | 9. Work location |
| 5. Maximum distance from satellite closet to work location (250 feet) (76 m) | 10. Maximum distance from information outlet to terminating endpoint (33 feet) (10 m) |
| | 11. Information outlet |

Figure 1-43. Basic Multi-point with One Work Location

Install Off-Premises Station Wiring

The cabling for off-premises stations is provided by the local telephone company. These stations can appear on any of the RJ21X network interfaces provided for the CO trunks.



CAUTION:

Use only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type) as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.

1. Install an A25D cable between the RJ21X network interface and a sneak fuse panel.
2. At the MDF, connect jumper wires between 1 row/connecting block in the green field and up to 3 rows/connecting blocks in the purple field to concentrate the analog line pairs.
3. Connect an A25D cable between the sneak fuse panel and the terminal block connector associated with the green row in Step 2.
4. Install a green label on the terminal block to identify the remote location.
5. Administer per *Administrator's Guide for Avaya MultiVantage Software*.

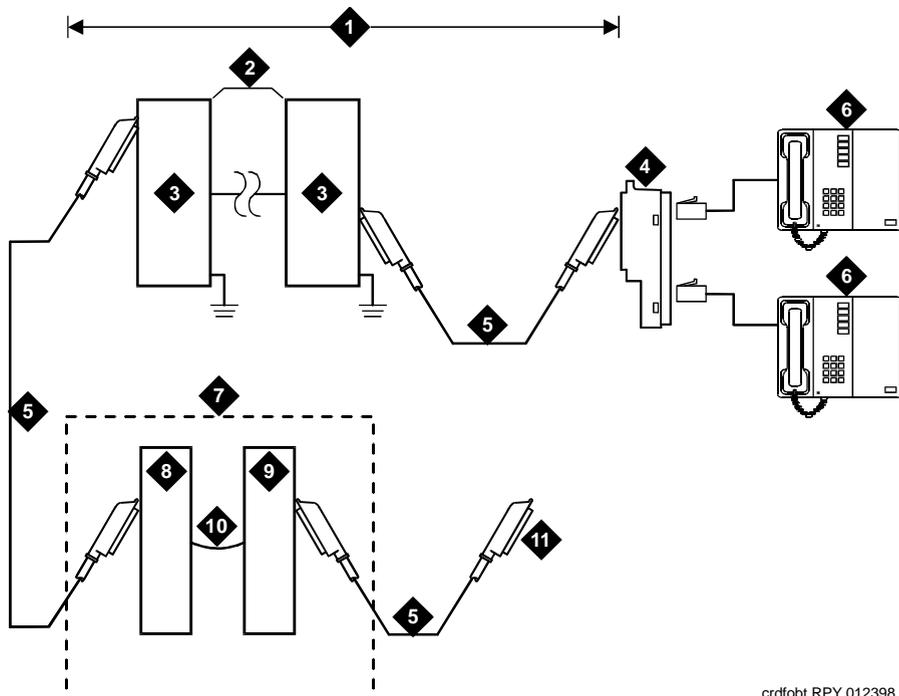
Install Off-Premises or Out-of-Building Stations

Out-of-building campus stations are those telephones not physically located in the same building as the equipment room but are located on the same property.

Analog Off-Premises Stations

[Figure 1-44 on page 1-94](#) shows the connections for 1 to 8 off-premises analog telephones. Only analog telephones connected to TN746B, TN2183, or TN769 Analog Line circuit packs can be installed out-of-building.

The maximum distance from the system cabinet to the out-of-building voice terminal is 6000 feet (1828.8 m) using 24 AWG (#5) (0.26 mm²) wire.



crdfobt RPY 012398

Figure Notes

- | | |
|--|--|
| 1. Locally engineered cables | 7. Part of MDF |
| 2. Out-of-building wiring | 8. Station side (white field) |
| 3. Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 9. System side (purple field) |
| 4. 356A adapter | 10. Cross-connect jumpers |
| 5. B25A cable | 11. To analog line circuit pack (TN2183, TN769, or TN746B) |
| 6. Out-of-building analog telephones | |

Figure 1-44. Connections for 1 to 8 Out-of-Building Analog Telephones

Figure 1-45 shows the connections for up to 24 off-premises analog telephones. Concentrations of analog line pairs are used at both buildings to minimize the off-premises wiring required. At the MDF, jumpers must be connected between 1 row/connecting block in the white field and up to 3 rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are 8 station appearances on each of the 3 fingers of the concentrator cable.

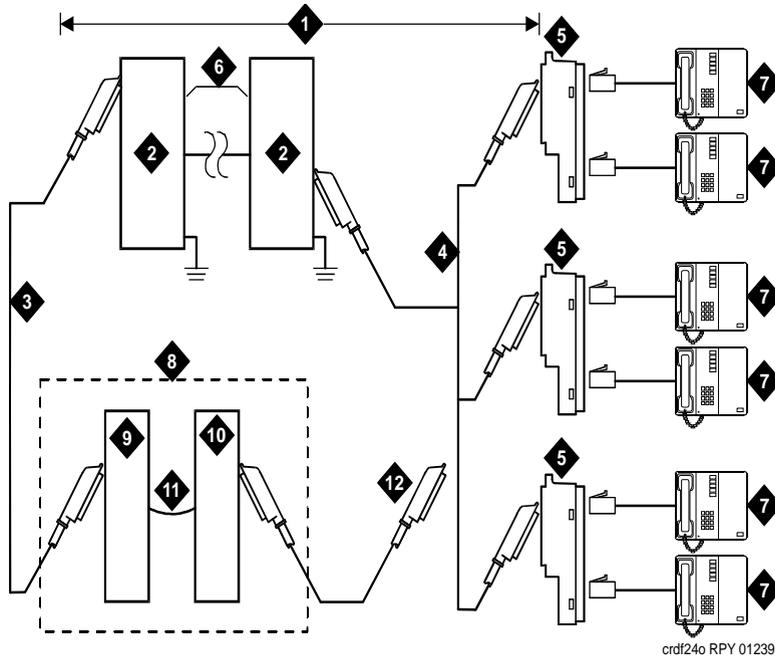


Figure Notes

- | | |
|--|--|
| 1. Locally engineered cables | 7. Out-of-building analog telephones |
| 2. Multi-pair protector units (primary protectors with heat coils or equivalent with sneak current protection) | 8. Part of MDF |
| 3. B25A cable | 9. Station side (white field) |
| 4. Concentrator cable (WP90929 List 1) | 10. System side (purple field) |
| 5. 356A adapter | 11. Cross-connect jumpers |
| 6. Out-of-building wiring | 12. To TN2183, TN769, or TN746B analog line circuit pack |

Figure 1-45. Connections to 24 Out-of-Building Telephones

Circuit Protectors

Carbon block, or equivalent protection is required at both building entrances. Also sneak current protection is required. Protection can be provided by a 4-type protector or a 3-type protector plus a separate sneak current protector. The 4-type protector is equipped with a heat coil.

The 4-type protector is the preferred device. For installations not using primary protection, 4-type protectors should always be used. When the 3-type protector is already installed, a separate sneak current protector is required. The multi-pair protector units and the off-premises cabling must be locally engineered.

Connectorized multi-pair protector units (female 25-pair connector) are recommended. [Table 1-18](#) shows the recommended protectors.

Table 1-18. Analog Line Circuit Protectors

Protectors		
Primary¹	Primary (with heat coil)	Sneak Current Protectors¹
3B1A (carbon)	4B1C (carbon)	220029 Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

1. The 3-type protectors should only be used if they are already part of the existing protection system. A sneak current protector is always required when a 3-type primary protector is used.

The maximum range of out-of-building analog telephones (500-, 2500-, or 7100-types) connected to an analog line circuit pack should be such that the maximum loop resistance does not exceed 1300 ohms.

The following voice terminals *cannot* be installed in an exposed environment:

- 7300-type voice terminals connected to TN762 Hybrid Line circuit packs
- Analog telephones connected to TN746 Analog Line circuit packs

Refer to [Table 1-3 on page 1-7](#) for circuit protector ordering information (comcodes).

Digital Out-of-Building Telephones

Protection is required at both building entrances for digital out-of-building voice terminals. There are 2 different types of protectors that can be used to protect digital voice terminals and digital line circuit packs. The 2 protectors to use are the 4C3S-75 Enhanced protector and the ITW Linx Enhanced Protector. These units provide primary and sneak current protection. The 4C3S-75 is equipped with a heat coil for sneak current protection. The ITW Linx is equipped with replaceable fuses for sneak current protection.

The 4C3S-75 is only used with Vintage 14 or newer TN754 circuit packs. The 4C3S-75 can be used on all vintages of the TN754B circuit packs. The ITW Linx may be used on all vintages of the TN754 circuit packs. [Table 1-19](#) lists the approved protectors.



NOTE:

The TN2181 (2-Wire 16 Port Digital Line circuit pack) may not be approved for some out-of-building uses. Contact your Avaya Inc. representative for more information.

Table 1-19. Digital Voice Circuit Protectors

Circuit Pack	Enhanced Primary Protector (With Sneak Current Protection)
TN754 V13 or earlier	ITW Linx Only
TN754 V14 or later	4C3S-75 or ITW Linx
TN754B all vintages	4C3S-75 or ITW Linx
TN2181	4C3S-75 or ITW Linx
TN2224	4C3S-75 or ITW Linx

When possible, all new and reused wiring installations should use blocks that accept the standard 5-pin plug-in 4C3S-75 protector. However, this may not be cost-effective in some cases. For these installations, the ITW Linx protector may be installed. An example of this is where screw-type carbon block protectors (or other non plug-compatible types) are in place and it is too costly to re-terminate the outside plant cable on a 5-pin mounting block for only a few out-of-building terminals.

The ITW Linx Enhanced Protector may be installed in series with existing primary protection. Note the 4C3S-75 protector cannot be installed in series with other types of primary protection. It must be installed as the only protection on the line entering the building. For the 4C3S-75 protector, various 25-, 50-, and 100-pair protector panels are equipped with 110-type connecting blocks and/or RJ21X connectors. The ITW Linx Enhanced Protector mounts directly on connecting blocks and requires a separate ground bar.

The maximum range for out-of-building digital voice terminals is 3400 feet (1036 m) when using 24 AWG (#5) (0.26 mm²) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.14 mm²) wire. The range can extend to 5000 feet (1524 m) using 24 AWG (#5) (0.26 mm²) wire or 4000 feet (1219 m) using 26 AWG (#4) (0.14 mm²) wire with the use of a data link protector. The protector is an isolating transformer used to remove phantom power on the system side and re-introduce it on the terminal side.

When a protector is used, the voice terminal must be locally powered by an external power supply or through the AC power cord provided with some of the 7400-type voice terminals. The protector is installed on the equipment side of the protection in both buildings.

Refer to [Table 1-3 on page 1-7](#) for circuit protector and data link protector comcodes.

Install Emergency Transfer Unit and Associated Telephones

⇒ NOTE:

Install only 1 emergency transfer power panel per system.

Emergency transfer capability is provided by an 808A Emergency Transfer Panel (or equivalent) mounted next to the trunk/auxiliary field. See [Figure 1-46 on page 1-99](#). Also refer to [Table 1-16 on page 1-78](#) for the pinout of the AUX (J1) connector.

Use analog telephones for emergency transfer. The 500-and 2500-type telephones can also be used as normal extensions. Emergency transfer capability may be provided on analog CO and Wide Area Telecommunications Service (WATS) trunks.

The transfer panel provides emergency trunk bypass or power-fail transfer for up to 5 incoming CO trunk loops to 5 selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0 Amp.

At the MDF, the unit is controlled by a connection to a yellow terminal row/connecting block in the trunk/auxiliary field. The unit is controlled by -48 VDC from the EM TRANS RELAY PWR terminals.

Install the Emergency Transfer Panel

The 808A Emergency Transfer Panel is used in the following installation example.

1. Install the transfer panel on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap-mounting the unit in an 89-type mounting bracket.

⇒ NOTE:

Install the panel so it can be accessed only by authorized personnel. The location must meet standard environmental considerations such as temperature, humidity, and so forth.

2. Verify dial tone is present at each trunk circuit.

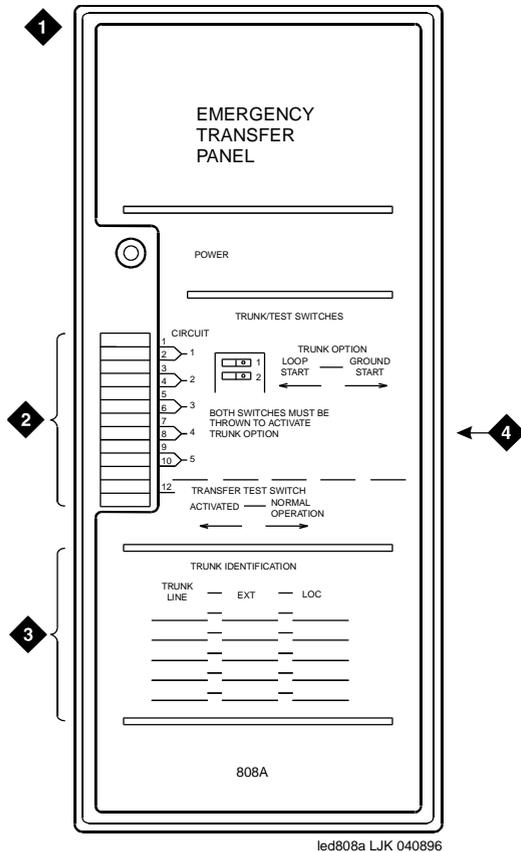


Figure Notes

- 1. 808A emergency transfer panel
- 2. Circuit start selection switches
- 3. Trunk identification label
- 4. 25-pair male connector

Figure 1-46. 808A Emergency Transfer Panel

- 3. Locate the circuit start selection switches. See [Figure 1-46 on page 1-99](#). These are the first 10 two-position switches on the left side of the 808A. The switches set each of the 5 incoming trunk lines to either loop start or ground start. Two switches are used for each of the 5 circuits; switches 1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and so forth. See [Table 1-20](#).

For loop start, set the switches to the **left**. For ground start, set the switches to the **right**.

Table 1-20. Trunk/Test Switches

Switch Number	Circuit Number
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	5
10	5
11	Not Used
12	Test Switch

4. Connect a 25-pair cable between the male RJ21 25-pair connector on the 808A and the yellow field on the MDF. [Table 1-21 on page 1-101](#) shows the pinouts.
5. Make cross-connections for each emergency trunk/emergency station pair. See [Figure 1-47 on page 1-103](#) and [Figure 1-48 on page 1-104](#).
6. On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.
7. To each voice terminal designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.
8. Check the system for normal operation as follows:
 - a. Place the test switch (switch 12) in NORMAL OPERATION.
 - b. Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.
 - c. Check wiring connections.
 - d. Verify there is dial tone on all emergency transfer sets.

Table 1-21. Pin Assignments for 25-Pair Connector on 808A

Pin	Color	Designation	Connector/Description
26	W-BL	TTC1	Tip-PBX Trunk Circuit 1
1	BL-W	RTC1	Ring-PBX Trunk Circuit 1
27	W-O	TTK1	Tip-CO Trunk Circuit 1
2	O-W	RTK1	Ring-CO Trunk Circuit 1
28	W-G	TLC1	Tip-PBX Line Port 1
3	G-W	RLC1	Ring-PBX Line Port 1
29	W-BR	TST1	Tip-Emergency Terminal 1
4	BR-W	RST1	Ring-Emergency Terminal 1
30	W-S	TTC2	Tip-PBX Trunk Circuit 2
5	S-W	RTC2	Ring-PBX Trunk Circuit 2
31	R-BL	TTK2	Tip-CO Trunk Circuit 2
6	BL-R	RTK2	Ring-CO Trunk Circuit 2
32	R-O	TLC2	Tip-PBX Line Port 2
7	O-R	RLC2	Ring-PBX Line Port 2
33	R-G	TST2	Tip-Emergency Terminal 2
8	G-R	RST2	Ring-Emergency Terminal 2
34	R-BR	TTC3	Tip-PBX Trunk Circuit 3
9	BR-R	RTC3	Ring-PBX Trunk Circuit 3
35	R-S	TTK3	Tip-CO Trunk Circuit 3
10	S-R	RTK3	Ring-CO Line Port 3
36	BK-BL	TLC3	Tip-PBX Line Port 3
11	BL-BK	RLC3	Ring-PBX Line Port 3
37	BK-O	TST3	Tip-Emergency Terminal 3
12	O-BK	RST3	Ring-Emergency Terminal 3
38	BK-G	TTC4	Tip-PBX Trunk Circuit 4
13	G-BK	RTC4	Ring-PBX Trunk Circuit 4
39	BK-BR	TTK4	Tip-CO Trunk Circuit 4
14	BR-BK	RTK4	Ring-CO Trunk Circuit 4
40	BK-S	TLC4	Tip-PBX Line Port 4
15	S-BK	RLC4	Ring-PBX Line Port 4

Continued on next page

Table 1-21. Pin Assignments for 25-Pair Connector on 808A — Continued

Pin	Color	Designation	Connector/Description
41	Y-BL	TST4	Tip-Emergency Terminal 4
16	BL-Y	RST4	Ring-Emergency Terminal 4
42	Y-O	TTC5	Tip-PBX Trunk Circuit 5
17	O-Y	RTC5	Ring-PBX Trunk Circuit 5
43	Y-G	TTK5	Tip-CO Trunk Circuit 5
18	G-Y	RTK5	Ring-CO Trunk Circuit 5
44	Y-BR	TLC5	Tip-PBX Line Port 5
19	BR-Y	RLC5	Ring-PBX Line Port 5
45	Y-S	TST5	Tip-Emergency Terminal 5
20	S-Y	RST5	Ring-Emergency Terminal 5
46	V-BL	COM1	Common 1 Relay Contact
21	BL-V	NO1	Normally Open 1 Contact
47	V-O	NC2	Normally Closed 2 Contact
22	O-V	NC1	Normally Closed 1 Contact
48	V-G	COM2	Common 2 Relay Contact
23	G-V	NO2	Normally Open 2 Contact
49	V-BR		
24	BR-V		
50	V-S	GRD	Ground From PBX
25	S-V	-48PX	-48V from Alarm Panel (AUX Cable)

9. Check the system for emergency transfer operation as follows:
 - a. Place the test switch (switch 12) in the ACTIVATED position.
 - b. The power LED should be OFF.
 - c. Verify there is dial tone on all emergency transfer sets.
10. Connect the 808A to the MDF with a B25A or A25B cable. [Figure 1-47](#) shows the connections at the trunk/auxiliary field for a telephone used only for emergency transfer.

Figure 1-48 shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer and as a normal extension.

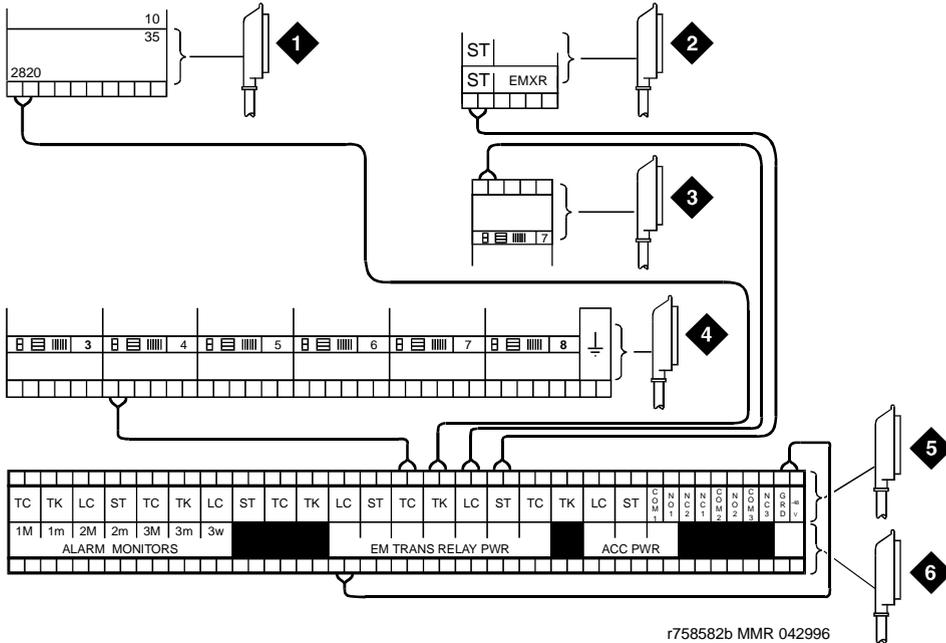


Figure Notes

- | | |
|-----------------------------------|-------------------------------------|
| 1. To network interface facility | 4. To CO trunk circuit pack |
| 2. To blue or white station field | 5. To power transfer unit |
| 3. To analog line circuit pack | 6. To control carrier AUX connector |

Figure 1-48. Connections for Telephone Used for Emergency Transfer and as Normal Extension

Install Telephone for Power Transfer Unit

Trunk/Auxiliary Field: Telephone Used Only for Emergency Transfer

1. Connect a pair of wires between the -48V and GRD terminals on the yellow emergency transfer row/connecting block and the EM TRANS RELAY PWR terminal. See Figure 1-47 on page 1-103.
2. Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to the TK terminals on the yellow emergency transfer row/connecting block for each trunk.

4. Connect the ST leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the ST terminal appearance in the yellow trunk/auxiliary field. The ST terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).
5. Connect the ST leads from the terminal in Step 4 to the assigned terminal in the blue or white station distribution field.

Trunk/Auxiliary Field: Telephone Used for Emergency Transfer and as Normal Extension

1. Connect a pair of wires between the -48V and GRD terminals on the yellow emergency transfer row/connecting block to the EM TRANS RELAY PWR terminal. See [Figure 1-48 on page 1-104](#).
2. Connect CO trunk leads from the purple field to the TC terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to the TK terminals on the yellow emergency transfer row/connecting block for each trunk.
4. Connect telephone leads from the purple analog line board row/ connecting block to the LC terminals on the yellow emergency transfer row/connecting block for each telephone.
5. Connect ST leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the ST terminal appearance in the purple trunk/auxiliary field.
6. Connect the ST leads from the terminal in Step 5 to the assigned terminal in the blue or white station distribution field.

Telephone Installation

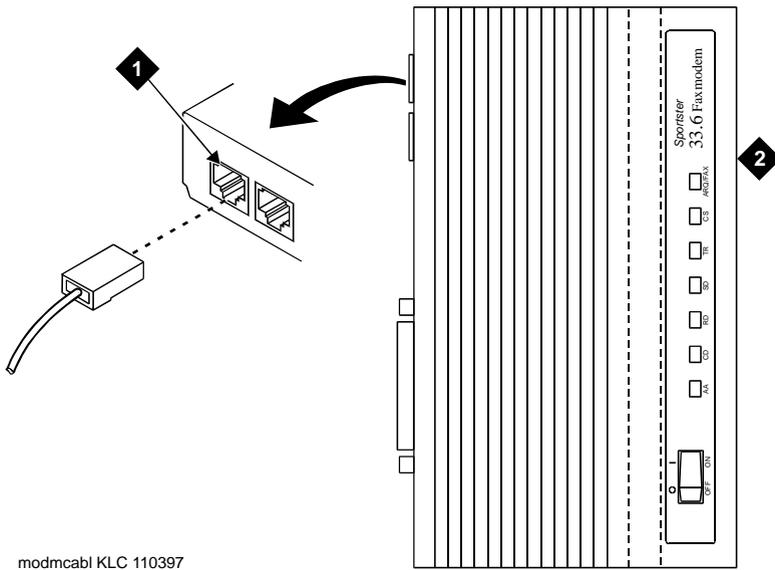
1. Connect the telephone to the information outlet.
2. Install patch cords/jumper wires between the system side and the station side of the station distribution field on the MDF.

Connect Modem to Telephone Network

1. Cross-connect the network jack on the modem to the network interface (via a 103A or modular wall jack). See [Table 1-22](#) for the pinout.

