Communication Server 1000M and Meridian 1

Large System Upgrades Overview

Avaya Communication Server 1000
Release 7.5

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New in this release

This chapter contains information about Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 new features.

Features

There are no updates to the feature descriptions in this document.

Other

See the following sections for information about changes that are not feature related.

Revision history

March 2012

Standard 05.05. This document is up-issued to include updates to the Installing a Signaling Server chapter.

November 2011

Standard 05.04. This document is up-issued to support the removal of content for outdated features, hardware, and system types.

September 2011

Standard 05.03. This document is up-issued to support the removal of content for outdated features, hardware, and system types.

April 2011

Standard 05.02. This document is up-issued to include information about joining the UCM security domain.

November 2010

Standard 05.01. This document is published to support Avaya Communication Server 1000 Release 7.5.

June 2010

Standard 04.02. This document is up-issued to include CP PM version 2 content and to update the CS 1000M task flow graphic.

June 2010

Standard 04.01. This document is issued for Avaya Communication Server 1000 Release 7.0.

September 2009

Standard 03.04. This document is up-issued to include changes in the Procedure for installing and enabling Peripheral Signaling cards

June 2009

Standard 03.03. This document is upissued to include commands for joining the UCM Security Domain and updates to the CP PM BIOS upgrade procedure.

May 2009

Standard 03.02. This document is upissued to include task flow graphics for Communication Server 1000 Release 6.0.

May 2009

Standard 03.01. This document is issued for Communication Server 1000 Release 6.0.

August 2008

Standard 02.07. This document is upissued with updates to graphics.

April 2008

Standard 02.06. This document is upissued with corrections to contents of upgrade kits.

April 2008

Standard 02.05. This document is upissued with editing corrections.

March 2008

Standard 02.04. This document is upissued with corrections to procedures for invoking software downgrade.

March 2008

Standard 02.03. This document is upissued with corrections to procedures for invoking software downgrade.

February 2008

Standard 02.02. This document is upissued with additions to procedures for invoking software downgrade.

November 2007

Standard 02.01. This document is issued for Communication Server 1000 Release 5.5.

July 2007

Standard 01.04. This document is upissued with corrections to procedures for invoking the install menu during CP PIV and CP P4 upgrades.

June 2007

Standard 01.03. This document is upissued with corrections to upgrade procedures.

June 2007

Standard 01.02. This document is upissued with corrections to links for software upgrades.

May 2007

Standard 01.01. This document is upissued for Communication Server 1000 Release 5.0. This document contains information previously contained in the following legacy document, now retired: *Communication Server 1000M and Meridian 1: Large System Upgrade Procedures* (553-3021-258).

May 2006

Standard 5.00. This document is upissued with corrections installing clock controllers and keycode upgrade procedure for CP PIV.

January 2006

Standard 4.00. This document is upissued with corrections to various upgrade procedures.

August 2005

Standard 3.00. This document is upissued to support CP PIV and Communication Server 1000 Release 4.5.

September 2004

Standard 2.00. This document is upissued for Communication Server 1000 Release 4.0.

October 2003

Standard 1.00. This document is new for Succession 3.0. It was created to support a restructuring of the Documentation Library. This document contains information previously contained in the following legacy document, now retired: *Upgraded Systems Installation: Upgrade to Options 51C, 61C, 81C* (553-3001-258).

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Customer service

Visit the Avaya Web site to access the complete range of services and support that Avaya provides. Go to www.avaya.com or go to one of the pages listed in the following sections.

Navigation

- **"Getting technical documentation" on page 29**
- **"Getting product training" on page 29**
- **"Getting help from a distributor or reseller" on page 29**
- **"Getting technical support from the Avaya Web site" on page 30**

Getting technical documentation

To download and print selected technical publications and release notes directly from the Internet, go to www.avaya.com/support.

Getting product training

Ongoing product training is available. For more information or to register, you can access the Web site at www.avaya.com/support. From this Web site, you can locate the Training contacts link on the left-hand navigation pane.

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If you purchased a service contract for your Avaya product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller for assistance.

Getting technical support from the Avaya Web site

The easiest and most effective way to get technical support for Avaya products is from the Avaya Technical Support Web site at www.avaya.com/support

System information

This document is a global document. Contact your system supplier or your Avaya representative to verify that the hardware and software described is supported in your area.

Subject

Use this document to perform upgrades on Meridian 1 Large Systems. This document also contains information about database transfers, Call Processor card upgrades, and network group upgrades.

This document contains information about converting Release 3.0 or later software to Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 on Meridian 1 Options 51C, 61C, 81C, CS 1000M SG and CS 1000M MG systems. For software conversion procedures prior to Release 3.0, see *Software conversion procedures* (553-2001-320) for software Release 24.

IMPORTANT!

Avaya Software Conversion Lab must perform Database conversion for Meridian 1 Options 21E, 51, 61, 71, STE, NT, and XT. Consult the current Avaya price book for cost and contact information.

Note on legacy products and releases

This manual contains information about systems, components, and features that are compatible with Avaya Communication Server 1000 software. For more information about legacy products and releases, click the Technical Documentation link under Support on the Avaya home page:

www.avaya.com

Applicable systems

This document applies to the following systems:

- Avaya Communication Server 1000M Single Group (CS 1000M SG)
- Avaya Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 Option 51C
- Meridian 1 Option 61C
- Meridian 1 Option 81C

Note: When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 software and configured to include a Signaling Server, they become CS 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a CS 1000M system.

Table 1
Meridian 1 systems to CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 Option 51C	CS 1000M Single Group
Meridian 1 Option 61C	CS 1000M Single Group
Meridian 1 Option 81C	CS 1000M Multi Group

You can convert NT8D37 CS 1000M and Meridian 1 large system IPE modules into CS 1000E Media Gateways with a Media Gateway Extended Peripheral Equipment Controller (MG XPEC) card. For more information, see *Avaya Communication Server 1000E Hardware Upgrade Procedures* (NN43041-464).

Signaling Server configuration

Meridian 1 Large Systems can be configured to run one or more Signaling Servers. The following Signaling Servers are supported in a Large System configuration for CS 1000 Release 7.5:

- CP PM Signaling Server
- Common Processor Dual Core (CP DC)
- Commercial off-the-shelf (COTS) Signaling Server

For more information about Signaling Server configuration, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Upgrade paths

This document contains information about the following Large System upgrades:

- Meridian 1 Options 51C, 61C, 81C, CS 1000M SG, and CS 1000M MG
- upgrades to FNF
- software upgrades
- network additions

The upgrades described in this guide are structured as source platform to target platform upgrades.

Intended audience

This document is intended for individuals who upgrade Large Systems.

This document is intended for individuals who convert software and upgrade systems.

Conventions

Terminology

The following systems are referred to generically as “Large System”:

- Avaya Communication Server 1000M Single Group (CS 1000M SG)
- Avaya Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 Option 51C
- Meridian 1 Option 61C
- Meridian 1 Option 81C

The Common Processor Pentium Mobile, Common Processor Dual Core (CP DC), and Commercial off-the-Shelf (COTS) platforms are referred to as server.

Related information

CAUTION — Data Loss

Only personnel who are familiar with the system and with conversion procedures should perform the conversion.

Read the applicable procedures carefully before beginning any the conversion.

Note: Converting software on single CPU systems disrupts call processing and allows service only to those telephones connected to Power Failure Transfer Units (PFTU).

CAUTION WITH ESDS DEVICES

To avoid damaging equipment from electrostatic discharge, wear a properly connected antistatic wrist strap when working on system equipment.

Perform preconversion and postconversion procedures for every system conversion.

Throughout this document the term *media* refers to tape, disk, CD-ROM, DVD-ROM, or Compact Flash (CF), whichever applies to the system.

The term **source** refers to the hardware and software that is currently running. The term **target** refers to the new hardware and software to which the system is converting.

CAUTION — Data Loss

Read "General software conversion information" on page 57 before performing any operations.

It contains information vital to the conversion process.

Manuals

The following manuals are referenced in this document:

- *Avaya Product Compatibility* (NN43001-256)
- *Avaya Converging the Data Network with VoIP* (NN43001-260)
- *Avaya Circuit Card Reference* (NN43001-311)
- *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313)
- *Avaya Features and Services* (NN43001-106)
- *Avaya Software Input/Output: Administration* (NN43001-611)
- *Avaya Element Manager System Reference - Administration* (NN43001-632)
- *Avaya IP Trunk: Description, Installation, and Operation* (NN43001-563)
- *Avaya Network Routing Service Fundamentals (NN43001-130)*

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN43001-125)
- *Avaya ISDN Basic Rate Interface: Features* (NN43001-580)
- *Avaya Software Input/Output: Maintenance* (NN43001-711)
- *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220)
- *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)
- *Avaya Communication Server 1000M and Meridian 1 Large System Maintenance* (NN43021-700)
- *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474)

Online

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Overview

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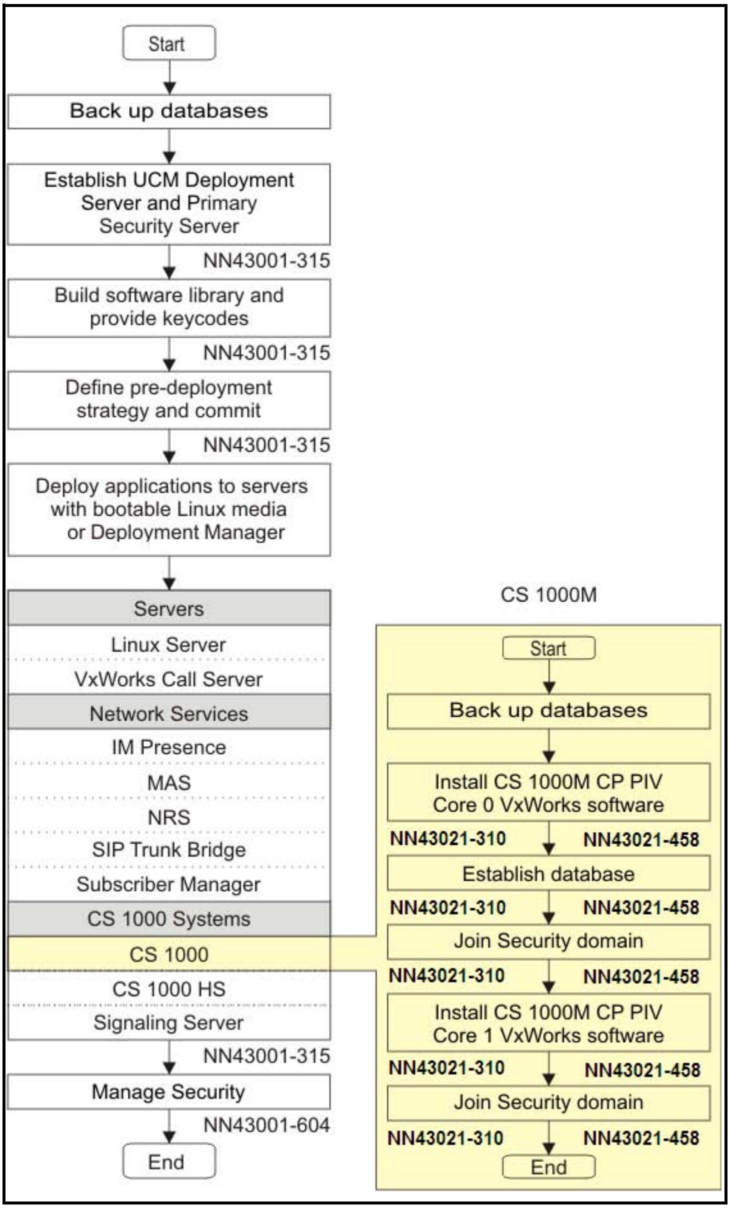
Avaya Communication Server 1000 task flow

This section provides a high-level task flow for the installation or upgrade of an Avaya Communication Server 1000 (Avaya CS 1000) system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the document number that contains the detailed procedures required for the task.

For more information refer to the following documents, which are referenced in Figure 1 on page 38:

- *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)
- *Avaya CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458)

Figure 1
Avaya Communication Server 1000M task flow



Document structure

The Large System Upgrades are divided into the following individual books. Upgrade procedures in these books are written from source software or system to target software or system and are organized by source system number.

Avaya CS 1000M and Meridian 1 Large System Upgrades Overview (NN43021-458)

Avaya CS 1000M and Meridian 1 51C to CS 1000M SG CP PIV Upgrade (NN43021-459)

Avaya CS 1000M and Meridian 1 61C to CS 1000M SG CP PIV Upgrade (NN43021-461)

Avaya CS 1000M and Meridian 1 61C CP PII to CS 1000M SG CP PIV Upgrade (NN43021-462)

Avaya CS 1000M and Meridian 1 61C to CS 1000M MG CP PIV FNF Upgrade (NN43021-463)

Avaya CS 1000M and Meridian 1 61C CP PII to CS 1000M MG CP PIV FNF Upgrade (NN43021-465)

Avaya CS 1000M and Meridian 1 CS1000M SG CP PIV to CS 1000M MG CP PIV FNF Upgrade (NN43021-466)

Avaya CS 1000M and Meridian 1 71 to CS 1000M MG CP PIV FNF Upgrade (NN43021-467)

Avaya CS 1000M and Meridian 1 81C IGS to CS 1000M MG CP PIV FNF Upgrade (NN43021-471)

Avaya CS 1000M and Meridian 1 CS 1000M MG CP PII IGS to CS 1000M MG CP PIV FNF Upgrade (NN43021-473)

Avaya CS 1000M and Meridian 1 CS 1000M MG CP PII FNF to CS 1000M MG CP PIV FNF Upgrade (NN43021-474)

General hardware upgrade information

Contents

This chapter contains information about the following topics:

NT4N41 Core/Net module 42
System Utility card 44
Upgrading Signaling Server Memory 48
Upgrade strategy 49
Tools 50
Upgrade preparation 51

NT4N41 Core/Net module

The Meridian 1 Option 61C and Meridian 1 Option 81C systems feature an NT4N41 Core/Net (see Figure 2 on page 42), that allows Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 to support a unified hardware platform for single group and multigroup configurations. Use this platform to upgrade from single group to multigroup configurations (requiring a new keycode file and any additional hardware necessary for a multigroup system).

Figure 2
NT4N41 Core/Net shelf (Meridian 1 Option 61C example)

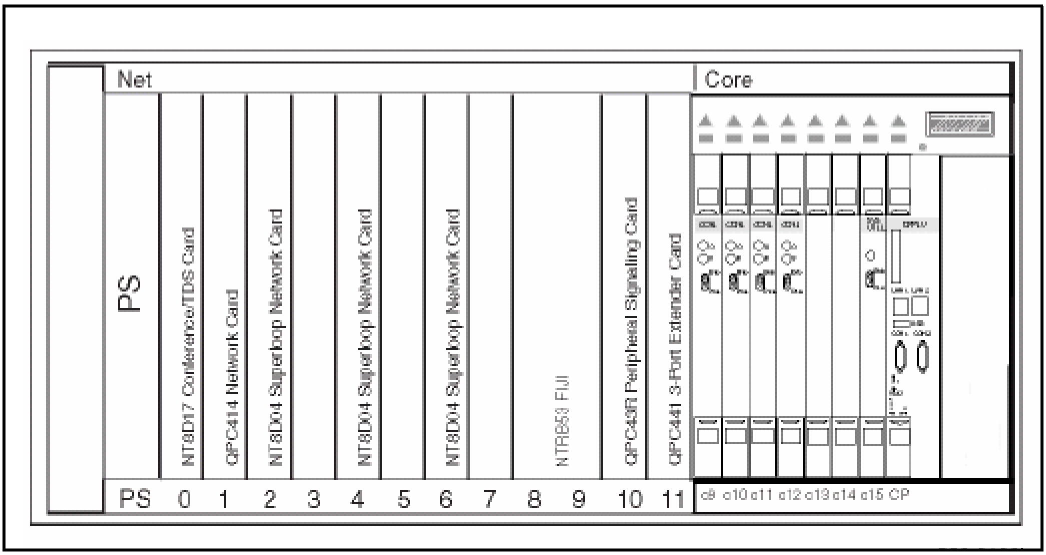
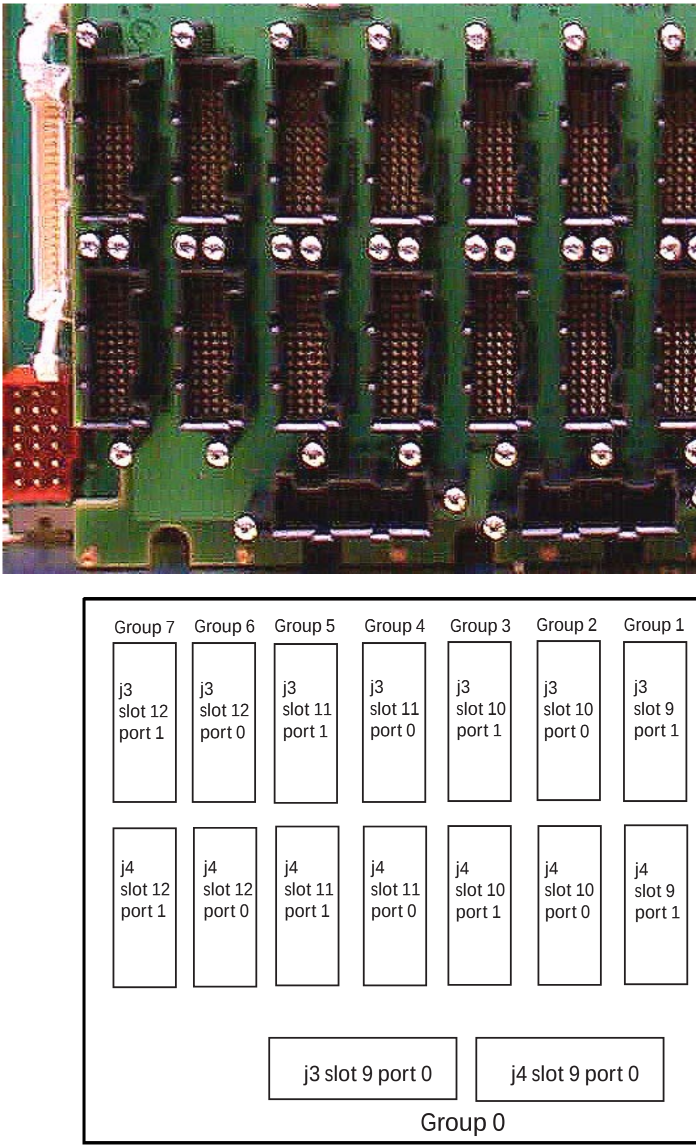


Figure 3
Fanout panel (backplane)



The NT4N41 Core/Net shelf is identical for Meridian 1 Option 61C systems and Meridian 1 Option 81C systems, with the following exceptions for Meridian 1 Option 61C:

- Only one cCNI card is required. Install this card in slot c9 in the Core/Net shelf and configure it as group 0.
- Only one connection is required between the cCNI and the 3PE for group 0 by using cable NT4N29.
- IGS/FNF cards and associated cables are not required.
- The Clock Controller card occupies card slot 9 in group 0.

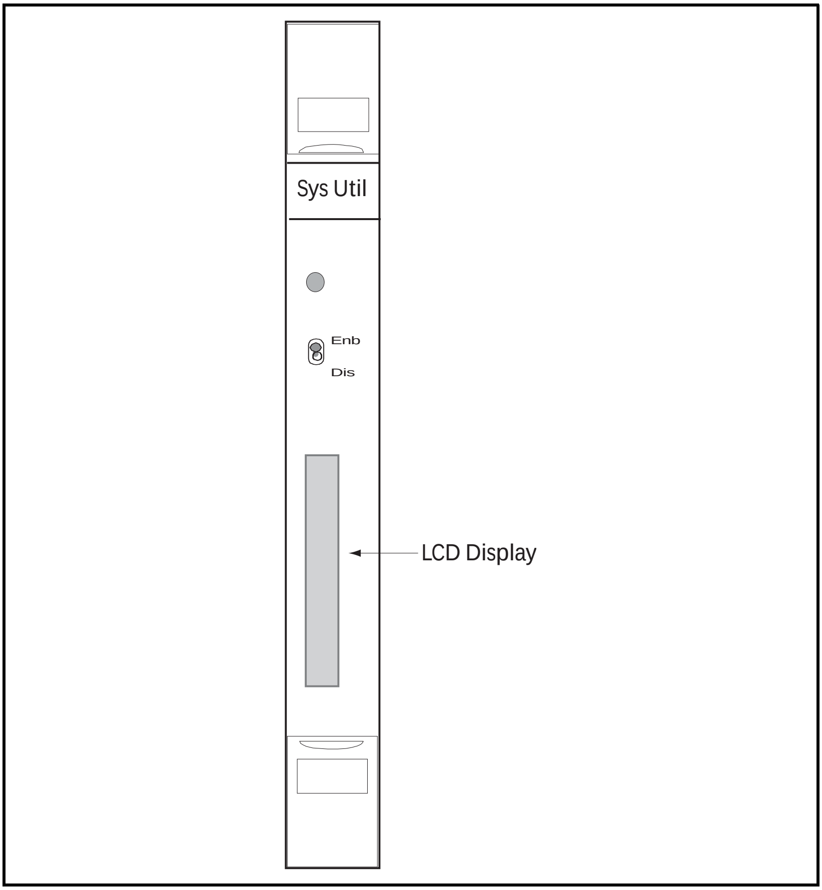
System Utility card

The NT4N48 System Utility card is located in slot c15 of the Core/Net module (see Figure 5 on page 46).

The Core ID switch is now located on the system utility card (see Figure 4 on page 45).

Figure 4
Core Module ID switch

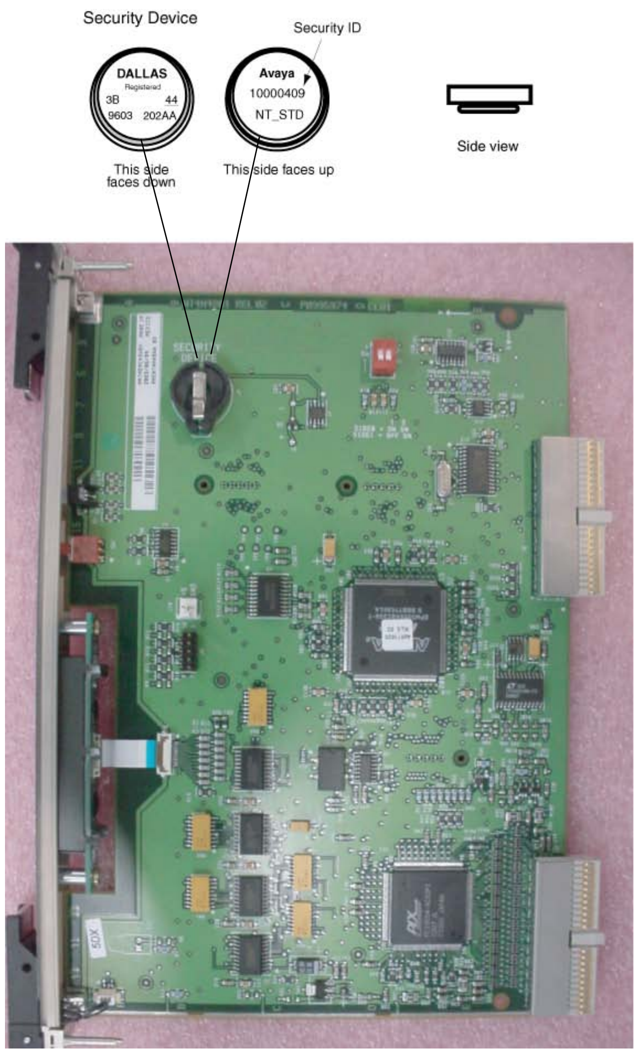
Figure 5
NT4N48 System Utility card



Security Device

The Security Device fits into the NT4N48 System Utility card (see Figure 6 on page 47).

Figure 6
System Utility card Security Device



Upgrading Signaling Server Memory

Signaling Servers require a minimum of 2 GB RAM to support Avaya CS 1000 Release 7.5. The Linux Platform Base Operating System is required to run Signaling Server applications.

Previous CP PM circuit cards contain 1 GB of RAM. You must upgrade the CP PM memory by adding 1 GB of RAM into the free SO-DIMM memory slot on the circuit card. The CP PM circuit card supports a maximum 2 GB (2 x 1 GB) of SO-DIMM DDR 200, 266, or 333 rated memory with error correcting code (ECC). For more information about CP PM circuit card hardware, see *Avaya Circuit Card: Description and Installation* (NN43001-311).