Table 1-22. Pinout of Network Jack

Pin Number	Signal
1	Unused
2	Tip
3	Ring
4	Unused



modmcabl KLC 110397

Figure Notes

1. Pin 1 of network jack
2. Modem

Figure 1-49. Network Jack on U.S. Robotics Modem

External Modem Option Settings

The U.S. Robotics Sportster Model USR 33.6 EXT external modem is the recommended external modem. A locally obtained, type-approved external modem may be used. Contact your Avaya Inc. representative for information.

1. If a non-U.S Robotics Model 839 modem is installed, refer to the setup instructions provided with that modem. Refer to [Table 1-24 on page 1-108](#) while setting up the modem. Go to Step 4 to complete the modem administration.
2. If no modem is installed, skip to step 5. If a U.S Robotics Model 839 modem is installed, perform the following.
3. Use [Table 1-23](#) to set the 8 option switches on the U.S. Robotics modem

Table 1-23. U.S. Robotics Model 839 External 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

4. Type **change system-parameters maintenance** and press Enter. Scroll to page 3 of the form.

5. Set the `Modem Connection:` field to **external** if a modem is installed. Set the field to **none** if no modem is installed. This field must be administered or alarms will be generated.



NOTE:

The `Modem Connection:` field cannot be set to **none** if Alarm Origination is activated.

6. Set the `Data Bits:` field to **8** (default).
7. Set the `Parity:` field to **none** (default).
8. For non-United States installations, set the remaining modem fields as shown in [Table 1-24](#).
9. Press `Enter` when the modem fields are properly administered.

Table 1-24. Modem Fields

Field	Description
Modem Connection	Default is none . Set to external if a modem is used.
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem.
RTS/CTS Enabled	Informs modem that communication with the data source UART is driven with RTS/CTS flow control. The default 6-character field name is &H1 . Set the field name to <code>\Q3</code> for Intel modems. This field is not case-sensitive.
Asynchronous Data Mode	Configures modem as an asynchronous device. This 8-character field name has a default value of &M0 (default). Set the field to <code>&M0&Q0</code> for Intel modems. This field is not case-sensitive.
DTE Auto-Data Speed	Adjusts the speed of the data source (DTE) UART to the outgoing (modem-to-modem) data rate. At maximum, this speed is 9600 baud. It is not desirable to have the serial data fill the modem buffer faster than the outgoing data rate, since data compression is disabled. The field name has a 6-character blank default value. The Paradyne products use <code>S90=1</code> to enable this functionality while the Intel product uses <code>\J1</code> to enable similar functionality. This field is not case-sensitive.
Disable Data Compression	Turns off the default data compression algorithms used by most modems. The field has a blank field of 6 characters as default. The AT commands that control this are supported by similar commands; however, these commands do not operate in the same manner. The Intel modems require <code>H0%C0</code> to disable V.42bis & MNP Class 5 data compression algorithms. The Paradyne products only use <code>%C0</code> to disable both algorithms. This field is not case-sensitive.

Continued on next page

Table 1-24. Modem Fields — Continued

Field	Description
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols. The field has a blank default of 6 characters. The Paradyne products use the command \N5 to enable V.42/MNP/Buffer error control while the Intel product uses \N3 to provide similar functionality.
Misc. Init. Param	This field has a 20-character blank default and supports any initialization parameters not already specified. The AT commands specified in this field are always the last initialization parameters to be sent to the external modem. This field is not case-sensitive.
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field should be set to S0=10.
Dial Type	This field controls the type of interregister signaling used between the modem and the CO. This 3-character field is denoted by "T" for tone dialing (default) and "P" for pulse dialing. This setting depends on type of line (tone or pulse) to the modem.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. Most modems have support for different make/ break options for pulse dialing only. Paradyne, Intel, and U.S. Robotics use the default &P0 to select a ratio of 39% make and 61% break for communication for the United States and Canada. The option &P1 sets a ratio of 33% make and 67% break for the United Kingdom and Hong Kong. This is a 5-character blank field (default) and is not case-sensitive.
Dial Command	This field has a default of "D" in a 3-character field. This field denotes the standard dialing command of the modem and is not case-sensitive.
No Answer Time-Out	Most modems provide a timer that abandons any outbound data call after a predetermined interval. This is a non-administrable parameter.

System Administration

⇒ NOTE:

Some of the interface units used between the system and other types of equipment require specific configuration settings and administration for each application. Refer to the user's guide for each equipment type for information on how to locate and set the configuration and option switches.

1. Administer the system by adding the customer data to match the wiring, telephones, and other equipment. See *Administrator's Guide for Avaya MultiVantage Software*.
2. Return to this section when finished.

⇒ NOTE:

Refer to *Installation for Adjuncts and Peripherals for Avaya MultiVantage Software* for data module and other peripheral installation and configuration requirements.

Alarms and Reporting

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.
2. Refer to [“Power Supply LED Indications” on page 2-8](#) if power supply faults are suspected.

Enable Alarm Origination to INADS

No External Modem Installed (or No Alarm Origination to INADS)

1. Type **change system-parameters maintenance** and press Enter.
2. Type **n** in the Alarm Origination Activated to OSS Numbers field and press Enter.
3. For some DEFINITY ECS software releases, enable Cleared Alarm Notification and Restart Notification before the submitting the form.

External Modem Installed

1. Type **change system-parameters maintenance** and press Enter.
2. Type **y** in the Alarm Origination Activated to OSS Numbers field and press Enter.
3. For some DEFINITY ECS software releases, enable Cleared Alarm Notification and Restart Notification before the submitting the form.
4. Be sure the system is part of the INADS database by calling the INADS Database Administrator at the Technical Service Center (TSC). Verify that INADS can dial into the system and that the system can dial out to INADS.

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



NOTE:

When calling from a remote modem, you may need to disable error correction to allow the modems to connect successfully. For example, the AT&T Paradyne KeepInTouch[®] modem may require the “AT\n0” command.

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.

Place a Test Call

1. From any telephone connected to a digital line circuit pack, call any nearby telephone connected to an analog line circuit pack.
2. Verify that the dial tone, ringing pattern, and talk path are acceptable.
3. Place a call through the Central Office (outside call) to any nearby telephone. Verify that the dial tone, ringing pattern, and talk path are acceptable.

Set Neon Voltage — Ring Ping

⇒ NOTE:

If the ringing option is set to 50 Hz, neon voltage is not available. If 25 Hz is selected, the maximum voltage is 120 volts. Refer to “[Set Ringing Option](#)” on page 1-55.

⇒ NOTE:

Set the control to OFF if there are no *neon* message waiting lamps or if LED message lamps are used. See [Figure 2-1](#).

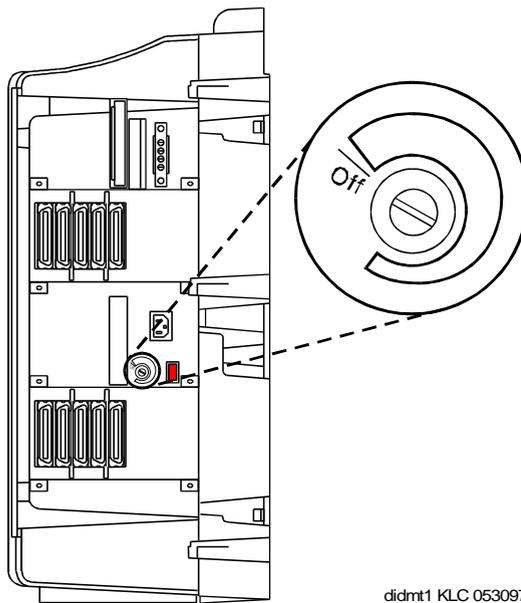


Figure 2-1. Setting the Neon Voltage

1. Call a telephone with a neon message indicator and leave a message.
2. Check for “ring ping” (single ring pulse) each time the lamp flashes (approximately every 3 seconds).
3. Adjust the control clockwise in small increments until the ring ping stops. Be sure that the message lamp still lights when the adjustment is finished.

Installation Completion

1. Type **logout** and press Enter to prevent unauthorized changes to data.
2. Set the left and right doors onto the hinge pins and close the doors. The doors must be closed to prevent EMI emissions. Tighten the door screws.
3. Set the right cover panel onto the right panel and secure. Do not use force.

Power Supply LED Indications

It is not possible to view the alarm log to determine which power unit in a multi-cabinet system is defective. Use the LEDs on the front of each power unit to determine its state.

[Table 2-1](#) shows the LED and alarm conditions. Ring voltage and neon bus output do not activate alarm status.

Table 2-1. LED and Alarm Conditions

Condition	LED Status	Alarm State	Fan Alarm
Normal	Red off Yellow on	open	high
No Input Power	Red off Yellow off	closed	open
Any DC Output not Present	Red on Yellow off	closed	no state
Fan Alarm	Red on Yellow off	closed	low

TN760D Tie Trunk Option Settings

The TN760D Tie Trunk circuit pack interfaces between 4 tie trunks and the TDM bus. Two tip and ring pairs form a 4-wire analog transmission line. An E and M pair are DC signaling leads used for call setup. The E-lead receives signals from the tie trunk and the M-lead transmits signals to the tie trunk.

To choose the preferred signaling format (Table 2-2 and Table 2-3), set the switches on the TN760D and administer the port using Figure 2-2 on page 2-10 and Table 2-4 on page 2-10.

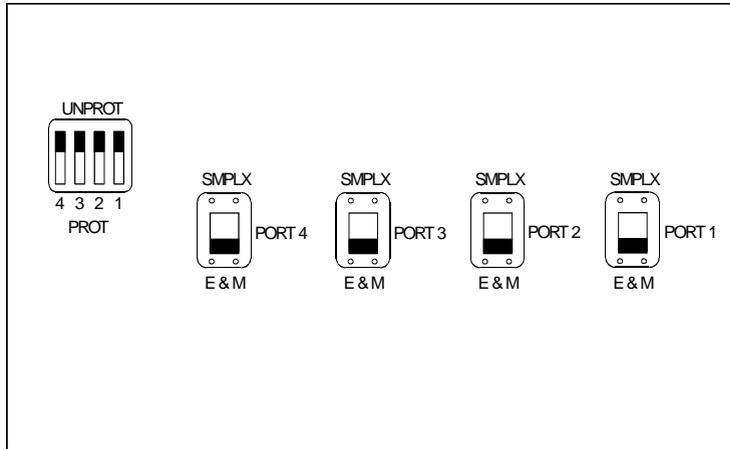
Table 2-2. Signaling Formats for TN760D

Mode	Type
E & M	Type I Standard (unprotected)
E & M	Type I Compatible (unprotected)
Protected	Type I Compatible, Type I Standard
Simplex	Type V
E & M	Type V
E & M	Type V Revised

Table 2-3. Signaling Type Summary

Signaling Type	Transmit (M-Lead)		Receive (E-Lead)	
	On-Hook	Off-Hook	On-Hook	Off-Hook
Type I Standard	ground	battery	open ¹ /battery	ground
Type I Compatible	open ¹ /battery	ground	ground	open ¹ /battery
Type V	open ¹ /battery	ground	open	ground
Type V Reversed	ground	open	ground	open

1. An open circuit is preferred instead of battery voltage.



7758183 RBP 050896

Figure 2-2. TN760D Tie Trunk Circuit Pack (Component Side)

Table 2-4. TN760D 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

TN464F/GP and TN2464BP Option Settings

The TN464F/GP DS1/E1 Interface - T1/E1 circuit pack interfaces between a 24- or 32-channel Central Office/ISDN or tie trunk and the TDM bus.

⇒ NOTE:

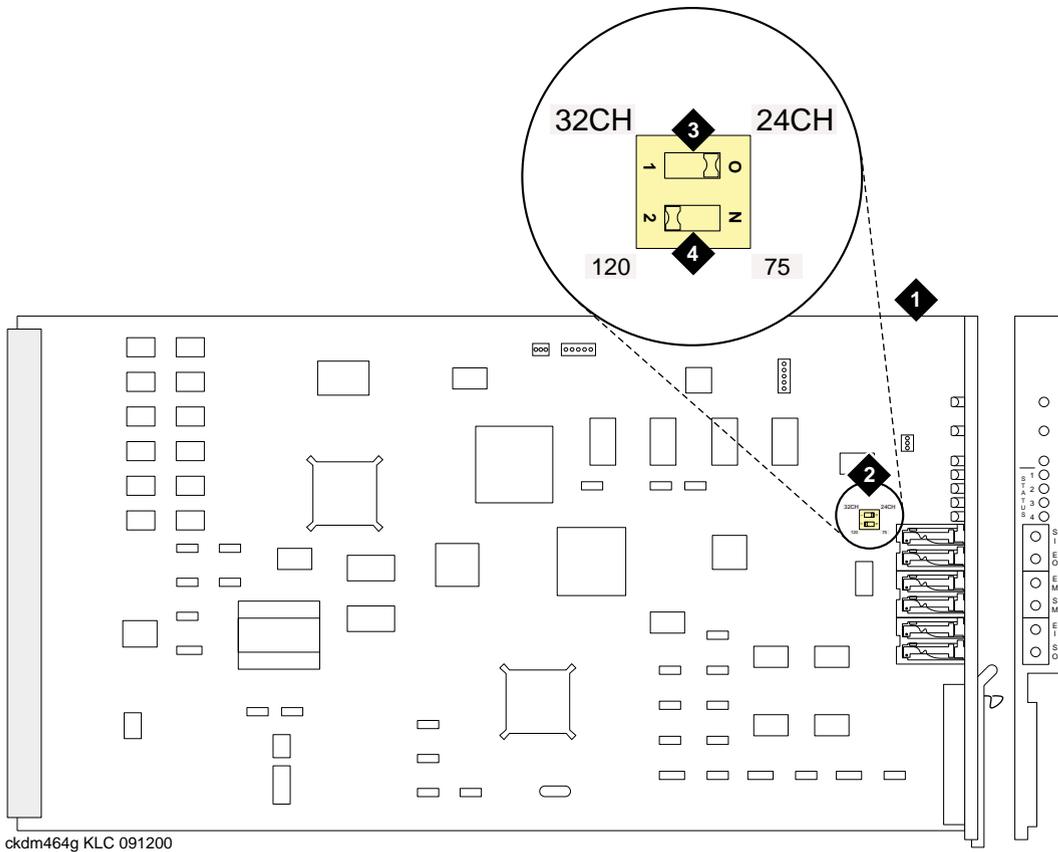
The P designation means the circuit pack's firmware is programmable. Refer to "[Downloading Firmware to Port Circuit Packs](#)" on page 5-2 for more information.

Set the switches on the circuit pack to select bit rate and impedance match. See [Table 2-5](#) and [Figure 2-3 on page 2-12](#). If the top switch setting is set to 32 channel, then set the lower switch setting to either 120 ohms or 75 ohms.

Table 2-5. Option Switch Settings on TN464F/GP and TN2464BP

120 ohms	Twisted pair
75 ohms	Coaxial requiring 888B adapter
32 Channel ¹	2.048 Mbps
24 Channel ¹	1.544 Mbps

1. If the 24/32 channel switch is not set per administration (or vice versa), the circuit pack alarms and will not be present in the list configuration command.
-



ckdm464g KLC 091200

Figure Notes

- | | |
|--|---------------------------|
| 1. TN464F/GP or TN2464BP
DS1/E1 Interface | 3. 24/32 Channel Selector |
| 2. Option switch | 4. 75/120 ohm Selector |

Figure 2-3. TN464F/GP and TN2464BP Option Settings

Connector and Cable Diagrams — Pinout Charts

See [Table 2-6](#) for typical lead designations. The circuit packs and auxiliary equipment are classified as shown in the following tables.

Table 2-6. Lead and Color Designations

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	W-BL	26	102
2	BL-W	01	002
3	W-O	27	103
4	O-W	02	003
5	W-G	28	104
6	G-W	03	004
7	W-BR	29	105
8	BR-W	04	005
9	W-SL	30	106
10	SL-W	05	006
11	R-BL	31	107
12	BL-R	06	007
13	R-O	32	108
14	O-R	07	008
15	R-G	33	109
16	G-R	08	009
17	R-BR	34	110
18	BR-R	09	010
19	R-SL	35	111
20	SL-R	10	011
21	BK-BL	36	112
22	BL-BK	11	012
23	BK-O	37	113
24	O-BK	12	013

Continued on next page

Table 2-6. Lead and Color Designations — *Continued*

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
25	BK-G	38	302
26	G-BK	13	202
27	BK-BR	39	303
28	BR-BK	14	203
29	BK-SL	40	304
30	SL-BK	15	204
31	Y-BL	41	305
32	BL-Y	16	205
33	Y-O	42	306
34	O-Y	17	206
35	Y-G	43	307
36	G-Y	18	207
37	Y-BR	44	308
38	BR-Y	19	208
39	Y-SL	45	309
40	SL-Y	20	209
41	V-BL	46	310
42	BL-V	21	210
43	V-O	47	311
44	O-V	22	211
45	V-G	48	312
46	G-V	23	212
47	V-BR	49	313
48	BR-V	24	213
49	V-SL	50	300
50	SL-V	25	200

Processor Interface Cable Pinout

Table 2-7 shows the pinout for the Processor Interface Cable.

Table 2-7. Processor Interface Cable Pinout

Signal Name	Processor (P1) (Amphenol Connector)	AUX (J1)	TERM (J3)	DCE (J2)	Modem (P2)
ACC48A	40	19			
AP1 (alarm in)	2	26			
AP2 (alarm in)	27	27			
EXTALMA	5	48			
EXTALMB	30	23			
XFER48	38	36			
MOD-CTS	21				5
MOD-DCD	46				8
MOD-DSR	8				6
MOD-DTR	7				20
MOD-GRD	20				1 & 7
MOD-RTS	34				4
MOD-RXD	33				3
MOD-TXD	45				2
TERM-CTS	9		5		
TERM-DTR	47		20		
TERM-GRD	35		1 & 7		
TERM-RXD	10		3		
TERM-TXD	22		2		
CDR-CTS	49			5	
CDR-DCD	24			8	
CDR-DSR	12			6	
CDR-DTR	37			20	
CDR-GRD	23			1 & 7	
CDR-RXD	36		3	3	
CDR-TXD	48		2	2	
GRD	25, 50	1-7, 11-17, 44-46	1, 7	1, 7	1, 7

Table 2-8. Port Circuit Pack Lead Designations

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754 TN726	TN760/B TN760C TN760D TN2209	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN464GP TN2207	TN746/B TN2183 TN793 TN2793	TN2224/B
1	T.1		T.1	T.1	T.1	T.1	C_5	T.1	T.1
2	R.1		R.1	R.1	R.1	R.1		R.1	R.1
3		TXT.1	T1.1	TXT.1	SZ.1	BT.1	C_ENAB	T.2	T.2
4		TXR.1	R1.1	TXR.1	SZ1.1	BR.1		R.2	R.2
5		PXT.1	E.1	PXT.1	S.1	LT.1	C_SYNC*	T.3	T.3
6		PXR.1	M.1	PXR.1	S1.1	LR.1		R.3	R.3
7	T.2		T.2	T.2	T.2	T.2	C2D-DATA	T.4	T.4
8	R.2		R.2	R.2	R.2	R.2	RDATA*	R.4	R.4
9		TXT.2	T1.2	TXT.2	SZ.2	BT.2	TDATA*		T.5
10		TXR.2	R1.2	TXR.2	SZ1.2	BR.2	TRSYSNC		R.5
11		PXT.2	E.2	PXT.2	S.2	LT.2	GRD		T.6
12		PXR.2	M.2	PXR.2	S1.2	LR.2	SCLK*		R.6
13	T.3		T.3	T.3	T.3	T.3			T.7
14	R.3		R.3	R.3	R.3	R.3			R.7
15		TXT.3	T1.3	TXT.3	SZ.3	BT.3			T.8
16		TXR.3	R1.3	TXR.3	SZ1.3	BR.3	PAHER*		R.8
17		PXT.3	E.3	PXT.3	S.3	LT.3		T.5	T.9
18		PXR.3	M.3	PXR.3	S1.3	LR.3	C_48V	R.5	R.9
19	T.4		T.4	T.4	T.4	T.4		T.6	T.10
20	R.4		R.4	R.4	R.4	R.4		R.6	R.10
21		TXT.4	T1.4	TXT.4	SZ.4	BT.4	C_P2SCLK	T.7	T.11
22		TXR.4	R1.4	TXR.4	SZ1.4	BR.4	LI (RX)	R.7	R.11
23		PXT.4	E.4	PXT.4	S.4	LT.4	LO* (TX)	T.8	T.12
24		PXR.4	M.4	PXR.4	S1.4	LR.4	LBACK1	R.8	R.12
25	T.5		T.5	T.5	T.5	T.5	GND	T.9	T.13
26	R.5		R.5	R.5	R.5	R.5	C_5V	R.9	R.13
27		TXT.5	T1.5	TXT.5	SZ.5	BT.5		T.10	T.14
28		TXR.5	R1.5	TXR.5	SZ1.5	BR.5		R.10	R.14
29		PXT.5	E.5	PXT.5	S.5	LT.5		T.11	T.15
30		PXR.5	M.5	PXR.5	S1.5	LR.5	C_RST	R.11	R.15
31	T.6		T.6	T.6	T.6	T.6		T.12	T.16
32	R.6		R.6	R.6	R.6	R.6		R.12	R.16
33		TXT.6	T1.6	TXT.6	SZ.6	BT.6	RDATA		T.17
34		TXR.6	R1.6	TXR.6	SZ1.6	BR.6	TDATA		R.17
35		PXT.6	E.6	PXT.6	S.6	LT.6	TRSYNC		T.18
36		PXR.6	M.6	PXR.6	S1.6	LR.6	GRD		R.18
37	T.7		T.7	T.7	T.7	T.7	SCLK		T.19
38	R.7		R.7	R.7	R.7	R.7			R.19
39		TXT.7	T1.7	TXT.7	SZ.7	BT.7			T.20

Continued on next page

Table 2-8. Port Circuit Pack Lead Designations — Continued

Cross-Connect Pin	TN742/B TN747B TN753 TN769 TN2147 TN465	TN754 TN726	TN760/B TN760C TN760D TN2209	TN762/B	TN763 TN763B TN763C	TN735	TN767B TN464GP TN2207	TN746/B TN2183 TN793 TN2793	TN2224/B
40		TXR.7	R1.7	TXR.7	SZ1.7	BR.7			R.20
41		PXT.7	E.7	PXT.7	S.7	LT.7	GRD	T.13	T.21
42		PXR.7	M.7	PXR.7	S1.7	LR.7		R.13	R.21
43	T.8		T.8	T.8	T.8	T.8	C_PRES*	T.14	T.22
44	R.8		R.8	R.8	R.8	R.8		R.14	R.22
45		TXT.8	T1.8	TXT.8	SZ.8	BT.8		T.15	T.23
46		TXR.8	R1.8	TXR.8	SZ1.8	BR.8	DC2_DATA	R.15	R.23
47		PXT.8	E.8	PXT.8	S.8	LT.8	LI* (RX)	T.16	T.24
48		PXR.8	M.8	PXR.8	S1.8	LR.8	LO (TX)	R.16	R.24
49	GRD	GRD	GRD	GRD	GRD	GRD	LBACK2	GRD	GRD
50	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD	GRD

* Denotes high side of line.

Table 2-9. DS1Interface Cable H600-307 (and C6C)

50-Pin			15-Pin		
Pin	Color	Designation	Pin	Color	Designation
02	W-BL				
03	BL-W				
47	W-G	LI (High)	11	W-G	LI (High)
22	G-W	LI	03	G-W	LI
48	W-BR	LO	09	W-BR	LO
23	BR-W	LO (High)	01	\BR	LO (High)
49	W-SL	LOOP2	06	W-SL	LOOP2
24	SL-W	LOOP1	05	SL-W	LOOP1

All other pins are empty.

Table 2-10 shows the pinouts for the TN2185 ISDN-BRI 4-wire S Interface.

Table 2-10. TN2185 ISDN-BRI — 4-Wire S Interface Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	TXT.1	1	W-BL	26	102
	TXR.1	2	BL-W	01	002
	PXT.1	3	W-O	27	103
	PXR.1	4	O-W	02	003
2	TXT.2	5	W-G	28	104
	TXR.2	6	G-W	03	004
	PXT.2	7	W-BR	29	105
	PXR.2	8	BR-W	04	005
3	TXT.3	9	W-SL	30	106
	TXR.3	10	SL-W	05	006
	PXT.3	11	R-BL	31	107
	PXR.3	12	BL-R	06	007
4	TXT.4	13	R-O	32	108
	TXR.4	14	O-R	07	008
	PXT.4	15	R-G	33	109
	PXR.4	16	G-R	08	009
5	TXT.5	17	R-BR	34	110
	TXR.5	18	BR-R	09	010
	PXT.5	19	R-SL	35	111
	PXR.5	20	SL-R	10	011
6	TXT.6	21	BK-BL	36	112
	TXR.6	22	BL-BK	11	012
	PXT.6	23	BK-O	37	113
	PXR.6	24	O-BK	12	013
7	TXT.7	25	BK-G	38	302
	TXR.7	26	G-BK	13	202
	PXT.7	27	BK-BR	39	303
	PXR.7	28	BR-BK	14	203
8	TXT.8	29	BK-SL	40	304
	TXR.8	30	SL-BK	15	204
	PXT.8	31	Y-BL	41	305
	PXR.8	32	BL-Y	16	205

Table 2-11 shows the pinout for the TN793 and TN2793 24-Port Analog Line circuit pack.

Table 2-11. TN793 Analog Line Circuit Pack Pinout

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	T.1	1	W-BL	26	102
	R.1	2	BL-W	01	002
2	T.2	3	W-O	27	103
	R.2	4	O-W	02	003
3	T.3	5	W-G	28	104
	R.3	6	G-W	03	004
4	T.4	7	W-BR	29	105
	R.4	8	BR-W	04	005
5	T.5	9	W-SL	30	106
	R.5	10	SL-W	05	006
6	T.6	11	R-BL	31	107
	R.6	12	BL-R	06	007
7	T.7	13	R-O	32	108
	R.7	14	O-R	07	008
8	T.8	15	R-G	33	109
	R.8	16	G-R	08	009
9	T.9	17	R-BR	34	110
	R.9	18	BR-R	09	010
10	T.10	19	R-SL	35	111
	R.10	20	SL-R	10	011
11	T.11	21	BK-BL	36	112
	R.11	22	BL-BK	11	012
12	T.12	23	BK-O	37	113
	R.12	24	O-BK	12	013
13	T.13	25	BK-G	38	302
	R.13	26	G-BK	13	202

Continued on next page

Table 2-11. TN793 Analog Line Circuit Pack Pinout — *Continued*

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
14	T.14	27	BK-BR	39	303
	R.14	28	BR-BK	14	203
15	T.15	29	BK-SL	40	304
	R.15	30	SL-BK	15	204
16	T.16	31	Y-BL	41	305
	R.16	32	BL-Y	16	205
17	T.17	33	Y-O	42	306
	R.17	34	O-Y	17	206
18	T.18	35	Y-G	43	307
	R.18	36	G-Y	18	207
19	T.19	37	Y-BR	44	308
	R.19	38	BR-Y	19	208
20	T.20	39	Y-SL	45	309
	R.20	40	SL-Y	20	209
21	T.21	41	V-BL	46	310
	R.21	42	BL-V	21	210
22	T.22	43	V-O	47	311
	R.22	44	O-V	22	211
23	T.23	45	V-G	48	312
	R.23	46	G-V	23	212
24	T.24	47	V-BR	49	313
	R.24	48	BR-V	24	213
25		49	V/SL	50	314
50		50	SL/V	25	214

Table 2-12. Circuit Pack and Auxiliary Equipment Classifications

Analog Line (8)	2-Wire Digital & Analog Line (16) and (24)	Data Line & Digital Line 4-Wire	2-Wire Digital & Analog 24 Ports	Hybrid Line	AUX Trunk	Central Office Trunk	Central Office Trunk 3-Wire		Tie Trunk	DS1 Tie Trunk	Four Port DIOD ²
							Central Office Trunk	DID / DIOD ¹ Trunk			
TN467	TN2149	TN726B	TN2224	TN762	TN417	TN429	TN2199	TN429	TN478	TN483	TN2184
TN432	TN2135	TN754B	TN2214	TN762B	TN763	TN493		TN2139	TN458	TN722	
TN431	TN468B	TN564B	TN793		TN763 D	TN422		TN459B	TN449	TN767	
TN411B	TN448	TN413	TN2793			TN421		TN436B	TN760 D	TN722B	
TN742	TN746		TN2214B			TN438B		TN753	TN760 C	TN464GP	
TN769	TN746B		TN2224B			TN447		TN2146	TN434	TN2207	
	TN2181		TN793B			TN465C		TN414	TN415	TN2464BP	
	TN2183		TN2793B			TN747B			TN2209		
	TN793					TN2138					
	TN2793					TN2147 C					
	TN2215					TN2148					
	TN791										
	TN2214										

1. DID/DIOD = Direct Inward Dialing/Direct Inward Outward Dialing

2. DIOD = Direct Inward Outward Dialing

Table 2-13. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
W-BL	26	T1	T1		T1	V1T1	T1	T1	A1	T1	T1		T1
BL-W	01	R1	R1		R1	V1R1	R1	R1	B1	R1	R1		R1
W-O	27		T2	TXT1	T2	CT1	SZ1				T11		
O-W	02		R2	TXR1	R2	CR1	SZ11				R11		
W-G	28		T3	PXT1	T3	P-1	S1				E1		
G-W	03		R3	PXR1	R3	P+1	S11		C1		M1		
W-BR	29	T2	T4		T4	V1T2	T2	T2	A2	T2	T2		T2
BR-W	04	R2	R4		R4	V1R2	R2	R2	B2	R2	R2		R2
W-S	30			TXT2	T5	CT2	SZ2				T12		
S-W	05			TXR2	R5	CR2	SZ12				R12		
R-BL	31			PXT2	T6	P-2	S2				E2		
BL-R	06			PXR2	R6	P+2	S12		C2		M2		
R-O	32	T3			T7	V1T3	T3	T3	A3	T3	T3		T3
O-R	07	R3			R7	V1R3	R3	R3	B3	R3	R3		R3
R-G	33			TXT3	T8	CT3	SZ3				T13		
G-R	08			TXR3	R8	CR3	SZ13				R13		
R-BR	34		T5	PXT3	T9	P-3	S3				E3		
BR-R	09		R5	PXR3	R9	P+3	S13		C3		M3		
R-S	35	T4	T6		T10	V1T4	T4	T4	A4	T4	T4		T4
S-R	10	R4	R6		R10	V1R4	R4	R4	B4	R4	R4		R4
BK-BL	36		T7	TXT4	T11	CT4	SZ4				T14		
BL-BK	11		R7	TXR4	R11	CR4	SZ14				R14		
BK-O	37		T8	PXT4	T12	P-4	S4				E4		
O-BK	12		R8	PXR4	R12	P+4	S14				M4		

Continued on next page

Table 2-13. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) — Continued

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
BK-G	38	T5	T9		T13	V1T5		T5		T5			
G-BK	13	R5	R9		R13	V1R5		R5		R5			
BK-BR	39		T10	TXT5	T14	CT4							
BR-BK	14		R10	TXR5	R14	CR4							
BK-S	40		T11	PXT5	T15	P-5							
S-BK	15		R11	PXR5	R15	P+5							
Y-BL	41	T6	T12		T16	V1T6		T6		T6			
BL-Y	16	R6	R12		R16	V1R6		R6		R6			
Y-O	42			TXT6	T17	CT6							
O-Y	17			TXR6	R17	CR6							
Y-G	43			PXT6	T18	P-6							
G-Y	18			PXR6	R18	P+6							
Y-BR	44	T7			T19	V1T7		T7		T7			
BR-Y	19	R7			R19	V1R7		R7		R7			
Y-S	45			TXT7	T20	CT7							
S-Y	20			TXR7	R20	CR7							
V-BL	46		T13	PXT7	T21	P-7							
BL-V	21		R13	PXR7	R21	P+7							
V-O	47	T8	T14		T22	V1T8		T8		T8		LI*	
O-V	22	R8	R14		R22	V1R8		R8		R8		LI	

Continued on next page

Table 2-13. Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) — Continued

Color	Connector Pin Numbers	Analog Line 8 ports	2-Wire Digital Line & Analog Line 16 ports	Data Line and Digital Line 4-wire	2-Wire Digital Line & Analog Line 24 Ports	Hybrid Line	AUX Trunk	CO Trk	CO Trunk 3-wire	DID/DIOD Trunk	Tie Trk	DS1 Tie Trunk	Four Port DIOD
V-G	48	T15	T23	TXT8	CT8							LO	
G-V	23	R15	R23	TXR8	CR8							LO*	
V-BR	49	T16	T24	PXT8	P-8							LBACK2	
BR-V	24	R16	R24	PXR8	P+8							LBACK1	
V-S	50												
S-V	25												

The wire colors in this chart apply only to B25A and A25B cables. H600-307 cable colors are not shown.

The following abbreviations apply for all circuit packs unless otherwise noted:

- T,R PBX transmit voice T Tip(A) Green
- T1,R1 PBX receive voice R Ring(B) Red
- M PBX transmit signal S Sleeve
- E PBX receive signal PX PBX transmit
- TX Terminal transmit
- LI, LI* Digital Trunk IN LO, LO* Digital Trunk OUT

The following wire colors apply in the above chart:

- W White
- S Slate (Grey)
- BL Blue
- R Red
- O Orange
- BK Black
- G Green
- Y Yellow
- BR Brown
- V Violet

Upgrading R6csi/R7csi/R8csi to Avaya MultiVantage Software on an Avaya DEFINITY Server CSI

3

This chapter provides the information on upgrading from a DEFINITY ECS Release 6csi, Release 7csi, or Release 8csi to Avaya MultiVantage Software on an Avaya DEFINITY Server CSI. As part of this upgrade, you must replace the TN798/B Processor with a TN2402 Processor. Refer to the *Maintenance for Avaya MultiVantage DEFINITY Server CSI* book for changing the processor circuit pack.

Administrator's Guide for Avaya MultiVantage Software lists features and functions and provides the commands, procedures, and forms to initialize and administer the system.

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. The License File enables the MultiVantage Software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. *Without a license file, the switch does not provide normal call processing.*

7-digit dial plan expansion

The upgrade automatically converts the old Uniform Dial Plan forms to the new forms, which are discussed completely in the *Avaya MultiVantage Software Administrator's Guide*.

Customers upgrading to Avaya MultiVantage Software can migrate to the 6-/7-digit dial plan or not:

- Customers who *want to migrate* to the 6-/7-digit dial plan can
 - freeze their translations and send them to the TSO for conversion. For customers who do not have optical drives, Avaya must migrate those translations to customer-compatible media.
 - re-administer the switch themselves (no translation freeze required).
- Customers who *do not want to migrate* to a 6-/7-digit dial plan (want to keep their current 4-/5-digit dial plan) experience no changes after the upgrade. That is, if they had 4-digit dialing before the upgrade, they have 4-digit dialing afterwards.

Call Management System

The CMS link is dropped and restarted during the upgrade, causing:

- Loss of CMS data. To minimize the measurement data loss, perform the upgrade just after the last CMS measurement interval. If needed, print the reports before starting the upgrade.
- Dropped calls (call processing aborted) 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.

Service Interruption

The upgrade process requires a service interruption of about 10 minutes and must be closely coordinated with the customer and the local account team.

Contact Network Technicians

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

Translation Card Upgrade Procedures

Releases 6, 7, and 8 formatted translation cards are compatible for read-only operations. New formatted translation cards are shipped with each upgrade.

Usable Circuit Packs

Every port or control circuit pack used in the upgraded system must conform to the minimum usable vintage requirements. Those circuit packs must meet the usable vintage specifications.

Refer to the *Software Release Letter* for current information about usable vintages. For information about usable vintages of international circuit packs, refer to the *ITAC Technical Alert* from your regional distributor.

Software Upgrade

Even though the Releases 6, 7 and 8 translations upgrade automatically to Avaya MultiVantage Software, several features require special attention because of screen changes or potential naming conflicts in the update or upgrade procedure.

Between customer confirmation and the actual upgrade, the Software Specialist and Associate should check these forms to ensure the upgraded translations are appropriate for the customer's needs. Enter these translations either locally or remotely. If done remotely, contact the Field Support Administration Center (FSAC), with possible assistance from the upgrade technician, for the remote entry. For more information, refer to *Administrator's Guide for Avaya MultiVantage Software*.

Make no administration changes during the upgrade procedure. There can be time gaps between steps, and because the system cannot prevent administration changes, make sure that none are attempted during the entire upgrade process.

Task Table

Table 3-1 provides the high-level tasks to perform the upgrades in this chapter. Refer to the appropriate page for instructions for each step.

Table 3-1. Tasks List

✓	Task Description	Page
	Pre-upgrade checklist	3-5
	Check SPE	3-13
	Verify Software Version	3-13
	Verify System Status	3-13
	Disable Scheduled Maintenance and Alarm Origination to INADS	3-14
	Check Link Status	3-14
	Disable TTI (<i>Do not skip this section!</i>)	3-15
	Check TTI Status	3-15
	Save Translations	3-15
	Save Announcements (if necessary)	3-15
	Shut Down DEFINITY AUDIX System (if necessary)	3-16
	Replace Circuit Packs	3-16
	Install the License File	3-17
	Display Memory-Configuration	3-18
	Set Daylight Savings Rules	3-19
	Verify the Upgrade	3-19
	Re-enable TTI	3-20
	Enable Scheduled Maintenance	3-20
	Enable Alarm Origination to INADS	3-21
	Register the Switch for Maintenance	3-21
	Check Customer Options	3-25
	Check Link Status	3-25
	Power Up DEFINITY AUDIX System	3-25
	Resolve Alarms	3-26
	Restore Announcements (if necessary)	3-26

Continued on next page

Table 3-1. Tasks List — *Continued*

✓	Task Description	Page
	Check SPE	3-26
	Install translation card	3-26
	Save Translations (post-upgrade)	3-26
	Save Announcements (if necessary— post-upgrade)	3-26
	Return Equipment	3-26

Pre-upgrade checklist

In order to be properly prepared for the installation, have the items listed in [Table 3-2](#) ready.

Table 3-2. Pre-installation checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Avaya MultiVantage Software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Documentation (book or PDF file): <ul style="list-style-type: none"> ■ <i>Maintenance for Avaya MultiVantage DEFINITY Server CSI</i> ■ <i>Administrator's Guide for Avaya MultiVantage Software</i> 	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	Processor faceplate serial number(s)	
9.	Transaction Record number	

Continued on next page

Table 3-2. Pre-installation checklist — *Continued*

Item No.	Item	✓
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): <ul style="list-style-type: none">■ 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).	
16.	Pre-upgrade administration changes	

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/> 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.

 **NOTE:**

If you have problems with a hardware serial number that is not in the SAP database, go to the [“If you have problems with RFA”](#) section.

Have direct connection

If you have a direct connection between RFA and 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.

No direct connection

If you do not have a direct connection between RFA and 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.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 3-3](#)) to have them correct the SAP information.

Table 3-3. RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel:		877-615-4174	Prompt 8
<ul style="list-style-type: none"> ■ U.S. and Canada ■ Variable Workforce Group ■ Avaya contractors 	<ul style="list-style-type: none"> Avaya Associates Members Contractors 		
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayanetwork.com	Prompt 3 Select GSO; select EMEA
APAC RTAC	Direct and Business Partners	+65-6872-8686	
CALA <ul style="list-style-type: none"> ■ Mexico TAC ■ Brazil TAC ■ Columbia TAC ■ Argentina TAC ■ Mexico Call Receipt 	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	

Pre-upgrade administration changes

You must make the administration changes listed in [Table 3-4](#) prior to the upgrade:

Table 3-4. Pre-upgrade administration changes

✓	Task Description	Page
	Remove Print Messages Feature Access Code	3-9
	Remove print-msgs buttons	3-9
	Remove MSA node names	3-11
	Remove MSA processor channels	3-12
	Remove MET station administration	3-12

Remove Print Messages Feature Access Code

Remove the value from the `Print Messages Access Code` field on the `Feature Access Code (FAC)` form ([Screen 3-1](#)). This feature access code allows users to print undelivered messages without having to call the message center.

change feature-access-codes Page 2 of X

FEATURE ACCESS CODE (FAC)

Extended Call Fwd Activate Busy D/A_ All: Deactivation:

Extended Group Call Pickup Access Code:

Facility Test Calls Access Code:

Flash Access Code:

Group Control Restrict Activation: Deactivation:

Hunt Group Busy Activation: Deactivation:

ISDN Access Code:

Last Number Dialed Access Code:

Leave Word Calling Message Retrieval Lock:

Leave Word Calling Message Retrieval Unlock:

Leave Word Calling Send A Message: #66

Leave Word Calling Cancel A Message: *66

Malicious Call Trace Activation: Deactivation:

PASTE (Display PBX data on Phone) Access Code:

Personal Station Access (PSA) Associate Code:

Per Call CPN Blocking Code Access Code:

Per Call CPN Unblocking Code Access Code: Dissociate Code:

Print Messages Access Code:

Priority Calling Access Code:

Program Access Code:

Screen 3-1. Feature Access Code form

Remove print-msgs buttons

If any of the Button Assignments are administered as `print-msgs` (print messages) on the Station ([Screen 3-2](#)) and Attendant ([Screen 3-3](#)) forms, remove these buttons.

```

change station 1014                                     Page 3 of X
                                                    STATION

SITE DATA
Room: _____ Headset? n
Jack: _____ Speaker? n
Cable: _____ Mounting: d
Floor: _____ Cord Length: 0_
Building: _____ Set Color: _____

ABBREVIATED DIALING
List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS
1: call-appr           5: _____
2: call-appr           6: _____
3: call-appr           7: _____
4: print-msgs        8: _____
    
```

Screen 3-2. Station form

```

change attendant                                     Page 1 of 3
                                                    ATTENDANT CONSOLE 1

Type: console Name: 27 character attd cons name
Extension: 1000 Group: 1 Auto Answer: none
Console Type: principal TN: 1 Data Module? n
Port: 01C1106 COR: 1 Disp Client Redir? n
Security Code: COS: 1 Display Language: english
H.320 Conversion? n

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)
Local Remote Local Remote Local Remote
1: 9 5: 9:
2: 82 6: 10:
3: 7: 11:
4: 8: 12:

HUNDREDS SELECT BUTTON ASSIGNMENTS
1: print-msgs 5: 9: 13: 17:
2: 6: 10: 14: 18:
3: 7: 11: 15: 19:
4: 8: 12: 16: 20:
    
```

Screen 3-3. Attendant Console form

Remove MSA node names

Remove all MSA node names from the MSA Names field on the Audix-MSA Node Names form ([Screen 3-4](#)).

change node-names audix-msa Page 1 of x

AUDIX-MSA NODE NAMES

Audix Name	IP Address	MSA Names	IP Address
audixA_	__.*.*.*	_____	__.*.*.*
audixB_	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*
_____	__.*.*.*	_____	__.*.*.*

Screen 3-4. AUDIX-MSA Node Names form

Remove MSA processor channels

If the `Appl.` field on the Processor Channel Assignment form ([Screen 3-5](#)) is

- `msaamwl`
- `msaclk`
- `msahlwc`
- `msallwc`
- `msamcs`

you must remove this administration. These processor channel assignments are used in conjunction with a messaging adjunct that is no longer supported.

```
display communication-interface processor-channels          Page 1 of 16
PROCESSOR CHANNEL ASSIGNMENT
Proc      Gtwy      Interface      Destination      Session      Mach
Chan Enable  Appl.    To  Mode Link/Chan      Node      Port  Local/Remote ID
1:   n   audix      s   1   5000  audix      0      1    2    2
2:   n   dcs       c   2   5000  default    5000   1    2    4
3:   n   msaamwl  s   3   5000  msa        0      1    2
4:   n   msahlwc c   4   5000  msa        5000   1    2
5:   n
6:   n
```

Screen 3-5. Processor Channel Assignment form

Remove MET station administration

If the field value in the `Type` field on the Station form ([Screen 3-6](#)) is

- `10MET`
- `20MET`
- `30MET`

you must remove these stations from administration. These Multi-Button Electronic Telephone (MET) stations are no longer supported and will not work after the upgrade.

```

change station xxxx                                     Page 1 of X
                                                    STATION
Extension: 1014                                     Lock Messages? n
  Type: 10MET                                       Security Code:
Port:                                             Coverage Path 1:
Name:                                             Coverage Path 2:
                                                    BCC:
                                                    TN:1
                                                    COR: 1

STATION OPTIONS
  Loss Group: 2                                     Personalized Ringing Pattern: 3
  Data Module? n                                   Message Lamp Ext: 1014
  Speakerphone: 2-way                             Mute button enabled? y
  Display Language? English                       Media Complex Ext:
                                                    IP Softphone? y
                                                    Remote Office Station? n
                                                    IP Emergency calls:

```

Screen 3-6. Station form

Check SPE

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

Verify Software Version

1. Type **list configuration software-version** and press **Enter**. Under the **UPDATE FILE** column, note whether a patch has been applied.



NOTE:

If the system must be restored to the old version, this patch must be downloaded onto the system.

Verify System Status

1. Type **display alarms** and press **Enter**. If the system is not alarm-free, take the needed corrective actions.
2. Type **display errors** and press **Enter**. Examine the error log and record the error 18s that identify the busy-outs placed by the customer.

Restore the customer-placed busy-outs after you have upgraded the system.

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

list station

list trunk-group

list hunt-group

list data-module

list announcements

If any command does not complete successfully, escalate the problem immediately.

Disable Scheduled Maintenance and Alarm Origination to INADS

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

or

If scheduled maintenance has **not** begun, set the `Start Time` field to a time after the upgrade 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 may generate alarms, resulting in unnecessary trouble tickets.

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



NOTE:

Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.

For some DEFINITY ECS software versions, set the `Cleared Alarm Notification` and `Restart Notification` fields to disable before pressing Enter.

Check Link Status

1. Enter **display communication-interface links** and press Enter. Write down all enabled links
2. Type **status link *number*** and press Enter for each enabled link.
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 Terminal Translation Initialization Enable field to **n** to de-activate the TTI feature.

Check TTI Status

1. Type **status tti** and press Enter.
2. Wait until the TTI Background Task State is completed.

Save Translations

1. Type **save translation** and press Enter to write all translations from memory to the original translation flashcard, which takes about 10 minutes.

When the save translations is successful, the error code must be a zero; otherwise, the translations are not copied. If the translations were corrupted, the following error message displays when logging in:

 **WARNING:**
Translation corruption detected; call Avaya distributor immediately.

 **NOTE:**
The **save translation** command cannot function if translations are corrupt. Refer to [“Translation Corruption Detected” on page A-2](#) to clear the problem.

Save Announcements (if necessary)

 **NOTE:**
The TN750C and TN2501AP Integrated Announcement circuit packs store announcements in nonvolatile memory; saving the announcements to a flashcard 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 DEFINITY ECS software versions, type **save announcements from UUCSS**. Type **help** and press Enter for complete command syntax.

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 3-27.



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.

Replace Circuit Packs



CAUTION:

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

1. Pull out the TN798 processor to power down the cabinet.
2. Insert the Avaya MultiVantage Software media (orange card) into the new TN2402 processor circuit pack slot.



NOTE:

In most cases the orange card will not be on-site and the upgrade performed using the pre-loaded MultiVantage Software on the TN2402 Processor circuit pack. If this is true, skip to Step 7.

3. Place the TN2402 processor circuit pack into the slot vacated by the TN798 processor.
4. Lock the TN2402 processor into place to power up the cabinet.
The system reads the Avaya MultiVantage Software automatically.
5. Install the *original* translation card when the system prompts (beeps)

You have 2 minutes to replace the Avaya MultiVantage Software card with the translation card.

6. At the system prompt, log in as craft. Skipt to the next section.
7. Insert the original translation card into the TN2402 Processor circuit pack slot and place the TN2402 into the slot vacated by the TN798 Processor circuit pack.
8. Power up the cabinet.
9. Verify that the upgrade was completed to the expected software load.