The NTM427CBE6 CP PM Signaling Server Linux upgrade kit includes the memory, hard drive, software, and Compact Flash cards you require to perform a CP PM Signaling Server upgrade. For more information about the Linux upgrade kit, see “Readiness checklist” on page 656.

COTS servers ship with various RAM configurations. Verify that your COTS server contains at least 2 GB of memory before you upgrade to CS 1000 Release 7.5. For more information about COTS server memory capacity or upgrades, see the User Guide provided with your COTS server.

For more information about Linux Signaling Server requirements, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Upgrade strategy

CS 1000 Release 7.5 supports Automatic Inline Conversion from Release 3.0 and later in Meridian 1 Option 51C, Meridian 1 Option 61C, and Meridian 1 Option 81C systems.

When you upgrade your system, the hardware upgrade and software conversion path you follow depends on the system type you upgrade from and the current release.

The hardware upgrade to CPP systems is performed as part of the software upgrade to CS 1000 Release 7.5. This eliminates the requirement of interim hardware.

IMPORTANT!

Avaya Software Conversion Lab must perform the Database conversion for Meridian 1 Options 21E, 51, 61, 71, STE, NT and XT. Consult the current Avaya price book for cost and contact information.

Security device and keycode

The security device and keycode are used together to customize software installation for a specific system. The keycode can only be validated and “unlocked” by the security devices for which it was made. Security devices are produced as part of each software order. One security device is mounted onto each IODU/C card on the Meridian 1 Option 51C and Meridian 1 Option 61C.

For CPP systems, the security device is mounted on the System Utility Card in the NT4N41 shelf (see Figure 6 on page 47) or in the Security Device Holder for a NT4N46 Shelf.

A keycode is also generated as part of the customer software order. The keycode is customized based on the following parameters:

- a specific release and issue of software
- a specific software generic (representing the combination of the system type and Call Processor type)

- a specific set of feature packages and License limits
- a specific set of security devices

A new keycode is required when any of the parameters change.

The contents of the Security Device Kit for CP PIV are listed in Table 2.

Table 2
Contents of the Security Device Kit

Item	Quantity	Description
Compact Flash card	1	A Compact Flash card (512 MB) that contains: • Install Software files • CS 1000 software • Key code file • DEP list • Default database
Keycode acknowledgment	1	A hard-copy printout of the keycode file, including a listing of the parameters for which the keycode was created.
Compact Flash card	1	Blank 128 MB CF for back-up.

Tools

Table 3 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed with that procedure.

Table 3
List of recommended tools (Part 1 of 2)

— Pliers, needle-nose
— Pliers, standard
— Screwdriver, 3/16” flat blade

Table 3
List of recommended tools (Part 2 of 2)

— Screwdriver, #2 Phillips
— Wire cutters
— Electrical insulation tape
— 5/16” socket wrench
— 1/4” socket wrench
— 3/8” socket wrench
— 1/4” nut driver
— 7/16” socket driver
— 11/32 Deep Socket
— Flashlight

Upgrade preparation

Before beginning an upgrade, read the important information in the next few pages pertaining to connection of a system monitor or modem, and backplane connections. Then perform a thorough audit of the system you are upgrading:

- Verify the suitability of the upgrade package you are considering.
- Resolve any existing operational problems, error messages, or other problems.
- Check for minimum vintage requirements on all circuit cards that will remain in the system. A table is provided in each upgrade section. For more information see *Avaya Product Compatibility* (NN43001-256).
- Verify that all equipment needed for the upgrade has been identified.
- Identify the target platform.
- Identify the source platform.
- Check for minimum software requirements on each application. See *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220).

- Check current installed patches and Dep lists. For this information and downloads, go to www.avaya.com/support.
- Check required Dep list for the target platform and applications.

Terminal and modem connections

During an upgrade, and for continuing system operation, connect a terminal to an SDI port in a network slot to provide an I/O interface to the active CPU in the system. Connect another terminal or a modem (for remote access) to either the DTE port on the inactive Core/Net module backplane (in split mode) to provide communication with the Call Processor cards in the system. The terminals must be RS-232 and capable of 9600 baud.

The Call Processor card serial interface ports (CPSI ports) or CP card COM ports are active only when the Core/Net associated with the CP card is active. Therefore, the CPSI/COM ports should not be used as the only I/O connection for the system.

> ***Note:*** When transferring call processing to a Core/Net module during an upgrade, one I/O address is required for a CPSI/COM port. If there is no address available, a SYS4532 error displays. You must make available one port assignment for a CPSI/COM port.

When the upgrade is complete, leave a terminal and/or modem connected to the system. One SDI port in a network slot must be permanently connected to a terminal or modem. On the CPSI/COM ports you can do one of the following:

- disconnect the ports
- leave terminals connected for local monitoring
- connect modems for remote monitoring

See "Terminal and modem connections" on page 625 for instructions on connecting terminals and modems to the system.

Meridian 1 Options 51C, 61C, 81C, and 81 shelf backplane connections

The following backplanes have a primary side and a secondary side:

- NT4N41 backplanes on Meridian 1 Options 61C/81C CPP
- NT5D21 backplanes used on Meridian 1 Options 51C, 61C and 81C
- NT6D60 backplanes on the Meridian 1 Option 81

The primary side (the side that faces the front of the shelf) contains the primary shrouds that provide mechanical guidance for the pins of the card edge connectors. The secondary side of the backplane (the side that faces the rear of the shelf) contains the secondary shrouds that provide mechanical guidance for cable connectors.

Before you connect cables to the backplane, visually inspect the secondary shroud connectors to make sure there are no bent pins. To connect cables, do the following:

1 Hold the cable so that the connector is perpendicular to the backplane, with the cable extending down at a 45-degree angle.

2 Partially insert the cable connector so its guides mate to the corresponding backplane connector.

3 Apply a small amount of pressure to push the cable connector straight into the backplane connector. You will feel a distinct click when the connector seats.

CAUTION — Service Interruption

Damage to Equipment

Do not push the connector in any further after you hear the click. Pins may be bent or broken if you force the cable connector or insert it at an angle.

Using the cable extraction tool on NT4N41, NT5D21, NT6D60, and NT9D11 equipped systems

To disconnect cables from the Core/Network module backplane, you must use the extraction tool provided, located in the rear of the module (behind the I/O safety panel).

CAUTION — Service Interruption

Damage to Equipment

You must use the extraction tool to disconnect cables from the backplane in modules to avoid bending or breaking backplane pins. Do not improvise with common hand tools.

WARNING

Damage to Equipment

Do not pry against the connector with the extraction tool. Simply inserting the tool between the connector and the securing clip is sufficient to unlock the connector. Prying may cause damage to the connector or the backplane pins.

Procedure 1
Removing cable connectors

Perform the steps below to remove cable connectors from the backplane. Use extreme caution to avoid bending or breaking backplane pins. Do not insert the extraction tool unless the cable connector is locked into the securing clip; a gentle tug on the cable will allow you to determine whether or not the connector is secured. Do not force the extraction tool deeper than the tab on side of the cable connector hood, and do not pry with the tool.

1 Grasp the cable just behind the connector hood.

2 Center the long flat edge at the angled end of the tool between the cable connector hood and the securing clip.

3 There are two versions of the extractor tool. If the straight end of the tool is notched, use that end if the connector can be accessed straight-on. If you must approach the connector from any angle at all, use the angled end.

4 Gently insert the extraction tool and gradually apply pressure in the direction directly toward the backplane while gently pulling the cable away from the backplane. A gentle side-to-side rocking motion may be used on the cable if needed.

5 Stop applying pressure as soon as the cable connector comes loose from the backplane.

6 Slowly remove the extraction tool and the cable connector.

End of Procedure

General software conversion information

Contents

This chapter contains information about the following topics:

Introduction 57
Conversion media 58
Software packaging 59
Software Install Kit 60
General conversion information 60
Patches 61
CS 1000 Release 7.5 63
Software release supported by machine type 65
H.323 Gatekeeper database to NRS database migration 67

Introduction

Conversion procedures vary with the system type and software release.

IMPORTANT!

Database conversion for pre-IODUC systems must be completed by Avaya Software Conversion Lab. Consult the current Avaya price book for cost and contact information.

Conversion media

> *Note:* CP PII systems (though not part of Release 7.5) contain floppy disk drives. CP PIV systems contain Compact Flash (CF) card drives.

For Release 3.0 and later systems, the following media are required for new software installations:

- CD-ROM: a generic CD-ROM that contains all software generics.
- Security device: provides a unique program for each system. The device does not contain feature or software release-specific information.
- Installation kit media: activates the Software Installation Tool. The Software Installation Kit contains the installation media to support each Call Processor card. Use the Installation kit that corresponds with your CP card type.
- 2 MB customer database disks: a blank DOS formatted disk for archiving the customer database.
- 128 MB or larger CF card: A blank DOS formatted disk for archiving the customer database.
- Database Transfer Utility diskette: supports the transfer of 4 MB databases to 2 MB.
- Customer database media converter tool (CP PIV): supports the transfer of a backed-up customer database to a CF card.
- Keycode diskette: consists of keycodes that contain software feature data. The keycodes must validate against the security device. In addition to receiving a keycode diskette from Avaya, a keycode diskette can be created on site using the following methods:
  - Downloading a keycode from the Avaya Keycode Distributor Server to a PC and creating a diskette. See “Using the Distributor Keycode Application” on page 603 for more information.
  - Entering a keycode manually using the commands in LD 143. Using this method, the keycode is entered as 21 lines of 16 characters. The keycode file is then saved to a 2 MB diskette in the floppy drive.

— Entering a keycode manually in the Meridian 1 Software Installation Tool. Using this method, the keycode is entered as 21 lines of 16 characters. The keycode file is then saved to a 2 MB diskette in the floppy drive.

CP PII keycode files must be named keycode with no extension (*Note:* CP PII is not part of Release 7.5). CP PIV keycodes can be named anything as long as they are in the keycode folder on the RMD CF and have the extension .kcd. When the keycode disk is created, the keycode is entered into the system by

- the KNEW command in LD 143
- the Software Installation Tool

The keycode is automatically activated on the next system Sysload.

The keycode contains the system software release information. For new features or License limits, a new keycode is required. A new CD-ROM, security device, or Install diskette is not required.

Software packaging

Verify the system packages prior to conversion. Be sure the Target software contains all the packages required to support system operation.

Software Install Kit

The Software Install Kit is a generic set of software and utility programs that are specific to a single release and issue of software. A new kit must be obtained when you upgrade to a new release or issue of software.

Following table lists the contents of the Software Install Kit for CP PIV.

Table 4CP PIV software install kit

CP PIV software install kit		
item	**Quantity**	**Description**
512 MB Compact Flash card	1	A CF card containing the Install Software files, Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 software, Dep. Lists (PEPs), and the keycode file.
Keycode acknowledgment	1	A hard-copy printout of the keycode file, including a listing of the parameters for which the keycode was created.
128 MB Compact Flash card	1	A blank 128 MB CF for customer backups.

General conversion information

This document supports conversions to Meridian 1 Options 51C, 61C, and 81C CP PIV systems.

IMPORTANT!

Avaya Software Conversion Lab must perform the Database conversion for Meridian 1 Options 21E, 51, 61, 71, STE, NT and XT. Consult the current Avaya price book for cost and contact information.

Be sure the system has enough memory to complete the conversion. See Table 5 on page 64 for details concerning Avaya CS 1000 Release 7.5 system capacity requirements.

In systems equipped with Superloops, calls drop during initialization when Peripheral Software Download (PSDL) occurs. The Superloop Network card (NT8D04) and Controller card (NT8D01) download peripheral software prior to initialization completion. This can increase the time required for system initialization when completing a conversion.

If a Force Download occurs during a parallel reload, initialization can take up to 15 minutes. Calls in process are interrupted.

When a software upgrade is performed to add new feature packages, perform a Sysload or parallel reload to enable the new software.

CAUTION — Service Interruption

Loss of Data

Do not attempt backward data dumping between software versions, upissues, or releases. This corrupts the data.

Patches

Software patches

Software patches are not deleted when the same software release is reinstalled in the system; however you must manually activate them.

If a software patch is included in the software, a plus sign (+) appears next to the software issue number in LD 22.

For this information and downloads, go to www.avaya.com/support.

Loadware patches

For Meridian 1 Option 51C, 61C, and 81C systems, loadware patches are deleted when you convert to a new software release, or when you perform a software upissue. Loadware patches are also deleted when the same software release is reinstalled in the system.

If there are one or more loadware patches fully installed in the software, a plus sign (+) prints next to the PSWV version and the modified loadware issue number in LD 22.

Loadware patches are only fully installed after the psdl.rec successfully rebuilds and the system initializes (INI) and reboots.

FIJI Download

On FNF based systems after the INI, a FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring, download up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process is not service affecting. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Normal message output appears on the active side.

From the Meridian 1 side:

```
NEW STATE RING 0 : NONE
RING 1 : FULL
FIJI061 RING 0 : STARTING AUTOMATIC DOWNLOAD
FIJI062 FIJI 0 0 : ENABLING FIJI CARD
FIJI062 FIJI 1 0 : ENABLING FIJI CARD
etc.
COMPLETE
```

```
FIJI063 FIJI 1 0 : DOWNLOAD DONE. TESTING CARD
COMPLETE
FIJI063 FIJI 3 0 : DOWNLOAD DONE. TESTING CARD
etc.
FIJI064 FIJI 1 0 : SELFTEST DONE
FIJI064 FIJI 3 0 : SELFTEST DONE
FIJI055 [Clock switch]
FIJI007 [Ring state change. Change to none/full.]
FIJI061 RING 1 : STARTING AUTOMATIC DOWNLOAD
FIJI062 FIJI 0 1 : ENABLING FIJI CARD
FIJI062 FIJI 1 1 : ENABLING FIJI CARD
etc.
COMPLETE
FIJI063 FIJI 0 1 : DOWNLOAD DONE. TESTING CARD
COMPLETE
FIJI063 FIJI 1 1 : DOWNLOAD DONE. TESTING CARD
etc.
FIJI064 FIJI 0 1 : SELFTEST DONE
FIJI064 FIJI 1 1 : SELFTEST DONE
```

CS 1000 Release 7.5

CS 1000 Release 7.5 supports Automatic Inline Conversion from Release 3.0 and later in Meridian 1 Option 51C, 61C, and 81C systems.

Fiber Network Fabric

Fiber Network allows the expansion of Meridian 1 Option 81C CP PIV systems from five to eight Network groups. The Intergroup cards and module in current Meridian 1 systems are replaced by a Dual Ring fiber optic network. This Fiber Network provides complete nonblocking communication between the network groups, which eliminates the incidence of busy signals for calls switched between groups.

IMPORTANT!

Meridian 1 and CS 1000M systems must use NT4N39 CP PIV processor cards to support CS 1000 Release 7.5.

IMPORTANT!

Release 25 introduced new Flash and DRAM memory requirements. Call Processor cards that meet the total memory requirement might not meet the individual Flash and DRAM memory requirement. For CS 1000 Release 7.5 flash and DRAM memory requirements, see Table 5.

Table 5
CS 1000 Release 7.5 memory requirements

Minimum memory requirement for call processors *Note:* The minimum memory requirement for CP PIV processors running CS 1000 Release 7.5 is 512 MB.			
System type	**Flash memory requirement**	**DRAM memory requirement**	**Total memory requirement**
Meridian 1 Option 61C CP PIV	NA	512 MB	512 MB
Meridian 1 Option 81C CP PIV with or without Fibre Network Fabric	NA	512 MB	512 MB
Note 1: All new Meridian 1 Options 61C, 81C and CS 1000M SG/MG CP PIV systems are equipped with 512 MB of memory.			

Software release supported by machine type

Table 6 below shows the software release associated with each system and its available release levels. The last two digits in the “software system number” column indicate the software generic; the first one or two digits indicate the system type.

Table 6
Software generic by machine type (Part 1 of 3)

System type	Software system number	Lowest supported release	Highest supported release
STE	1511	18	21
NT	1111	8	21
XT	1211	8	21
RT	1311	12	21
Option 21E	1511	18	21
Meridian 1 Option 51C equipped with NT5D10 CP card	2421	23	CS 1000 Release 5.0 2421
Meridian 1 Option 51C equipped with NT5D03 CP card	2821	23.5X	CS 1000 Release 5.0 2821
Meridian 1 Option 61	1111	15	21
Meridian 1 Option 61C equipped with NT5D10 CP card	2521	23	CS 1000 Release 5.0 2521
Meridian 1 Option 61C equipped with NT5D03 CP card	2921	23.5X	CS 1000 Release 5.0 2921
Meridian 1 Option 61C CP PII equipped with NT4N64 CP PII card***	3221	CS 1000 Release 7.0	CS 1000 Release 5.5 3221
Meridian 1 Option 61C CP PIV equipped with NT4N39 CP PIV card***	3521	CS 1000 Release 7.0	CS 1000 Release 7.5 3521

Table 6
Software generic by machine type (Part 2 of 3)

System type	Software system number	Lowest supported release	Highest supported release
Option 71	1211	15	21
Meridian 1 Option 81 equipped with NT5D10 CP card*	2611	23	25
Meridian 1 Option 81 equipped with NT5D03 CP card*	3011	23.5X	25
Meridian 1 Option 81 equipped with NT5D10 CP card*	2621	23	CS 1000 Release 5.0 2621
Meridian 1 Option 81 equipped with NT5D03 CP card*	3021	23.5X	CS 1000 Release 5.0 3021
Meridian 1 Option 81C equipped with NT5D10 CP card**	2621	23	CS 1000 Release 5.0 2621
Meridian 1 Option 81C equipped with NT5D03 CP card**	3021	23.5X	CS 1000 Release 5.0 3021
Meridian 1 Option 81C CP PII equipped with A0810496 CP PII card***	3311	25.xx	25.40b
Meridian 1 Option 81C CP PII equipped with NT4N64 CP PII card***	3321	25.xx	CS 1000 Release 5.5 3321

Table 6
Software generic by machine type (Part 3 of 3)

System type	Software system number	Lowest supported release	Highest supported release
Meridian 1 Option 81C CP PIV equipped with NT4N39 CP PIV card***	3621	CS 1000 Release 7.0	CS 1000 Release 7.5 3621
*Meridian 1 Option 81 systems require Package 298. **Meridian 1 Option 81C systems require Package 299. *** Meridian 1 Option 61C and Option 81C systems require Package 368.			

H.323 Gatekeeper database to NRS database migration

To migrate an H.323 Gatekeeper database to a Communication Server 1000 (CS 1000) Release 7.5 Network Routing Service (NRS) database, see *Avaya Network Routing Service Fundamentals (NN43001-130)*.

Software conversion

Contents

This chapter contains information about the following topics:

Software preconversion 70

Meridian 1 CP PIV software upgrade procedures 73

Prepare for upgrade 73

Perform upgrade 91

Installing a new keycode 130

Postconversion procedure 145

Postconversion procedure 145

Software preconversion

IMPORTANT!

Avaya Software Conversion Lab must perform the Database conversion for Meridian 1 Options 21E, 51, 61,71, STE, NT and XT. Consult the current Avaya price book for cost and contact information.

Avaya can convert all systems in the software conversion lab.

Introduction

Read “General software conversion information” on page 57 before beginning the conversion procedures. The conversion procedure used depends on the release of the Source and Target software. Obtain all necessary hardware and software. Save a copy of the data-dumped **Source** software until it is determined that all site data converted successfully.

IMPORTANT!

Database backup information should be preserved for a minimum of 5 days.

Use these procedures to convert from one software release to a later release or to upissue software within the same software release. These procedures are for software conversions only. Do not use this procedure for any other purpose. After the conversion is completed, perform the postconversion procedures in “Postconversion procedure” on page 145.

Have the following items available before proceeding:

- The General Release Bulletin for the new software.
- The appropriate software and conversion media.
- The installation media and CF cards (as required).

- A temporary SDI card and a local TTY or remote TTY modem may be required.
- To perform parallel reload in dual CPU systems.
- Required Dependency list patches for the target system.
- A capture file should be maintained during all processes.

Avaya Communication Server 1000 compatibility

Consult *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220) for Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 product compatibility.

Software Install Kit

The Software Install Kit is a generic set of software and utility programs that are specific to a single release and issue of software. A new kit must be obtained when upgrading to a new release or issue of software.

Table 7 lists the contents of the CP PIV Software Install Kit.

Table 7
Contents of the CP PIV Software Install Kit

Item	Quantity	Description
512 MB Compact Flash card	1	A CF card containing the Install Software files, Avaya CS 1000 Release 7.5 software, Dep. Lists (PEPs), and the keycode file.
Keycode acknowledgment	1	A printout of the keycode file, including a listing of the parameters for which the keycode was created.
Compact Flash card	1	Blank 128 MB CF for back-up.

Meridian 1 CP PIV software upgrade procedures

Prepare for upgrade

This document implements a source to target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes indicating what condition the system should be in at that stage of the upgrade. If the system is not in the proper condition steps should be taken to correct this.

Each section is written to maintain Dial Tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 8.

Table 8
Prepare for upgrade steps

Procedure Step	Page
Plan upgrade	74
Upgrade Checklists	74
Prepare	74
Identifying the proper procedure	75
Connecting a terminal	75
Perform a template audit	79
Back up the database (data dump)	80

Plan upgrade

Planning for an upgrade involves the following tasks:

- Read and understand the current release Product Bulletin.
- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications
- Identify all applications that are currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.
- Review all product bulletins and Avaya Alerts that impact the site.
- Determine if software can be converted on site or must be sent to Avaya.
- Prepare a contingency plan for backing out of the upgrade.

Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on page 653. Engineers may print this section in order to facilitate the upgrade.

Prepare

Preparing for an upgrade involves the following tasks:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform (see *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.

- Determine the current patch or Dep lists installed at the source platform.
- Determine the required patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.
- Secure the source software and key code.
- Secure the target software and key code.
- Verify the new key code using the DKA program.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source to target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

IMPORTANT!

Database backup information should be preserved for a minimum of 5 days.

Connecting a terminal

Procedure 2
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

2 The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

3 If only one terminal is used for both Core or Core/Net modules, the terminal must be connected from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Printing site data

Print site data to preserve a record of the system configuration (Table 9). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 9
Print site data (Part 1 of 4)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>

Table 9
Print site data (Part 2 of 4)

Site data	Print command	
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV

Table 9
Print site data (Part 3 of 4)

Site data	Print command	
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)

Table 9
Print site data (Part 4 of 4)

Site data	Print command	
Superloops and XPEs	LD 97	
	REQ	CHG
	TYPE	SUPL
	SUPL	Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya CS 1000 Media Gateway 1000E (Avaya MG 1000E)
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

> ***Note:*** The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this overlay until the audit is complete. If the overlay is interrupted, data can corrupt.

LD 01	The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**
•	
•	
TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

To back up system data, perform a data dump to save all system memory to the hard disk.

Procedure 3
Performing a data dump

1 Log on to the system.

2 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43	Load the program

3 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear after the data dump is complete.

****	Exit the program

End of Procedure

Making the RMD bootable

CAUTION — Data Loss

The PC utility used in the following procedure (mkbootrmd.exe) does not validate whether the drive letter entered is a valid RMD CF card. You must enter the correct RMD drive letter when prompted, or you risk formatting the incorrect drive.

The PC utility used in the following procedure (mkbootrmd.exe) erases data on the CF card. For more information, read the README_BOOTABLE_RMD.txt file.

Note: This utility is supported by all versions of Microsoft Windows.

The installation RMD CF card ships preformatted and bootable from Avaya. Consumer CF cards are not bootable by default and must be made bootable as described in Procedure 4 on page 82.

Procedure 4
Making the RMD bootable

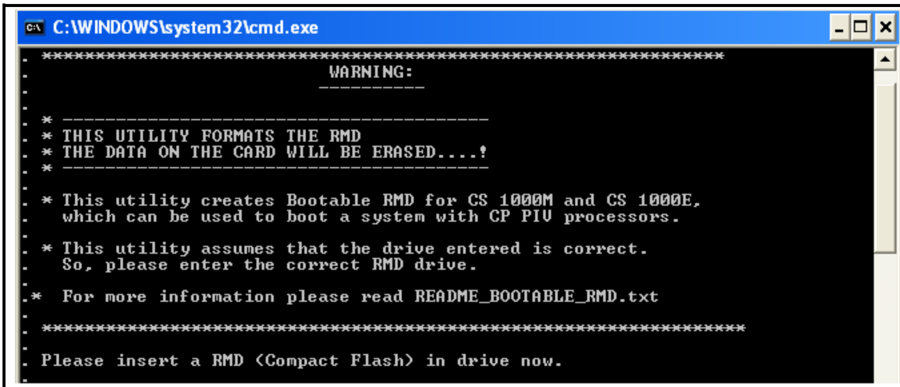
1 After downloading the software image file, unzip it to a directory on your PC.

Note: To find the Signaling Server software utility, you must navigate to the CF folder, then utilities folder.

2 Open the utilities folder.

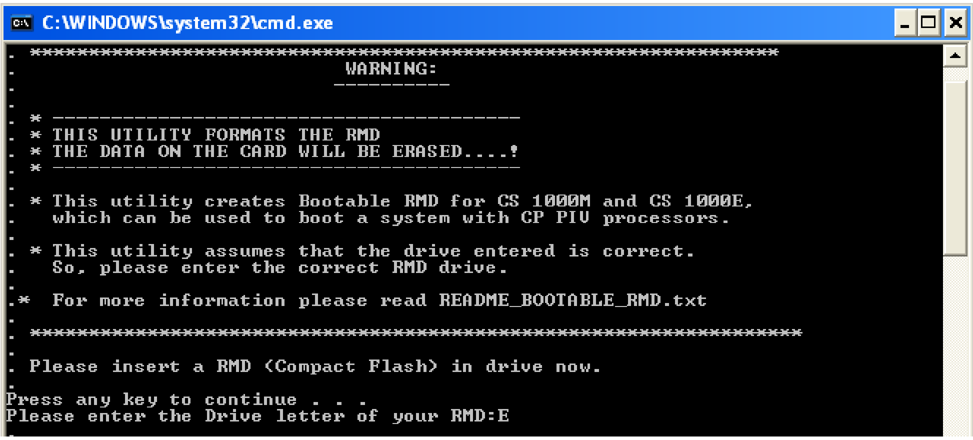
3 Double click the mkbootrmd.bat file. Insert a blank 512 MB CF card (see Figure 7).

Figure 7
mkbootrmd.bat



4 Enter the correct drive letter of the RMD (see Figure 8).

Figure 8
mkbootrmd.bat



5 The boot sector files (bootrom.sys and nvram.sys) are successfully copied making the CF card bootable (see Figure 9).

Figure 9
Boot sector successfully installed

```
.
. RMD format Successful ...
.
. Installing Boot sector ...
.
.
. Copying files . . .
.
. bootrom.sys copied OK.
.
. Check whether the following output shows
. "All the specified file(s) are contiguous"
.
.           * * * WARNING * * *
.IF THE FILES ARE NOT CONTIGUOUS,
.   PLEASE RECREATE THE RMD
.           * * * * * * * * * * *
Press any key to continue . . .
The type of the file system is FAT.
Volume CS1000BOOT created 4/12/2006 12:22 PM
Volume Serial Number is 389E-1E98
Windows is verifying files and folders...
File and folder verification is complete.
Windows has checked the file system and found no problems.

  512,180,224 bytes total disk space.
      352,256 bytes in 1 files.
  511,827,968 bytes available on disk.

        8,192 bytes in each allocation unit.
       62,522 total allocation units on disk.
       62,479 allocation units available on disk.
All specified files are contiguous.
.
Press any key to continue . . .
```

End of Procedure

Transferring the database from floppy disk to CF (customer database media converter tool)

IMPORTANT!

This upgrade requires that the PC you are working from is equipped with a floppy disk drive and CF reader (or, if a CF reader is not available, a PCMCIA CF adaptor).

The floppy disk that contains the backed up customer database needs to be transferred to a CF card. This procedure converts the customer database from a 2 MB floppy disk to CF card, which is restored during the Communication Server 1000 Release 7.5 software upgrade later in this section. Avaya recommends that you use the extra CF card included with the Software Install Kit.

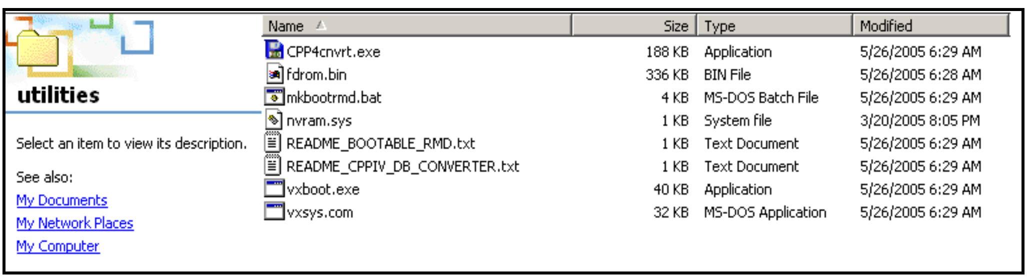
Procedure 5
Transferring the database from floppy disk to CF

This procedure requires that the PC you are working from is equipped with a floppy disk drive and CF reader (or, if a CF reader is not available, a PCMCIA CF adaptor).

1. After downloading the software image file, unzip it to a directory on your PC.

2. Open the Utilities folder. See Figure 10.

Figure 10
Utilities folder

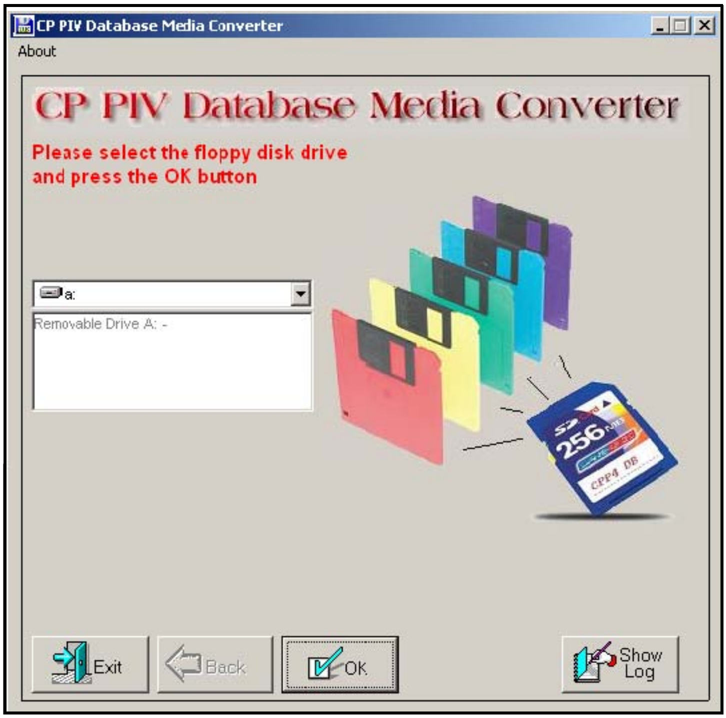


3 Insert the floppy disk containing the backed up customer database from Procedure 3 on page 80.

4 Insert a CF card (there is one included in the Software Install Kit) into the CF reader or PCMCIA CF adapter.

5 Start the Database Media Converter utility by double clicking the CPP4cnvrt.exe file. The first screen (Figure 11 on page 86) prompts you to select the correct drive letter for the floppy disk drive.

Figure 11
Select the floppy disk drive



6 The utility then prompts you to insert the floppy disk (diskette 1) and click OK (see Figure 12 on page 87).

Figure 12
Insert diskette 1

7 After verifying the database on the floppy disk, the utility prompts you to select the CF drive (see Figure 13 on page 88).

Note: if the database is on more than 1 floppy, the utility prompts you to insert the next floppy until the entire database is read.

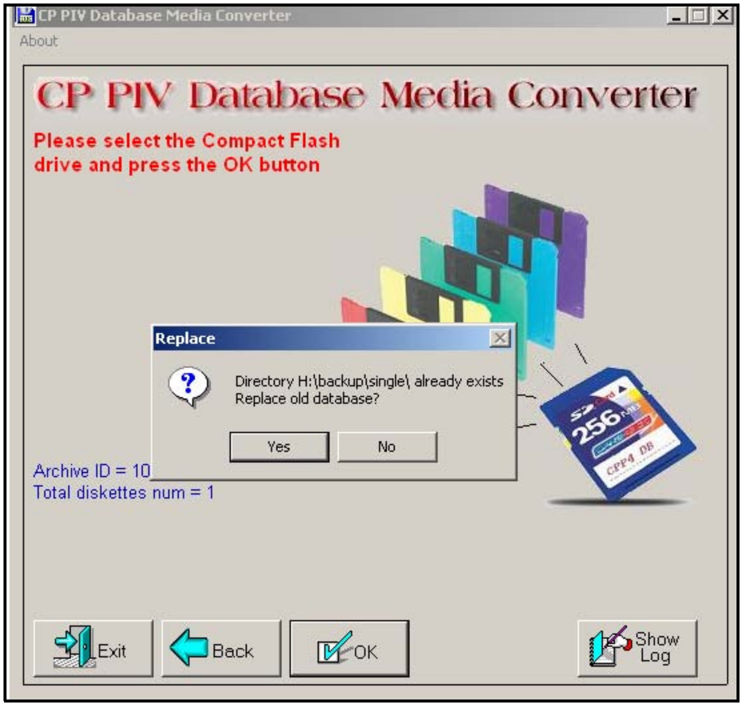
Figure 13
Select the CF drive

8 At this point, 2 options are available:

a. If the CF card already contains a previously backed-up database, a dialog box appears (see Figure 14 on page 89). Click yes to replace old database.

b. If the CF card is blank, the database is backed up to the CF card.

Figure 14
Replace database on CF drive



9 The utility completes the transfer to CF and prompts you to copy another or EXIT.

Figure 15
Copy another or exit

End of Procedure

Perform upgrade

CAUTION WITH ESDS DEVICES

To avoid damaging equipment from electrostatic discharge, wear a properly connected antistatic wrist strap when working on or near Meridian 1 equipment.

Perform a parallel reload

Software must be installed on both Core hard drives. perform the procedures in this section to complete the installation.

> ***Note:*** To complete these procedures, the system must be working and connected to a terminal.

Verify memory

Determine whether the system requires additional memory.

Check the status of the hardware.

Perform the steps in Procedure 6 to determine the status of the hardware.

Procedure 6
Determining hardware status

1 Load LD 137 to check the status of the hard disks.

LD 137	Load program
STAT	Obtain the status of the hard disks

2 Load LD 135 and check the status of the CPs, CNIs and memories.

LD 135	Load program
STAT CPU	Obtain the status of both CPs and memory
STAT CNI	Obtain the status of all configured CNIs

End of Procedure

Check that Core 0 is active

Check that Core 0 is active. If Core 1 is active, make Core 0 active:

LD 135	Load program
STAT CPU	Obtain the status of the CPUs
SCPU	Switch to Core 0 (if necessary)

Split the Cores

From the active side, split the cores:.

LD 135	Load program
SPLIT	Enter Split on the active core
********	Exit program

> System is in split mode, CP 0 is active, clock 0 is active, Core/Net 1 is in split mode.

Install the software on Core/Net 1

For CP PIV systems, perform the steps in Procedure 7 on page 93 to install the software on Core/Net 1.

Procedure 7
Upgrading the software on CP PIV systems

1 Check that a terminal is now connected to COM 1port in CP 1. The settings for the terminal are:

- **a.** Terminal type: VT100
- **b.** 9600 Baud
- **c.** Data bits: 7
- **d.** Parity: odd
- **e.** Stop bits: 1
- **f.** Flow control: none

2 Insert the RMD into the CF card slot on Call Processor 1 (inactive).

3 Perform a KDIF in LD 143.

4 Press the manual RESET button the Call Processor 1 (inactive) card faceplate.

5 Call up the Software Installation Program during a SYSLOAD. During SYSLOAD, the following prompt appears:

```
Read boot parameters from:
  F: Faceplate compact flash
  H: Hard Drive
  0 [H]
```

Press F to boot from the compact flash (which contains the software).

For the CP PIV upgrade, the **F** must be in uppercase.

6 Enter <CR> at the Install Tool Menu.

Note: Blank CF prompts begin here.

```
Mounting /cf2
Found /cf2/nvram.sys
Mounting /boot|
Found /boot/nvram.sys
                    Selecting nvram file from 2
sources
Read boot parameters from:
F: Faceplate compact flash
H: Hard Drive
 10 [F]
Press <CR> when ready
Reading boot parameters from /boot/nvram.sys
Press any key to stop auto-boot...
```

```
Communication Server 1000 Software/Database/BOOTROM RMD Install Tool
====================================================================

                Avaya

     Communication Server 1000 Software

           Install Tool version 29

             Copyright 1992 - 2007

       Please press <CR> when ready ...

*****************************************************************
WARNING:

This software does not support TNs configured on PE/EPE
shelves. Upgrading to this software release will permanently
disable all TNs configured on PE/EPE and will not allow new
TNs to be configured.

Proceed with the upgrade? (Y/N) y

*****************************************************************
WARNING:

Upgrading from pre-Release 4.5 software to Release 4.5 or higher
will result in the system PDT passwords being reset to default.

Proceed with the upgrade? (Y/N) y
```

7 The system then enters the `Main Menu` for keycode authorization.

```
                M A I N   M E N U

The Software Installation Tool will install or
upgrade Communication Server 1000 Software,
Database and the CP-BOOTROM. You will be
prompted throughout the installation and given
the opportunity to quit at any time.

Please enter:

<CR> -> <u> - To Install menu

        <t> - To Tools menu.

        <q> - Quit.

        Enter Choice> <u>
```

Enter <CR> or u to continue. The system searches for available keycode files in the “keycode” directory on the RMD. If no keycode file is found, the system displays the following menu:

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
================================================
====================

No keycode files are available on the removable
media.

Please replace the RMD containing the keycode
file(s).

Please enter:

          <CR> -> <a> - RMD is now in the drive.

          <q> - Quit.

          Enter choice>
```

At this point, either replace the RMD or quit the installation. If you select option “<q> - Quit.”, the system requires confirmation.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool

================================================
====================

You selected to quit. Please confirm.

Please enter:

        <CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.

        Enter choice>
```

If “y” (quit) is selected, the system prints “INST0127 Keycode file is corrupted. Check Keycode file.” and returns to the installation main menu.

After accessing the RMD containing the valid keycode(s), press <CR>. The system displays the keycode file(s) available as in the following example:

```
The following keycode files are available on the
removable media:

Name                         Size   Date      Time

--------------------     -------          -----

<CR> -> <1> -keycode.kcd 1114 mon-d-year hr:min

<2> - KCport60430m.kcd   1114 mon-d-year hr:min

<q> - Quit

Enter choice> 2
```

Note: A maximum of 20 keycode files can be stored under the “keycode” directory on the RMD. The keycode files must have the same extension “.kcd”.

8 Select the number next to the appiicable keycode.The system validates the selected keycode and displays the software release and machine type authorized.

```
Validating keycode ...

Copying "/cf2/keycode/KCport60430m.kcd" to "/u/
keycode" -

Copy OK: 1114 bytes copied

The provided keycode authorizes the install of
xxxx software (all subissues) for machine type
xxxx (CP PIV processor on <system>).
```

Note: The software release displayed depends on the keycode file content. The system requests keycode validation.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool

================================================

Please confirm that this keycode matches the
System S/W on the RMD.

Please enter:

         <CR> -> <y> - Yes, the keycode matches.
Go on to Install Menu.

         <n> - No, the keycode does not match.
Try another keycode.

Enter choice>
```

9 Enter <CR> or y to continue the installation. The system displays the Install Menu. Select option “<a>.

Note: Option A uses the existing db from the FMD. External database backup is Option B.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
=================================================

I N S T A L L    M E N U

        The Software Installation Tool will
install or upgrade Communication Server 1000
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

               For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> <a>
```

10 The system requires the insertion of the RMD containing the software to be installed.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool

=================================================
Please insert the Removable Media Device into the
drive on Core x.

Please enter:

         <CR> -> <a> - RMD is now in drive.
Continue with s/w checking.

         <q> - Quit.

Enter choice> <CR>
```

11 If the RMD containing the software is already in the drive, select option "<a> - RMD is now in drive. Continue with s/w checking." (or simply press <CR>) to continue. If the RMD is not yet in the drive, insert it and then press <CR>.

12 The system displays the release of the software found on RMD under the "swload" directory and requests confirmation to continue the installation.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool

=================================================

The RMD contains System S/W version xxxx.

Please enter:

        <CR> -> <y> - Yes, this is the correct
version. Continue.

        <n> - No, this is not the correct version.
Try another RMD or a different keycode.

Enter choice> <CR>
```

Note: If the RMD contains the correct software release, select option "<y> - Yes, this is the correct version. Continue." (or simply press <CR>) to continue. If the software release is not correct and you want to replace the RMD, insert the correct RMD in the drive and then press <CR>. If you want to replace the keycode, select option "<n> - No, this is not the correct version".

13 Choosing Yes for the Dependency Lists installation.

Note: If Dependency Lists are not installed on media, the following prompts do not appear. Proceed to step 15 on page 104.

Do you want to install Dependency Lists? Please enter: <CR> -> <y> - Yes, Do the Dependency Lists installation <n> - No, Continue without Dependency Lists installation Enter choice> The default choice is YES as shown in the prompt. If the choice is no, then the following prompt will appear for the confirmation: Are you sure? Please enter: <CR> -> <n> - No, Go to the Dependency List menu <y> - Yes, Go to the next menu Enter choice> The default choice is NO which will return the user to deplist menu. Enable Automatic Centralized Software Upgrade (CSU) Feature? Please enter: <CR> -> <y> - Yes <n> - No Enter choice>

14 Select to enable/disable CSU option.

Note: if Sequential is selected **<1>**, upgrades to the Avaya MG 1000Es are performed across the LAN in a sequential manner. One MG 1000E is upgraded at a time. No other MG 1000E upgrades are initiated until the current MG 1000E completes its installation.

If Simultaneous is selected **<2>**, upgrades to the MG 1000Es are performed simultaneously across the LAN. Up to eight MG 1000Es are upgraded at the same time. If there are more than eight MG 1000Es, the upgrade to the next MG 1000E begins after the upgrade of one MG 1000E is complete. The following warning is presented to the installer:

WARNING

Call Processing is not guaranteed to operate on the call server during simultaneous upgrades.
Do you wish to proceed? (y/n).

```
 Set Automatic Centralized Software Upgrade Mode to:
              Please enter:
<CR> -> <1> - Sequential
             <2> - Simultaneous
              Enter choice>
>Processing the install control file ...
>Installing release 0600x
```

15 The PSDL files menu appears. Enter the appropriate choice for the site's geographic location.

```
*************************************************
PSDL INSTALLATION MENU

The PSDL contains the loadware for all
downloadable cards in the system and loadware for
Avaya 3900 Series Digital Deskphones.

*************************************************
Select ONE of the SEVEN PSDL files:

1. Global 10 Languages
2. Western Europe 10 Languages
3. Eastern Europe 10 Languages
4. North America 6 Languages
5. Spare Group A
6. Spare Group B
7. Packaged Languages
[Q]uit, <CR> - default

By default option 1 will be selected.
Enter your choice ->x

>Copying new PSDL ...
```

16 The installation summary screen appears. Verify the parameters and enter <CR> when ready.

17 Enter <CR> to confirm and continue upgrade.

Note: After entering yes below, the system copies the software from RMD to FMD (the files copied are listed). This file copy takes between 5 and 10 minutes to complete.

```
 Please enter:

<CR> -> <y> - Yes, start installation.

       <n> - No, stop installation. Return to the
            Main Menu.


        Enter choice>

>Checking system configuration

You selected to upgrade Software release: XXXX to
release: xxxx. This will erase all old system
files.

Database files will NOT be erased.

You  may continue  with software  upgrade or quit
now and leave your software unchanged.

Please enter:

        <CR> -> <a> - Continue with upgrade.

        <q> - Quit.

        Enter choice>
```

18 Successful installation confirmation appears, enter <CR> to continue.

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool

=================================================

Software release xxxx was installed successfully
on Core x.

All files were copied from RMD to FMD.



Please press <CR> when ready ...
```

19 Press "Enter" after checking the Installation summary.

20 Upon returning to the main install menu, enter **q** to quit.

```
              I N S T A L L    M E N U

        The Software Installation Tool will
install or upgrade Succession Enterprise System
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

               For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> q
```

21 The system then prompts you to confirm and reboot. Enter <CR> to quit. Enter <CR> again to reboot.

```
You selected to quit. Please confirm.

    Please enter:

<CR> -> <y> - Yes, quit.

        <n> - No, DON'T quit.


        Enter choice> <CR>

You selected to quit the Install Tool.

You may reboot the system or return to the Main
Menu.




        ------------------------------

        DO NOT REBOOT USING RESET BUTTON!!!


        ------------------------------


        Please enter:

<CR> -> <a> - Reboot the system.

        <m> - Return to the Main menu.

        Enter Choice> <CR>

>Removing temporary file "/u/disk3521.sys"

>Removing temporary file "/u/disk3621.sys"

>Rebooting system ...
```

At this point the system reloads and initializes.

22 Remove the RMD from the CF card slot on Core 1.

End of Procedure

Verifying TN and database conversion

Use LD 11 and LD 14 to verify the TN and database conversion, as shown in the following examples:

```
>ld 11
SL1000
MEM AVAIL: (U/P): 46061770    USED U P: 5417976 150331    TOT: 51630077
DISK SPACE NEEDED: 183 KBYTES

TRADITIONAL TELEPHONES AVAIL:   113 USED:   111    TOT:   224
IP USERS                  AVAIL:    65   USED:    15    TOT:                 80
BASIC IP USERS            AVAIL:    22   USED:     2    TOT:    24
TEMPORARY IP USERS        AVAIL:    24   USED:     0    TOT:    24
ACD AGENTS                AVAIL:   160   USED:     0    TOT:   160
MOBILE EXTENSIONS         AVAIL:    20   USED:     0    TOT:    20
AVAYA SIP LINES           AVAIL:    24   USED:     0    TOT:    24
THIRD PARTY SIP LINES     AVAIL:    24   USED:     0    TOT:    24
PCA                       AVAIL:    64   USED:     0    TOT:    64
AST                       AVAIL:   100   USED:     0    TOT:   100
SIP CONVERGED DESKTOPS AVAIL:    40    USED:     0    TOT:    40
SIP CTI TR87              AVAIL:    64   USED:     0    TOT:    64
TNS                       AVAIL: 31953          USED:   807    TOT: 32760
DATA PORTS                AVAIL: 32760    USED:     0    TOT: 32760
```

```
>ld 14
TRK000
MEM AVAIL: (U/P): 46061770    USED U P: 5417976 150331    TOT: 51630077
DISK SPACE NEEDED: 183 KBYTES

ITG ISDN TRUNKS         AVAIL:     0    USED:     0    TOT:          0
IP PEER H.323 TRUNKS    AVAIL:    16 USED:    32 TOT:                48
AST                     AVAIL:   100    USED:     0    TOT:          100
RAN CON                 AVAIL:    48    USED:     0    TOT:          48
MUS CON                 AVAIL:     0    USED:     0    TOT:          0
TNS                     AVAIL: 31953 USED:   807   TOT:              32760
DATA PORTS              AVAIL: 32760 USED:     0   TOT:              32760
SIP ACCESS PORTS        AVAIL:   101    USED:    32    TOT:          133
TRADITIONAL TRUNKS      AVAIL: 32436 USED:   324    TOT:             32760
```

Transfer call processing from Core/Net 0 to Core/Net 1

CAUTION — Service Interruption

Service Interruption

Call Processing is interrupted! Perform these next steps carefully. This is the point at which service is interrupted. Calls in process are interrupted, especially if Peripheral Software Download takes place.

WARNING

System initialization may take up to 15 minutes or longer.

IMPORTANT!

Power down all applications.

From Core/Net 0, the active side, transfer call processing to Core/Net 1

To transfer call processing, do the following:

LD 135	Load the program
CUTOVR	The inactive CP become active

Core/Net 0 is in split mode, CP 1 is active, Clock 1 is active.

FIJI Download

IMPORTANT!

On FNF based systems after the INI, a FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring, download up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all Fiji's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process is not service affecting. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Test Core/Net 1

Perform the steps in Procedure 8 to test call processing on Core/Net 1.

Procedure 8
Testing call processing on Core/Net 1

1 Check for dial tone.

2 Make internal, external, and network calls.

3 Check attendant console activity.

4 Check DID trunks.

5 Check any auxiliary processors.

End of Procedure

Note: From this point forward Core/Net 0 is being upgraded with new software.

Install software on Core/Net 0

For CP PIV systems, perform the steps in Procedure 7 on page 93 to install the new software on Core/Net 0. Where “Core/Net 1” appears, assume “Core/ Net 0”.

> ***Note:*** Move cable to J25 of Core/Net 0.

Enable system redundancy

Perform the steps in Procedure 9 to enable system redundancy.

Procedure 9
Enabling system redundancy

1 From the active CPU, Core/Net 1, enable redundancy:

LD 135	Load program
JOIN	Synchronize the memory and drives

System is now in redundant mode,

Test Core/Net 1 and Core/Net 0

Perform the steps in Procedure 10 to test Core/Net 1 and Core/Net 0.

Procedure 10
Testing Core/Net 1 and Core/Net 0

From the active CPU, Core/Net 1, perform these tests:

1 Perform a redundancy sanity test using the following sequence.

LD 135	Load program
STAT CNI c s	Obtain status of cCNI cards
STAT CPU	Obtain status of CPU and memory
TEST CPU	Test the CP card in both Core/Nets
TEST CNI c s	Test each cCNI card (core, slot)
STAT SUTL	Obtain status of System Utility card
TEST SUTL	Test the System Utility card
TEST IPB	Test the Inter Processor Bus

2 Test system redundancy.

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	
STAT FMD	Status of CP PIV Fixed Media Device (FMD)
STAT RMD	Status of CP PIV Removable Media Device (RMD)

3 Switch Cores and test the other side (Core/Net 0).

LD 135	Load program
SCPU	Switch cores
TEST CPU	Test the inactive Core/Net
STAT CNI c s	Obtain status of cCNI (both main and Transition) cards
TEST CNI c s	Test cCNI (both main and Transition) cards
STAT SUTL	Obtain status of System Utility card
TEST SUTL	Test System Utility card
TEST IPB	Test Inter Processor Bus

4 Clear the display and minor alarms on both Cores.

CDSP	Clear the displays on the Cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

5 Obtain the status of the Cores, CNIs, and memory.

STAT CPU	Obtain the status of both Cores and redundancy
STAT CNI c s	Obtain the status of all configured cCNIs (both main and Transition) cards
STAT HEALTH	Obtain status of CPU and memory (If health is not the same on both Cores and IPL health, the cores will not swap.)
********	Exit program

End of Procedure

Perform a data dump

Perform the steps in Procedure 11 (CP PIV) to perform a data dump.

Procedure 11
Performing a data dump (CP PIV)

1 Remove the existing CF card from the active Core/Net RMD slot and insert a fresh CF card.

2 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43	Load program.

3 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump.

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> If the data dump is not successful, do not continue; contact your technical support organization. A data dump problem must be corrected before proceeding.

4 When "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" appear on the terminal, enter:

********	Exit program

End of Procedure

To complete the parallel reload, proceed to "Postconversion procedure" on page 145.

> The parallel reload procedure is complete.

Back out of a system software upgrade (CP PIV)

To back out of a system software upgrade after it is in the redundant mode, split the cores and install the previous release of the software. Perform the following procedures in order.

Split the Cores

Perform the steps in Procedure 12 on page 117 to split the core processors.

Procedure 12
Splitting the cores

1 From the active side, split the cores.

LD 135	Load the program
SPLIT	Enter Split on the active core (Allow the former active side to INIT before continuing)
********	Exit program

End of Procedure

Install the old release software on Core/Net 1

Perform the steps in Procedure 13 to reinstall the previous software release.

Procedure 13
Installing a previous software release (downgrade)

1 Insert the RMD into the CF card slot.

2 Press the manual RESET button on the CP card faceplate.
Before the install menu appears, the system validates hard disk partitioning which takes about 5 minutes.