If it is not the correct load, then the MultiVantage Software media must be on-site and you must perform Steps 2-6 above.

Install the License File

Pre-installation

1. Type **save translation** and press Enter.
After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
2. Type **reset system 3** and press Enter.
Wait until the system has completely reset before continuing.
3. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.
This disconnects (unregisters) all IP endpoints.
4. Type **set time** and press Enter.
Ensure that the system date and time are set correctly.

Installation (direct connection)

If you have a direct connection between the RFA and the switch:

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.

2. If the system has IP endpoints registered and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.
This re-registers the IP endpoints.

Installation (no direct connection)

If you do not have a direct connection between RFA and the switch:

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.
5. If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

Administer No-License/Emergency Numbers

1. At the SAT type **change system-parameters features** and press RETURN.
The Feature-Related System Parameters screen displays:
2. In the `Emergency Numbers - Internal` field (optional) type a valid extension.



NOTE:

This number cannot be a hunt group or ACD number.

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.



NOTE:

This number cannot be a hunt group or ACD number.

5. Press ENTER to save the changes.

Display Memory-Configuration

1. Log in as **craft**. If the Translation Corruption Detected message appears, refer to [“Translation Corruption Detected” on page A-2](#).
2. Type **display memory-configuration** and press Enter. Make sure that in the `Total DRAM` field the `SIMM` field in the `SPE-A` column says **16**.

Set Daylight Savings Rules

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

⇒ NOTE:

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

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

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

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

⇒ NOTE:

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

3. Press Enter.

Verify the Upgrade

1. Type **status system 1** and verify that the system is in a normal state.
2. Type **display alarms** and press Enter.
If the system is not alarm-free, take the needed corrective actions.
3. Type **list configuration software-version** and press Enter. Verify the Avaya MultiVantage Software configuration.

4. Type **display communication links** and press Enter.

Status each of the links.



NOTE:

ISDN-PRI D-channel links no longer appear on this screen. (For Release 7 and later, ISDN-PRI resides on the network packet circuit pack.) For Release 7 and later, the only way to determine if an ISDN-PRI D-Channel is up is to type **status signaling group** and press Enter.

5. Type **list signal** press Enter. For each signal, type **status signal** and press Enter.



NOTE:

Check the ISDN-PRI D-channel links here.

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

list station

list trunk-group

list hunt-group

list data-module

Re-enable TTI



NOTE:

Do this step only if you disabled TTI before the upgrade.

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the `Terminal Translation Initialization Enable` field to **y** to re-enable the TTI feature.
3. Type **status tti** and press Enter.
4. Wait until the `TTI Background Task State` reads `completed`.

Enable Scheduled Maintenance

1. Type **change system-parameters maintenance** and press Enter .
2. Check the `Start Time` and `Stop Time` fields.

Enable Alarm Origination to INADS

1. Get the DOSS order number of the upgrade from the project manager and ask the regional Customer Software Administration to complete the “[Check Customer Options](#)” steps. See “[Where to get additional help](#)” on page -xii for telephone numbers.



NOTE:

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

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.
2. Ensure that the `G3 version:` field is `V11`.
3. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to screen 7, QSIG Optional Features, and ensure that the `Basic Call Setup` field is `y`.

Check Link Status

1. Type **display communication-interface links** and press Enter.
2. Type **status link *number*** and press Enter. Repeat this step for each link.
3. Check that DS1 trunks and BRI phones are functioning normally.
4. Refer to *Maintenance for Avaya MultiVantage DEFINITY Server CSI* to test or restore the out-of-service links.

Power Up DEFINITY AUDIX System

1. To power up the AUDIX assembly, refer to [“DEFINITY AUDIX Power Procedures” on page 3-27](#).

Resolve Alarms

1. Type **display alarms** and press **Enter** to examine the alarm log. Resolve any alarms using *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

Restore Announcements (if necessary)

1. Type **restore announcements** and press **Enter** to copy announcements from the upgraded translation flashcard to memory, which takes about 40 minutes.

Check SPE

1. Type **status system 1** and press **Enter**.

Install translation card

1. Replace the *original* translation card with the new ATA flashcard.

Save Translations (post-upgrade)

1. Type **save translations** and press **Enter** to copy upgraded translations to the new flashcard, which takes about 20 minutes.

Save Announcements (if necessary— post-upgrade)

1. Type **save announcements** and press **Enter** to copy announcements to the new flashcard.

Return Equipment

1. Return replaced equipment to Avaya.
2. Retain the old translation card for up to 10 business days to verify that the customer is satisfied and that there is no need to reverse the upgrade. Reversing the upgrade also means reinstalling the old TN798/B processor circuit pack.
3. Return the old translation card to Avaya.

DEFINITY AUDIX Power Procedures

Power Down the AUDIX System

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

1. Log into the AUDIX System as **craft**.
2. Type **reset system shutdown** and press Enter.
3. Press Enter again to start the shutdown process.
4. The `SHUTDOWN Completed` message appears when the AUDIX is successfully shut down. This takes about 2 minutes.
5. You can now shut down the carrier or remove the AUDIX System for service.



CAUTION:

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

Power Up the AUDIX System

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

Upgrading R9csi/R10csi to Avaya MultiVantage Software on an Avaya DEFINITY Server CSI

4

This chapter provides the information on upgrading from a DEFINITY Enterprise Communication Server (ECS) Release 9csi/10csi to Avaya MultiVantage Software on an Avaya DEFINITY Server CSI.

Administrator's Guide for Avaya MultiVantage Software lists the features and functions and provides the commands, procedures, and screens to initialize and administer the system.

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. The License File enables the Avaya MultiVantage Software category, release, features, and capacities. License Files are created using SAP order information and/or current customer configuration information. Without a license file, the switch does not provide normal call processing.

7-digit dial plan expansion

The upgrade automatically converts the old Uniform Dial Plan forms to the new forms. These forms are discussed completely in the *Avaya MultiVantage Software Administrator's Guide*.

Customers upgrading to Avaya MultiVantage Software can migrate to the 6-/7-digit dial plan or not:

- Customers who *want to migrate* to the 6-/7-digit dial plan can
 - freeze their translations and send them to the TSO for conversion. For customers who do not have optical drives, Avaya must migrate those translations to customer-compatible media.
 - re-administer the switch themselves (no translation freeze required).
- Customers who *do not want to migrate* to a 6-/7-digit dial plan (want to keep their current 4-/5-digit dial plan) experience no changes after the upgrade. That is, if they had 4-digit dialing before the upgrade, they have 4-digit dialing afterwards.

Service interruption

The upgrade process requires a non-call-preserving service interruption in a standard reliability system. 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, causing:

- Loss of CMS data. To minimize the measurement data loss, perform the upgrade just after the last CMS measurement interval. If needed, print the reports before starting the upgrade.
- Dropped calls (call processing aborted) 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 Vantage Table, which is included with the letter, before starting the upgrade.

Usable circuit packs

Every circuit pack 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. Replace all unusable vintage circuit packs with current vintages.

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:

Only the *init* login can perform this activity.

Antistatic protection



CAUTION:

When handling circuit packs or any electronic components, always wear an antistatic wrist ground strap. Connect the strap to an approved ground such as ground jack on the cabinet.

Task table

Table 4-1 provides the high-level tasks to perform the upgrades in this section. Refer to the appropriate page for instructions for each step.

Table 4-1. Tasks to upgrade Release 9/10 csi to Avaya MultiVantage Software

✓	Task Description	Page
	Pre-upgrade checklist	4-4
	Go to the RFA website	4-6
	Check SPE	4-12
	Verify version	4-13
	Verify system status	4-13
	Disable scheduled maintenance and alarm origination	4-14

Continued on next page

Table 4-1. Tasks to upgrade Release 9/10 csi to Avaya MultiVantage Software —

✓	Task Description	Page
	Check link status	4-14
	Disable TTI (<i>Do not skip this section!</i>)	4-15
	Check TTI status	4-15
	Save translations	4-15
	Save announcements (if necessary)	4-15
	Upgrade the software	4-16
	Install the License File	4-16
	Administer no-license/emergency numbers	4-17
	Set daylight savings rules	4-18
	Verify the upgrade	4-17
	Check link status	4-19
	Re-enable TTI	4-20
	Enable scheduled maintenance	4-20
	Register the switch for maintenance	4-20
	Resolve alarms	4-25
	Restore busyouts	4-25
	Restore announcements	4-25
	Check SPE	4-25
	Save translations (post-upgrade)	4-25
	Save announcements (post-upgrade)	4-26
	Return equipment	4-26

Pre-upgrade checklist

Before starting the upgrade, have the items listed in [Table 4-2](#) ready or completed.

Table 4-2. Pre-upgrade checklist

Item No.	Item	✓
1.	Software Release Letter	
2.	Avaya MultiVantage Software on removable media	
3.	Extra formatted removable media	
4.	Authorized wrist grounding strap	
5.	Avaya MultiVantage Software documentation (book or .PDF file): <ul style="list-style-type: none"> ■ <i>Maintenance for Avaya MultiVantage DEFINITY Server CSI</i> ■ <i>Administrator's Guide for Avaya MultiVantage Software</i> 	
6.	Your personal Single Sign-On (SSO) for RFA website authentication login.	
7.	SAP order number with RTUs	
8.	Look up hardware serial number(s) with the list configuration license (long) SAT command. Duplicated systems require long in the command.	
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 (depending upon your switch connection method and whether already installed on your PC): <ul style="list-style-type: none"> ■ Features Extraction Tool (FET) application (from Release 9 only) ■ FET documentation (from Release 9 only) ■ 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 4-2. 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).	
16.	Pre-upgrade administration changes	

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/> 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.

⇒ NOTE:

If you have problems with a hardware serial number that is not in the SAP database, go to the [“If you have problems with RFA”](#) section.

Have direct connection

NOTE:

If you are upgrading from Release 10 to Avaya MultiVantage Software, omit this section.

If you have a direct connection between RFA and the switch *and* you are upgrading from Release 9 to Avaya MultiVantage Software:

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.

No direct connection

NOTE:

If you are upgrading from Release 10 to Avaya MultiVantage Software, omit this section.

If you do not have a direct connection between RFA and the switch *and* you are upgrading from Release 9 to Avaya MultiVantage Software:

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.

If you have problems with RFA

If you get an error message that a hardware serial number is not in the SAP database, you must call the RFA Helpdesk ([Table 4-3](#)) to have them correct the SAP information.

Table 4-3. RFA Helpdesk contact numbers

Where	Who	Phone number/URL	Prompt or selection
Channel:		877-615-4174	Prompt 8
<ul style="list-style-type: none"> ■ U.S. and Canada ■ Variable Workforce Group ■ Avaya contractors 	<ul style="list-style-type: none"> Avaya Associates Members Contractors 		
U.S. and Canada	Business Partners	866-800-5194	Prompt 8
EMEA	Direct and Business Partners	+31-70-414-8720 <i>or</i> http://www.avayanetwork.com	Prompt 3 Select GSO; select EMEA
APAC RTAC	Direct and Business Partners	+65-6872-8686	
CALA <ul style="list-style-type: none"> ■ Mexico TAC ■ Brazil TAC ■ Columbia TAC ■ Argentina TAC ■ Mexico Call Receipt 	Direct and Business Partners	+525-278-7878 +5511-5185-6655 +571-616-6077 +5411-4114-4440 +1-720-444-9998	

Pre-upgrade administration changes

You must make the administration changes listed in [Table 4-4](#) prior to upgrading to Avaya MultiVantage Software:

Table 4-4. Pre-upgrade administration changes

✓	Task Description	Page
	Remove Print Messages Feature Access Code	4-9
	Remove print-msgs buttons	4-9
	Remove MSA node names	4-10
	Remove MSA processor channels	4-11
	Remove MET station administration	4-12

Remove Print Messages Feature Access Code

Remove the value from the `Print Messages Access Code` field on the Feature Access Code (FAC) form ([Screen 4-1](#)). This feature access code allows users to print undelivered messages without having to call the message center.

```

change feature-access-codes                                     Page 2 of X
                                FEATURE ACCESS CODE (FAC)
Extended Call Fwd Activate Busy D/A_ All:      Deactivation:
Extended Group Call Pickup Access Code:
Facility Test Calls Access Code:
Flash Access Code:
Group Control Restrict Activation:             Deactivation:
Hunt Group Busy Activation:                   Deactivation:
ISDN Access Code:
Last Number Dialed Access Code:
Leave Word Calling Message Retrieval Lock:
Leave Word Calling Message Retrieval Unlock:
Leave Word Calling Send A Message: #66
Leave Word Calling Cancel A Message: *66
Malicious Call Trace Activation:             Deactivation:
PASTE (Display PBX data on Phone) Access Code:
Personal Station Access (PSA) Associate Code:
Per Call CPN Blocking Code Access Code:
Per Call CPN Unblocking Code Access Code:     Dissociate Code:
Print Messages Access Code:
Priority Calling Access Code:
Program Access Code:
    
```

Screen 4-1. Feature Access Code form

Remove print-msgs buttons

If any of the Button Assignments are administered as `print-msgs` (print messages) on the Station ([Screen 4-2](#)) and Attendant ([Screen 4-3](#)) forms, remove these buttons.

```
change station 1014                                     Page 3 of X
                                                    STATION

SITE DATA
Room: _____ Headset? n
Jack: _____ Speaker? n
Cable: _____ Mounting: d
Floor: _____ Cord Length: 0_
Building: _____ Set Color: _____

ABBREVIATED DIALING
List1: _____ List2: _____ List3: _____

BUTTON ASSIGNMENTS
1: call-appr           5: _____
2: call-appr           6: _____
3: call-appr           7: _____
4: print-msgs         8: _____
```

Screen 4-2. Station form

```
change attendant                                     Page 1 of 3
                                                    ATTENDANT CONSOLE 1

Type: console Name: 27 character attd cons name
Extension: 1000 Group: 1 Auto Answer: none
Console Type: principal TN: 1 Data Module? n
Port: 01C1106 COR: 1 Disp Client Redir? n
Security Code: COS: 1 Display Language: english
H.320 Conversion? n

DIRECT TRUNK GROUP SELECT BUTTON ASSIGNMENTS (Trunk Access Codes)
Local Remote Local Remote Local Remote
1: 9 5: 9:
2: 82 6: 10:
3: 7: 11:
4: 8: 12:

HUNDREDS SELECT BUTTON ASSIGNMENTS
1: print-msgs 5: 9: 13: 17:
2: 6: 10: 14: 18:
3: 7: 11: 15: 19:
4: 8: 12: 16: 20:
```

Screen 4-3. Attendant Console form

Remove MSA node names

Remove all MSA node names from the MSA Names field on the Audix-MSA Node Names form ([Screen 4-4](#)).

Remove MET station administration

If the field value in the `Type` field on the Station form ([Screen 4-6](#)) is

- 10MET
- 20MET
- 30MET

you must remove these stations from administration. These Multi-Button Electronic Telephone (MET) stations are no longer supported and will not work after the upgrade.

```
change station xxxx                                     Page 1 of X
                                                    STATION
Extension: 1014                                         Lock Messages? n      BCC:
  Type:10MET                                           Security Code:        TN:1
Port:                                                  Coverage Path 1:     COR: 1
Name:                                                  Coverage Path 2:
STATION OPTIONS
  Loss Group: 2                                       Personalized Ringing Pattern: 3
  Data Module? n                                     Message Lamp Ext: 1014
  Speakerphone: 2-way                               Mute button enabled? y
  Display Language? English                         Media Complex Ext:
                                                    IP Softphone? y
                                                    Remote Office Station? n
                                                    IP Emergency calls:
```

Screen 4-6. Station form

Check SPE

1. Type **status system 1** and press RETURN.

Check these fields for the corresponding values:

- Maj/Min alarms = 0
- Service State = in service

Verify version

1. Type **list configuration software-version** and press RETURN.
The Software Versions screen appears.
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 version, you must also download a patch onto the system.\

3. In the SOFTWARE VERSION section note the current version listed in the `Memory Resident` field.

**NOTE:**

Ensure that the current version is compatible with this software-only upgrade path from Release 9csi to Avaya MultiVantage Software.

Verify system status

1. Type **status system 1** and press RETURN.
Check these fields for the corresponding values:
 - In the `SPE ALARMS` section, `MAJOR` and `MINOR` alarms = 0
 - `Service State` = `in service`
2. If there are alarms, take the necessary corrective actions (**display alarms**).
3. Type **display errors** and press RETURN.
4. Examine the Hardware 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.

Disable scheduled maintenance and alarm origination

To prevent scheduled daily maintenance from interfering with the upgrade:

1. 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.



NOTE:

Disabling alarm origination prevents the system from generating alarms, thus preventing unnecessary trouble tickets.

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 type **status signaling group** 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

1. Type **change system-parameters features** and press RETURN.
2. Go to the second page and 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.



CAUTION:

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

Check TTI status

1. Type **status tti** and press Enter.
2. Repeat the command until the TTI Background Task State is completed.

Save translations

1. Type **save translation** and press RETURN to write all translations from memory to the translation flashcard (about 10 minutes).
2. Ensure that the **save translation** command was successful (error code must be zero). If the value is anything else, the translations were not copied to the flashcard. If the translations are corrupted, the following error message appears when logging in:



WARNING:

Translation corruption detected; call an Avaya distributor immediately.



NOTE:

The **save translation** command does not run if the translations are corrupt or do not match (duplicated systems only).

Save announcements (if necessary)



NOTE:

The TN750C and the TN2501AP Integrated Announcement circuit packs store announcements in nonvolatile memory; saving the announcements to a flashcard is optional.

1. If the PPN contains a TN750/B Announcement circuit pack, type **display announcements** and press RETURN.

2. If administered recorded announcements are listed, type **save announcements UUCSS** and press RETURN. For example, **01D03**.

The time necessary for this depends upon the length and number of the announcements on the circuit pack.

⇒ NOTE:

For some DEFINITY ECS software versions, type **save announcements from UUCSS**. Type **help** and press RETURN for the complete command syntax.

Upgrade the software

1. Write down the release string EXACTLY as it appears on the orange card.

⇒ NOTE:

Note: The entire string is 16 characters, including 4 periods.

2. Insert the media in the processor circuit pack.
3. Type **upgrade software <release string>** (case sensitive) and press Enter.
This process takes about 10-12 minutes.
4. When the system prompts (beeps), insert the original translation (white) card into the processor circuit pack.

⇒ NOTE:

You have 2 minutes to replace the Avaya MultiVantage Software card with the translation card. If you miss this window, the system comes up without translations. Correct this by inserting the original translation card into the processor circuit pack and use the **reset system 3** command at the SAT.

5. When the upgrade is complete, log off the system and log in again as craft.

Install the License File

Pre-installation

1. Type **save translation** and press Enter.
After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
2. Type **reset system 3** and press Enter.
Wait until the system has completely reset before continuing.
3. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

4. Type **set time** and press **Enter**.

Ensure that the system date and time are set correctly.

Installation (direct connection)

If you have a direct connection between the RFA and the switch:

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.

2. If the system has IP endpoints registered and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

Installation (no direct connection)

If you do not have a direct connection between RFA and the switch:

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.
5. If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

Administer no-license/emergency numbers

1. At the SAT type **change system-parameters features** and press **RETURN**.
The Feature-Related System Parameters screen displays.
2. In the `Emergency Numbers - Internal` field (optional) type a valid extension.



NOTE:

This number cannot be a hunt group or ACD number.

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.



NOTE:

This number cannot be a hunt group or ACD number.

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 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 and the amount of time offset at the point of 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		
	Stop:	first		on or after		
3:	Start:	first		on or after		
	Stop:	first		on or after		
4:	Start:	first		on or after		
	Stop:	first		on or after		
5:	Start:	first		on or after		
	Stop:	first		on or after		



NOTE:

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

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. Press ENTER.

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:
 - In the `SPE ALARMS` section, `MAJOR` and `MINOR` 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.
The Software Versions screen appears.
 4. 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 version, you must also download a patch onto the system.
5. In the `SOFTWARE VERSION` section note the current version listed in the `Memory Resident` field.

Check link status

1. Type **display communication-links** and press RETURN.
Ensure that the link administration is the same as before the upgrade.
2. 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
3. Type **list signaling-group** press RETURN.
Check the system to ensure that the signaling group administration is the same as before the upgrade.

4. 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.
5. 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**

Re-enable TTI

NOTE:

Do this step only if you disabled TTI before the upgrade.

1. Type **change system-parameters features** and press Enter.
2. On the second screen, set the `Terminal Translation Initialization Enable` field to **y** to re-enable the TTI feature.
3. Type **status tti** and press Enter.
4. Repeat the status command until the `TTI Background Task State` reads `completed`.

Enable scheduled maintenance

1. Type **change system-parameters maintenance** and press RETURN.
2. Ensure that the `Start Time` and `Stop Time` fields' administration is the same as before the upgrade.

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.

Resolve alarms

1. Type **display alarms** and press RETURN to examine the alarm log.
2. Resolve any alarms using *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

Restore busyouts

1. Restore any busyouts that you removed in the [Verify system status](#) section prior to the upgrade.

Restore announcements

If the system contains a TN750/B Announcement circuit pack:

1. Type **restore announcements** and press RETURN to copy announcements from the upgraded translation flashcard to memory, which takes about 40 minutes.

Check SPE

1. Type **status system 1** and press RETURN.
Check these fields for the corresponding values:
 - In the `SPE ALARMS` section, `MAJOR` and `MINOR` alarms = 0
 - `Service State = in service`

Save translations (post-upgrade)

1. Type **save translations** and press ENTER to copy the upgraded translations and the License File to the new flashcard, which takes about 20 minutes.

Save announcements (post-upgrade)

1. Type **save announcements** and press ENTER to copy announcements to the new flashcard.

Return equipment

1. Return replaced equipment to Avaya.
2. Retain the old translation card for up to 10 business days to verify that the customer is satisfied and that there is no need to reverse the upgrade.
3. Return the old translation card to Avaya.

This chapter details the information required to install additional port hardware and other equipment associated with upgrading an existing system.

For more information about installing adjuncts and peripheral devices, refer to *Installation for Adjuncts and Peripherals for Avaya MultiVantage Software*.

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. Type **change circuit-pack**.
4. Verify the circuit pack appears in the listing.
5. If the circuit pack code is not present, type the code manually in the proper slot.
6. Type **test board long** and press Enter to test the board.
7. Log off the system after the addition (and any required administration) is complete.

For information about administering circuit packs and other equipment, refer to *Administrator's Guide for Avaya MultiVantage Software*.

Downloading Firmware to Port Circuit Packs

You can download new firmware to one or more like circuit packs – with a “P” suffix – residing within the same system. This capability reduces the need to physically remove circuit packs and return them to the factory for firmware updates.



CAUTION:

The accuracy of the information provided in this section is dependent on several factors, including the:

- Set of downloadable circuit packs
- Architecture of the system where these circuit packs reside
- Current abilities of and processes within the Services infrastructure

*This description contains the most accurate information available at the time of production. Go to the Web site: <http://support.avaya.com>, and look for updated information about downloading firmware to your product under **Product Documentation** → **Communications Systems**.*

During this process, a Web-downloaded firmware image (residing on a local server) is either:

- For a “**self**-download”, copied (uploaded) onto a “**source**” circuit pack
- For a “**remote** download”, copied (uploaded) through a “**source**” C-LAN circuit pack to a “**target**” circuit pack

using the File Transfer Protocol (FTP). The image is then copied to FLASH memory.

Although different circuit packs have different potential roles in a firmware download, the following circuit packs (with these or higher suffixes) can participate in a firmware-download procedure:

- Control LAN (C-LAN) – TN799C¹ or TN799DP
- 2-Wire Digital Line (DIG-LINE) – TN2214CP or TN2224CP
- IP Media Processor (IPMEDPRO) – TN2302AP
- IP Server Interface (IPSI) – TN2312AP
- Maintenance/Test (M/T-ANL) – TN771DP
- UDS1 – TN464GP, TN2464BP, and TN2313AP
- Voice Announcements over LAN (VAL) – TN2501AP

1. Although a TN799C C-LAN circuit pack can participate as the “source” of a download to various “target” circuit packs, this board cannot be a final recipient of downloaded firmware.