```
Testing partition 0

        0 percent done...1 percent done...99 percent done....100
        percent done

Testing partition 1
```

> 0 percent done...1 percent done...99 percent done....100 percent done
>
> Testing partition 2
>
> 0 percent done...1 percent done...99 percent done....100 percent completed!
>
> Disk physical checking is completed!
>
> There are 3 partitions in disk 0:
> The size of partition 0 of disk 0 is XX MB
> The size of partition 0 of disk 0 is XX MB
> The size of partition 0 of disk 0 is XX MB
>
> Disk partitions and sectors checking is competed!

3 Call up the Software Installation Program during a SYSLOAD. During SYSLOAD, the following prompt appears:

```
Read boot parameters from:
    F: Faceplate compact flash
    H: Hard Drive
```

Press F to boot from the compact flash (which contains the software).

4 When the screen displays the Install menu, select the following options in sequence when prompted:

<a> Install software.

The Installation Status Summary screen appears that lists the options to be installed.

<y> Start Installation.

<a> Continue with Upgrade.

5 Enter **b** to install the Software, Database and CP-BOOTROM.

```
 I N S T A L L   M E N U

        The Software Installation Tool will
install or upgrade Succession Enterprise System
Software, Database and the CP-BOOTROM. You will be
prompted throughout the installation and given the
opportunity to quit at any time.

        Please enter:

<CR> -> <a> - To install Software, CP-BOOTROM.

        <b> - To install Software, Database,
CP-BOOTROM.

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

               For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> b
```

6 Select a PSDL file to install. The PSDL file contains the loadware for all downloadable cards in the system and loadware for Avaya 3900 Series Digital Deskphones.

Select one of the six PSDL files

<1> Global 10 Languages

<2> Western Europe 10 Languages

<3> Eastern Europe 10 Languages

<4> North America 6 Languages

<5> Spare Group A

<6> North America 6 Languages (Duplicate of **<4>**)

The languages contained in each selection are outlined as follows:

- 1 – English, French, German, Spanish, Swedish, Italian, Norwegian, Brazilian Portuguese, Finnish, Japanese Katakana.
- 2 – English, French, German, Spanish, Swedish, Norwegian, Danish, Finnish, Italian, Brazilian Portuguese.
- 3 – English, French, German, Dutch, Polish, Czech, Hungarian, Russian, Latvian, Turkish.
- 4 – English, Spanish, French, Brazilian Portuguese, Japanese Katakana, German.
- 5 – English, French, German, Spanish, Swedish, Italian, Norwegian, Portuguese, Finnish, Japanese Katakana.
- 6 – English, Spanish, French, Brazilian Portuguese, Japanese Katakana, German.

(Current Release) Language groups

7 Select a PSDL file to install. The PSDL file contains the loadware for all downloadable cards in the system and loadware for Avaya 3900 Series Digital Deskphones.

Select one of the six PSDL files

<1>	Global 10 Languages
<2>	Western Europe 10 Languages
<3>	Eastern Europe 10 Languages
<4>	North America 6 Languages
<5>	Spare Group A
<6>	North America 6 Languages (Duplicate of **<4>**)

The languages contained in each selection are outlined as follows:

- 1 – Global 10 Languages English, French, German, Spanish, Swedish, Italian, Norwegian, Brazilian Portuguese, Finnish, Japanese Katakana.
- 2 – Western Europe 10 Languages English, French, German, Spanish, Swedish, Italian, Norwegian, Brazilian Portuguese, Finnish, Danish.
- 3 – Eastern Europe 10 Languages English, French, German, Dutch, Polish, Czech, Hungarian, Russian, Latvian, Turkish.
- 4 – North America six Languages English, French, German, Spanish, Brazilian Portuguese, Japanese Katakana.
- 5 – Spare Group A.
- 6 – Spare Group B.

8 Continue with ROM upgrade when prompted.
Select a database to install.

<cr>	Enter carriage return to continue.
<a>	Continue with CP BOOTROM installation.
<a>	Install the CP BOOTROM from hard disk.

<a>	Start installation.
<a>	Continue with ROM upgrade.

The Installation Status Summary screen appears. Verify that RMD to disk, disk to ROM, and CP-BOOTROM were installed.

<cr>	Continue.
<q>	Quit. Remove the RMD from the CF card slot.
<y>	Confirm quit.
<a>	Reboot the system.

9 Confirm that the software is installed and working on Core/Net 1:

LD 135	Load program
STAT CPU	Display CPU status
STAT CNI	Display CNI status

End of Procedure

Transfer call processing from Core/Net 0 to Core/Net 1

CAUTION — Service Interruption

Service Interruption

The following procedure to transfer call processing can cause service interruptions.
Time the procedure to minimize the effect of any breaks in service.

IMPORTANT!

Power down all applications.

CAUTION — Service Interruption

Service Interruption

The INI may take up to15 minutes to complete.

From Core/Net 0, the active side, transfer call processing to Core/Net 1:

LD 135	Load program
CUTOVR	The inactive CP become active

CAUTION — Service Interruption

Service Interruption

The INI may take up to15 minutes to complete.

Call processing is now switched from Core/Net 0 to Core/ Net 1.

FIJI Download

On FNF based systems after the INI, a FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring, download up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all Fiji's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process is not service affecting. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

IMPORTANT!

Power up all applications.

Test Core/Net 1

Perform the steps in Procedure 14 to test call processing on Core/Net 1. Testing call processing includes, but is not limited to the following tests.

Procedure 14
Testing call processing on Core/Net 1

1 Check for dial tone.

2 Make internal, external, and network calls.

3 Check attendant console activity.

4 Check DID trunks.

5 Check any auxiliary processors.

End of Procedure

Note: From this point Core/Net 0 is being upgraded with the replacement software.

Install software on Core/Net 0

Perform the steps in Procedure 13 on page 117 to install the old software on Core/Net 0. Where “Core/Net 1” appears, assume “Core/Net 0”.

Check for peripheral software download

Access LD 22 and print the Target peripheral software version. (The Source peripheral software version was printed during the preconversion procedure.)

If there is a difference between the Source and Target peripheral software version, a forced download occurs during initialization when coming out of parallel reload. System initialization takes longer and established calls on IPE are dropped.

LD 22

REQ	PRT
TYPE	PSWV

Use the following responses at the REQ prompt in LD 22 to access the following information:

ISS	Issue and release
TID	Tape/Aux ID
ISSP	System, DepList, and Patch information
SLT	System parameters

Enable system redundancy

Perform the steps in Procedure 15 to enable system redundancy.

Procedure 15
Enabling system redundancy

1 From the active CPU, Core/Net 1, enable redundancy:

LD 135	Load program
JOIN	Synchronize the memory and drives

System is now in redundant mode.

Test Core/Net 1 and Core/Net 0

Perform the steps in Procedure 16 to test call processing on Core Net 1 and Core/Net 0.

Procedure 16
Testing call processing on Core/Net 1 and Core/Net 0

1 From the active CPU, Core/Net 1, perform a redundancy sanity test using the following sequence:

LD 135	Load program
STAT CNI c s	Obtain status of cCNI cards
STAT CPU	Obtain status of CPU and memory
TEST CPU	Test the CP PIV card in both Core/Nets
TEST CNI c s	Test each cCNI card (core, slot)
STAT SUTL	Obtain status of System Utility (main and Transition) cards
TEST SUTL	Test System Utility (main and Transition) cards
TEST IPB	Test Inter Processor Bus
TEST LCD	Test LCDs
TEST LED	Test LEDs

2 Test system redundancy:

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	
TEST CMDU	Test the MMDU card

3 Switch Cores and test the other side (Core/Net 0).

LD 135	Load program
SCPU	Switch cores
TEST CPU	Test the inactive Core/Net
STAT CNI c s	Obtain status of cCNI (both main and Transition) cards
TEST CNI c s	Test cCNI (both main and Transition) cards
STAT SUTL	Obtain status of System Utility card
TEST SUTL	Test System Util card
TEST IPB	Test Inter Processor Bus
TEST LCD	Test LCDs
TEST LED	Test LED

4 Clear the display and minor alarms on both Cores.

CDSP	Clear the displays on the Cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

5 Obtain the status of the Cores, CNIs, and memory.

STAT CPU	Obtain the status of both Cores and redundancy
STAT CNI c s	Obtain the status of all configured cCNIs (both main and Transition) cards
********	Exit program

End of Procedure

Join the system to the UCM Security Domain

Perform the following commands to joina Communication Server 1000M device or system to the UCM Security Domain from the VxWorks CLI.

From the VxWorks CLI, logon with account ADMIN2:.

LD 117	Load program
REGISTER UCMSECURITY SYSTEM	Confirm list of devices to add to UCM Security Domain
REGISTER UCMSECURITY DEVICE	Manually join a device to the UCM Security Domain

You can join or unjoin the UCM Security Domain with the LD 117 commands **REGISTER** or **UNREGISTER**.

You can join or unjoin the UCM Security Domain with the OAM, PDT, or IPL commands **joinSecDomain** or **leaveSecDomain**.

For more information about joining the UCM Security Domain, see *Avaya Security Management* (NN43001-604).

Installing a new keycode

Adding new features or modifying License limits requires the installation of a new keycode. Keycodes are delivered by a portable media appropriate for the processor type (Compact Flash for CP PIV) or electronic file transfer. You install keycodes using the keycode management commands in LD 143 or the Software Installation Tool.

IMPORTANT!

To ensure proper formatting of a CF card, you must use the PC utility (mkbootrmd.exe) found in the utilities folder of the downloaded software image. For more information, read the README_BOOTABLE_RMD.txt file.

The following procedures outline the steps to install a new keycode (using the keycode commands in LD 143) that can be activated “instantly” or that requires a Sysload (Cold Restart). More information about the “Instant License” feature can be found in *Avaya Features and Services* (NN43001-106).

This section describes how to install a keycode using the commands listed below:

Table 10
Keycode installation

Keycode delivery	Keycode Installation command
CF card for CP PIV	Use the KNEW RMD command for both Core 0 and Core 1 in LD 143.
Electronic file on a PC	Use the KUPL command in LD 143, followed by the KNEW FMD (CP PIV) command (see note).

Table 10
Keycode installation

Keycode delivery	Keycode Installation command
Faxed to the customer site (paper-based keycode)	Use the KMAN command in LD 143, followed by the KNEW FMD (CP PIV) command.
Note 1: For a CP PIV RMD, the new keycode must be in a file directory called keycode. The CF card used for this purpose must be formatted using the PC utility (mkbootrmd.exe) found in the utilities folder of a CP PIV downloaded software image. ***Note 2:*** If the keycode is downloaded from the Keycode Distributor Server (KDS), use the KUPL command to install the keycode. For more information about KDS, see "Using the Distributor Keycode Application" on page 603.	

Feature operation

Feature operation is further divided into four options:

- Feature and License parameter upgrade by using a keycode delivered on a CF card (CP PIV)
- Upgrade feature and License parameter using HyperTerminal
- Upgrade feature and License parameter entered manually
- Revert to the previous keycode with the KRVR command

Feature and License parameter upgrade using a keycode delivered on a CF card (CP PIV)

A directory must be created on the CF card (RMD) named keycode. The following rules apply:

- All keycode files must reside in this directory
- The directory can contain up to 20 keycodes
- The keycode filenames must be unique
- The keycode filenames can contain up to eight characters, and must end with a .kcd extension.

Perform the steps in Procedure 17 on page 132 to perform a feature and License parameter upgrade using a keycode delivered on a CF card (CP PIV).

Leave the system in full redundant mode (hard-disk and CPU redundancy).

Procedure 17
Performing a feature and License parameter upgrade using a keycode delivered on a CF card (CP PIV).

1 Log on to a system terminal and load LD 143.

>LD 143
CCBR000
.

2 Insert the new keycode CF card into the CF drive on the active Core.

3 Print the pending keycode contents.

KSHO RMD	print the contents of the candidate keycode in the CF drive on the active Core. Where: RMD = Core 0 or 1 (CP PIV only)

4 Enter the KDIF command and select keycode comparison options.

Note: Ensure that the new keycode does not lower License limits or reduce features compared with the existing keycode. If it has been determined that the keycode lowers License limits or reduces features, do not continue with the KNEW command. Contact the Avaya order management representative.

. KDIF
Please use: KDIF <param1> <param2> with the following parameters:

NEW	Accepted new keycode
REC	Currently used keycode
OLD	Previously used keycode
RMD	Candidate keycode on removable CF card
FMD	Candidate keycode on fixed CF card

Enter the keycode comparison option. The new keycode option is shown in **bold**.

Note: In the following example, the (REC) currently used keycode is compared with the new keycode file on the CF card. If choosing from multiple keycode files, ensure you select the correct keycode file. The system limits shown are for example purposes only.

.KDIF REC RMD
Validating Keycode File /p/install/keycode.rec ... OK

The following keycode files are available on the removable media:

```
Name                          Size    Date         Time
--------------------          ------  ----------   -------

 <CR> -> <1> - site_A.kcd     1114   Apr-06-2006   10:09
         <2> - KEYCODE.KCD    1114   Mar-28-2006   11:11

     <q> - Quit

     Enter choice>
```

Validating Keycode File /cf2/keycode/KEYCODE.KCD ... OK

System parameters	**1st keycode**	**2nd keycode**
System Serial Number	: 46379	46379
Software Version	: 3521	3521
System Type	: Option 61C	Option 61C
Call Processor	: CP PIV	CP PIV
Release	: 4	4
Issue	: 50	50
NTI Order Number	:	
NT SDID - 1	:	
NT SDID - 2	:	
Date and Time of Manufacture	:	

Note: (:) indicates that information is not available

License Limits	1st keycode	2nd keycode
Loop Limit	: 32	32
Sys TNs Limit	: 0	200
ACD Agt Limit	: 10	10
ACD DNs Limit	: 10	10
AST Limit	: 10	10

......

Common packages for both keycodes:
0-2 4-5 7-25 28-29 32-55 58-65
......

Additional packages in the 2nd keycode:
< **30-31**
.

5 Select the new keycode for activation using the KNEW command.

KNEW RMD

> **CAUTION**
> A menu appears prompting the user to choose from multiple keycode files. Ensure you select the correct keycode file.

The uploaded keycode is validated against the security device.

If the following system message is displayed:

CCBR020 New Keycode accepted and activated successfully.

Sysload is not needed!

This means that the new keycode is eligible for instant activation and no further user action is required. Go to steps 6 and 7.

If the keycode is not eligible for instant activation, a Sysload is needed to activate the new keycode and the following system message is displayed:

CCBR009 New Keycode accepted. New License limits and feature packages will be activated during the next Sysload (Cold Restart).

Go to step 8.

6 Load LD 22 and confirm that the new License parameters have been updated.

>LD 22
REQ SLT
....

If License limits are correct, then the keycode installation is complete.

See “Reverting to the previous keycode with the KRVR command” on page 141 if License limits are not increased or problems exist.

7 Once it is confirmed that the keycode changes taken effect as expected, perform a data dump in LD 43.

8 For keycodes that are not eligible for Instant License, place the system in split mode. This places a redundant (shadowed) system into single (nonshadowed) mode.

For CP PIV use Procedure 21.

End of Procedure

Feature and License parameter upgrade using HyperTerminal®

Perform the steps in Procedure 18 to perform a feature and License parameter upgrade using HyperTerminal®. Leave the system in full redundant mode (hard-disk and CPU redundancy).

Procedure 18
Performing a feature and License parameter upgrade

1 On a PC, access the system (through a modem) with HyperTerminal®:

Click the Start button | Programs | Accessories | HyperTerminal.

2 Double-click the HyperTerminal client to the system.

3 Log on to the system.

4 Load the Keycode Management Program (LD 143).

LD 143	Load program
KUPL	Upload keycodes to the hard disk or FMD on the target system

5 Click the **Transfer** menu in HyperTerminal and select **Send Text File**.

6 From the **Files of type** pull-down menu, select **All Files (*.*)**.

7 Locate and select the keycode file on the PC. Use the **Look in** pull-down menu to select the drive on which the keycode is located.

8 Click **Open**.

The keycode is displayed after the KUPL prompt.

Example:

KUPL 0001PBX 0101
9FPAMSRHNN17KRUQAFFSPREQEVMTHIDHRKDJHRKEJR56

9 Press the Enter key.

The Keycode is checked for CRC errors and is uploaded to the hard disk or Fixed Media Device (FMD).

Enter the following command:

KDIF REC HD	Compare the existing keycode with the new keycode on the hard disk
KDIF REC FMD	Compare the existing keycode with the new keycode on the FMD

Ensure that the new keycode does not lower License limits or reduce features compared with the existing keycode. If it is determined that the keycode lowers License limits or reduces features, do not continue with the KNEW command. Contact the Avaya order management representative.

10 Select the new keycode for activation using the KNEW command.

KNEW (see Table 10 on page 130 for correct command syntax)

The uploaded keycode is validated against the security device.

If the following system message is displayed:

CCBR020 New Keycode accepted and activated successfully. Sysload is NOT needed!

This means that the new keycode is eligible for instant activation and no further user action is required. Go to steps 11 and 12.

If the keycode is not eligible for instant activation, a Sysload is needed to activate the new keycode. The following system message is displayed:

CCBR009 New Keycode accepted. New License limits and feature packages will be activated during the next Sysload (Cold Restart).

Go to step 13.

11 Load LD 22 and confirm that the new License parameters have been updated.

>LD 22
REQ SLT
....

If License limits are correct, then the keycode installation is complete.

See “Reverting to the previous keycode with the KRVR command” on page 141 if License limits are not increased or problems exist.

12 Once it is confirmed that the keycode changes taken effect as expected, perform a data dump in LD 43.

13 For keycodes that are not eligible for Instant License, place the system in split mode. This places a redundant (shadowed) system into single (nonshadowed) mode.

For CP PIV use Procedure 21.

End of Procedure

Feature and License parameter upgrade entered manually

Before beginning this procedure, obtain a copy of the keycode. The keycode can reside on paper or as an electronic file. To enter the keycode manually, type the keycode in LD 143 as 21 lines, 16 characters per line.

Perform the steps in Procedure 19 on page 139 to perform a feature and License parameter upgrade manually.

Procedure 19
Performing a feature and License parameter upgrade manually

1 Log on to the system.

2 Load the Keycode Management Program (LD 143).

LD 143	Load program
KMAN	Manually enter the keycode to the target system

3 Type the keycode file, 21 lines of 16 characters each. Press **Return** to go to the next line.

Note: When entering the keycode, do not enter the header information that proceeds the keycode.

4 Type “end” at line 22 to end the process.

5 Press **Enter**. The new keycode file is saved on the hard disk or FMD.

Enter the following command:

KDIF REC HD	Compare the existing keycode with the new keycode on the hard disk.
KDIF REC FMD	Compare the existing keycode with the new keycode on the FMD

Ensure that the new keycode does not lower License limits or reduce features compared with the existing keycode. If it is determined that the keycode lowers License limits or reduces features, do not continue with the KNEW command. Contact the Avaya order management representative.

6 Select the new keycode for activation using the KNEW command.

KNEW (see Table 10 on page 130 for correct command syntax)

The uploaded keycode is validated against the security device.

If the following system message is displayed:

CCBR020 New Keycode accepted and activated successfully. Sysload is NOT needed!

This implies that the new keycode is eligible for instant activation and no further user action is required. Go to step 7 and 8.

If the keycode is not eligible for instant activation, a Sysload is needed to activate the new keycode. The following system message is displayed:

CCBR009 New Keycode accepted. New License limits and feature packages will be activated during the next Sysload (Cold Restart).

Go to step 9.

7 Load LD 22 and confirm that the new License parameters have been updated.

>LD 22
REQ SLT
....

If License limits are correct, then the keycode installation is complete.

See "Reverting to the previous keycode with the KRVR command" on page 141 if License limits are not increased or problems exist.

8 Once it is confirmed that the keycode changes have taken effect as expected, perform a data dump in LD 43.

9 For keycodes that are not eligible for Instant License, place the system in split mode. This places a redundant (shadowed) system into single (nonshadowed) mode.

For CP PIV use Procedure 21.

End of Procedure

Reverting to the previous keycode with the KRVR command

The terms “old” and “new” keycode, as discussed here, refer to the most recent previous KNEW command. The “old” keycode is the former keycode, prior to the KNEW command. The “new” keycode is the keycode that was activated by the KNEW command. Use KRVR command (as shown in Procedure 20) to revert to the old keycode.

Procedure 20
Revert to old keycode

1 Log on to the system.

2 Load the Keycode Management Program (LD 143).

LD 143	Load program
KRVR	Replaces the keycode.rec with the keycode.old file.

The old keycode is eligible for instant activation with the KRVR command if the only difference between the old keycode and the new keycode is that some or all of the License parameters in the old keycode are *higher*.

If the old keycode is eligible for instant activation, it is activated without further user action. The following system message is displayed:

CCBR020 New Keycode accepted and activated successfully. Sysload is NOT needed!

If the keycode is not eligible for instant activation, a Sysload is needed to activate the old keycode and the following system message is displayed:

CCBR009 New Keycode accepted. New License limits and feature packages will be activated during the next Sysload (Cold Restart).

Go to step 5.

3 Load LD 22 and confirm that the new License parameters have been updated.

>LD 22
REQ SLT
....

If License limits are correct, then the keycode installation is complete.

4 Once it is confirmed that the keycode changes taken effect as expected, perform a data dump in LD 43.

5 For keycodes that are not eligible for Instant License, place the system in split mode. This places a redundant (shadowed) system into single (nonshadowed) mode.

For CP PIV use Procedure 21.

End of Procedure

Procedure 21
Parallel reload CP PIV

Place the system in split mode. This places a redundant (shadowed) system into single (nonshadowed) mode.

1 Connect a terminal to J25 of Core 1 to monitor reload. Terminal settings are:

— 9600 BAUD, 8 bits, no parity and 1 stop bit (8N1)

2 Ensure CP 0 is active and CP1 is standby. It might be necessary to switch CPs and split the Cores:

LD 135	
STAT CPU	
SCPU	Switch CPs if necessary
SPLIT	Split CPs (CP 1 reloads)
********	Exit program

3 Wait until sysload and INI have completed.

4 In the inactive core (Core 1), load Overlay 143 and confirm that the new License parameters have been updated.

>LD 143
KSHO REC (show currently used keycode)
....

5 Compare license parameters from memory to keycode.rec.

>LD 22
REQ SLT (show current license limits active on system)
....

6 Compare package parameters from memory to keycode.rec

>LD 22
REQ PRT
TYPE PKG (show current software packages active on system)
...

7 Switch call processing from the active core (Core 0) to the inactive core (Core 1). This command must be issued from active Core 0.

CAUTION — Service Interruption

Service Interruption

Call Processing is interrupted!

LD 135	
CUTOVR	Force Core 1 to become active
****	Exit program

The previously inactive core (Core 1) with the new keycode now becomes active.

8 Return the system to redundant mode, synchronizing the memory and hard drive of the inactive core with the active core. From the active Core (Core 1) enter LD 135:

LD 135	
STAT CPU	
JOIN	Synchronize CPs with CP 1 as master
**** **	Exit program

9 Wait until synchronization of memory drives is completed.

10 From the active Core (Core 1) enter LD 135 and obtain the health status of the Cores:

LD 135	
STAT CPU	
STAT HEALTH	CP 1 and 0 should have identical health
**** **	Exit program

11 Perform a datadump. The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear after the data dump is complete.

LD 43	
EDD	Begin the data dump
**** **	Exit program

End of Procedure

Postconversion procedure

Use this procedure to verify that the conversion process was successful, and system data converted completely. This is the last part of the total conversion procedure. Perform these steps **after** completing all other procedures for the system.

The site data should be printed before and after conversion. See Table 11 on page 149. If the data has changed, make the necessary updates on the **Target** release, and datadump to the new system media. Print out the items marked with an asterisk (*) to be sure everything converted properly. All other items on Table 11 on page 149 are provided to be printed if desired.

Check the General Release Bulletin (GRB), and the Conversion notes (earlier in this document) to verify any database updates that need to be made as a result of conversion. Be sure to verify all SYSxxx messages that might appear during the conversion process. These messages might indicate some database updates are required.

CAUTION — Service Interruption

Service Interruption

Test call processing thoroughly. This can include more testing than is described in this procedure, depending on system configuration. This procedure is intended to show some of the basic tests performed to complete the conversion process.

> ***Note:*** When parallel reload is complete, the attendant consoles are in Night mode. If performing these procedures during the day, contact the attendant. If these procedures are taking place during the evening, it might not be desirable to perform these call processing steps.

Postconversion steps

Perform the steps in Procedure 22 to perform the postconversion procedure.

Procedure 22
Performing the postconversion procedure

1 Print system data listed in Table 11 on page 149. Verify that all information matches the printouts created before conversions. Make changes if necessary.

2 From any unrestricted telephone, dial the access code for an outside line (usually 9), and dial the listed Directory Number (DN) for the customer. Verify that the correct Incoming Call Indicator (ICI) lights at the attendant console.

3 If the customer is equipped with more than one console, transfer the call to another console.

4 Extend the call to a telephone, and release the call from the console.

5 From the called telephone, transfer the call back to the attendant.

6 Answer and release the call.

7 From any telephone dial the DN for the attendant. Verify that the correct ICI lights at the console, then release the call.

8 Busy-out one trunk group using a Trunk Group Busy (TGB) key on the console.

9 From any telephone with TGAR 0-7, dial the access code of the busied-out trunk group, to verify that the call is intercepted to the console and receives either overflow tone or a recorded announcement.

10 Restore the trunk group to the in-service state using the Trunk Group Busy (TGB) key on the console.

11 During the conversion procedure the Central Office might have busied-out the DID trunks. If DID trunks are equipped, from any unrestricted telephone, dial the access code for an outside line, and dial a DID number into the system.

12 If a private network is used, from any unrestricted telephone, dial the network access code and place a CDP, ESN, BARS/NARS, or ISDN call as applicable to the system.

13 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

Note: Test all applications and call handling

14 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

15 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

16 Load LD 135 to test and switch CPUs. (Omit this step for Option 51C.)

LD 135	Load program
TEST CPU	Test CPU
SCPU	Switch CPUs
********	Exit overlay

17 Load LD 137 to get the status of the CMDUs and IOPs.

LD 137	Load program
STAT	Obtain the status of both CMDUs and IOPs
********	Exit overlay

Note: Check MMDU in CP PII machines.

18 Load LD 43 to back up the other set of B1 disks. Insert the B1 disk in the active CMDU.

LD 43	Load program
BKO	Back up to the backup disks and the active CMDU

Note: Back up additional 2 MB floppy disks.

19 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, the system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

******** Exit overlay

20 Check that Fiber Ring 1 operates correctly:

LD 39	Load the program
STAT RING 1	Check the status of Ring 1

21 Reset the Rings:

RSET	Reset the Rings and prepare them for redundancy
RSTR	Restore both Rings to HALF state

22 Check that the Rings operate correctly:

STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

23 If any Ring problems occur, correct them now.

STAT ALRM <X> <Y>	Check the alarm status of individual FIJI cards or all FIJI cards (See *Avaya Software Input/Output: Administration* (NN43001-611) for more information)

24 Verify that call processing operates correctly: this includes, but is not limited to the following:

- Check for dial tone.
- Make internal, external, and network calls.
- Check attendant console activity.
- Check DID trunks.
- Check any auxiliary processors.

25 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

26 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.

Table 11
Print site data (Part 1 of 4)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	CUST	<cr>
Directory Numbers	LD 20	
	REQ	PRT
	TYPE	DNB
	CUST	<cr>

Table 11
Print site data (Part 2 of 4)

Site data	Print command	
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV

Table 11
Print site data (Part 3 of 4)

Site data	Print command	
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)

Table 11
Print site data (Part 4 of 4)

Site data	Print command	
Superloops and XPEs	LD 97	
	REQ	CHG
	TYPE	SUPL
	SUPL	Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Overview of upgrading to Avaya CS 1000 and Meridian 1 PBX systems

Contents

This chapter contains information about the following topics:

Introduction 153
Choosing a scenario 160
Upgrade scenarios 165

Introduction

The focus of the “Avaya CS 1000 and Meridian 1 PBX systems upgrade procedures” on page 171 is upgrading Meridian 1 PBX systems. (See “Terminology” on page 156 for an explanation of “Internet-enabled”.) The scenarios and procedures described in this section and in “Avaya CS 1000 and Meridian 1 PBX systems upgrade procedures” on page 171 do not apply for upgrades to Meridian 1 PBX systems that are not Internet-enabled to any degree.

If your system is not already Internet-enabled to any degree, then upgrading to Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 is no different from any other update to a new release of software. See the appropriate scenario in this manual.

In order to enable your system for IP telephony, you must equip it with Media Cards and their associated applications. For more information, see:

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125)
- *Avaya IP Trunk: Description, Installation, and Operation* (NN43001-563)
- *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313)

To upgrade your Meridian 1 Large System to an Avaya CS 1000M Large System, install a Signaling Server. For more information, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

If your system is already equipped with IP Line, IP Trunk, or both, then upgrading to CS 1000 Release 7.5 involves more than simply updating to a new software release. Similarly, upgrading to a CS 1000M Large System involves more than simply installing a Signaling Server: it involves migrating the network from a node-based dialing plan to a Network Routing Service (NRS) resolved Network Numbering Plan, as well as reconfiguring and cutting over the upgraded system to use IP Peer Virtual Trunks. The scope of the upgrade will depend on the configuration and complexity of the existing network.

If your system is already equipped with IP Line, IP Trunk, or both, make sure that you read and fully understand this section. Then, after you have identified the upgrade scenario that best suits your circumstances, perform the procedures for that scenario in "Avaya CS 1000 and Meridian 1 PBX systems upgrade procedures" on page 171.

In general, there are three types of upgrade that can be performed on Meridian 1 PBX systems:

1 Software and system

2 Software only

3 System only

Table 12 shows how the upgrade types related to current and desired configurations.

Table 12
Upgrade types for Meridian 1 PBX systems

Upgrade from this configuration...			To this configuration	
Type	**System**	**Software**	**System**	**Software**
Software only	CS 1000M	CS 1000 Release 3.0 or later	CS 1000M	CS 1000 Release 7.5
Software and system	Meridian 1	CS 1000 Release 3.0 or later	CS 1000M	CS 1000 Release 7.5
Software only	Meridian 1	CS 1000 Release 3.0 or later	Meridian 1	CS 1000 Release 7.5
System only	Meridian 1	CS 1000 Release 3.0 or later	CS 1000M	CS 1000 Release 7.5

Note 1: Within the upgrade scenarios, some procedures apply to Meridian 1 systems with IP Line, others to IP Trunk.

Note 2: To complete a system-only upgrade, you must first complete a software-only upgrade.

Note 3: Meridian 1 systems without IP Line or IP Trunk should be treated as software-only upgrades. In these cases, a subsequent system-only upgrade should be treated as a new installation of IP Line and IP Peer Networking.

There are many scenarios for each type of upgrade. This section first presents important information about terminology and specifications, and then proceeds to describe and compare the scenarios in terms of overall approach. This is followed by a high level CS 1000 system upgrade. The detailed procedures for each scenario are presented in the next section.

IMPORTANT!

- The scenarios contain many of the same procedures, but the task sequence is different. It is very important to follow the order of the steps provided in the respective scenarios.
- The decision about which type of upgrade to perform and which scenario to follow depends on a number of considerations. Make sure that you read this entire section and fully understand it before you decide on an upgrade scenario.

Terminology

The following terms are used in this document:

- **Internet-enabled**. Refers to a Meridian 1 system that is equipped with:
  - — IP Line only
  - — IP Trunk only
  - — both IP Line and IP Trunk

  Note: The system is not equipped with a Signaling Server.

- **System upgrade**. Refers to upgrading a Meridian 1 PBX system (Option 61C, 81C) to CS 1000 Release 7.5 with a Signaling Server (CS 1000M HG, CS 1000M SG, CS 1000M MG).
- **Software upgrade**. Refers to any of the following:
  - — upgrading any Meridian 1 system to CS 1000 Release 7.5
  - — upgrading the IP Trunk software (also known as loadware) to support CS 1000 Release 7.5
  - — upgrading the IP Line software (also known as loadware) to support CS 1000 Release 7.5
- **Network upgrade**. Refers to upgrading systems and software across a private IP Telephony network in a coordinated way to minimize cost, service interruption, or both. In general, this must be done gradually, system by system.

- **Migration**. Refers to migrating IP Trunk nodes from a node-based dialing plan to a Network Routing Service (NRS) resolved Network Numbering Plan that is centrally managed through NRS. Migration denotes a gradual, low-risk, system-by-system reconfiguration and testing of the UDP and CDP dialing plans, Network Numbering Plan, and network routing. For detailed information migration to CS 1000 Release 7.5, see *Avaya IP Peer Networking: Installation and Commissioning* (NN43001-313) and *Avaya Network Routing Service Fundamentals (NN43001-130)*.
- **Cutover**. Refers to reconfiguring and cutting over an upgraded CS 1000M system from using IP Trunks to using IP Peer Virtual Trunks. If a large IP Trunk network has been completely migrated to using the NRS-resolved Network Numbering Plan, then cutover to using IP Peer Virtual Trunks can proceed gradually, system by system, with low risk of service interruption.
- **Coordinated cutover**. For small networks (for example, 2 to 4 systems) it may be practical to coordinate the simultaneous cutover of all systems from using IP Trunks with node-based dialing plans to using the IP Peer Virtual Trunks and NRS-resolved Network Numbering Plan *in the same maintenance window*. In this case the IP Trunk migration procedures are eliminated.
- **IP Line**. Refers to a software application that allows an IP Phone to be connected to a CS 1000M. It also provides echo cancellation, and compresses and packetizes voice for transmission over an IP data network. The IP Line application runs on the Signaling Server, which provides Voice Gateway (VGW) Digital Signal Processor (DSP) ports at the customer level.
- **IP Trunk**. Refers to the ISDN-Signaling IP Trunk application that enables calls in a private telephony network to travel over the converged enterprise IP network. The IP Trunk application runs on Media Cards that are grouped in IP Trunk nodes hosted by Meridian 1 PBX or upgraded CS 1000M systems.

  The IP Trunks appear to the Call Server as ISDN Signaling Link (ISL) trunks. MCDN features are supported over IP Trunks, but the Call Servers do not process the H.323 network signaling protocol directly and do not interact with the control signaling for the IP telephony media path. IP Trunk cards have dedicated DSP ports that are used for all calls.

- **IP Peer Virtual Trunk**. Refers to a software application that supports virtual IP trunks. On CS 1000M IP Peer Virtual Trunk software runs on the Call Server and Signaling Server.