NOTE:

Table 5-1 on page 5-3 shows each of the previous circuit pack's roles in a firmware download.

Table 5-1. Circuit-Pack Roles in Firmware Downloads

Circuit Pack	TN Code	Role in Self-Download	Role in Remote Download
C-LAN	TN799C	N/A	Source ¹
	TN799DP	Source ²	Source
DIG-LINE (2-wire)	TN2214CP	N/A	Target ³
	TN2224CP	N/A	Target
IPMEDPRO	TN2302AP	N/A	Target
Maintenance/Test	TN771DP	N/A	Target
UDS1	TN464GP	N/A	Target
	TN2464BP	N/A	Target
	TN2313AP	N/A	Target
VAL	TN2501AP	Source	N/A

1. A “source” circuit pack in a remote download uploads firmware to 1 – 50 like “target” circuit packs.
2. A “source” circuit pack in a self-download can only upload firmware to its own flash memory.
3. A “target” circuit pack in a remote download receives firmware from a C-LAN remote “source” circuit pack.

Table 5-2 on page 5-4 shows the high-level procedures for a firmware download.

Table 5-2. Firmware download procedures

Step	Action	No. of circuit packs	Description
1.	Complete the “Preparing to Update Firmware” on page 5-4 section.	All	Gathering information, downloading new firmware image file from Website.
2.	Choose either: <ul style="list-style-type: none"> ■ “Self-Download” on page 5-7 <li style="text-align: center;"><i>or</i> ■ “Remote download” on page 5-14 	Single Multiple (same type)	<ol style="list-style-type: none"> 1. Copying a new firmware image file onto a source circuit pack using the File Transfer Protocol (FTP) 2. Replacing the old firmware image file in FLASH memory with the new file <ol style="list-style-type: none"> 1. Copying a new firmware image file onto a source C-LAN circuit pack using the File Transfer Protocol (FTP) 2. Copying the image to the target circuit pack(s) 3. Replacing the old firmware image file in FLASH memory with the new file
4.	If you have any trouble with the procedure, refer to “Troubleshooting firmware downloads” on page 5-21.	All	<ul style="list-style-type: none"> ■ “Reset 1 or 2” ■ “Testing firmware download” ■ “Backing out of firmware download”

Preparing to Update Firmware

The following sections contain preparatory information to assist with the successful completion of firmware downloads to port circuit packs. These sections are:

- [“Verify hardware/software requirements”](#) on page 5-5
- [“Download Web’s image to local staging area”](#) on page 5-6
- [“Pre-upload checks”](#) on page 5-6

Verify hardware/software requirements

The following items and procedures are needed to download firmware to the appropriate circuit packs:

- Use an appropriate procedure and source circuit pack to download firmware to the following target circuit packs ([Table 5-3](#)).

Table 5-3. Download Procedure by Circuit Pack

Source Circuit Pack	Download Method	Target Circuit Pack(s)
TN799C (C-LAN)	“Remote download”	DIG-LINE, UDS1, IPMEDPRO, or Maintenance/Test
TN799DP (C-LAN)	“Self-Download” or “Remote download”	The TN799DP or TN2312AP itself DIG-LINE, UDS1, IPMEDPRO, or Maintenance/Test
TN2501AP (VAL)	“Self-Download”	The TN2501AP itself

- A source circuit pack with an Ethernet data module administered to one of its ports
- Target port circuit packs with a “P” suffix
- Services login and password
- Clear channel between the source (C-LAN) and target board (for downloads to remote PNs only)

PC or other server

- IP connectivity to the source board
- IP connectivity to the World-Wide Web
- File transfer protocol (FTP) software program



NOTE:

Some GUI-based FTP applications are incompatible with Avaya MultiVantage Software. Command-line FTP applications launched from a UNIX shell or DOS prompt work best.

- Web browser (Netscape 4.5 or Internet Explorer 5, or higher)

Download Web's image to local staging area

For a download from the Web, you need a temporary staging area to store the firmware images before uploading them to the source circuit pack. Although this download is normally done from a PC, you can also use other server types, such as UNIX.

1. Go to the Avaya Customer Support Web site (<http://support.avaya.com>).
2. Select the **Online Services** link near the top left of the page.
3. Select **Software/Firmware Downloads**.
4. A page with a large table appears.
5. Find and click on the following table entry:

<u>Grouping</u>	<u>Product Name</u>	<u>Document Title</u>
Communication Systems	Definity Enterprise Communication Server (ECS)	Avaya Media Server and Media Gateway

6. The main MultiVantage Firmware Download page appears.
7. Select the circuit pack you want to upgrade, then the firmware images that you need (there may be more than one, depending on the circuit pack).
8. For example, the **tn2501ap_f05.bin** filename is for the TN2501AP (VAL) circuit pack.
9. Download the file to the directory where you will launch the FTP application.

Pre-upload checks

At the SAT:

1. Enter **change permissions login**.
Ensure that the `Administer Features` field is **y** on the Command Permissions Categories screen.
2. Get the source circuit pack's IP address either from the data systems administrator or by typing the following SAT commands:
 - a. If you know the circuit pack's address, enter **list configuration board UUCSS**.

If not, enter **list configuration all**.
 - b. Check that these ports are enabled:
 - Port 17 (C-LAN)
 - Port 33 (VAL)
 - c. Enter **display port UUCSSpp** to obtain the data module's ID, where **pp** is the port's number.

- d. Enter **display data-module ID** to obtain the link's number.
 - e. Enter **status link link_number** to check the link's status and obtain the source IP address.
3. If this is a remote download, continue with ["Remote download"](#) on page 5-14.
If not, continue with the following section.

Self-Download

During this procedure, you will use an FTP client to copy the new firmware image file to a circuit pack. Then you will copy the new image to the FLASH memory on the pack. This procedure updates **only** a single circuit pack and applies to these circuit packs:

- TN799DP Control LAN (C-LAN)
- TN2501AP Voice Announcements over LAN (VAL)

⇒ NOTE:

If you have any trouble with this procedure, refer to ["Troubleshooting firmware downloads"](#) on page 5-21.

Set up circuit pack's file system

Before you can upload staged files to the source circuit pack, you must set up a file system on the circuit pack to accept the files.

1. Log into the switch using a superuser or services login and password.
2. Enter **enable filesystem board UUCSS login ftplogin ftppassword [size actual_size]**, where:
 - **ftplogin** is any temporary login ID for this FTP session (for example, **denver**).
 - **ftppassword** is any ≥ 7-character temporary password for this FTP session (for example, **broncos**).

Later, you will use this same **ftplogin** and **ftppassword** in the following section, ["FTP the new firmware image file"](#).

⇒ NOTE:

The optional **size actual_size** qualifier only works with TN799C (C-LAN). It allows you to specify a *smaller* file-system size than the default 1-MB block (maximum) allocated.

If the source circuit pack has insufficient memory, delete old files (**remove file board UUCSS filename**), or wait until there is less traffic on the board.



CAUTION:

*Unless the Remove Image File After Successful Download field is set to **y**, the **ftplogin** and **ftppassword** remain on the TN799DP (C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you issue the **disable filesystem board UUCSS** command.*

FTP the new firmware image file

The following steps are generic to most FTP programs. Use your laptop/PC/UNIX to complete this procedure.

1. Ensure that the new firmware image file is in the same directory where you will launch the FTP session.
2. Enter **ping source_ip_address** to verify a communication link to the source board.
3. Enter **ftp source_ip_address**.
4. Log into the source circuit pack with the same **ftplogin** and **ftppassword** that you used in the “Set up circuit pack’s file system” section.
 - **ftplogin** is any temporary login ID for this FTP session (for example, **denver**).
 - **ftppassword** is any ≥ 7-character temporary password for this FTP session (for example, **brncos**).
5. Enter **bin**.

This transfers files in binary format.
6. If you are downloading to a TN2501AP (VAL) circuit pack only, enter **cd /**.

This command moves you from the announcement directory (default for an FTP session) to the root directory (“/”), where firmware and other files reside.
7. Enter **put filename.ext**.

This command copies the new firmware image file to the destination directory.
8. Enter **dir**.

Verify that the new firmware image file is on the circuit pack.
9. Enter **quit**.

This ends the FTP session.

Verify files

From the SAT verify that the new firmware image file is on the circuit pack.

1. Enter **list directory board UUCSS**.

The List Directory screen ([Screen 5-1](#)) displays.

- Verify that the new firmware image file is listed in the File/Directory Name field.

```
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
```

Screen 5-1. List Directory screen

Schedule download

- Enter **change firmware download**.

The Firmware Download screen ([Screen 5-2](#)) displays.

```
change firmware download                                     Page 1 of 1
                                                           FIRMWARE DOWNLOAD

Source Board Location: _____
Firmware Image File Name: _____
Target Board Code: _____ Suffix: __ Firmware Vintage: __
Schedule Download? _ Remove Image File After Successful Download? _
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)
```

Screen 5-2. Firmware Download screen

- Fill in the fields listed in [Table 5-4](#):

Table 5-4. Firmware Download fields and descriptions

Field	Description	Notes
Source Boards Location	Type the UCCSS address of the source circuit pack.	
Firmware Image File Name	Type the complete filename (including file extension) of the new firmware image file.	See Screen 5-1 in the section “Verify files” on page 5-8.
Target Board Code	Type the circuit pack ID, for example “TN2501.”  NOTE: Do not type the “AP” suffix.	Self-download: This must be the same circuit pack type as the source circuit pack. You cannot mix circuit-pack types. Remote-download: This must be the same circuit pack as the target circuit pack.
Suffix	Examples: <ul style="list-style-type: none"> ■ For VAL (TN2501AP), type AP. ■ For C-LAN (TN799DP), type DP. ■ For DS1 (TN464GP), type GP. 	
Firmware Vintage	This is a display-only field for TN799DP (C-LAN) and TN2501AP (VAL).	
Schedule Download	Type y to schedule the firmware download for another time. Type n to start the firmware download immediately after completing the form.	Once the firmware download begins, you cannot make any changes to this form. If you answer n(o) , then the Start Date/Time and Stop Date/Time fields do not appear. The download begins as soon as you press Enter.

Continued on next page

Table 5-4. Firmware Download fields and descriptions — *Continued*

Field	Description	Notes
Remove Image File After Successful Download	Type y if you want the procedure to automatically remove the new firmware image file [default]. Type n if you do not want the new firmware image file removed.	At the completion of a successful download, the procedure automatically removes the new firmware image file from the source file system, freeing up the memory on the source circuit pack. We recommend using the default setting. If field is set to n , you must manually remove the new firmware image file from the source file system after the download has completed. See “Disable file system” on page 5-20 .
Start Date/Time	Type the date and time that you want the firmware download to begin.	See the section, “Check specified resources” on page 5-12 , to ensure that the necessary resources are available.
Stop Date/Time	Type the date and time that you want the firmware download to end.	If the scheduled stop time is reached before the new firmware image file has been downloaded to every circuit pack, the system finishes downloading to the circuit pack in progress before aborting the remainder of the download schedule.
Target Location	Type the UUCSS address of the circuit pack that you are updating.	For a self-download, this circuit pack must reside in the same location as the source pack. You can only put one entry in this field.

3. Submit the schedule.

If you set the `Schedule Download` field to **n**, the download starts as soon as you submit the schedule.



NOTE:

If you receive a SAT error message asking you to use the command, **test firmware download**, this means that there was a problem with a previous firmware download. Run the test before proceeding.



CAUTION:

*Unless the `Remove Image File After Successful Download` field is set to **y**, the `ftplogin` and `ftppassword` remain on the TN799DP*

(C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you issue the **disable filesystem board UUCSS** command.

4. If you are self-downloading to a TN2501AP (VAL) circuit pack, reseal the pack:



WARNING:

To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.



CAUTION:

Ensure that both the top green and top amber LEDs are out.

- a. Release the latch handle to free the circuit pack from the carrier.
- b. Pull the circuit pack out approximately 1 – 2 inches (~ 3 – 5 cm).
- c. Re-insert the circuit pack into the carrier.
- d. Close the latch securely.

Check specified resources

This procedure checks the header on the new firmware image file to ensure that the firmware download will run as you intend.

1. Type **test firmware download** and press Enter.

The Test Results screen ([Screen 5-3](#)) appears.

```

test firmware download                               SPE A

                                TEST RESULTS

Port      Maintenance Name  Alt. Name  Test No.  Result      Error Code
-----
FW-DWNLD                1413      PASS
    
```

Screen 5-3. Test Results screen

2. Look in the `Result` field for FAIL conditions.
3. If the test does not pass, refer to the proper maintenance book in the FW-DWNLD section and resolve every error.
4. Re-run the test (**test firmware download**).

When the test passes, every specified resource is available for the scheduled download.

Monitor download progress

1. Enter **status firmware download** and press Enter.

The Status Firmware Download screen ([Screen 5-4](#)) displays.

```

status firmware download                                     Page 1 of 1
                                STATUS FIRMWARE DOWNLOAD
Source Board Location: 01C02
Firmware Image File Name: tn2501ap_f05.bin
Target Board Code: TN2501 Suffix: AP Firmware Vintage: __
Schedule Download? _ Remove Image File After Successful Download? _
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. 01C02   P  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. _____

Status: Pending(P) Completed(C) Failed(F) Aborted (A)
    
```

Screen 5-4. Status Firmware Download screen

2. If this form is blank after issuing the command, go to Step 4.
3. Check the St (status) field immediately to the right of the Target Location field's address of the circuit pack to view the progress of the firmware update:
 - (P)ending
 - (C)ompleted
 - (F)ailed
 - (A)borted
4. Enter **status firmware download last**.

This allows you to view the progress of the last completed firmware update or the entire schedule if it is completed.



CAUTION:

*Unless the Remove Image File After Successful Download field is set to **y**, the ftplogin and ftppassword remain on the TN799DP (C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you issue the **disable filesystem board UUCSS** command.*

5. If you are self-downloading to a TN2501AP (VAL) circuit pack, reseal the pack:



WARNING:

To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.



CAUTION:

Ensure that both the top green and top amber LEDs are out.

- a. Release the latch handle to free the circuit pack from the carrier.
- b. Pull the circuit pack out approximately 1 – 2 inches (~ 3 – 5 cm).
- c. Re-insert the circuit pack into the carrier.
- d. Close the latch securely.

Aborting a firmware download

If you need to abort a scheduled (pending) firmware download:

1. Enter **disable firmware download**.

This command:

- Continues to download the firmware image file to circuit pack in progress
- Aborts the remainder of the download schedule
- Clears the contents of the Firmware Download screen ([Screen 5-4](#))

Remote download

This procedure allows you to update up to 50 target circuit packs of the same type using a new firmware image file distributed from a source TN799C/DP C-LAN circuit pack. This procedure can update these target circuit packs:

- 2-Wire Digital Line (TN2214CP or TN2224CP)
- IP Media Processor (TN2302AP)
- Maintenance/Test (TN771DP)
- UDS1 (TN464GP, TN2464BP, and TN2313AP)



NOTE:

If you have any trouble with this procedure, refer to [“Troubleshooting firmware downloads” on page 5-21](#).

Preparation

1. Repeat the procedures in the “[Preparing to Update Firmware](#)” on page 5-4.

Set up file system on circuit pack

Before you can load files onto the source C-LAN circuit pack, you must first set up a file system on the circuit pack to accept the files.

1. Log into the switch using a superuser or services login and password.
2. Enter **enable filesystem board UUCSS login ftplogin ftppassword [size actual_size]**, where:
 - **ftplogin** is any temporary login ID for this FTP session (for example, **denver**).
 - **ftppassword** is any ≥ 7 -character temporary password for this FTP session (for example, **broncos**).

Later, you will use this same **ftplogin** and **ftppassword** in the section, “[FTP the new firmware image file](#)” on page 5-8.



NOTE:

The optional **size actual_size** qualifier only works with TN799C (C-LAN). It allows you to specify a *smaller* file-system size than the default 1-MB block (maximum) allocated.

If the source circuit pack does not have enough available memory, delete old files (**remove file board UUCSS filename**), or wait until there is less traffic on the board.



CAUTION:

*Unless the Remove Image File After Successful Download field is set to **y**, the ftplogin and ftppassword remain on the TN799DP (C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you issue the **disable filesystem board UUCSS** command.*

FTP the new firmware image file

The following steps are generic to most FTP programs. Use your laptop/PC/UNIX to complete this procedure.

1. Ensure that the new firmware image file is in the same directory where you will launch the FTP session.
2. Enter **ping source_ip_address** to verify a communication link to the source C-LAN board.
3. Enter **ftp source_ip_address**.

4. Log into the source C-LAN circuit pack with the same **ftplogin** and **ftppassword** that you used in the section, “[Set up circuit pack’s file system](#)” on page 5-7.
 - **ftplogin** is any temporary login ID for this FTP session (for example, **denver**).
 - **ftppassword** is any ≥ 7-character temporary password for this FTP session (for example, **brancos**).
5. Enter **bin**.
This transfers files in binary format.
6. Enter **put filename.ext**.
This command copies the new firmware image file to the destination directory.
7. Enter **dir**.
Verify that the new firmware image file is on the circuit pack.
8. Enter **quit**.
This ends the FTP session.

Verify files

From the SAT verify that the new firmware image file is on the circuit pack.

1. Type **list directory board UUCSS** and press Enter.
The List Directory screen ([Screen 5-5](#)) displays.
2. Verify that the new firmware image file is listed in the **File/Directory Name** field.

```
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
```

Screen 5-5. List Directory screen

Schedule download

1. Fill in every field in [Table 5-4 on page 5-10](#) except the `Target Location` field.

 **NOTE:**

If you are scheduling firmware downloads for a circuit pack that is designated as primary/secondary sync (timing) source (for example, TN464GP), this procedure automatically redesignates a local timing source during the download. After the download is complete and the circuit pack is returned to service, the procedure designates the original circuit packs as the timing source.

 **NOTE:**

The target circuit packs are automatically busied out before the firmware is downloaded to them and automatically returned to service after the download is completed. While a DS1 circuit pack is busied out, any active calls through that circuit pack are dropped.

2. In the `Target Location` field, type the UUCSS address of each similar-type, programmable circuit pack (up to 50).

 **NOTE:**

You can only download one image file to a similar type circuit pack at a given time (for example, to every TN464GP circuit pack). The download process *does not* support broadcasting more than one image file to different-type circuit packs (for example, from TN464GP to TN2313BP).

If you do not know the target board locations:

- a. Type **list configuration all** and press Enter.

The System Configuration screen ([Screen 5-6](#)) appears.

```
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  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
```

Screen 5-6. System Configuration screen

- b. Look for the "P" suffix in the Code column and note the circuit pack's UUCSS address in the Board Number field.
 - c. Type the UUCSS address of every similar type circuit pack in the Target Location field.
3. Submit the schedule.

If you set the Schedule Download field to n, the download starts as soon as you submit the schedule.

⇒ NOTE:

If you receive a SAT error message asking you to use the command **test firmware download** command, this means that there was a problem with a previous firmware download. Run the test before proceeding.

Check specified resources

This procedure checks the header on the new firmware image file to ensure that the firmware download runs as you intend.

1. Type **test firmware download** and press Enter.

The Test Results screen ([Screen 5-7](#)) appears.

```
test firmware download                                SPE A

                                TEST RESULTS

Port      Maintenance Name  Alt. Name  Test No.  Result      Error Code
-----
FW-DWNLD                1413      PASS
```

Screen 5-7. Test Results screen

2. Look in the `Result` field for `FAIL` conditions.
3. If the test does not pass, refer to the proper maintenance book in the `FW-DWNLD` section and resolve every error.
4. Re-run the test (**test firmware download**).

When the test passes, every specified resource is available for the scheduled download.

Monitor download progress

1. Type **status firmware download** and press Enter.

The Status Firmware Download screen ([Screen 5-8](#)) displays.

```

status firmware download                                     Page 1 of 1
                                STATUS FIRMWARE DOWNLOAD
Source Board Location: 01C02
Firmware Image File Name: usdlyv22r1
Target Board Code: TN464 Suffix: GP Firmware Vintage: _1
Schedule Download? _ Remove Image File After Successful Download? _
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. _____

Status: Pending(P) Completed(C) Failed(F) Aborted (A)
    
```

Screen 5-8. Status Firmware Download screen

Aborting a firmware download

If you need to abort a scheduled (pending) firmware download:

1. Type **disable firmware download** and press Enter.

This command:

- Continues to download the firmware image file to circuit pack in progress
- Aborts the remainder of the download schedule
- Clears the contents of the Status Firmware Download screen ([Screen 5-8](#))

Disable file system

⇒ NOTE:

*Performing the following steps on the TN799DP (C-LAN) or TN2501AP (VAL) circuit packs, removes only the **ftprogin** and the **ftppassword**. The allocated memory for the file system remains reserved for the session.*

To free up resources on the source circuit pack, you must delete the new firmware image files and disable the file system.

1. Type **remove file board UUCSS filename** and press Enter to remove image files from the source board.
2. Type **list directory board UUCSS** and press Enter.
The List Directory screen ([Screen 5-1](#)) appears.
3. Verify that the new firmware image file is **not** listed in the File/Directory Name field.
4. Enter **disable filesystem board UUCSS** and press Enter to disable the file system on the source circuit pack.



NOTE:

This command is only successful if no files remain on the source circuit pack.

Troubleshooting firmware downloads

This section contains three troubleshooting sections:

- [“Reset 1 or 2”](#)
- [“Testing firmware download”](#)
- [“Backing out of firmware download”](#)

Reset 1 or 2

If the system does a reset 1 or 2 and no alarms are present:

1. At the SAT, enter **display initcauses** and press Enter.
2. Clear any errors by performing the procedures in the Error Log Entries and Test to Clear Values section of the FW-DWNLD maintenance object in the maintenance book.

Testing firmware download

To test the firmware download process:

1. At the SAT, type **test firmware download** and press Enter.

The Test Results screen ([Screen 5-9](#)) appears.

```
test firmware download                               SPE A
                                                    TEST RESULTS
Port      Maintenance Name  Alt. Name  Test No.  Result      Error Code
FW-DWNLD                1413      PASS
```

Screen 5-9. Test Results screen

2. The example in [Screen 5-9](#) shows PASS in the `Result` field, indicating a successful test of the firmware download circuitry.

If the test does not pass, refer to the Error Log Entries and Test to Clear Values section of the FW-DWNLD maintenance object in the maintenance book.

Backing out of firmware download

To revert back to the old firmware image file on *TN799DP (C-LAN)* or *TN2501AP (VAL)* only:

1. At the SAT, enter **get boot-image UUCSS** and press Enter to check the status of the firmware images on the target circuit pack.

The Display Firmware Image(s) report ([Screen 5-10](#)) appears.

```

get boot-image 1C07

                                DISPLAY FIRMWARE IMAGE(S)

      Image 1                Image 2
Board Type: TN2501            TN2501
FW Vintage: 02                01
HW Signature: 02              02
  Suffix: A                    A
  Date: 03/02/02              03/02/01
  Timestamp: 10:30:50          12:42:18
CRC Checksum: Good            Good
Active Image: Yes              No
Reboot Image: Yes              No
    
```

Screen 5-10. Display Firmware Image(s) screen

- a. Check Image 1 and Image 2 to see where the active image resides.
- b. Check the date and time stamps to determine whether to revert back to Image 1 or Image 2.

In the following example, we are reverting back to Image 2, because it has the older date and time stamp.

2. At the SAT, type **set boot-image board UUCSS image 1 / 2** and press Enter.

Example: **set boot-image board 1C07 image 2**



NOTE:

In most cases, the image with the more recent date and time stamp is the new firmware image file.

The system responds with Command Successfully Completed.

- At the SAT, type **get boot-image UUCSS** and press Enter to check the status of the firmware images on the target circuit pack.

The Display Firmware Image(s) report ([Screen 5-11](#)) appears.

```

get boot-image 1C07

                                DISPLAY FIRMWARE IMAGE(S)

Image 1                          Image 2

Board Type: TN2501                TN2501
FW Vintage: 02                    01
HW Signature: 02                  02
  Suffix: A                        A
  Date: 03/02/02                  03/02/01
  Timestamp: 10:30:50             12:42:18
CRC Checksum: Good                Good
Active Image: Yes                 No
Reboot Image: No                  Yes
    
```

Screen 5-11. Display Firmware Image(s) screen

Note that the values in both the `Active Image` and the `Reset Image` fields have changed.