  The IP Peer Virtual Trunks appear to the Call Server as H.323 protocol or Session Initiation Protocol (SIP) trunk routes. The Call Server supports MCDN features H.323, and SIP protocols over IP Peer Virtual Trunks, including control signaling for the IP telephony media path. This enables end-to-end direct media path connections between IP Phones and Voice Gateway DSP ports over IP Peer Virtual Trunks.

  IP Peer Virtual Trunks are called virtual because Voice Gateway (VGW) DSP ports, located on Media Cards, are allocated to IP Peer Virtual Trunks per call as needed. VGW DSP ports are customer-level resources that are shared by IP Lines and IP Peer Virtual Trunks.

Software specifications

Table 13 lists the software components required to upgrade to CS 1000 Release 7.5.

> ***Note:*** The information in Table 13 was valid as of date of publication. However, before you begin the upgrade, check the latest General Release Bulletin, Product Bulletins, and the Avaya Software Download Web site to confirm that you have the latest versions. In particular, if your upgrade package was shipped some weeks before you begin to perform the upgrade, check the Avaya Software Download Web site, in case a maintenance upissue occurred in the interim.

Table 13
CS 1000 Release 7.5 software components (Part 1 of 2)

Item	Version
Call Server	X21 Release 7.5.
Signaling Server (see note below)	CS 1000 Release 7.5 Linux Base and Linux Signaling Server applications
IP Line application (see note below)	IP Line
IP Trunk application	IP Trunk 3.01

Table 13
CS 1000 Release 7.5 software components (Part 2 of 2)

Item	Version
Media Card firmware (8051XA Controller)	FW shipped with CS 1000 Release 7.5
Avaya 1120E/1140E IP Deskphones	FW shipped with CS 1000 Release 7.5
2001 IP Phone	FW shipped with CS 1000 Release 7.5
2004 IP Phone	FW shipped with CS 1000 Release 7.5
Avaya 2007 IP Deskphone	FW shipped with CS 1000 Release 7.5
Avaya 2033 IP Conference Phone	FW shipped with CS 1000 Release 7.5
Avaya 2050 IP Softphone	FW shipped with CS 1000 Release 7.5
2210/2211 IP Phones	FW shipped with CS 1000 Release 7.5
2212 IP Phone	FW shipped with CS 1000 Release 7.5
ACD Set IP Phone	FW shipped with CS 1000 Release 7.5
Web browser	Microsoft Internet Explorer v.6.0.2600 or later Other Web browsers (such as Mozilla Firefox) are *not supported*.
Note: The Signaling Server IP Line Terminal Proxy Server (LTPS), NRS, Element Manager, IP Line loadware, and IP Phone firmware are on the Signaling Server installation media. ***Note:*** Meridian 1 Option 61C and 81C do not support IP Phones. You must perform a system upgrade to CS 1000M for IP telephone support.	

Stand-alone NRS

You can install stand-alone CS 1000M NRS Network Numbering Plan resolution to simplify network management for IP Trunk 3.01and BCM 3.6 networking in large complex networks.

You can order duplicate sets of the NTDU27CB Signaling Server hardware/ software package and power cord prior to upgrading any Meridian 1 PBX system to CS 1000 Release 7.5 with IP Peer Networking. This package is required to install a Primary and an Alternate stand-alone NRS for centralized

NRS management of the Network Numbering Plan for the IP Trunk 3.01 and BCM 3.6 network.

Collocated stand-alone NRS can be configured later as Signaling Servers when the systems are upgraded to CS 1000 Release 7.5, with coresident NRS, IP Peer Virtual Trunks, and LTPS for IP Line.

Surplus equipment

The D-Channel PC Card from the IP Trunk node and its cabling is not required after IP Trunk cards have been converted to Media cards. This may be kept as a spare for nodes still running IP Trunk or ITG Trunk applications.

The MSDL card D-Channel port is no longer used.

Choosing a scenario

The decision as to which scenario to follow will depend on your system and circumstances. The primary difference between the scenarios is whether and when:

- you migrate the IP Trunk nodes to an NRS-resolved Network Numbering Plan
- you cut over the upgraded system from using IP Trunks to IP Peer Virtual Trunks

After considering the information provided in "Migration and cutover options" below and "Additional considerations" on page 162, choose the upgrade scenario that best suits your organization.

The scenarios presented in these two chapters are not exhaustive. They are intended to cover the most common situations and the most likely desired configurations. After studying the scenarios, you may decide to contact Avaya for assistance with the upgrade, migration, and conversion procedures. See "Choosing a scenario" on page 160.

Migration and cutover options

There are three ways to approach migrating the IP Trunks and cutting over to IP Peer Virtual Trunks:

- preupgrade migration followed by gradual cutover
- postupgrade migration followed by gradual cutover
- coordinated cutover without migration

Table 14 describes the three methods and explains the differences between them.

Table 14
Comparison of upgrade, migration, and cutover methods (Part 1 of 2)

Preupgrade migration	Postupgrade migration	Coordinated cutover
You can migrate a large Meridian 1 PBX IP Trunk 3.01 network to use Signaling Servers configured as stand-alone NRS to take advantage of a simplified, NRS-managed Network Numbering Plan in advance of the first Meridian 1 PBX system upgrade to CS 1000M.	You can begin to upgrade Meridian 1 PBX systems one by one to CS 1000M in a large IP Trunk 3.01 network that still uses the IP Trunk node-based dialing plans. ***Note:*** Upgraded systems must continue to use the IP Trunks until you have migrated the IP Trunk 3.01 network to use coresident or stand-alone NRS.	For a small network of Meridian 1 PBX systems with IP Trunk (for example, 2–4 systems), and with sufficient planning, technician resources, and length of maintenance window for IP Trunk service interruption, you may choose to skip the procedures to migrate the IP Trunk network. (You will still need to transfer or duplicate the IP Trunk node-based dialing plans to the NRS-resolved Network Numbering Plan, but you don't migrate the IP Trunks to actually use that numbering plan.)

Table 14
Comparison of upgrade, migration, and cutover methods (Part 2 of 2)

Preupgrade migration	Postupgrade migration	Coordinated cutover
After the IP Trunk 3.01 network migration is complete, you can upgrade the Meridian 1 PBX systems one by one to CS 1000M and immediately reconfigure and cut over each upgraded system to use the IP Peer Virtual Trunks and NRS-resolved Network Numbering Plan. The Signaling Servers configured as stand-alone NRS can be reconfigured as coresident NRS for upgraded CS 1000M systems.	After you have upgraded the first two Meridian 1 PBX systems to CS 1000M with Primary and Alternate NRS, you can start to migrate a large IP Trunk 3.01 network to use the Signaling Server NRS to resolve the Network Numbering Plan. However, *only after the IP Trunk 3.01 network migration is complete* can you begin to reconfigure and cut over the systems one by one to use the IP Peer Virtual Trunks.	Upgrade the Meridian 1 PBX systems one by one to CS 1000M. Continue to use IP Trunks with node-based dialing plans. Finally, in a single maintenance window, simultaneously reconfigure and cut over all the upgraded CS 1000M systems to use the IP Peer Virtual Trunks and NRS-resolved Network Numbering Plan. Thoroughly test the UDP and CDP dialing plans and NRS-resolved Network Numbering Plan.

Additional considerations

A critical consideration is whether the IP Trunk nodes use local node-based dialing plans or whether the entire IP Trunk network was initially configured, or has been migrated, to use a Signaling Server NRS to resolve the Network Numbering Plan into Call Signaling IP addresses for the H.323 and SIP endpoints, including IP Trunk and BCM.

When planning upgrades to CS 1000M for an existing network of Meridian 1 PBX systems that are networked using IP Trunk (that is, ISDN-signaling IP trunks), you must consider:

- the size of the network
- the complexity of the dialing plan
- the complexity of the Network Numbering Plan

- the complexity of the public and private trunk routing
- IP Trunk interoperation with BCM systems in the network

You must also consider:

- schedule and budget
- tolerance for temporary service interruption of the IP Trunk network
- the logistics and availability of technicians to simultaneously reconfigure and cut over multiple upgraded systems to use an NRS-resolved Network Numbering Plan

If it is not practical to reconfigure and cut over all the upgraded systems simultaneously to use IP Peer Virtual Trunks, choose either a pre or postupgrade migration scenario. Separating the migration, upgrade, and cutover elements of the process allows you to adopt a phased approach that maintains uninterrupted service of the IP Trunk network while the Meridian 1 PBX systems are gradually upgraded to CS 1000M systems.

For a smaller network of Meridian 1 PBX systems (for example, 2 to 4 systems) using the node-based IP Trunk dialing plans, it may be practical to upgrade all systems, one by one, to CS 1000M with IP Trunk, and then simultaneously reconfigure and cut over all the upgraded systems to use IP Peer Networking Virtual IP Trunks within a single maintenance window. In this case you can choose a coordinated cutover scenario.

If you have already completed the migration of a large network of IP Trunk 3.01 and BCM 3.6 nodes (using migration scenario), you no longer need to consider migration when upgrading any additional Meridian 1 PBX systems to CS 1000M. In these postmigration cases, you can choose a gradual, system-by-system cutover scenario, to immediately reconfigure and cut over each upgraded system to use the IP Peer Virtual Trunks and NRS-resolved Network Numbering Plan.

WARNING

1 CS 1000 Release 7.5 is not backwards compatible with Meridian 1 X11 Release 25.40 and IP Line 4.0 within a single system.

2 Prior to cutting over any upgraded CS 1000M system belonging to a large IP Trunk network to use IP Peer Virtual Trunks:

- **a.** All ITG Trunk nodes in the network must be upgraded to run IP Trunk release 3.01 and migrated to use the NRS-resolved Network Numbering Plan.
- **b.** BCM systems using IP trunks must be upgraded to Release 3.6 and migrated to use the NRS-resolved Network Numbering Plan.

Failure to upgrade and migrate all nodes to IP Trunk 3.01 and BCM Release 3.6 using NRS will isolate the nonupgraded nodes in the network from the nodes using NRS for Network Numbering Plan resolution.

3 Software releases prior to IP Trunk 3.01 and BCM 3.6 do not interoperate with the CS 1000 Release 7.5 NRS and therefore cannot support calls to and from the CS 1000 Release 7.5 system using the IP Peer Virtual IP trunks.

4 IP Trunk 3.01 interoperates with the CS 1000 Release 7.5 NRS and IP Peer Virtual IP trunk Gateways, and also with the ITG Trunk 2.xx and BCM 3.xx nodes in the network, because IP Trunk 3.xx supports dual methods of resolving destinations by:

- **a.** node-based dialing plan resolution for interoperation with ITG Trunk 2.xx nodes, BCM 3.xx, and IP Trunk 3.00 nodes (if desired — for example, for Network QoS Fallback to PSTN)
- **b.** the CS 1000 Release 7.5 NRS Network Numbering Plan resolution for interoperation with IP Peer Gateways, IP Trunk 3.01, and BCM 3.6.

Upgrade scenarios

High-level CS 1000 system upgrade

The following list outlines the steps required to upgrade an CS 1000 system:

1. Determine which Signaling Server to use as Element Manager.
   a. Upgrade or install Linux base for this server
   b. Join the security domain
   c. From the UCM Deployment Manager, deploy the Element Manager application (and any others required)
2. Install the latest patches for Linux Base and Applications
3. Disable MSEC and IPSEC on the 5.x system
4. Upgrade the Call Server:
   a. Verify new keycode for correct packages and ISM (LD 143 KDIF)
   b. As applicable, split Co-res
   c. Upgrade the inactive core
   d. Monitor for database conversion system messages and investigate messages
   e. Use LD 135 to cut over (CUTOVR) to the CS1000 Release 7.5 Core
5. Login to the Call Server, using LD 117 (REGISTER UCM DEVICE), which registers the Call Server with UCM
6. From UCM, monitor for CS 1000 registration
7. From UCM, launch Element Manager and install the latest CS 1000 Call Server patches
8. Upgrade Firmware on MC32 and MC32S Cards:
   a. From UCM, launch element Manager
   b. Perform Loadware upgrade for Voice Gateway Media Cards
9. From CS 1000 LD 117 (REGISTER UCM SYSTEM), register all CS 1000 elements with UCM
10. From UCM, monitor for the CS 1000 Element registrations

11 Through UCM Elements, edit the element and verify configuration (IP address) data is correct for MC32 and MC32S. Correct data if required

12 From UCM, launch Element Manager and from IP Network, Nodes, select the appropriate node:

- **a** Personal Directory - check box to enable
- **b** Save
- **c** Sync
- **d** Restart applications on the Signaling Server

13 Upgrade and deploy remainder Signaling Servers

14 From UCM, launch Element Manager and from IP Network, Nodes, select your node:

- **a** Save
- **b** Sync
- **c** Restart applications on the Signaling Server

15 Upgrade inactive core

16 Use LD (135 JOIN) to join the Co-res Call Server

17 Login to the active Call Server using LD 117 (REGISTER UCM DEVICE) and register the UCM device (registers inactive core)

Note: Do not use the same user names for both the local Call Server and UCM "Central" accounts.

Note: Deplist installation fails with CP PM Co-res if filename is in capital letters (for example, “DEPList6.zip”). The workaround is to change the Deplist filename to lowercase letters (for example, “deplist6.zip”).

Note: A CP PM reset to factory defaults changes Call Server Core number to Core 0 by default. If this is a CP PM HA Call Server Core 1, you must manually change the Bios setting for Core 0 back to Core1 (see Tools menu).

Meridian 1 PBX system upgrade scenarios

Table 15 lists the upgrade scenarios. See "Avaya CS 1000 and Meridian 1 PBX systems upgrade procedures" on page 171 for details about the tasks and procedures for each scenario.

Table 15
Upgrade scenarios (Part 1 of 4)

Scenario	Description	General tasks
Software and system upgrades		
1	Software and system upgrade using the preupgrade migration method. Refer to "Scenario 1: Software and system (pre-upgrade migration)" on page 173 for the detailed list of tasks and procedures.	**1** Install the stand-alone Signaling Server at two sites and configure Primary and Alternate NRS to avoid a single point of failure. **2** Migrate the entire IP Trunk network and an associated BCM network to use the NRS-resolved Network Numbering Plan. **3** Later, upgrade the Call Server to CS 1000 Release 7.5, and simultaneously upgrade IP Line. **4** Cut over the upgraded CS 1000M system to use IP Peer Virtual Trunks.
2	Software and system upgrade using the postupgrade migration method. Refer to "Scenario 2: Software and system (post-upgrade migration)" on page 174 for the detailed list of tasks and procedures.	**1** Upgrade two or more Meridian 1 PBX systems to CS 1000M systems and simultaneously upgrade IP Line. Continue to use IP Trunks with local node-based dialing plan. **2** Configure Primary and Alternate NRS to avoid a single point of failure. **3** Migrate the entire IP Trunk 3.01 network to use the NRS-resolved Network Numbering Plan. **4** Cut over the upgraded CS 1000M systems to use IP Peer Virtual Trunks.

Table 15
Upgrade scenarios (Part 2 of 4)

Scenario	Description	General tasks
3	Software and system upgrade using the coordinated cutover method. Refer to “Scenario 3: Software and system (coordinated cutover)” on page 174 for the detailed list of tasks and procedures.	**1** Upgrade all Meridian 1 PBX systems to CS 1000M. Continue to use IP Trunks with local node-based dialing plan. **2** Coordinate the simultaneous cutover of all the upgraded CS 1000M systems to use IP Peer Virtual Trunks and the NRS-resolved Network Numbering Plan.
4	Software and system upgrade of Meridian 1 systems equipped with IP Line only. Refer to “Scenario 4: Software and system (IP Line only)” on page 175 for the detailed list of tasks and procedures.	**1** Upgrade the Meridian 1 PBX system to CS 1000M system and simultaneously upgrade IP Line.
Software-only upgrades		
5	Software-only upgrade to CS 1000 Release 7.5. Refer to “Upgrade scenarios” on page 172 for the detailed list of tasks and procedures.	**1** Upgrade the IP Line application. **2** Upgrade the system software to CS 1000 Release 7.5. **3** Configure IP Telephony Node. **4** Upgrade the IP Trunk application.
System-only upgrades		

Table 15
Upgrade scenarios (Part 3 of 4)

Scenario	Description	General tasks
6	System-only upgrade of a system whose IP Trunk 3.01 network has previously been migrated. Refer to "Scenario 6: System only (pre-upgrade migration)" on page 175 for the detailed list of tasks and procedures.	**1** Install Signaling Servers on the CS 1000 Release 7.5 system that is being upgraded to CS 1000M. **2** Perform keycode expansion on the Call Server to expand the system limit for IP Peer Virtual Trunks. **3** Cut over the upgraded CS 1000M system to use IP Peer Virtual Trunks.
7	System-only upgrade using the postupgrade migration method. Refer to "Scenario 7: System only (post-upgrade migration)" on page 176 for the detailed list of tasks and procedures.	**1** Upgrade one or more Meridian 1 systems to CS 1000M by adding one or more Signaling Servers. **2** Perform keycode expansion on the Call Server to expand the system limit for IP Peer Virtual Trunks. **3** Migrate the entire IP Trunk 3.01 network to use the NRS-resolved Network Numbering Plan. **4** Cut over the upgraded CS 1000M system to use IP Peer Virtual Trunks.

Table 15
Upgrade scenarios (Part 4 of 4)

Scenario	Description	General tasks
8	System-only upgrade using the coordinated cutover method. Refer to “Scenario 8: System only (coordinated cutover)” on page 176 for the detailed list of tasks and procedures.	**1** Upgrade one or more Meridian 1 systems to CS 1000M by adding one or more Signaling Servers. **2** Configure the upgraded CS 1000M systems to use IP Peer Virtual Trunks and NRS-resolved Network Numbering Plan.
9	System-only upgrade of Meridian 1 systems equipped with IP Line only. Refer to “Scenario 4: Software and system (IP Line only)” on page 175 for the detailed list of tasks and procedures.	**1** Upgrade one or more Meridian 1 systems to CS 1000M by adding one or more Signaling Servers.

Avaya CS 1000 and Meridian 1 PBX systems upgrade procedures

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Scenario 3: Software and system (coordinated cutover). 174

Scenario 4: Software and system (IP Line only). 175

Scenario 5: Software only 175

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- Configuring the Call Server to enable Element Manager 181
- Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 183
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Creating the IP Telephony node in Element Manager 186
Configuring IP Peer Virtual Trunks on the Call Server 192
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Configuring NRS 200
Accessing the NRS and configuring the Redirect Server 200

Upgrade scenarios

The sequence in which the procedures must be performed depends on the upgrade scenario you are following. For important information you must consider before choosing a scenario, see “Overview of upgrading to Avaya CS 1000 and Meridian 1 PBX systems” on page 153.

Table 16 lists the upgrade scenarios.

Table 16
Upgrade scenarios (Part 1 of 2)

Scenario	Description
1	Software and system upgrade using the preupgrade migration method. Refer to “Scenario 1: Software and system (pre-upgrade migration)” on page 173 for the detailed list of tasks and procedures.
2	Software and system upgrade using the postupgrade migration method. Refer to “Scenario 2: Software and system (post-upgrade migration)” on page 174 for the detailed list of tasks and procedures.
3	Software and system upgrade using the coordinated cutover method. Refer to “Scenario 3: Software and system (coordinated cutover)” on page 174 for the detailed list of tasks and procedures.
4	Software and system upgrade of Meridian 1 systems equipped with IP Line only. Refer to “Scenario 4: Software and system (IP Line only)” on page 175 for the detailed list of tasks and procedures.

Table 16
Upgrade scenarios (Part 2 of 2)

Scenario	Description
5	Software-only upgrade to CS 1000 Release 7.5. Refer to "Scenario 5: Software only" on page 175 for the detailed list of tasks and procedures.
6	System-only upgrade of an Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 system whose IP Trunk 3.01 network has previously been migrated. Refer to "Scenario 6: System only (pre-upgrade migration)" on page 175 for the detailed list of tasks and procedures.
7	System-only upgrade using the postupgrade migration method. Refer to "Scenario 7: System only (post-upgrade migration)" on page 176 for the detailed list of tasks and procedures.
8	System-only upgrade using the coordinated cutover method. Refer to "Scenario 8: System only (coordinated cutover)" on page 176 for the detailed list of tasks and procedures.
9	System-only upgrade of Meridian 1 systems equipped with IP Line only. Refer to "Scenario 9: System only (IP Line only)" on page 176 for the detailed list of tasks and procedures.

List of procedures

This section provides a list of the procedures for each scenario. The procedures must be performed in the order given.

Scenario 1: Software and system (pre-upgrade migration)

To upgrade a Meridian 1 PBX system to Avaya CS 1000M using the preupgrade migration method, perform the following procedures in the order given:

1. "Installing and configuring the Signaling Server" on page 178
2. "Configuring the Call Server to enable Element Manager" on page 181
3. "Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183

4. "Upgrading the firmware on Media Cards" on page 184
5. "Creating the IP Telephony node in Element Manager" on page 186
6. "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 2: Software and system (post-upgrade migration)

To upgrade a Meridian 1 PBX system to CS 1000M using the postupgrade migration method, perform the following procedures in the order given:

1. "Installing and configuring the Signaling Server" on page 178
2. "Configuring the Call Server to enable Element Manager" on page 181
3. "Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
4. "Upgrading the firmware on Media Cards" on page 184
5. "Creating the IP Telephony node in Element Manager" on page 186
6. "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 3: Software and system (coordinated cutover)

To upgrade a Meridian 1 PBX system to CS 1000M using the coordinated cutover method, perform the following procedures in the order given:

1. "Installing and configuring the Signaling Server" on page 178
2. "Configuring the Call Server to enable Element Manager" on page 181
3. "Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
4. "Upgrading the firmware on Media Cards" on page 184
5. "Creating the IP Telephony node in Element Manager" on page 186
6. "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 4: Software and system (IP Line only)

To upgrade a Meridian 1 PBX system equipped with IP Line only to CS 1000M, perform the following procedures in the order given:

1. "Installing and configuring the Signaling Server" on page 178
2. "Configuring the Call Server to enable Element Manager" on page 181
3. "Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
4. "Upgrading the firmware on Media Cards" on page 184
5. "Creating the IP Telephony node in Element Manager" on page 186

Scenario 5: Software only

To upgrade a Meridian 1 PBX system to CS 1000 Release 7.5 software, perform the following procedures in the order given:

1. "Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
2. "Upgrading the firmware on Media Cards" on page 184 (if necessary)

Scenario 6: System only (pre-upgrade migration)

To upgrade a previously migrated Meridian 1 CS 1000 Release 7.5 system to CS 1000M, perform the following procedures in the order given:

1. "Installing and configuring the Signaling Server" on page 178
2. "Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186
3. "Creating the IP Telephony node in Element Manager" on page 186
4. "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 7: System only (post-upgrade migration)

To upgrade a Meridian 1 CS 1000 Release 7.5 system to CS 1000M using the postupgrade migration method, perform the following procedures in the order given:

1 "Installing and configuring the Signaling Server" on page 178

2 "Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186

3 "Creating the IP Telephony node in Element Manager" on page 186

4 "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 8: System only (coordinated cutover)

To upgrade a Meridian 1 CS 1000 Release 7.5 system to CS 1000M using the coordinated cutover method, perform the following procedures in the order given:

1 "Installing and configuring the Signaling Server" on page 178

2 "Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186

3 "Creating the IP Telephony node in Element Manager" on page 186

4 "Configuring IP Peer Virtual Trunks on the Call Server" on page 192

Scenario 9: System only (IP Line only)

To upgrade a Meridian 1 CS 1000 Release 7.5 system equipped with IP Line only to CS 1000M, perform the following procedures in the order given:

1 "Installing and configuring the Signaling Server" on page 178

2 "Creating the IP Telephony node in Element Manager" on page 186

Summary of scenarios

Table 17 summarizes the upgrade scenarios, for ease of reference. Table 18 on page 178 summarizes and compares the sequence of procedures for each scenario, by indicating the order in which the procedures are performed.

Table 17
Summary of upgrade scenarios

Scenario	Description
1	Software and system upgrade using the preupgrade migration method.
2	Software and system upgrade using the postupgrade migration method.
3	Software and system upgrade using the coordinated cutover method.
4	Software and system upgrade of Meridian 1 systems equipped with IP Line only.
5	Software-only upgrade to CS 1000 Release 7.5.
6	System-only upgrade of a CS 1000 Release 7.5 system whose IP Trunk 3.01 network has previously been migrated.
7	System-only upgrade using the postupgrade migration method.
8	System-only upgrade using the coordinated cutover method.
9	System-only upgrade of Meridian 1 systems equipped with IP Line only.
Note: See Table 18 on page 178 for a high-level description of the scenarios.	

Table 18
Order of procedures, by scenario

	Scenario/Sequence								
Procedure	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Installing and configuring the Signaling Server (p. 178)	**1**	2	2	2		**1**	**1**	**1**	**1**
Configuring the Call Server to enable Element Manager (p. 181)	7	4	4	4	3				
Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5 (p. 183)	8	5	5	5	4				
Upgrading the firmware on Media Cards (p. 184)	9	6	6	6	5				
Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks (p. 186)						2	2	2	
Creating the IP Telephony node in Element Manager (p. 186)	10	7	7	7		3	3	3	2
Configuring IP Peer Virtual Trunks on the Call Server (p. 192)	12	9	9			5	5	5	

Procedures

The following are the procedures required to complete the upgrade scenarios. Not all the procedures are required for each scenario, and the order in which the procedures are performed is critical. For the sequence you must follow, see the applicable “List of procedures” or to the “Order of procedures, by scenario” on page 178.

WARNING

Before beginning the system upgrade, ensure that a PWD1 username and password has been configured on the Call Server. If there is no PWD1 username and password, configure them in LD 17. This is necessary to enable login to the Media Cards and Signaling Server.

Installing and configuring the Signaling Server

Prior to beginning the procedure, make note of the existing Signaling Server node id and node IP address. This information is used to configure the new Signaling Server in order to reduce impact to existing phone users that use partial DHCP. If new node data is used for full DHCP users, the DHCP scope must be changed at the time of installation to reduce user impact.

When connecting a Signaling Server Leader to the ELAN subnet and TLAN subnet of a system that has an existing IP Line node, you must take care not to disrupt service on the existing IP Line node. To avoid service interruption you must prevent the new Signaling Server Leader from interacting with the existing IP Line node until the node has been appropriately reconfigured (as outlined in step 3).

The SIP Virtual Trunk application resides on the Signaling Server.

The following applications can run on the Signaling Server:

- IP Line application, including the Line Terminal Proxy Server (LTPS)
- Element Manager
- SIP Line Gateway
- Network Routing Service (NRS) comprised of the following three components:
  - SIP Redirect Server
  - Network Connection Server (NCS)
- Application Server which includes Personal Directory, Callers List, Redial List, and Password administration.

Procedure 23
Installing and configuring the Signaling Server (Part 1 of 2)

Step	Action
1	Install the Signaling Servers (hardware) and connect all Signaling Servers to the ELAN subnet and TLAN subnet. See: • *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315) • *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)

Procedure 23
Installing and configuring the Signaling Server (Part 2 of 2)

Step	Action
2	Insert the CS 1000 Release 7.5 Signaling Server software installation media into the Signaling Server. For installation procedures, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
3	Configure the first Signaling Server as Leader of the IP Telephony node during the installation. To prevent conflict with the Node ID and Node IP address of an existing IP Line node: **1** Configure a temporary Node ID (for example, 9999). **2** Configure a temporary Node IP address. **3** Configure the Primary (active side) Call Server ELAN network interface IP address when prompted. This action is not required for stand-alone NRS.
4	Install and configure any additional Signaling Servers as Followers in the IP Telephony node.
5	Reboot the Signaling Server Leader after the software installation and basic configuration is complete. ***Note:*** **Do not reboot the Signaling Server Followers.** They will be rebooted in a later procedure, after they have been manually configured in Element Manager (see “Creating the IP Telephony node in Element Manager” on page 186, step 7).
6	Log on to the Signaling Server from a TTY where: login ID (default) = **`admin`** password (default) = **`admin`** ***Note:*** You will be prompted to change the Signaling Server password after logging in.
7	Use ping to verify the Signaling Server’s Ethernet connection by pinging hosts on the ELAN subnet and TLAN subnet.

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	System only (pre-upgrade migration)	"Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186
2	System only (post-upgrade migration)	"Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186
3	System only (coordinated cutover)	"Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks" on page 186
4	System only (IP Line only)	"Creating the IP Telephony node in Element Manager" on page 186

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Configuring the Call Server to enable Element Manager" on page 181
2	Software and system (post-upgrade migration)	"Configuring the Call Server to enable Element Manager" on page 181
3	Software and system (coordinated cutover)	"Configuring the Call Server to enable Element Manager" on page 181
4	Software and system (IP Line only)	"Configuring the Call Server to enable Element Manager" on page 181
5	Software only	"Configuring the Call Server to enable Element Manager" on page 181

Configuring the Call Server to enable Element Manager

In CS 1000 Release 7.5, Login Name must be enabled on the call server in order for the Call Server PWD1, PWD2, and PDT2 to synchronize with the

Signaling Server when the PBX link to each host comes up. Element Manager also depends on this setting.

Procedure 24
Configuring the Call Server to enable operation of Element Manager

Step	Action
1	Configure a minimum of two (preferably four) pseudo TTYs (PTY) on the Call Server in LD 17 using **ADAN** command.
2	Enable the Login Name feature on the Call Server by configuring LNAME = **YES** in LD 17 for data block TYPE PWD.
3	Verify the Login Name and Password (in LD 22 using print type PWD) that you must use for logging into Element Manager. You can use PWD01, PWD02, or LAPW login names and passwords to log on to Element Manager.
4	Verify the Primary (active CP side) IP address and Secondary (inactive CP side) IP address on the Call Server using LD 117 **PRT ELNK** command or LD 137 **STAT ELNK** command.
5	Save configuration changes permanently in LD 43 by entering the command: **EDD** ***Note:*** EDD also synchronizes Call Server PWD01 Login Name and Password with the Signaling Servers if the pbxLinks to the Call Server are established.

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
2	Software and system (post-upgrade migration)	"Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
3	Software and system (coordinated cutover)	"Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
4	Software and system (IP Line only)	"Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183
5	Software only	"Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5" on page 183

Upgrading the Call Server and rebooting the system to run Avaya Communication Server 1000 (Avaya CS 1000) Release 7.5

IMPORTANT!

The call server and IP Line nodes within a single system must be upgraded simultaneously to CS 1000 Release 7.5.

Note: CS 1000 Release 7.5 is not backwards compatible with Meridian 1 X11 Release 25.40 and IP Line 5.0 within a single system.

Upgrade the Call Server software to CS 1000 Release 7.5. For CP PIV systems, see "Upgrading the software on CP PIV systems" on page 93.

Option 61C and 81C can be upgraded in split mode to minimize service interruption. If upgrading in this mode, do not force the CS 1000 Release 7.5 CP side to become active until the existing IP Line node has been upgraded to the latest IP Line loadware, and the IP Line cards have been reset and are in the process of simultaneously rebooting.

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Upgrading the firmware on Media Cards" on page 184
2	Software and system (post-upgrade migration)	"Upgrading the firmware on Media Cards" on page 184
3	Software and system (coordinated cutover)	"Upgrading the firmware on Media Cards" on page 184
4	Software and system (IP Line only)	"Upgrading the firmware on Media Cards" on page 184
5	Software only	"Upgrading the firmware on Media Cards" on page 184

Upgrading the firmware on Media Cards

You may need to upgrade the Media Card firmware as part of the software upgrade. Use the **`IPL>firmwareVersionShow`** command, as indicated in the following procedure, to display the firmware version and determine if you must upgrade the firmware.

> ***Note:*** You must upgrade the Media Card firmware if the following message appears repeatedly on the Command Line Interface (CLI) of the upgraded or converted Media Card running IP Line:
>
> `(A07) Poll message not received from 8051XA`

Procedure 25
Upgrading the firmware on Media Cards

Telnet to each Media Card and log on to the IPL>shell.

4 Check the firmware version by entering: `IPL>firmwareVersionShow`

5 Verify the 8051XA firmware version of each card.

6 If the Media Card firmware version is less than 5.8, perform the remaining steps:

7 Access the www.avaya.com Web site.

8 Choose **Support | Software Downloads | Product Family | Communication Server | IP Line and Voice Gateway Media Card**

9 Download the appropriate firmware.

End of Procedure

Next steps

After you perform this procedure, choose one of the following procedures

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Creating the IP Telephony node in Element Manager" on page 186
2	Software and system (post-upgrade migration)	"Creating the IP Telephony node in Element Manager" on page 186
3	Software and system (coordinated cutover)	"Creating the IP Telephony node in Element Manager" on page 186
4	Software and system (IP Line only)	"Creating the IP Telephony node in Element Manager" on page 186

Performing keycode expansion on the Call Server to enable IP Peer Virtual Trunks

To perform keycode expansion on the Call Server to enable IP Peer Virtual Trunks, see *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...	Go to...
6 System only (pre-upgrade migration)	"Creating the IP Telephony node in Element Manager" on page 186
7 System only (post-upgrade migration)	"Creating the IP Telephony node in Element Manager" on page 186
8 System only (coordinated cutover)	"Creating the IP Telephony node in Element Manager" on page 186

Creating the IP Telephony node in Element Manager

If a large multicard IP Line node exists, it saves time and minimizes user error to import the IP Line node configuration into the Element Manager IP Telephony node configuration.

For more information about this procedure, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN43001-125) and *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313).

Note: After you create the IP Telephony node in Element Manager, you must add the configuration data of the Signaling Server Leader and Followers and any new Media Cards to the IP Telephony node.

Procedure 26
Creating IP Telephony node in Element Manager (Part 1 of 5)

Step	Action
1	Open a Web browser on the management PC and go to: **`http://<Signaling Server Leader ELAN network interface IP address or TLAN network interface IP address>`** ***Note:*** Only Microsoft Internet Explorer v.6.0.2600, or later, is supported.
2	Log on to Element Manager via the Signaling Server Leader using the Call Server login name and password for PW01, PW02, or appropriately configured LAPW.
3	Import the IP Line node configuration files from the Leader card of the existing IP Line node by choosing **Configuration** | **IP Telephony** from the Navigation Tree and clicking **Import Node Files**. For more information about importing node configuration from an existing node, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN43001-125).

Procedure 26
Creating IP Telephony node in Element Manager (Part 2 of 5)

Step	Action
4	Edit the node configuration from Element Manager. See *Avaya Signaling Server IP Line Applications Fundamentals* (NN43001-125), section titled *“Import node configuration from an existing node.”* **1** Add the Signaling Server Leader to the node and configure the Signaling Server Leader as a Primary, Alternate, or Failsafe NRS. ***Note:*** There is only one Network Routing Service (NRS) and one Alternate NRS in the network. All other Signaling Servers are configured as Failsafe NRS. **2** Add any additional Signaling Server Followers to the node. **3** Enable Line TPS on Signaling Server Leader and Followers. **4** Enable IP Peer VTRK Gateway on the Signaling Server Leader and Followers. **5** Configure H323-ID for IP Peer VTRK Gateway (for example, “**`upgraded_system_IPP-GW`**”). **6** Configure Primary and Alternate NRS IP addresses for IP Peer Virtual Trunks:

Procedure 26
Creating IP Telephony node in Element Manager (Part 3 of 5)

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td></td><td>
(Step 4, Action 6 continued...)
<table>
<tr><th>If...</th><th>Then...</th></tr>
<tr><td>The local IP Telephony node contains the Alternate NRS for the NRS zone...</td><td>The Alternate NRS IP address for the CS 1000M must equal the TLAN IP address of the Signaling Server Leader hosting the Alternate NRS in the local IP Telephony node.
The Primary NRS IP address for the CS 1000M must equal the TLAN IP address of the remote Signaling Server Leader hosting the Primary NRS.</td></tr>
<tr><td>The local IP Telephony node does not contain the Primary or Alternate NRS for the NRS zone...</td><td>The Primary NRS IP address for the CS 1000M must equal the TLAN IP address of the remote Signaling Server Leader hosting the Primary NRS.
The Alternate NRS IP address for the CS 1000M must equal the TLAN IP address of the remote Signaling Server Leader hosting the Alternate NRS.</td></tr>
</table>
7 Add the new Media Cards to the IP Telephony node (if required by System and Engineering).
8 Click the Save/Transfer button to save the configuration to the Call Server and to transfer the configuration to the Signaling Server and cards.
</td></tr>
</table>

Procedure 26
Creating IP Telephony node in Element Manager (Part 4 of 5)

Step	Action
5	Configure the new Voice Gateway TNs on the Call Server. Do one of the following: **1** From the Navigation Tree in Element Manager, choose **Configuration** | **IP Telephony**. **Result:** Node Summary Page appears. **a.** Click on the arrowhead. **b.** Click on the appropriate Media Card. **c.** Click on `ADD VGW CHANNELS`. **Note:** If an Alert Box appears, you need to log on to the command line of the call server, and use LD 22 to determine if Package 167 is enabled or restricted: `REQ` **`PRT`** `TYPE:` **`167`** If it is restricted, obtain a new keycode to enable GPRI Package 167. Then, in LD 73 perform: `REQ` **`NEW`** `TYPE:` **`DDB`** and carriage return through, accepting all the defaults. or **2** Use LD 14 from the Call Server CLI to configure the new Voice Gateway TNs.

Procedure 26
Creating IP Telephony node in Element Manager (Part 5 of 5)

Step	Action
6	Clear Leader information from the former Leader card: **1** Using Telnet or a TTY, log on to the technician level shell (`IPL>`) of the former Leader card of the imported IP Line node. **2** Enter the CLI command **`clearLeader`** to clear the Leader flag from the card. **3** Issue **`disTPS`** command to gracefully disable the Terminal Proxy Server and allow the IP Phones to reregister to another IP Line card when idle. Be sure to monitor the progress by using the **`tpsShow`** or **`isetShow`** commands. **4** Use LD 32 **`DISI`** command to gracefully disable the Voice Gateway TNs of the card when idle on the Call Server. Be sure to monitor the progress using LD 32 **`STAT`** command, or **`IPT> vgwShow`** command. **5** Reset the former Leader card by entering the CLI command **`cardReset`** in the `IPL>` shell.
7	Reboot the Signaling Server Leader and all Signaling Server Followers.
8	Verify that the Signaling Server Leader functions as the new Leader of the IP Telephony upon rebooting (for example, **`oam>electShow`**; **`censusShow`**; **`tpsShow`**).
9	Log on to the Signaling Server Leader and enter: **`oam> loadBalance`** **Result:** All IP Phones will be unregistered from the Media Card and reregistered with the Signaling Server Leader. This may take up to several minutes, resulting in the following message: `loadbalance has been completed.`
10	Enable the Voice Gateway TNs of the former Leader card using LD 32. The command is: **`ENLC c`**

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Scenario 1: Software and system (pre-upgrade migration)" on page 173
2	Software and system (post-upgrade migration)	"Scenario 2: Software and system (post-upgrade migration)" on page 174
3	Software and system (coordinated cutover)	"Scenario 3: Software and system (coordinated cutover)" on page 174
4	Software and system (IP Line only)	"Scenario 4: Software and system (IP Line only)" on page 175
5	Software only	"Scenario 5: Software only" on page 175
6	System only (pre-upgrade migration)	"Scenario 6: System only (pre-upgrade migration)" on page 175
7	System only (post-upgrade migration)	"Scenario 7: System only (post-upgrade migration)" on page 176
8	System only (coordinated cutover)	"Scenario 8: System only (coordinated cutover)" on page 176
9	System only (IP Line only)	"Scenario 9: System only (IP Line only)" on page 176

Configuring IP Peer Virtual Trunks on the Call Server

Use this procedure to configure the IP Peer Virtual Trunks (IPP VTRK) as described in *Avaya IP Peer Networking Installation and Commissioning*

(NN43001-313) and to verify the correct configuration and operational state of the IP Peer VTRK.

Procedure 27
Configuring IP Peer Virtual Trunks on the Call Server

Step	Action
1	Configure the IP Peer Virtual Trunk according to *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313), section titled *"Configuring IP Peer networking."*
2	Verify the operational state of the IP Peer Virtual Trunk D-Channel in LD 96 using the command: **`STAT DCH <DCH No.>`**
3	Verify the operational state of the IP Peer Virtual Trunk Route, Members, and D-Channel using LD 32 and the following commands: • on the Call Server: **`STVT <Cust. No.> <Route No.> <Starting No.><No.of Members>`** **`DSRM <Cust. No.> <Route No.>`** **`ENRM <Cust. No.> <Route No.>`** • on the Signaling Server: **`oam> vtrkShow`**

Next steps

Upon completion of this procedure, choose one of the following:

For this scenario...		Go to...
1	Software and system (pre-upgrade migration)	"Accessing the NRS and configuring the Redirect Server" on page 200
2	Software and system (post-upgrade migration)	"Accessing the NRS and configuring the Redirect Server" on page 200
3	Software and system (coordinated cutover)	"Accessing the NRS and configuring the Redirect Server" on page 200
6	System only (pre-upgrade migration)	"Accessing the NRS and configuring the Redirect Server" on page 200
7	System only (post-upgrade migration)	"Accessing the NRS and configuring the Redirect Server" on page 200
8	System only (coordinated cutover)	"Accessing the NRS and configuring the Redirect Server" on page 200

SIP Redirect Server

Using the Session Initiation Protocol (SIP), a SIP Redirect Server connects Avaya Communication Servers.

CS 1000 Release 7.5 SIP Redirect Server allows SIP interoperability between the CS 1000 systems and other proxy servers. A SIP Redirect Server is always required for interoperability between two SIP devices. It provides address resolution for the Call Servers.

> ***Note:*** Currently, the Avaya Multimedia Communication Server (Avaya MCS 5100) system provides a proxy server; however, this system may not be part of the customer network.

Avaya has many products with a SIP interface. A Redirect Server is used to translate telephone numbers recognized by Enterprise Business Network (EBN) voice systems to IP addresses in the SIP domain. As a result, the Redirect Server interfaces with SIP-based products.

Building on the H.323 Gatekeeper, the SIP Redirect Server with CS 1000 Release 7.5 facilitates centralized dialing plan management and the configuration of the network routing information for the SIP domain.

The H.323 Gatekeeper and SIP Proxy can reside on the same Signaling Server. The data entry for the dialing plan is common for both the H.323 and SIP solutions. CS 1000 Release 7.5 also includes an enhanced Web interface for the SIP Redirect Server.

Redirect server functionality

A redirect server receives requests, but rather than passing these onto another redirect server, it sends a response back to the caller.

The originator sends an address resolution request to the redirect server. The redirect server performs a lookup to see if there is an address match in its database. The redirect server returns a response back to the originator indicating the address (if a match is found) required for the originator to call the called party. The originator uses the provided address and directly contacts the called party at the next server.

A redirect server receives SIP requests and responds with 3xx (redirection) responses, directing the client to contact an alternate set of SIP addresses. 3xx redirection responses provide information about the user's new location or about alternate services that must be able to satisfy the call.

Network Routing Service (NRS)

CS 1000 Release 7.5 includes the Networking Routing Service (NRS).

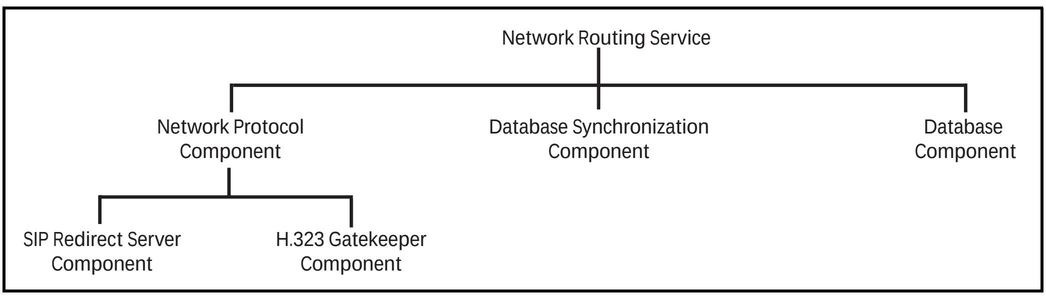
The NRS allows customers to manage a single network dialing plan for SIP, H.323, and mixed H.323/SIP networks.

The NRS is comprised of the following three components:

- network protocol component
- database synchronization component
- database component

Figure 16 shows a the NRS components.

Figure 16
NRS components



The NRS combines the following into a single application for network-based routing:

- SIP Redirect Server – Provides central dialing plan management/routing for SIP-based solutions. The Redirect Server is a software component of the NRS.
- H.323 Gatekeeper – Provides central dialing plan management/routing for H.323-based solutions. The H.323 Gatekeeper is a software component of the NRS.
- Network Connection Server (NCS) – The NCS is used for Virtual Office solutions. The IP Line Virtual Office/Avaya CS 1000 Media Gateway 1000 B (Avaya MG 1000B) feature depends on the H.323 Gatekeeper to act as the NCS for the purposes of routing a Virtual Office login to the proper home Terminal Proxy Server (TPS).

The NRS database also resides on the Signaling Server with the NRS applications (see Figure 17). Both the SIP Redirect Server and H.323 Gatekeeper have access to this endpoint/location database. The data is stored and organized in the database. The data is used by both the SIP Redirect Server and the H.323 Gatekeeper.

Figure 17
NRS components and database

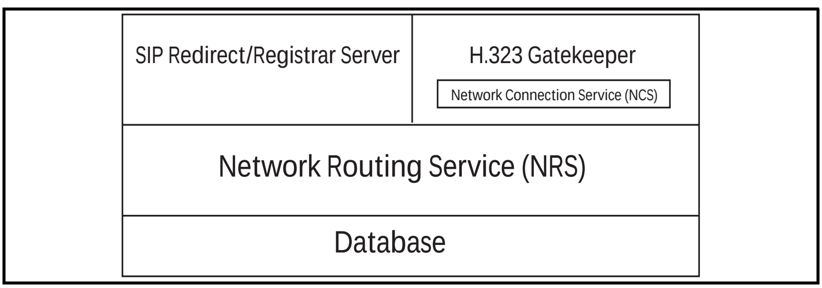
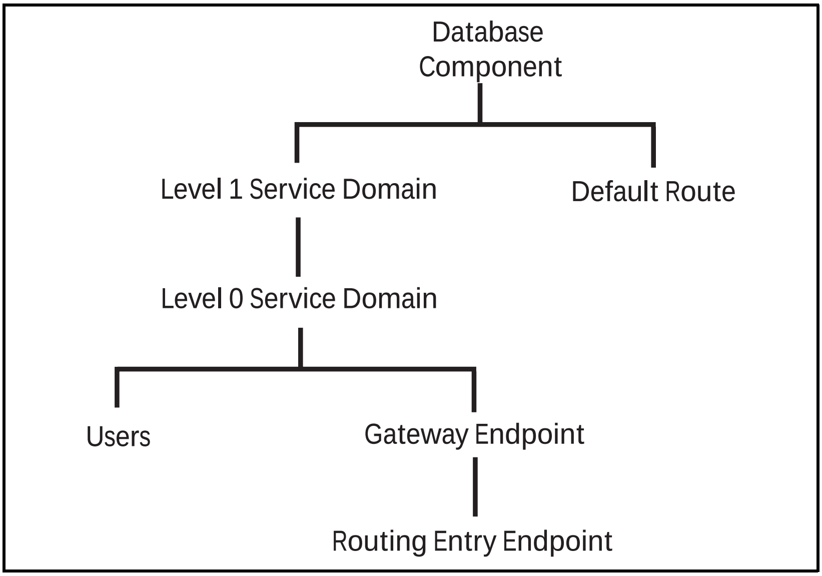


Figure 18 shows a hierarchical view of the database.

Figure 18
NRS database components



The NRS provides services to several service provider networks.

Capacity

The capacity of the NRS supports 5000 endpoints.

The maximum number of numbering plan entries for each server is 50 000.

The maximum number of busy hour call attempts is 500 000. This is a combination of calls through all three components: SIP Redirect Server, H.323 Gatekeeper, and the NCS.

Authentication