- Reseat the circuit pack to activate the new firmware image:



WARNING:

To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.



CAUTION:

For a TN2501AP VAL circuit pack, ensure that both the top green and top amber LEDs are out.

- Release the latch handle to free the circuit pack from the carrier.
 - Pull the circuit pack out approximately 1 – 2 inches (~ 3 – 5 cm).
 - Re-insert the circuit pack into the carrier.
 - Close the latch securely.
- Wait until all 3 of the top LEDs (red, green, and amber) are out.

- At the SAT, type **get boot-image UUCSS** and press Enter to check the status of the firmware images on the target circuit pack.

The Display Firmware Image(s) report ([Screen 5-12](#)) appears.

```
get boot-image 1C07

                                DISPLAY FIRMWARE IMAGE(S)

      Image 1                Image 2
Board Type: TN2501          TN2501
FW Vintage: 02              01
HW Signature: 02           02
  Suffix: A                 A
    Date: 03/02/02         03/02/01
  Timestamp: 10:30:50      12:42:18
CRC Checksum: Good         Good
Active Image: No           Yes
Reboot Image: No           Yes
```

Screen 5-12. Display Firmware Image(s) screen

- Ensure that both the **Active Image** and the **Reset Image** fields are as you expect.

Installing TN464GP/TN2464BP with Echo Cancellation

The TN464GP and TN2464BP circuit packs with echo cancellation are intended for 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. For more information refer to [“Downloading Firmware to Port Circuit Packs” on page 5-2](#).

Although the TN464GP and TN2464BP circuit packs are backward-compatible, the echo cancellation feature is compatible only with Avaya MultiVantage Software, and the feature must be enabled in the License File.

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 “[Add Circuit Packs](#)” on [page 5-1](#). For information on setting the option switches, refer to “[TN464F/GP and TN2464BP Option Settings](#)” on [page 2-11](#). For information on administering the circuit packs, refer to the *Administrator’s Guide for Avaya MultiVantage Software*.

Echo cancellation must first be purchased, then a License File created and installed.

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. Verify that the DS1 Echo Cancellation? field is set to **y**. If not, you must obtain a License File with this feature enabled and install it.
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 the Avaya CMC1 Media Gateway, keep the default setting for the EC Direction: field of **inward**.
- If you know that the distant party is hearing echo that originates in the Avaya CMC1 Media Gateway 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 get additional help” on page -xii](#).

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 *Administrator's Guide for Avaya MultiVantage Software*.
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

Two circuit packs presently support Direct Inward Dial (DID) trunks: the TN753 DID trunk circuit pack and the TN797 Combination Circuit pack. Each can support up to 8 DID trunks.

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 *Administrator's Guide for Avaya MultiVantage Software*.

Add Tie Trunks

Requirements

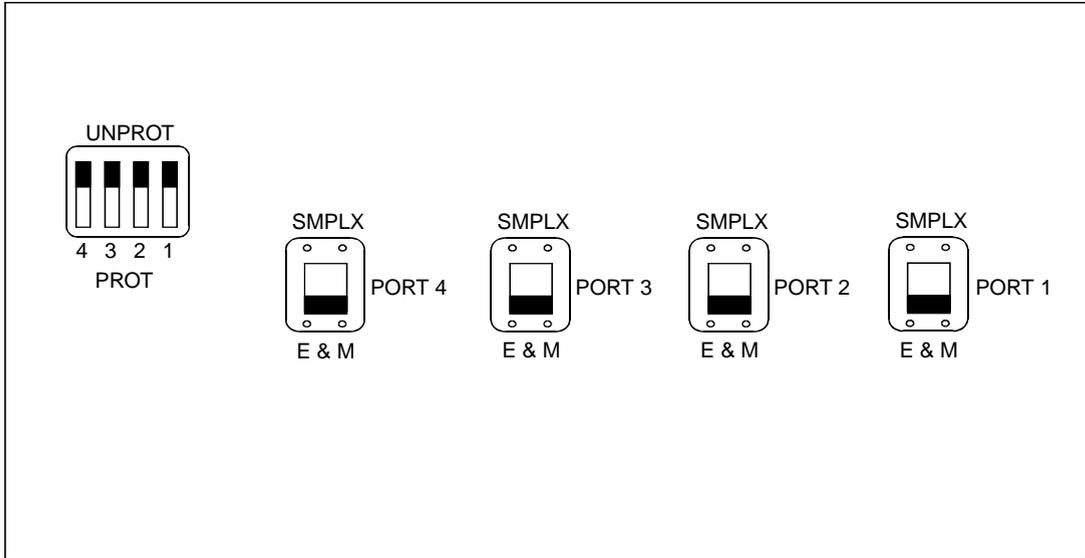
Each tie trunk connects to 1 port of a 4-port tie trunk circuit pack or to an assortment of international tie trunk circuit packs.

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 5-1 on page 5-29](#) and [Table 5-5 on page 5-29](#) 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 *Administrator's Guide for Avaya MultiVantage Software*.



r758183 RBP 050896

Figure 5-1. Tie Trunk Circuit Packs (Component Side)

Table 5-5. 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	Avaya CMC1 Media Gateway	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
		Compatible	Standard			Compatible
Inter-Building	Avaya CMC1 Media Gateway	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
		Compatible	Standard Plus Protection Unit			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 *Administrator's Guide for Avaya MultiVantage Software*.

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 *Administrator's Guide for Avaya MultiVantage Software*.

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 Integrated Announcements/TN2501AP

Replacing a TN750/B/C circuit pack

If you are replacing a TN750C announcement circuit pack with the new TN2501AP:

- get a list and description of the announcements stored on the TN750C circuit pack.
- re-record the announcements on a computer or at a professional recording studio as .wav files (CCITT μ -Law or A-Law, 8KHz, 8-bit mono), so that they are ready to transfer to the new announcement circuit pack after it is installed and administered. See [Announcement File Specifications](#).



CAUTION:

Before you remove a TN750A or B circuit pack from its carrier, ensure that you have backed up the announcements that are stored on it. Once you remove the circuit pack from the carrier, power is lost along with the announcements.

Replacing old announcement circuit packs with the new TN2501AP circuit pack requires that you

- remove previous announcement administration
- record new announcements for the TN2501AP
- re-record any announcements currently resident *on the TN750 circuit packs that you are replacing*. You cannot transfer or restore TN750 announcements from flash card, tape, or optical disk to the TN2501AP.

Announcement File Specifications

The TN2501AP circuit pack, 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)

All previously-recorded announcements must be converted to these file formats to work on the TN2501AP circuit pack. Announcements recorded through the direct telephone access are automatically recorded in 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.

Before you start

Ensure that you have the required hardware (see [“Hardware specifications”](#)).

Configurations

Figure 5-2 shows the configuration options for the TN2501AP (VAL) circuit pack within a system.

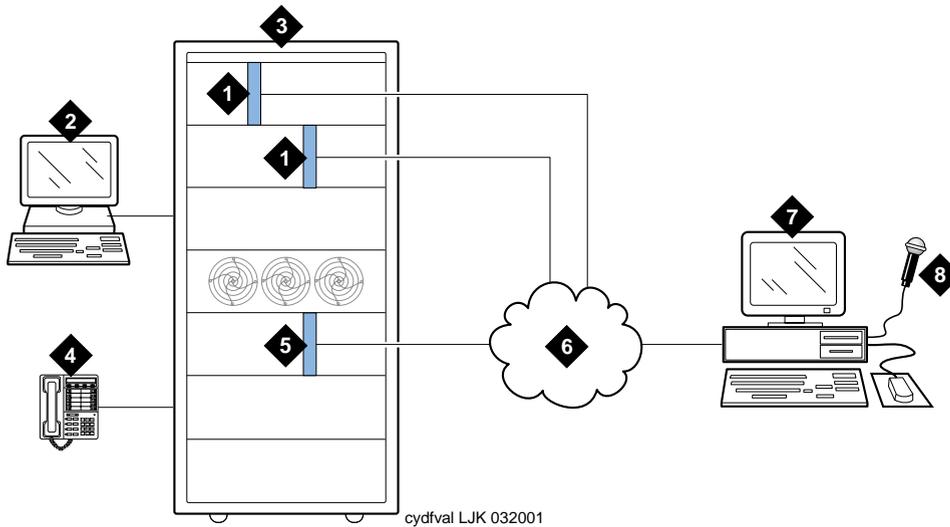


Figure Notes

1. TN2501AP VAL announcement circuit pack
2. System access terminal (SAT)
3. Switch
4. Phone for recording announcements
5. TN799C (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
 - FTP client application
 - VAL Manager application (PC only)
8. Microphone

Figure 5-2. VAL configuration options

Hardware specifications

The following table contains a list of the required VAL hardware.

Part	Number	Comcode
TN2501AP	1	108772583
Backplane Adapter	1	848525887
LAN cable varies by network (see also Notes for Figure 5-3)	N/A	N/A

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.

Backplane Adapter

[Figure 5-3](#) shows the Backplane Adapter.

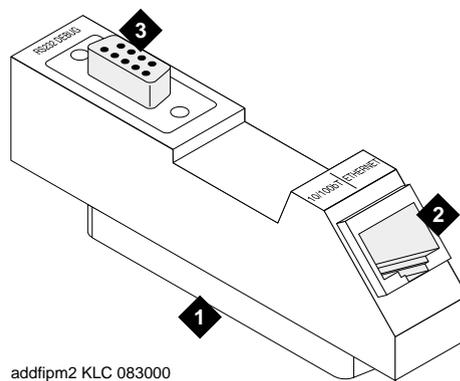


Figure Notes

1. Amphenol connector attaches to the back of the switch cabinet, corresponding to the TN2501AP circuit pack slot.
2. RJ-45 LAN cable connection
 - 10 Mbps uses Category 3 cable.
 - 100 Mbps uses Category 5 cable.
3. This connector is not used for VAL.

Figure 5-3. Backplane Adapter (Comcode 848525887)

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 (note #2 in Figure 5-3),
100 Mbps	Category 5	Connects through the RJ45 jack (note #2 in Figure 5-3),

Switch administration before hardware installation

Before inserting the circuit pack into a carrier, an Avaya representative must administer the VAL customer options. 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. Verify that the `G3 Version` field is set to **V11**.
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. Scroll to page 4.
5. Verify that the `VAL Full 1-Hour Capacity?` field is set for the offer that was purchased:
 - **n** for Standard offer (10 minutes storage time) and only 1 circuit pack.
 - **y** for Enhanced offer (1 hour storage time) and multiple circuit packs.

If any of the preceding administration is different, you must get a License File with these customer options enabled and install it on the switch before the TN2501AP circuit pack works.

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 ([Figure 5-3](#)) 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.

Administer the 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
Number   Board Type             Code      Vintage   Assigned Ports
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 5-13. 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                               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 5-14. IP Node Names screen (change node-names ip)

- 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.

- Set the `Subnet Mask` field according to your network requirements.
- The `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.
- Leave the `Net Rgn` (Network Region) field at its default value. This field is not used for VAL.
- 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.

- 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 5-16. Data Module screen (add data-module *extension*)

- Set the `Type` field to **ethernet**.
- 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.
9. 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.

If using a TN464F, then packet bus support has not been added, requiring more than 8 PRI signaling groups. See [“Add Packet Bus Support” on page 5-43](#) for adding circuit packs for packet bus support.

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.

If using a TN464F, then packet bus support has not been added, requiring more than 8 PRI signaling groups. See [“Add Packet Bus Support” on page 5-43](#) for adding circuit packs for packet bus support.

Add Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support” on page 5-43](#) and perform the steps.

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 *Administrator’s Guide for Avaya MultiVantage Software*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *Maintenance for Avaya DEFINITY Server CSI*.

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 translation cards.
2. Update backup cards, if necessary.

Add Packet Bus Support

Disable Alarm Origination

1. Type **change system-parameters maintenance** and press Enter.
2. Set the Alarm Origination Activated field to **n**.



CAUTION:

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

3. For some DEFINITY ECS software versions, disable Cleared Alarm Notification and Restart Notification before submitting the form.

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 translation card.

Install Circuit Packs

1. Install the appropriate circuit packs. See [Table 5-6](#).

Table 5-6. Circuit Pack Locations for Packet Bus in PPN

Circuit Pack	Carrier	Quantity	Slot
TN799C	Any	1	Any Available Port Slot

Administer the Bus Bridge

1. Type **change system-parameters maintenance** and press Enter.
2. On Page 2, Type **y** in the PKTINT 2 field.
3. Choose the port bandwidths or use the default and submit the form.
4. Verify the bus bridge LED is lit on the TN799C C-LAN circuit pack. This indicates that the packet bus is enabled.

Test the Packet Bus and C-LAN Circuit Pack

1. Type **test packet port-network 1 long** and press Enter. For more detail about these tests, refer to the test pkt command section in the *Maintenance for Avaya DEFINITY Server CSI*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Enable Alarm Origination to INADS

1. Ask the regional Customer Software Administration to complete the “[Verify Customer Options](#)” steps. See “[Where to get additional help](#)” on page -xii for telephone numbers.



NOTE:

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

Verify Customer Options

1. Type **display system-parameters customer-options** and press Enter.
Ensure that the `G3 version` field is **V11**.
2. If the customer was using Supplementary Services Protocol b or d on an ISDN-PRI trunk group before the upgrade, go to the QSIG Optional Features screen and ensure that the `Basic Call Setup` field is **y**.

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. Enable the Packet Bus Activated option on the System-Parameters Maintenance screen.
3. See *Administrator's Guide for Avaya MultiVantage Software* 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 translation cards.
2. If administered recorded announcements are displayed, Type **list configuration software-version** and press *Enter*. Go to Page 2 to see when announcements were last saved.
3. To save the announcements, Type **save announcements** and press *Enter*.

Add Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support” on page 5-43](#) and perform the steps.

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 greater call classification capabilities than the TN2182 (Tone-Clock) circuit pack provides.

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 *Administrator’s Guide for Avaya MultiVantage Software*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms that may exist using *Maintenance for Avaya DEFINITY Server CSI*.

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 translation cards.
2. Update backup translation cards, if required.

Add TTC Japanese 2-Mbit Trunks

The TN2242 Japan 2-Mbit trunk interconnects to other vendor equipment in Japan as well as to other 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 cabinet to the Time Division Multiplexor device.
4. To administer forms, see the following sections in the *Administrator's Guide for Avaya MultiVantage Software*.
 - 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 an ISDN-PRI D-channel.
- over a TCP/IP connection.

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*
- *Administration for Network Connectivity for Avaya MultiVantage Software*

Add Circuit Packs

A TN464GP, TN767C, or TN760 DS1 circuit pack is required for PPP connections. A TN799C C-LAN circuit pack is also required.

1. Determine the port assignments of the circuit packs to be added.

If a C-LAN circuit pack is already in the system, you do not need a second C-LAN circuit pack for DCS. If your system already has a C-LAN, skip the following [“Administer the Bus Bridge”](#) section. You do not need to power down the cabinet to install any of these circuit packs.

Administer the Bus Bridge

1. Type **change system-parameters maintenance** and press Enter.
2. On Page 2, Type **y** in the `PKTINT 2` field.
3. Choose the port bandwidths or use the default and submit the form.
4. Verify the bus bridge LED is lit on the C-LAN circuit pack. This indicates that the packet bus is enabled.

Test the Packet Bus and Control-LAN Circuit Pack

1. Type **test packet port-network 1 long** and press Enter. For more detail about these tests, refer to the “test pkt command” section in *Maintenance for Avaya DEFINITY Server CSI*.

Install Cables

1. Install cable from the cabinet to a hub or 110 (purple) wall field as required. Connect the 259A connector to the port slot containing the C-LAN circuit pack. See [Figure 5-4 on page 5-48](#). For a pinout of TN799C, see [Table 5-7 on page 5-49](#).

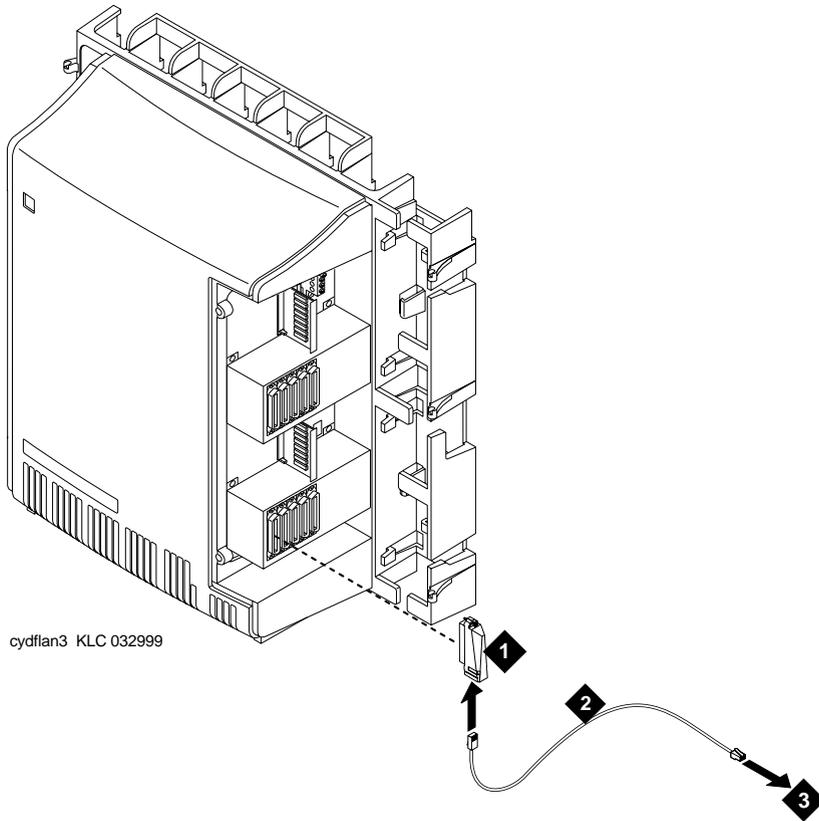


Figure Notes

1. 259A Connector
2. DW8 Cable
3. Hub or 110 (purple) wall field

Figure 5-4. Cable Connection for C-LAN

Table 5-7. TN799C Pinout

Backplane Pin	25-Pair Wire Color	Lead Name	Peripheral Connector Pin
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Enter Added Translations

1. Type **display system-parameters customer-options** and press Enter.
Ensure that the DCS field is **y**.
2. Administer the other required translation data using the forms listed under Distributed Communications System (DCS) in *Administration for Network Connectivity for Avaya MultiVantage Software*.

Save Translations

1. Type **save translation** and press Enter to instruct the system to copy the translation information to the flashcard.

Add ISDN—BRI

Add the Packet Bus Support

1. If packet bus support is not already installed, see [“Add Packet Bus Support” on page 5-43](#) and perform the steps.

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 *Administrator's Guide for Avaya MultiVantage Software*.

Resolve Alarms

1. Examine the alarm log. Resolve any alarms using *Maintenance for Avaya DEFINITY Server CSI*.

Save Translations

1. Type **save translation** and press Enter to instruct the system copy translation information to the translation flashcards
2. Update backup cards, if required.

Add Radio Controller

For information on installing and administering the TN789 Radio Controller, refer to *DEFINITY Wireless Business System Installation and Test*.

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.

The IP Media Processor allows you to send voice and fax from the Avaya CMC1 Media Gateway through an Internet protocol (IP) network to other switches having this feature or to other H.323 compliant endpoints. It is implemented using either the TN802B IP Interface, which is a Windows NT server residing on the IP Interface Assembly or TN2302AP IP Media Processor.

⇒ NOTE:

The P board suffix designation means the circuit pack is firmware-downloadable. Refer to [“Downloading Firmware to Port Circuit Packs” on page 5-2](#) for more information.

For information on installing this IP Solution, refer to

- [Add IP Media Processor](#)
- [Add IP Interface Assembly](#)

Add IP Media Processor

Unlike the TN802B IP Interface Assembly, the TN2302AP operates in one mode: Media Processor (MedPro), which is H.323 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 *Administration for Network Connectivity for Avaya MultiVantage Software*.

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/C). For C-LAN administration, refer to *Administration for Network Connectivity for Avaya MultiVantage Software*.

⇒ NOTE:

Although the TN2302AP IP Media Processor works with the TN799B C-LAN circuit pack, you need a TN799C to download new firmware to the TN2302AP circuit pack.

The TN2302AP IP Media Processor can work in the same configuration 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 items ready before your shipment arrives:

- An unoccupied port slot in the carrier 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 shipment arrives, check the contents (see [Table 5-8 on page 5-53](#)).

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 5-8 on page 5-53](#) for each TN2302AP IP Media Processor ordered.
3. Read and follow any directions inserted into the package by the factory.

Table 5-8. Required Hardware

Comcode/Code	Description	Quantity
108312612	TN2302AP IP Media Processor	1
848525887	TN2302AP Amphenol Adapter ¹	1
108525528	TN799B/C ² C-LAN circuit pack.  NOTE: One TN799B/C supports more than one TN2302AP.	1
102631413	ADPTR-259A connector	1

¹The adapter has an Amphenol connector on one side and an RJ45 connector on the other for connecting to the LAN. See [Figure 5-5](#).

²You must install a TN799C to be able to download new firmware to the TN2302AP.

 **NOTE:**

The customer must provide one CAT5 or better cable for each TN2302AP.

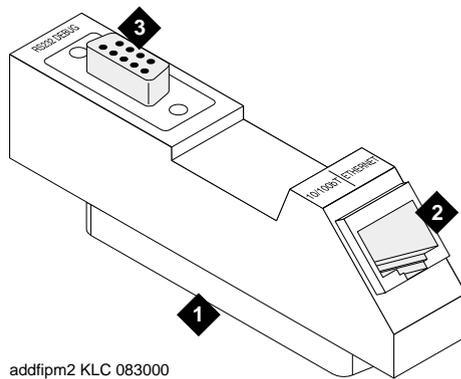


Figure Notes

- | | |
|---|------------------------------------|
| 1. Amphenol connector to backplane connector corresponding to TN2302AP slot | 2. To Ethernet |
| | 3. 9-pin connector for maintenance |

Figure 5-5. 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(s).
- One or more TN799B/C circuit pack(s) (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 you are 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 and latch the TN2302AP IP Media Processor into the port slot you reserved for it (see [Figure 5-6](#)).

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.

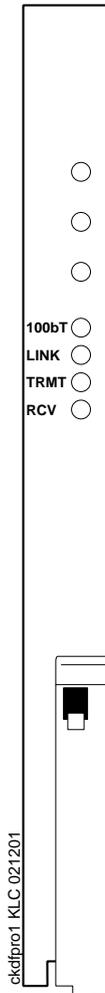


Figure 5-6. TN2302AP IP Interface faceplate

Initial Administration Steps for C-LAN and IP Media Processor

⇒ NOTE:

Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software* for specific information.

1. Log in as **craft**.
2. Type **change node-names** and press Enter.

- 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                . . .
. . .
. . .
. . .
```

- Type **display circuit-pack** and press Enter. Verify that the TN2302AP shows up in the Code column.
- Type **change ip-interfaces** and press Enter.

```
change ip-interfaces                               Page 1 of 2
                                         IP INTERFACES
Inter-region IP connectivity allowed? n
Enable
Eth Pt Type      Slot Code Sfx Node Name      Subnet Mask      Gateway Address  Net Rgn
y C-LAN  01A09 TN799 B clan-a1        255.255.255.0    . . . 1
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    . . .
```



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 the `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 *Administration for Network Connectivity for Avaya MultiVantage Software* 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 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 steps 1 through 3 for each port.
5. Type **remove ds1 *UUCSS*** and press Enter.

Remove the Circuit Packs



CAUTION:

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



NOTE:

The TN799B/C, TN802, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

1. Press the recessed Reset button on the TN802 circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799 and TN802 circuit packs.

Replace the Cables

1. Disconnect the network cable from the Ethernet connection.
2. If using a monitor, keyboard, and mouse:
 - a. Turn off the monitor and unplug it from the AC outlet.
 - b. Disconnect the monitor, keyboard, and mouse from the H600-512 external cable assembly.
3. Turn off the modem and unplug it from the AC outlet.
4. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

5. Disconnect the Amphenol connector on the existing external cable assembly from the backplane connector corresponding to the TN802 circuit pack.
6. Connect the Amphenol connector of the TN2302AP Amphenol adapter to the backplane connector corresponding to the slot selected for the TN2302AP circuit pack.



NOTE:

The TN802 occupied 3 slots, and the cable was connected to the rightmost backplane slot. For convenience use the same rightmost slot vacated by the TN802 circuit pack for the TN2302AP circuit pack.

7. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

1. If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.
2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802 and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press Enter to verify that the system recognizes the TN2302AP circuit pack.

Administration

1. Administer the TN799B/C C-LAN. Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software*.
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 5-56](#) and [“Test the External Connection to the LAN” on page 5-58](#).

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
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 . . .
```

2. Set the Enable Eth Pt field to n
3. Press Enter to effect the change.
4. Type **change ip-interfaces** and press Enter.
5. Delete the information in the Type, Slot, and Node Name fields for each TN802B you are replacing.
6. Press Enter to save the information and effect the new settings.

Remove the Circuit Packs



CAUTION:

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



NOTE:

The TN799B/C, TN802B, and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.



NOTE:

If replacing the existing TN799 circuit pack, remove it first and replace it with the TN799C. If you have a TN799B, you do not need to replace it for the TN2302AP to work. You do need a TN799C if you want to be able to download new firmware to the TN2302AP.

1. Press the recessed Reset button on the TN802B circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799B and TN802B circuit packs.

Replace the Cables

1. Disconnect the network cable from the Ethernet connection.
2. Turn off the modem and unplug it from the AC outlet. It is not needed for the TN2302AP.
3. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

4. Disconnect the Amphenol connector on the external cable assembly from the backplane connector corresponding to the TN802B circuit pack.
5. Connect the Amphenol connector on the TN2302AP Amphenol adapter to the backplane connector corresponding to slot selected for the TN2302AP circuit pack.



NOTE:

The TN802 circuit pack occupied 3 slots, and the cable was connected to the rightmost slot. For convenience use the same rightmost slot vacated by the TN802B circuit pack for the TN2302AP circuit pack. The other 2 slots are now available for other circuit packs.

6. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Install the circuit packs

1. If replacing the TN799 circuit pack, install the TN799B/C circuit pack in the slot vacated by the TN799 circuit pack.
2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802B and where the adapter is connected to the corresponding backplane connector. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press Enter to verify that the system recognizes the TN2302AP circuit packs.

Administration

1. Administer the TN799B/C C-LAN, if necessary. Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software*.
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 5-56](#) and [“Test the External Connection to the LAN” on page 5-58](#).

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 mode is Internet Telephone Server—Enterprise (ITS-E) compatible
- Media Processor (MedPro) mode is H.323 compatible.

The TN802B IP Interface is backwards compatible and defaults to IP Trunk mode. You must administer it to use it in MedPro mode.

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 *Administration for Network Connectivity for Avaya MultiVantage Software*.

If you have existing TN802 IP Interface circuit packs, you can upgrade them either by replacing the circuit pack with a TN802B or by downloading the TN802B firmware onto the circuit packs (see [“Upgrade to TN802B \(R8\)” on page 5-92](#)).

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 carrier 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 Media Processor order arrives at your site, check the contents (see [Table 5-9](#)).

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 5-9. 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 5-7](#). Look for the label where the bundle enters the Amphenol connector.

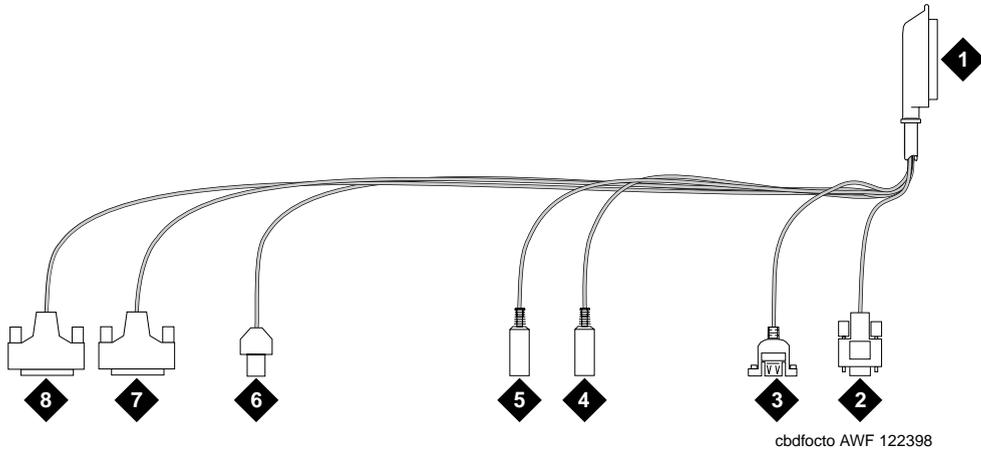


Figure Notes

- | | |
|---|-----------------------------------|
| 1. Amphenol connector to connector corresponding to TN802B slot | 5. To mouse |
| 2. To VGA monitor | 6. To ethernet |
| 3. To USB (not used) | 7. 25-pin male connector to modem |
| 4. To keyboard | 8. 25-pin male connector to COM2 |

Figure 5-7. 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 5-8](#).
3. Make sure that the modem's DIP switches are set as shown in [Figure 5-8](#) and [Table 5-10](#) on page 5-69.
4. Plug the modem into an AC power outlet.
5. Turn on the modem using the switch on the front of the modem.

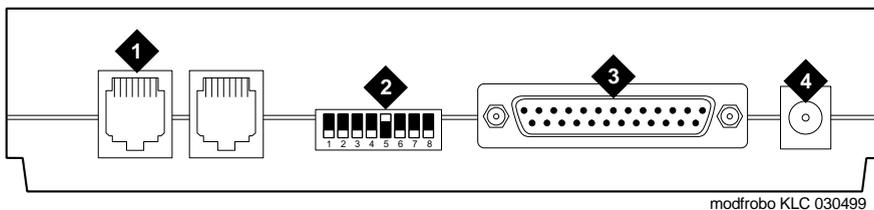


Figure Notes

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

Figure 5-8. External Modem Connections for U.S. Robotics Modem

Table 5-10. 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 5-9 on page 5-70](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT** *. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

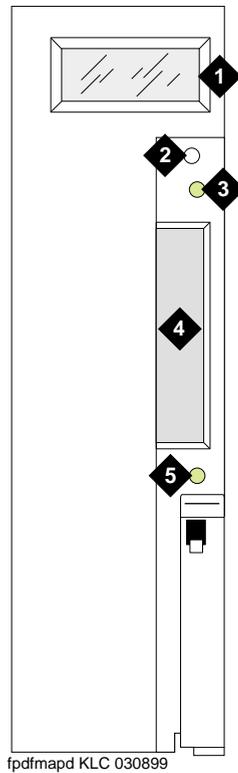


Figure Notes

- | | |
|----------------------------|----------------------------------|
| 1. LCD display | 4. PCMCIA card slot |
| 2. Reset button (recessed) | 5. Yellow PCMCIA disk-in-use LED |
| 3. Red board status LED | |

Figure 5-9. 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 5-10](#)) 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” on page 5-72](#)

⇒ NOTE:

For an initial installation, the TN802B IP Interface needs to be administered first (see [“Administer the IP Interface” on page 5-72](#)).

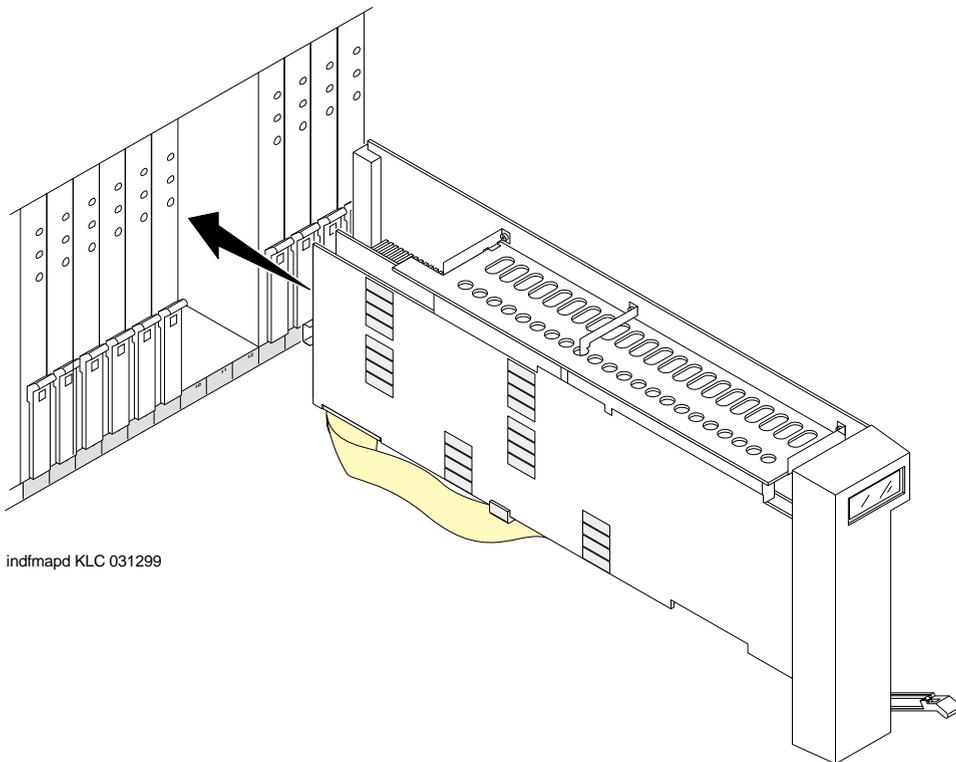


Figure 5-10. J58890MA-1 L30 IP Interface Assembly

Administer the TN799B C-LAN

Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software*.

Administer the IP Interface

Administration is usually done remotely; call your service representative to start the process.

Administration



NOTE:

Refer to the *Administration for Network Connectivity for Avaya MultiVantage Software* for specific information.

1. Log in as **craft**.
2. Type **change node-names** and press Enter.
3. On screen 2, type in the node name and IP address for the TN802B.

```
change node-names                                     Page 2 of 6

                                NODE NAMES

Name                IP Address                Name                IP Address
clan-a1             192.168.1 .31                . . .
clan-b1             192.168.2 .31                . . .
default             0 .0 .0 .0                   . . .
med-a1              192.168.1 .81                . . .
. . .
. . .
. . .
```

4. Type **change circuit-pack** and press Enter.
5. Check the Code column to see if the slots above the TN802B say DSMAPD or MEDPRO.

```
change circuit-packs                                 Page 1 of 5

                                CIRCUIT PACKS

Cabinet: 1                                           Carrier: A
                                                    Carrier Type: processor

Slot Code  Sf Mode  Name                Slot Code  Sf Mode  Name
01: TN754          DIGITAL LINE        11: MEDPRO    RESERVED-IP
02: TN758          POOLED MODEM        12: MEDPRO    RESERVED-IP
03: TN2144         ANALOG LINE         13: TN802 B   MAPD BOARD
04: TN746 B        ANALOG LINE         14:
05:                                                         15:
06: TN771 C        MAINTENANCE/TEST   16:
07: TN464 F        DS1 INTERFACE
08: TN2140         E&M TIE TRUNK
09: TN767 E        DS1 INTERFACE
10: TN799 B        CONTROL-LAN

'#' indicates circuit pack conflict.
```

- 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.

- Type **change ip-interfaces** and press Enter.
- Type in the information for the TN802B IP Interface,
- 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-
abled Type Slot Code Sfx Node Name Subnet Mask Bcast/Gway Net
Addr Rgn
n C-LAN 01A09 TN799 clan-a1 255.255.255.0 192.168.1 .100 1
y MEDPRO 01A13 TN802 B med-a1 255.255.255.0 192.168.1 .21 1
n 255.255.255.0 . . .
```

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.

- 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 and connected to the IP network.

Installing in IP Trunk Mode



NOTE:

IP Trunk mode should only be used to maintain compatibility with existing IP Trunk or ITS-E installations. We strongly recommend that you use the MedPro mode 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 carrier
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 shipment arrives, check the contents (see [Table 5-11 on page 5-75](#)).

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 5-11. 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 5-11](#). Look for the label where the bundle enters the Amphenol connector.

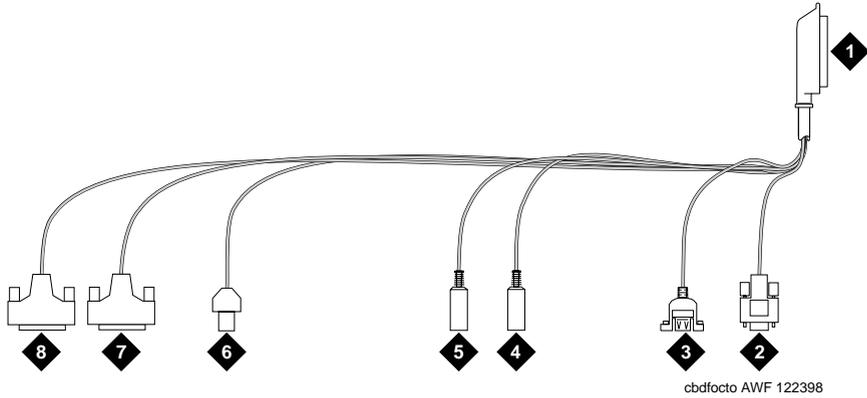


Figure Notes

- | | |
|---|-----------------------------------|
| 1. Amphenol connector to connector corresponding to TN802B slot | 5. To mouse |
| 2. To VGA monitor | 6. To ethernet |
| 3. To USB (not used) | 7. 25-pin male connector to modem |
| 4. To keyboard | 8. 25-pin male connector to COM2 |

Figure 5-11. 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 leftmost analog-line port on the modem as shown in [Figure 5-12](#).
3. Make sure that the modem's DIP switches are set as shown in [Figure 5-12](#) and [Table 5-12 on page 5-78](#).
4. Plug the modem into an AC power outlet.
5. Turn on the modem using the switch on the front of the modem.

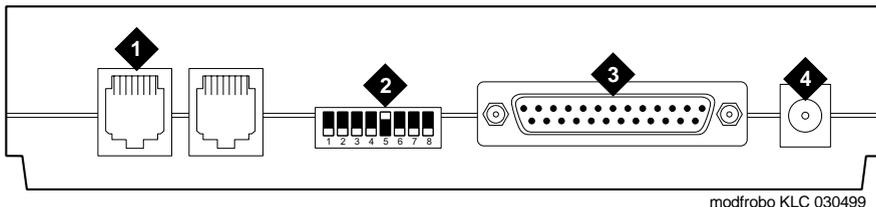


Figure Notes

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

Figure 5-12. External Modem Connections for U.S. Robotics Sportster

Table 5-12. 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 5-13 on page 5-80](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT** *. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

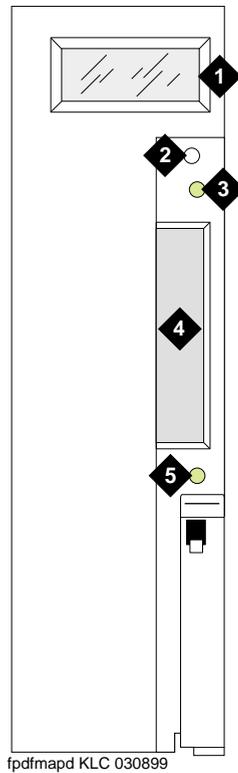


Figure Notes

- | | |
|----------------------------|----------------------------------|
| 1. LCD display | 4. PCMCIA card slot |
| 2. Reset button (recessed) | 5. Yellow PCMCIA disk-in-use LED |
| 3. Red board status LED | |

Figure 5-13. 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 rightmost of the three slots you reserved for it (see [Figure 5-14 on page 5-81](#)).

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.

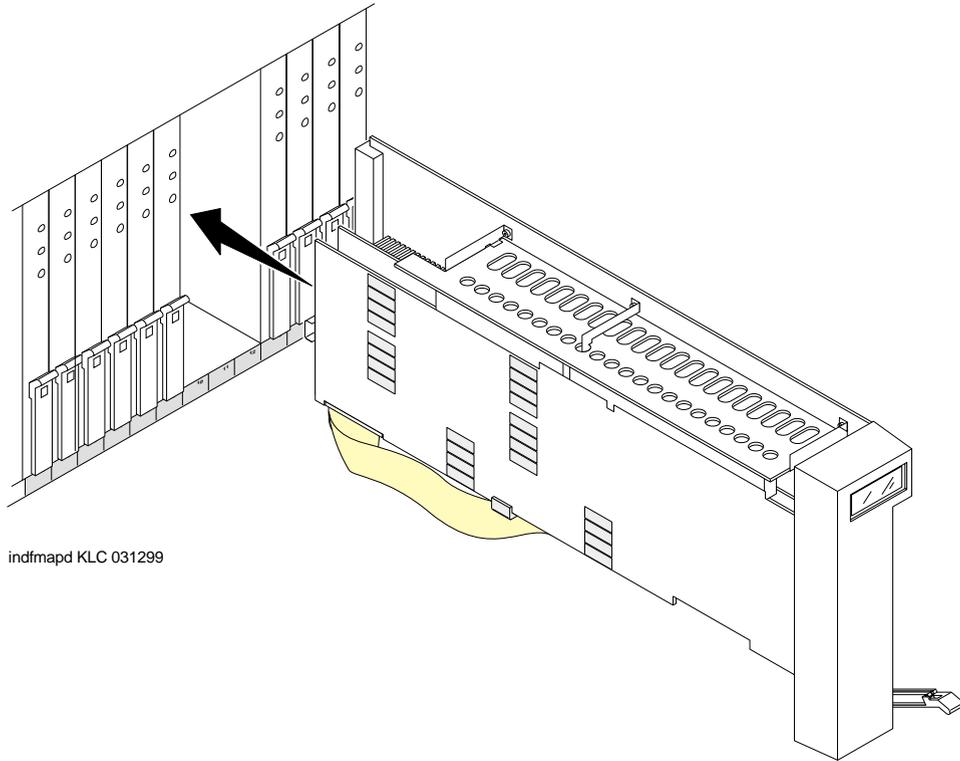


Figure 5-14. J58890MA-1 L30 IP Interface Assembly

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
01: TN754                                11: DSMAPD  RESERVED-IP
02: TN758                                12: DSMAPD  RESERVED-IP
03: TN2144                               13: TN802  B   MAPD BOARD
04: TN746  B   ANALOG LINE                14:
05:                                             15:
06: TN771  C   MAINTENANCE/TEST           16:
07: TN464  F   DS1 INTERFACE
08: TN2140                               E&M TIE TRUNK
09: TN767  E   DS1 INTERFACE
10: TN799  B   CONTROL-LAN

'#' indicates circuit pack conflict.
```

4. If MEDPRO, go to the entry just above the TN802B that says MEDPRO.
5. Type DSMAPD, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

```
MedPro type requires TN802 with application. Type
MEDPRO on circuit-packs form.
```

Log onto the TN802B Interface Server . If administered remotely through pcANYWHERE:

1. Dial in to the server through pcANYWHERE using the dialup number supplied.
2. Click on the pcANYWHERE Remote Host Computer button on the toolbar to send CTRL ALT DEL to the host.
3. Type **administrator** in the `User Name` field.
4. Type **iptrunk** in the `Password` field and click **OK**.
5. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

If administered locally on a monitor, keyboard, and mouse:

1. Press CTRL, ALT, and DEL simultaneously.
2. Type **administrator** in the `User Name` field.
3. Type **iptrunk** in the `Password` field and click **OK**.
4. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

A-Law versus Mu-Law. For systems using A-Law companding, an additional procedure is necessary.

On the SAT:

1. Busyout the trunk group associated with the IP trunk by typing **busyout board UUCSS** and pressing Enter.

In the Windows interface to TN802B:

1. Click on **Control Panel > Services**.
2. Highlight **IP Trunk Service**, then click on **Stop**.
3. In the lower left-hand corner, right-click **Start > Explore**.
4. Go to the c: drive and click on its, then bin.
5. Double-click on the its.ini file to open it in Notepad.
6. Under the [MediaLib] section, go to COMPANDING=MLAW. Change **MLAW** to **ALAW**.
7. Click on **File > Save** to save the file.
8. Click on **File > Exit** to exit Notepad.
9. Click on **Control Panel > Services**.
10. Highlight **IP Trunk Service**, then click on **Start**.



NOTE:

Do not select Startup.

After service has started, go to the SAT:

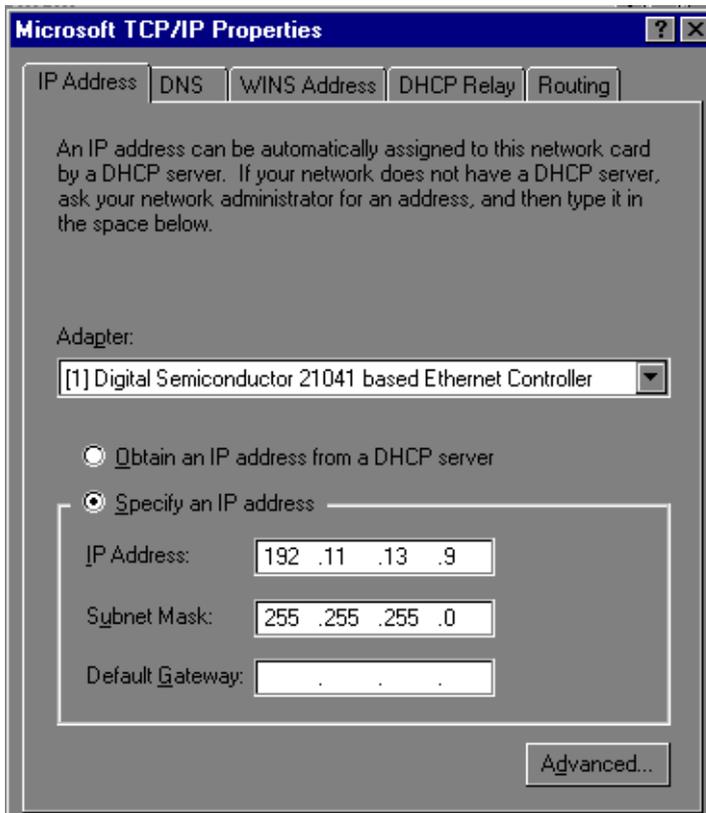
1. Release the trunk group associated with the IP trunk by typing **release board UUCSS** and pressing Enter.

Assign Server and Domain Names. The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within your network.

1. Click on **My Computer > Control Panel > Network**.
2. Select the **Identification** tab, then click **Change**.
3. Type the new server name in the `Computer Name` field.
4. Type the new domain name in the `Domain` field and click **OK > OK > Close**.
5. When prompted to reboot the computer, select one of the following options:
 - **No** if you have not assigned IP addresses then go to [“Assign an IP Address”](#)
 - **Yes** if you have assigned IP addresses.

Assign an IP Address. 1. Click on **My Computer > Control Panel > Network**.

2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window.



5. Verify that the `Adapter` drop down menu lists 2 DEC Ethernet adapters.

**CAUTION:**

Do not change any settings on the adapter labeled [1] for any reason.

6. Select the DEC Ethernet adapter labeled [2].

Microsoft TCP/IP Properties

IP Address DNS WINS Address DHCP Relay Routing

An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.

Adapter:
[2] Digital Semiconductor 21143 based 10/100 mpbs Ethernet

Obtain an IP address from a DHCP server

Specify an IP address

IP Address: 1 .1 .1 .1

Subnet Mask: 255 .255 .255 .0

Default Gateway: 1 .1 .1 .1

Advanced...

OK Cancel Apply

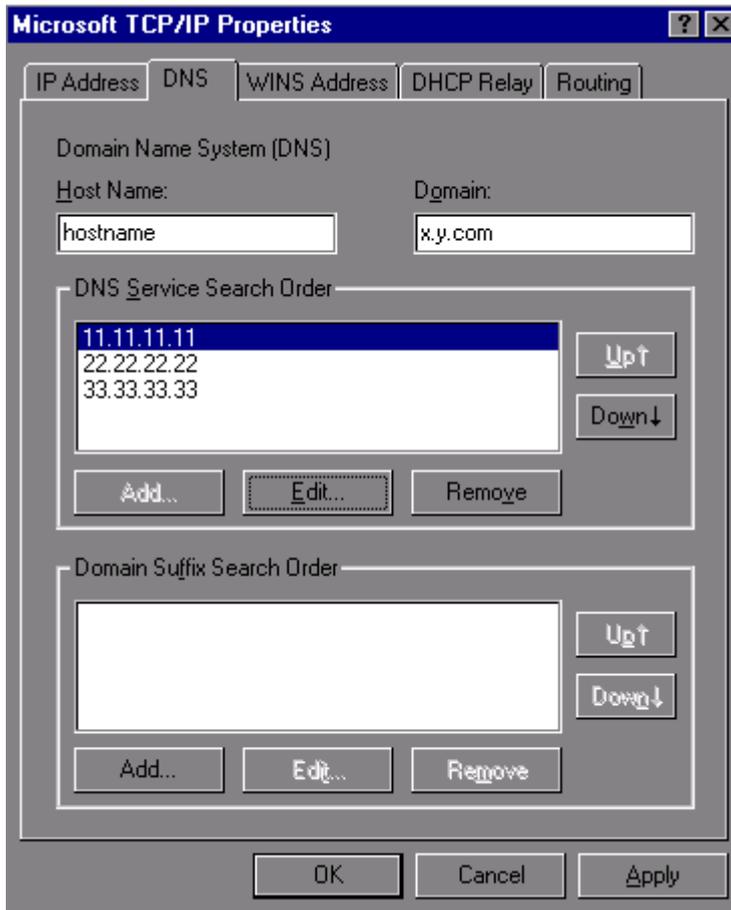
7. Type a valid IP address for the IP Interface server in the `IP Address :` field.
8. Type the appropriate subnet mask in the `Subnet Mask :` field.

**NOTE:**

Not all networks require steps 9 through 18. Check with the local network administrator to determine which are required.

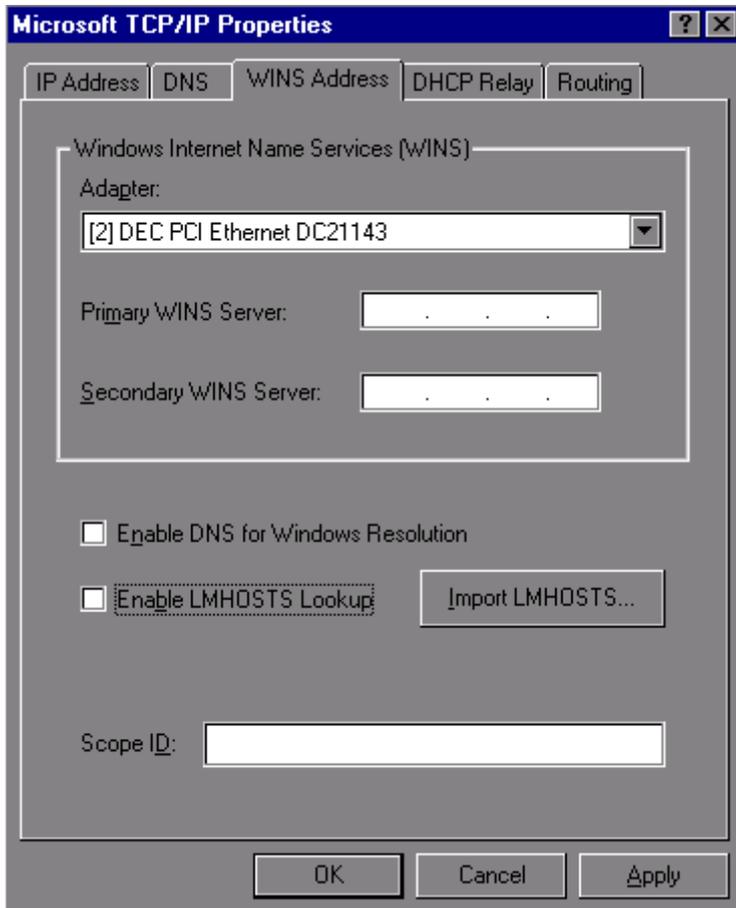
9. If you use gateways, type the IP address of the default gateway for the IP Interface server in the `Default Gateway :` field.

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.

- Click on the WINS Address tab.



- Make sure the [2] DEC shows in the Adapter field.
- If WINS server is available, type its IP address in the Primary WINS Server field.
- If DNS is available, select Enable DNS for Windows Resolution.
- If the network uses an imported LMHOSTS file, select Enable LMHOSTS Lookup and Import LMHOSTS and click **OK**.
- 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?
- 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.
- Click **Close**.

If administered remotely through pcANYWHERE:

21. Click on the pcANYWHERE Restart Host Computer button on the toolbar to restart the computer.

If administered locally on a monitor, keyboard, and mouse:

21. Click **Yes** in the dialog box to restart the computer.



WARNING:

When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

Check Network Services

When the server restarts, make sure that the required network services have started correctly. If you see an error dialog box, then the network services did not start correctly. Also, check the NT Event Log.

1. Click on **My Computer > Control Panel > Network > Services**. Make sure that the following services are listed:
 - Computer Browser
 - Microsoft Internet Information Server 2.0
 - NetBIOS Interface
 - RPC Configuration
 - Server
 - Workstation
2. Click the **Protocols** tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
3. Click **OK**.

Test the External Connection to the LAN. To test the external IP connections, ping the IP Interface server and ping a known computer connected to your network.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping nnn.nnn.nnn.nnn** (which is your IP address).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
 - If no response, verify the IP-address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of your gateway).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling.
 - If all else fails, click on **Start > Settings > Control Panel > Network**. Select the **Adapters** tab and highlight the [2] DEC adapter.
 - Click **Properties > Change**.
 - From the Duplex Mode dropdown menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test
4. At the command prompt, type **ping nnn.nnn.nnn.nnn** (which is the IP address of another external computer beyond the gateway).
 - If you have connectivity, the system responds with the following message:

```
Reply from nnn.nnn.nnn.nnn: bytes=32 time<##ms  
TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
5. Type **exit** and press Enter.

Test the IP Interface Onboard LAN Connections. To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B IP Interface.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping 192.11.13.9** (which is the IP address of the internal IP Interface server).
 - If everything is configured correctly, the system responds with the following message:

```
Reply from 192.11.13.9: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
 - If you have connectivity, the system responds with the following message:

```
Reply from 192.11.13.8: bytes=32 time<##ms TTL=###
```
 - If no response, verify the IP settings for Adapter [1].
4. Type **exit** and press Enter.

The TN802B IP Interface is now installed and connected to the IP network.

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 (DEFINITY ECS 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 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 5-13 on page 5-80](#)) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.
6. After the TN802B is shut down, reseal the circuit pack to restart the system.
7. Log in using **ctrl alt del**

Upgrading IP trunks to H.323 trunks

If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to [“Upgrade to TN802B \(R8\)” on page 5-92](#)

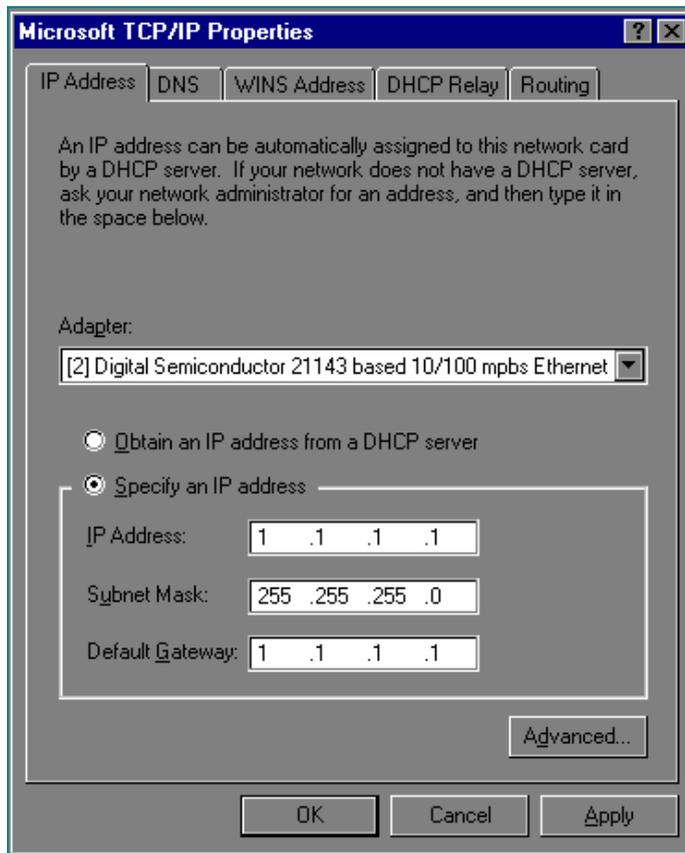
To upgrade an existing IP trunk to an H.323 trunk requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window. Write down the IP address, subnet address, and gateway address shown for adaptor [2] (see example below).



NOTE:

Do not use the addresses for adaptor [1].



5. When done, click **OK, OK**.

Upgrade to TN802B (R8)

⇒ NOTE:

The upgrade takes about 20 minutes.

1. Insert the flash disk into the right most slot on the TN802 IP trunk. On the monitor, a dialog box assigns a drive letter with the removable media designation; the default is D:.
2. Right click on **Start > Explore** to open the Windows NT Exploring pane and select the drive letter indicated in step 1.
3. Double-click on **Medpro** and select the Setup icon.
4. Follow the Install Shield procedure to transfer all the necessary files to the TN802 IP Interface.

⇒ NOTE:

In the Finish dialog box, select **I will restart later**. Do not select **Restart computer**.

This would be a good time to read the Readme.txt file.

5. Click on **Start > Settings > Control Panel > Services**.
6. Select **IP Trunk** and click on **Startup**.

 **NOTE:**
Do not click on Start.

7. Under Startup Type, select **Disabled** and click **OK** to disable IP Trunk mode.

 **NOTE:**
If IP trunk and MedPro services are both set to automatic, the TN802B defaults to IP Trunk and MedPro features cannot be used.

8. Select **MedPro** and click on **Startup**.

 **NOTE:**
Do not click on Start.

9. Under Startup Type, select **Automatic** and click **OK** to enable MedPro mode.
10. Click **Start > Shut Down** and select `Restart the computer?`

or on the TN802:

Press the recessed reset button on the faceplate (see [Figure 5-13 on page 5-80](#)) until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), reseal the circuit pack to restart the system.

or on the SAT:

- a. Type **busyout board UUCSS** and press Enter.
- b. Type **reset board UUCSS** and press Enter.
- c. Type **release board UUCSS** and press Enter.

Once the system is completely initialized, the LCD reads **MEDPRO ***.

 **WARNING:**
When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

11. Affix the new TN802B label to the circuit pack.
12. Disconnect the monitor, keyboard, and mouse.

Circuit Pack Verification

1. Type **change circuit-pack** and press Enter.
2. Check the Code column to see if it says DSMAPD or MedPro.

```

change circuit-packs                                     Page 1 of 5
                CIRCUIT PACKS

      Cabinet: 1                                     Carrier: A
                                                Carrier Type: processor

Slot Code  Sf Mode   Name                               Slot Code  Sf Mode   Name
01: TN754                DIGITAL LINE                               11: MEDPRO      RESERVED-IP
02: TN758                POOLED MODEM                               12: MEDPRO      RESERVED-IP
03: TN2144              ANALOG LINE                                13: TN802 B     MAPD BOARD
04: TN746 B             ANALOG LINE                                14:
05:                                                              15:
06: TN771 C             MAINTENANCE/TEST                           16:
07: TN464 F             DS1 INTERFACE
08: TN2140              E&M TIE TRUNK
09: TN767 E             DS1 INTERFACE
10: TN799 B             CONTROL-LAN

'#' indicates circuit pack conflict.
    
```

3. To correct it, go to the entry just above the TN802B that says DSMAPD.
4. Type MEDPRO, and press Enter. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
5. To complete the administration, refer to *Administration for Network Connectivity for Avaya MultiVantage Software*.

Installing an Integrated Channel Service Unit (ICSU) Module

The integrated channel service unit (ICSU) is a combination of a 120A3A 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:

- 120A3A CSU module



NOTE:

Re-manufactured/repaired ICSU units and any manufactured after May 7, 2002 are marked as "120A3A."

- 700A DS1 loopback jack
- Cable H600-383
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 120A3A CSU

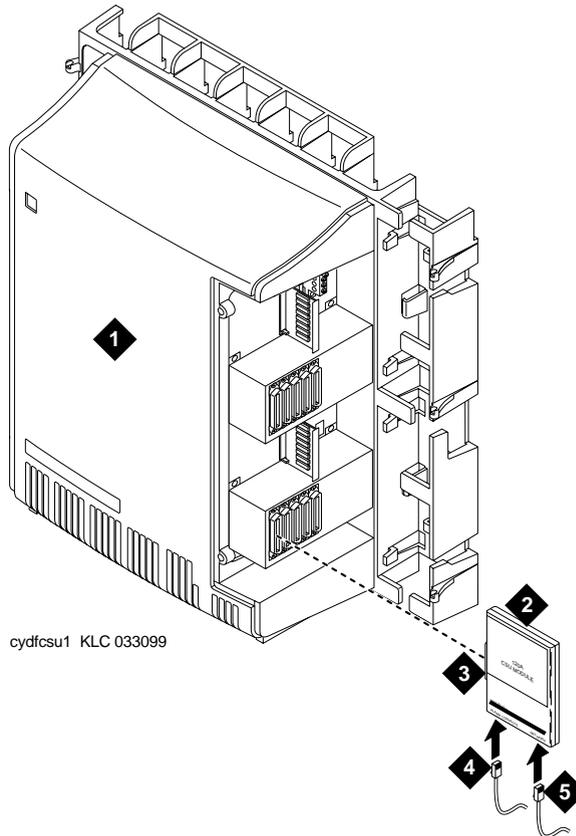


Figure Notes

1. Rear of carrier containing DS1 circuit pack
2. 120A3A CSU
3. To 25-pair connector on rear of carrier
4. DW8A-DE 4-pair cord to alarm contacts (optional)
5. 4-pair cord to network interface (H600-383)

Figure 5-15. 120A3A Channel Service Unit Module



CAUTION:

Do not plug the 120A3A into any circuit pack other than a TN464F or TN767E or TN2464 or TN2313. Do not connect the 120A3A 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 120A3A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.



CAUTION:

Always wear an antistatic wrist strap when installing a 120A3A module. Do not touch the external alarm cable when it is connected to the 120A3A. 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 120A3A's 25-pair connector directly into the plug associated with the DS1 circuit pack slot.
4. Secure the 4C retainer around the 120A3A.
5. Attach the supplied H700-383 cable to the 120A3A and to the 700A loopback jack.

This cable is directional. To determine the end that connects to the 120A3A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A3A end. The shield is grounded only at the 120A3A end.

Use the cable provided. If cabling other than that provided with the 120A3A 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 120A3A. Ground the shields of this cable only at the 120A3A end to avoid ground loops.
- Cabling between the network interface and 120A3A can have no bridge taps.
- If using standard house riser cable for connections between the network interface and the 120A3A, 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 120A3A, 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.



NOTE:

Avoid mixing wires of different gauges in a DS1 line.

6. If using external alarm equipment, attach the supplied DW8 cable to the 120A3A and the external equipment. The maximum length of this cable depends on the alarm equipment.
7. If a TN464F or later is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack as shown in [Figure 2-3 on page 2-12](#).
8. From the DS1 circuit-pack form of the system administration console, set the line compensation field to 0-133 ft (40.6 m).
9. Reset the 120A3A by reseating the DS1 circuit pack.

When you reinsert the DS1 circuit pack after installing a 120A3A CSU the 120A3A resets. The DS1 circuit pack initializes and tests the 120A3A. 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 120A3A as instructed in *Integrated CSU Module Installation and Operation*, 555-230-193.

[Table 5-13](#) provides the H600-383 cable pinouts. [Table 5-14 on page 5-99](#) provides the cable lengths for each cable group number.

Table 5-13. H600-383 Cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	
6	Shield			
7				Not assigned
8				Not assigned

Table 5-14. H600-383 Cable Lengths by Group Number

Group	Length	Group	Length
1	25 feet (7.7 m)	5	125 ft (38.1 m)
2	50 feet (15.2 m)	6	200 ft (71 m)
3	75 feet (22.9 m)	7	400 ft (122 m)
4	100 feet (30.5 m)	8	750 ft (198.1 m)

Installing a J58890CG Power Distribution Unit

Mounting without a backing plate

NOTE:

Note: the J58890CG Power Distribution Unit should be installed to the right of the SCC Cabinet Stack, and mounted approximately 12 inches (30.5 cm) off the floor.

To install the J58890CG Power Distribution Unit on a wall *without a plywood backing plate*, use the following procedure:

1. Hold the unit at the desired location (see Note) and mark the 4 (four) holes (slots and keyholes) centers with a pencil.
2. Use a level to make sure the unit is straight, set the unit aside and install 4 (four) ZINC drywall “screw in” anchors rated for 50 LBS each minimum.
3. Install the TOP 2 (two) screws supplied with the zinc anchors.
4. Install the power distribution unit onto the top screws.
5. Install the bottom screws through the slots in the power distribution housing.

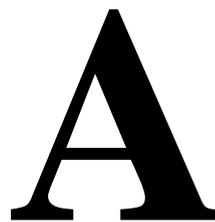
Mounting with a backing plate

 NOTE:

Note: the J58890CG Power Distribution Unit should be installed to the right of the SCC Cabinet Stack, and mounted approximately 12 inches (30.5 cm) off the floor.

To install the J58890CG Power Distribution Unit on a wall *with a plywood backing plate*, use the following procedure:

1. Hold the unit at the desired location (see Note) and mark the 4 (four) holes (slots and keyholes) centers with a pencil.
2. Use a level to make sure the unit is straight, set the unit aside and install 2 (two) #12 pan head phillips wood screws (rated for 50 LBS each minimum) in the top position.
3. Install the power distribution unit onto the top screws.
4. Install the bottom screws through the slots in the power distribution housing.



This appendix provides information to correct some problems when upgrading a system. The information in this appendix is a compilation of the most commonly reported troubles received by Tier 4 Support at Avaya. For general information on troubleshooting associated with maintenance procedures, see Chapter 1, “Maintenance for csi Systems,” of *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

This appendix is organized into two main sections, as described below:

- [Troubleshooting Guidelines](#) – provides general procedures to try before escalating a problem
- [Troubleshooting Upgrades](#) – provides specific troubleshooting procedures for common upgrade problems

Troubleshooting Guidelines

Before escalating a problem, try the troubleshooting procedures listed in this appendix. Also try the general troubleshooting procedures below.

1. Check the software compatibility on the Software Release Letter. Be sure the software that you are upgrading *from* is compatible with the Avaya MultiVantage Software that you are upgrading *to*.
2. Check the Avaya MultiVantage Software flashcard for defects.
3. Always use the Software Release Letter that accompanies the Avaya MultiVantage Software. If the letter is not available, use the appropriate chapter in this book.

Troubleshooting Upgrades

The subsections to follow present specific procedures for common upgrade problems, listed below:

- [No Translation After Upgrade](#)
- [Translation Corruption Detected](#)
 - [Unsuccessful Translation Backup](#)
 - [Software Incompatibility](#)
- [Re-install the ISDN-PRI Links \(Only for Failed Upgrades\)](#)

No Translation After Upgrade

This problem usually means that the translation flashcard was not present when the system expected it to be present. This can occur if the translation card is not fully inserted, or in some cases when the technician is distracted from monitoring the progress of the **upgrade software** command and fails to insert the translation card when prompted. To recover, perform the following:

1. Verify that the translation card is inserted (on duplicated SPE systems, it should be inserted in the active SPE).
2. Login as **craft**.
3. Verify the format and content of the flashcard by typing **status card-mem**, and observe that the output indicates that a translation file is present.
4. Type **reset system 3** and press **Enter**.
5. If the above fails, escalate the problem.

Translation Corruption Detected

This usually means that the translations were not successfully backed up to the translation card or that the current software may not be compatible with the new Avaya MultiVantage Software.

 **NOTE:**

The Terminal Translation Initialization (TTI) should be disabled before you save translations prior to an upgrade.

1. Repeat the upgrade with the TTI disabled.

Unsuccessful Translation Backup

1. If the processor circuit pack was replaced as part of the upgrade, remove the processor and replace it with the original processor circuit pack.
2. Insert the original translation card (or backup translation card) into the TN798B. This is a **csi** circuit pack only.
3. Enter **reset system 4** to reboot the system and to reinstall the original translations.
4. To correct the translation corruption problem, contact your Avaya representative.

Software Incompatibility

If these procedures do not clear the corruption problem, then the software versions may be incompatible. You may need to upgrade to an interim software version before upgrading to Avaya MultiVantage Software.

1. Consult the remediation that came with the Avaya MultiVantage Software.
2. Contact your Avaya representative for this information.

Re-install the ISDN-PRI Links (Only for Failed Upgrades)

If your upgrade failed and you need to re-install the ISDN-PRI links, use this procedure.

1. Type **add data-module [PI ext]** and press Enter.
2. Type the information in the fields based on the information that you entered earlier.
3. Type **change communication-interface links** and press Enter.
4. Type the information in the fields based on the information that you entered earlier with one exception. Leave the `Enable` field setting as it is.
5. Type **change communication-interface processor-channels** and press Enter.
6. Type the information in the fields based on the information that you entered earlier.
7. Type **change communication-interface links** and press Enter.
8. Type the information in the `Enable` field based on the information that you entered earlier.
9. Type **save translation** and press Enter.

This appendix provides information on how to administer Access Security Gateway (ASG). ASG employs a challenge/response protocol to confirm the validity of a user and reduce the opportunity for unauthorized access. ASG authentication will be imposed for Avaya services logins as indicated below:

- **init** - all types of access require ASG authentication
- **inads** - all types of access require ASG authentication
- **craft** - if accessing remotely, ASG authentication is required.



NOTE:

Craft login sessions from a direct connect management terminal continue to rely on password authentication.

Using the ASG Mobile

1. Double click on the ASG Mobile V1.1 on your desktop and an ASG Mobile V1.1 Login window appears.
2. In the `Tech ID` field, type your login ID, which is the name of the attached file (without the “.asg”). Your login ID is the same as your Avaya login (or an abbreviated part of it).
3. Type the password twice. Note that the password is case-sensitive.



NOTE:

Your new password will be sent to you in a separate email.

4. Click the `OK` button and an ASG Mobile V1.1 Authentication window appears.
5. Use your communications package (for example, DSA, ProComm, or TerraNova) to dial the switch you need to contact.
6. Log into your communications package window as either **init**, **inads**, or **craft**. Instead of a password prompt, a seven-digit (challenge) number appears in the window of your communications package.
7. Move to the ASG Mobile V1.1 Authentication window.
8. Type the 10-digit Product ID in the `Equipment ID` field. The default ID is 10 zeros (0000000000).
9. Type **init**, **inads**, or **craft** in the `Equipment Login` field. The **craft** login ID is the default.
10. Type the challenge number (from your communications package window) into the `Challenge` field. Do not use the “-” character.
11. Type the trouble ticket number in the `Ticket Number` field. If there is no ticket number, you can use this field as a one-word comment field or leave it blank.
12. Click the `Start` button. The `Activity Status` field displays “Started” and the `Response` field displays a new seven-digit number.
13. Move to your communications package window.
14. Type the new seven-digit (response) number in the `Response` field. Do not use the “-” character.

The Avaya CMC1 Media Gateway verifies the response. If the response is incorrect, return to Step 1. If this is the third rejection, see the *Maintenance for Avaya MultiVantage DEFINITY Server CSI*.

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