SIP provides improved security through authentication. CS 1000 Release 7.5 requires a username and password for accessing the database. The username and password are stored (in encrypted format) in the same database as the SIP Redirect Server or Proxy Server data.

Three types of access privileges are supported:

- Administrative privileges – Administrative users have full read/write privileges. An administrator can view and modify NRS server data.
- Observer privileges – Observers have read-only privileges. An observer can only view the Redirect/Proxy Server data.
- Database Password Change privileges – The database administrative login is used to control access to the NRS database engine. The only privilege the database administrative login has is the ability to change the database access password.

Redundancy

The NRS maintains the redundancy capabilities of backup and failsafe servers introduced with the H.323 Gatekeeper and extends these capabilities to the SIP domain.

Compatibility

The CS 1000 Release 7.5 H.323 Gatekeeper and NRS are backwards compatible with IP Trunk 3.01, and Succession 3.0 Line TPS Network Connect Service signaling for Virtual Office and Avaya MG 1000B. However, the CS 1000 Release 7.5 NRS is not compatible with the Succession 3.0 Failsafe Gatekeeper.

Web interface

A new Web interface has been developed for the NRS. The Web interface is common to both the H.323 Gatekeeper and the SIP Redirect Server.

The URL of the NRS has the following format:

http://[NRS_server_IP_address]/nrs/

Configuring NRS

To configure NRS for CS 1000 Release 7.5, see *Avaya Network Routing Service Fundamentals (NN43001-130)*.

When you configure NRS for CS 1000 Release 7.5:

- The Primary NRS must be standalone (i.e. no other applications).
- The Alternate NRS may be standalone, or may be coresident (i.e. running other applications) except for Personal Directory.
- Do not configure Failsafe NRS.
- If a Signaling Server has a Call Server defined on the same ELAN subnet, it can be managed by Element manager, even if it is standalone. For more information, see *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313).
- If a Signaling Server has no Call Server defined it can only be reconfigured using the Install Tool. For more information, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

If you install a new Primary or Alternate NRS, perform a complete installation. For more information, see *Avaya Network Routing Service Fundamentals (NN43001-130)*.

Accessing the NRS and configuring the Redirect Server

For more information about installing a new Primary or Alternate NRS, see *Avaya Network Routing Service Fundamentals (NN43001-130)*.

Using the Keycode Retrieval Utility

Contents

This chapter contains information about the following topics:

Introduction 201
Register for the KRS Web site 201
Access the KRS Web site 202

Introduction

The Keycode Retrieval Utility is an Avaya Customer Support service feature available to registered customers. The Keycode Retrieval Utility provides a full suite of online tools, services, resources and interactive capabilities.

The Keycode Retrieval Utility provides a tool for distributors to browse and retrieve keycodes. A distributor is considered to "own" a keycode once it has been manufactured and its associated order invoiced.

If you cannot access the Keycode Retrieval System (KRS) Web site, you must register for access and wait approximately 5 business days for the account to be activated before accessing the "Downloading keycodes" procedure.

Register for the KRS Web site

If you cannot access the KRS Web site, use the following procedure to register.

Procedure 28
Registering for the KRS Web site

1. Open your Web browser software.
2. Enter the URL http://support.avaya.com/krs in the Address or Net Site bar and press **Return** or **Enter**.
3. Follow the instructions provided to register or edit your registration profile.

End of Procedure

Access the KRS Web site

Perform the steps in this procedure only after completing the registration procedure above.

Procedure 29
Accessing the Keycode Retrieval System

1. Open your Web browser.
2. Enter the URL http://support.avaya.com/krs in the Address or Net Site bar and press **Return** or **Enter**.
3. Under Support & Training, Online Self-Service, click on the Keycode Retrieval link. See Figure 19 on page 203. You are now on the Keycode Retrieval page. See Figure 20 on page 204.
4. In Step 1, select a login location. See Figure 21 on page 205.
5. In Step 2, select the product family for the keycode access.
6. Click **Go.** The Keycode Retrieval System window opens. See Figure 23 on page 207.

Figure 19
Home page

Figure 20
Keycode Retrieval page

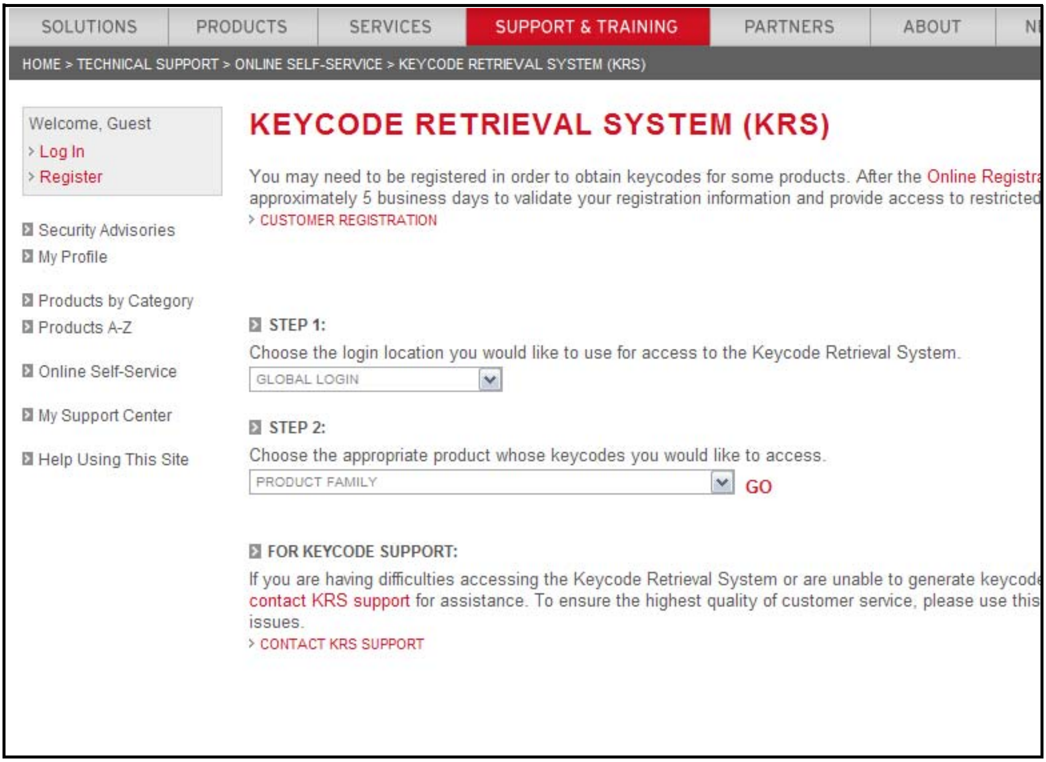


Figure 21
Login location selection (step 1)

Figure 22
Product family selection (step 2)

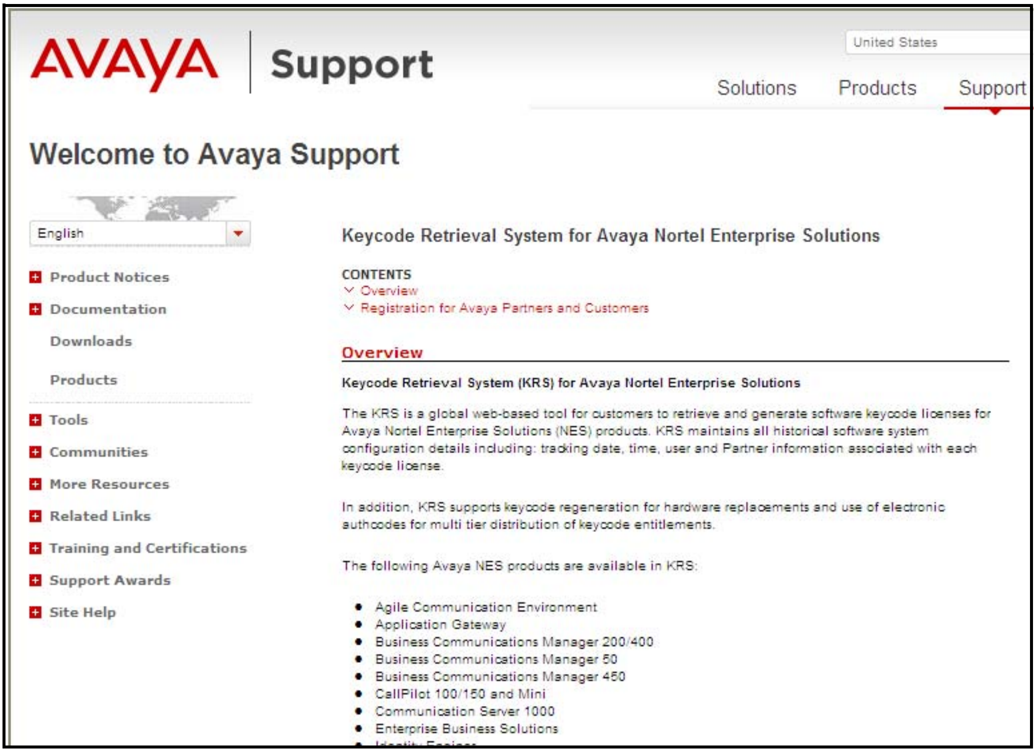
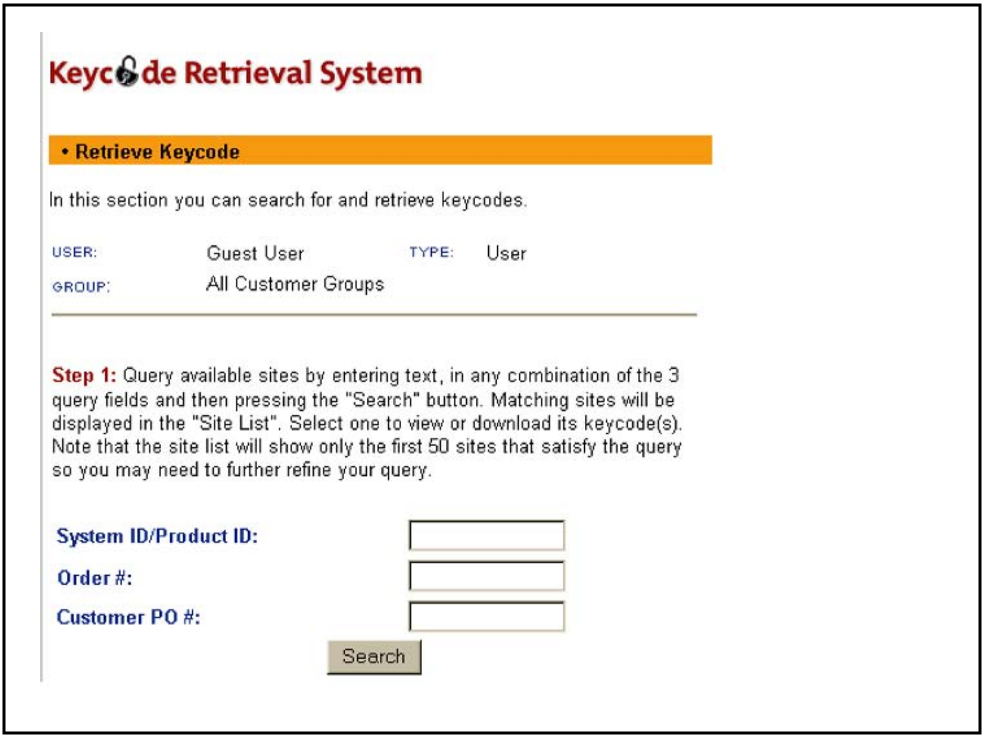


Figure 23
Keycode Retrieval System



Meridian 1 Keycode Retrieval System

Use the Keycode Retrieval System window to access the keycode application for the Meridian product line.

> *Note:* A registered user has access to all keycode applications for the various product lines displayed.

The following is a list of the Quick Links on the left of the Keycode Retrieval System window screen:

- **Retrieve by Site**. To specify a site ID and retrieve all keycodes for products associated with the entered site ID.

- **Retrieve by Product**. To view Site I.D.'s sorted by product type.
- **Retrieve by Date**. To retrieve all historic (previously produced) keycodes for a particular site ID.
- **Retrieve by Custom Set**. To retrieve previously "grouped" keycodes by a custom label created by the customer.
- **Edit Custom Set**. To edit (add or delete) the contents of a custom set of keycodes.
- **Compare**. To compare two keycodes of the same product type.
- **Terms and Conditions**. Legal disclaimers
- **Download KMT**. Links to a site where the latest version of the KMT can be downloaded to a PC desktop to manage keycodes. This client side application is only necessary for viewing downloaded keycodes when not connected to the Web site.
- **Support**. Provides the phone numbers or e-mail address for support.
- **Related Links**. Links to additional Avaya keycode related sites.
- **Feedback**. Pops up an e-mail reply to provide comments and suggestions back to the business owners of the KRS Web site.
- FAQ and What's New.

Replace NT4N46 Core/Net with NT4N41

Contents

This chapter contains information about the following topics:

Prepare for upgrade 210
Equipment requirements 224
Check personnel requirements 225
Install Core 1 hardware 225
Disable and remove equipment from Core 1 226
Cable Core 1 240
Power up Core 1 245
Complete the replacement 251

Prepare for upgrade

This document implements a source to target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes indicating what condition the system should be in at that stage of the upgrade. If the system is not in the proper condition steps should be taken to correct this.

Each section is written to maintain Dial Tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 19.

Table 19
Prepare for upgrade steps

Procedure Step	Page
Plan upgrade	211
Upgrade Checklists	211
Prepare	211
Identifying the proper procedure	212
Connect a terminal	213
Check the Core ID switches	214
Print site data	217
Perform a template audit	219
Back up the database (data dump)	221
Identify two unique IP addresses	223
Check requirements for cCNI to 3PE cables (NTND14)	223

Plan upgrade

Planning for an upgrade involves the following tasks:

- Read and understand the current release Product Bulletin.
- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure sufficient power for new columns/modules or applications.
- Identify all applications (CallPilot, SCCS, IP, etc.) that are currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.
- Review all product bulletins and Avaya Alerts that impact the site.
- Determine if software can be converted on site or must be sent to Avaya.
- Prepare a contingency plan for backing out of the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade Checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter on 653. Engineers may print this section in order to facilitate the upgrade.

Prepare

Preparing for an upgrade involves the following tasks:

- Identify and become familiar with all procedures.

- Verify that all installed applications meet the minimum software requirements for the target platform (see *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220)).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Determine the current patch or Dep lists installed at the source platform.
- Determine the required patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.
- Secure the source software and key code.
- Secure the target software and key code.
- Verify the new key code using the DKA program.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source to target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

> **IMPORTANT!**
>
> Database backup information should be preserved for a minimum of 5 days.

Connect a terminal

Procedure 30
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

2 The settings for the terminal are:

- **a.** 9600 Baud
- **b.** 8 data
- **c.** parity none
- **d.** 1 stop bit
- **e.** full duplex
- **f.** XOFF

3 If only one terminal is used for both Core or Core/Net modules, the terminal must be connected from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Check the Core ID switches

Procedure 31
Checking the Core ID switches

Each NT4N41 Core/Net card cage or module is identified as “Core 0” or “Core 1”. This setting is made by a set of option switches on the System Utility card. The Core ID switches are set in the factory. Confirm that these settings match the identification labels for the module into which they will be installed.

CAUTION — Service Interruption

System Failure

The Core/Net card cages MUST be installed in the correct Core 0 or Core 1 module.

1 Pull the System Utility card far enough out of its slot so you can see the ID switch settings.

2 Check and confirm the switch settings according to Table 20.

3 Reinstall the System Utility card.

- **a.** Gently slide the card into the slot until it makes contact with the backplane. Never force a card into the slot.
- **b.** Push in the top and bottom latches on the card to lock it in place.

End of Procedure

Table 20
Core module ID switch settings (System Utility card)

	Position 1	Position 2
Core 0	On	On
Core 1	Off	On

Figure 24
Core card placement in the NT4N41 Core/Net card cage (front)

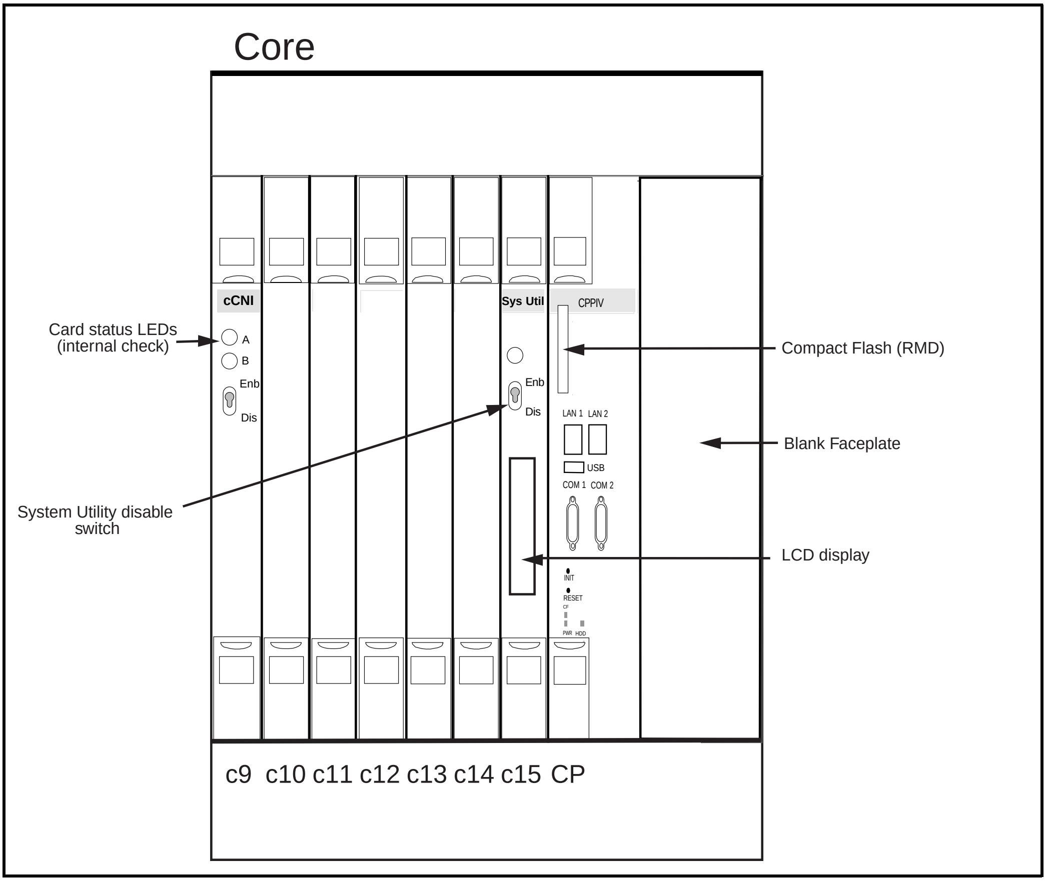


Figure 25
Core Module ID switch

Print site data

Print site data to preserve a record of the system configuration (Table 21). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 21
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>

Table 21
Print site data (Part 2 of 3)

Site data	Print command	
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>

Table 21
Print site data (Part 3 of 3)

Site data	Print command	
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya CS 1000 Media Gateway 1000E (Avaya MG 1000E)
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this overlay until the audit is complete. If the overlay is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**
•	
•	
TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

To back up CP PIV system data, perform a data dump to save all system memory to the hard disk.

If you are upgrading from a CP PII, perform an ABKO (attended backup) to save the database to a spare set of floppy disks. You can transfer the CP PII floppy backups to a RMD and restore to CP PIV. For more information, see “Software conversion” on page 69.

Performing a data dump

1 Log on to the system.

2 Load the Equipment Data Dump Program (LD 43). At the prompt, enter:

LD 43	Load program

3 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

4 The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

********	Exit program

End of Procedure

Procedure 32
Performing an ABKO (save the database to floppies)

1 Insert floppy disks into BOTH floppy disk drives in each CP PII Core MMDU.

Note: If the file is too large to fit on a single floppy disk, the ABKO command will compress the data. If the compressed data is still too large to fit on a single disk, both floppy disks in the two drives will be used. Be sure to insert floppy disks into BOTH drives before you start the ABKO backup.

2 Load the Customer Configuration Backup and Restore (LD 143). At the prompt, enter:

LD 143	Load program

3 Run the ABKO backup (LD 143).

ABKO	Run the backup

Result: If the backup is successful, the system displays a message that states that the database backup is complete and generates a report that indicates which floppy drives were used.

4 If there are validation errors, repeat the procedure.

CAUTION — Service Interruption

Loss of Data

If the backup is not successful, do not continue; contact your technical support organization. Any backup problems must be corrected before the system is upgraded to CP PIV.

5 Once the backup is complete, type:

********	Exit program

End of Procedure

Identify two unique IP addresses

Each system must be configured with two unique IP addresses for LAN identification and communication. One IP address is defined for the *active* Core. The second IP address is defined for the *inactive* Core. In this configuration, the *active* Core (either Core 0 or Core 1) that handles call processing is always identified by the same IP address.

- Contact your systems administrator to identify two unique IP addresses before the upgrade.

Check requirements for cCNI to 3PE cables (NTND14)

Existing NTND14 CNI to 3PE cables on Meridian 1 81 and 81C platforms using NT5D21 and/or NTND60 shelves can be reused if they meet the following conditions:

IMPORTANT!

When configuring NTND14 cables, observe the following rules:

- The shortest NTND14 Cable should always be used.
- A network group requires 4 NTND14 cables, 2 to each half group. Both cables to each half group must be the same length.
- A check should be made on the existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50' cables are manufacture discontinued.

For NTND14 cable lengths, see Table 22 on page 224

NTND14 CNI to 3PE cable connects CPU Core to Network shelf.

Table 22
NTND14 cable length

Cable	Length
NTND14BA	1.8 m (6 ft.)
NTND14BB	2.4 m (8 ft.)
NTND14BC	3.0 m (10 ft.)
NTND14BD	3.7 m (12 ft.)
NTND14BE	7.6 m (25 ft.)
NTND14BG	10.6 m (35 ft.)

Equipment requirements

This section describes the minimum equipment required to replace the Core/Net module. Some cards and cables are shipped in separate packages to prevent damage to the equipment. The required hardware must be ordered by piece and not by assemble. For order codes, see Table 23 on page 225.

Before you begin to replace equipment, check that the equipment listed on the order form is also listed on the packing slip. If any items are missing, contact your supplier for replacements before you begin the replacement.

WARNING

If any required equipment is missing, DO NOT proceed with equipment replacement. Instead, contact your supplier for replacements.

Table 23 describes the minimum hardware required to replace an NT4N46 CoreNet shelf with an NT4N41 Core/Net shelf.

Table 23
Required hardware

Order number	Description	Quantity per Core/Net Shelf
NT4N41	Core/Net Card Cage AC/DC	1*
NT4N48	System Utility Card	1*
NTND14	cCNI to 3PE cables	2**
NT4N39	CP PIV Call Processor	1***
NT4N65	cCNI Core Network Interface	1-4***

Note 1: *Assumes customer is replacing ONE Core/Network Card cage but not both.

Note 2: ** Two NTND14 cables are required for each Network shelf to connect to NT4N41 card cage. If more than 2 groups are configured, more NTND14 cables are required.

Note 3: ***Reuse from existing NT4N46 shelf.

Check personnel requirements

Avaya recommends that no fewer than two people perform a card cage replacement.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Install Core 1 hardware

In this section, the customer is assumed to be replacing a Core/Net 1 NT4N46 card cage. If you are replacing a Core/Net 0, care should be taken to change

Core/Net 0 to Core/Net 1. For information about customer supplied hardware in the NT4N46 Core/Net shelf, see Table 23 on page 225.

Procedure 33
Checking main Core card installation

1 If not already installed, install a P0605337 Card Slot Filler Panel in each slot. (Slots c13 and c14 are left empty.)

2 Check side ID switch settings for SU card in Core/Net 1 according to Table 24 below. (NT4N48 System Utility card is located in slot c15.)

Table 24
Core module ID switch settings (System Utility card)

	Position 1	Position 2
Core 0	On	On
Core 1	Off	On

End of Procedure

Check factory-installed cables

Table 25 lists factory-installed cables.

Table 25
Factory-installed cables

Order Number	Description	Quantity per Core/Net shelf
NT4N4405	Shelf Power Cable	1
NT4N89AA	System Monitor cable	1
NT4N29AA	CNI to 3PE cable	2

Disable and remove equipment from Core 1

See Table 23 on page 225 for minimum equipment requirements to replace the Core/Net module.

Procedure 34
Checking that Core 0 is active and split the cores

1 Verify that Core 0 is the active side performing call processing.

LD 135	Load program
STAT CPU	Obtain the status of the CPUs

2 If Core 1 is active, make Core 0 active.

SCPU	Switch to Core 0
********	Exit program

3 Split the cores.

LD 135	Load program
SPLIT CPU	Split call processing from Core 0 to Core 1
********	Exit program

Result: The system is now in split mode, with call processing on Core 0.

End of Procedure

Check that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	If necessary, switch to Clock Controller 0
DIS CC 1	Disable Clock Controller 1
********	Exit program

3 Faceplate disable Clock Controller 1.

End of Procedure

Check that Ring 0 is active

1 Check the status of Ring 0.

LD 39	Load program
STAT RING 0	Obtain the status of Ring 0 (Ring state should be HALF/HALF)

2 Disable Ring auto recovery.

LD 39	Load program
ARCV ON/ OFF	Set or reset autorecovery operation for ring

3 Swap to Ring 0.

LD 39	Load program
SWRG 0	Switch call processing to ring 0

4 Disable Ring 1.

LD 39	Load program
DIS RING 1	Disables all FIJI cards on side 1

End of Procedure

Software disable Network cards in Core/Net 1

CAUTION — Service Interruption

Service Interruption

At this point, the upgrade interrupts service.

Procedure 35
Software disabling cards in network slots of Core/Net 1

1 In Core/Net 1 only, software disable all network and I/O cards, such as XNET, TTY, Conf/XCT and ISDN cards:

a. In Core/Net 1 only, disable XNET.

LD 32	Load program
DISL sl	Disable XNET, where sl = the superloop number of the XNET card
********	Exit program

b. In Core/Net 1 only, disable ENET.

LD 32	Load program
DISL X	Disable ENET, where X = loop number of ENET card
********	Exit program

c. In Core/Net 1 only, software disable each port on the SDI cards:

LD 37	Load program
DIS TTY x	Disable port on SDI card, where x = the number of the interface device attached to a port
********	Exit program

d. In Core/Net 1 only**,** disable DTI cards.

LD 60	Load program
DISL x	Disable the DTI card, where x = the loop number of the DTI port
********	Exit program

e. In Core/Net 1 only, disable DCH and PRI cards.

LD 96	Load program
DIS DCH x	Disable DCH, where x = associated D-Channel
********	Exit program
LD 60	Load program
DISL x	Disable PRI card, where x = the loop number PRI port
********	Exit program

f. In Core/Net 1 only, disable MSDL cards.

LD 48	Load program
DIS MSDL x	Disable the MSDL card, where x = the MSDL card number. System will respond with group 0
********	Exit program

g. In Core/Net 1 only, disable XCT cards.

LD 34	Load program
DISX x	Disable the XCT card, where x = the superloop number of the XCT card
********	Exit program

2 In Core/Net 1 only, software disable the QPC43 Peripheral Signaling Card:

LD 32	Load program
DSPS x	Disable the QPC43 card. See Table 26 for Peripheral Signaling Card numbers
********	Exit program

Table 26
Peripheral Signaling Card numbers

Group/ shelf	Peripheral Signaling Card	Loops disabled/enabled
0 / 0	0	0–15
0 / 1	1	16–31

3 In Core/Net 1 only, faceplate disable the fiji, 3PE, PS and all network cards.

End of Procedure

Procedure 36
Removing the system monitors from Core 1

Note: This procedure applies to both AC and DC systems.

1 In Core 1, software disable the master system monitor (NT8D22).

LD 37	Load program
DIS TTY #	Disable the master system monitor TTY interface

2 Remove J3 and J4 cables on Core 1 system monitors.

Note: Do *not* turn off the blower units in the front of the pedestals.

3 Remove the system monitor from the rear of the pedestal on Core 1.

> **CAUTION — Service Interruption**
>
> **Service Interruption**
>
> The system can shut down if the system monitors are not removed. Remove the monitors and keep the cooling fans ON.

> **DANGER OF ELECTRIC SHOCK**
>
> In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

End of Procedure

Power down Core/Net 1

> **CAUTION — Service Interruption**
>
> **Service Interruption**
>
> Call processing is interrupted for approximately 60 minutes while the procedures are completed.

In AC-powered systems, set the MPDU circuit breaker located at the left end of the module to OFF (top position).

In DC-powered systems, set the breaker for the Core 1 module in the back of the column pedestal to OFF (down position).

Procedure 37
Removing Core 1 cables and card cage

1 Label and disconnect all cables from the front of the module.

2 Tape over the contacts to avoid grounding.

3 Tie all cables to the sides so the working area in front of the card cage is totally clear.

4 Remove the I/O safety panel by turning the screws on each side. Set the I/O safety panel aside.

5 Tag and disconnect all cables from the backplane to the interior of the I/O assembly.

6 Tag and disconnect all plugs, wires, and cables to the backplane.

Note 1: Leave the network cards in the card cage. You will relocate them to the NT4N41 card cage later in the upgrade procedure.

Note 2: Two people are needed to remove the Core card cage because of the weight of the card cage and its contents.

7 Use a 1/4” nut driver to remove the two mounting screws at the bottom rear of the card cage. The screws secure the card cage to the module casting. Keep the screws to use with the NT4N41 card cage.

CAUTION — Service Interruption

Do not drop the mounting screws into the pedestal. Doing so can cause serious damage.

8 Remove the front trim panels on both sides of the card cage.

9 Remove the three mounting screws that secure the front of the card cage to the bottom of the module. Keep the screws for use with the NT4N41 card cage.

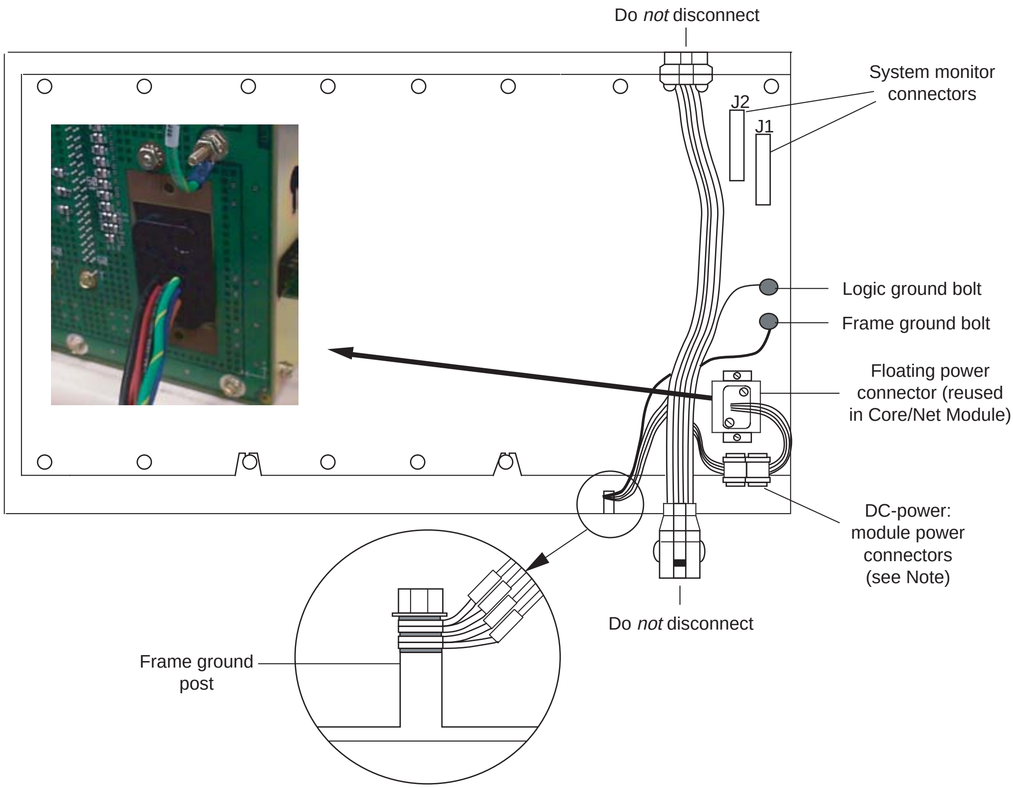
10 Pull the card cage forward until it is halfway out of the module.

11 Disconnect cables, plugs, and wires from the rear of the module to the backplane.

12 Remove the logic return (LTRN) (orange) wire from the backplane bolt. Be careful; do not drop the nut or lock washer into the pedestal. See Figure 26 below for DC power connectors; Figure 27 on page 235 for AC power connectors.

13 Remove the frame ground (FGND) (green) wire from the frame ground bolt on the module.

Figure 26
DC power connectors on the Core module backplane



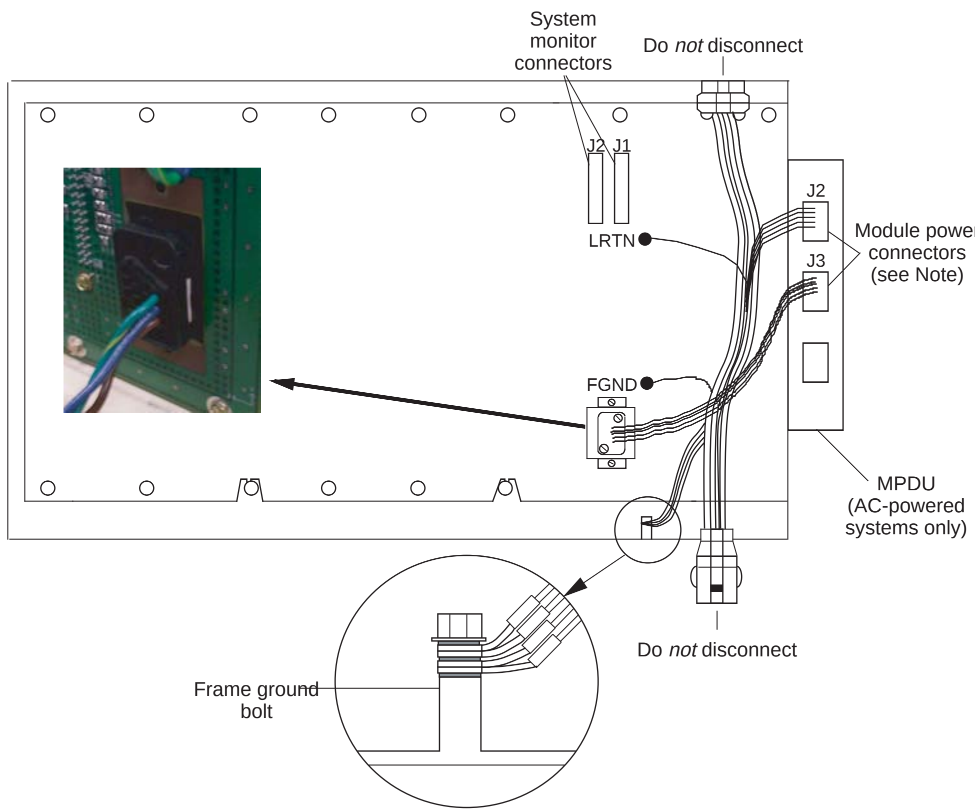
Note: With AC power, the module power connectors plug into J1 and J2 on the MPDU. (With DC power, they connect to each other and hang loose.)

14 Label and disconnect the module power connectors. These are small orange connectors plugged into the module power distribution unit (MPDU) in an AC-powered system, or connected to each other in a DC-powered system.

15 Label and disconnect the system monitor ribbon cables to J1 and J2.

16 Remove the Core card cage from the module.

Figure 27
AC power connectors on the Core module backplane



Note: AC-powered system shown. With DC power, module power connectors connect to each other.

17 Remove the power harness and reserve it for reinstallation when you install the new NT4N41 card cage. The power harness is located at the right rear lower corner and plugs into the rear of the power supply.

- For AC systems, relocate power harness NT8D80AM.
- For DC systems, relocate power harness NT7D11.

18 Reposition the EMI shield (it looks like a brass grill) in the base of the module. Tape over the front mounting tabs to hold the shield in position. You will remove the tape later.

WARNING

If you do not tape the EMI shield in position, you cannot install the card cage correctly.

19 In AC-power systems only, plug the module power cable (the short harness attached to the module power connector) into connector J3 on the MPDU. The MPDU is attached to the side of the card cage.

End of Procedure

CAUTION — Service Interruption

Damage to Equipment

Remove any debris (such as screws) that fell into the base of the UEM module.

Install the NT4N41 card cage in Core 1

Procedure 38
Installing the NT4N41 card cage in Core 1

1 Check that the card cage is configured as Core 1. See “Check the Core ID switches” on page 214 for instructions.

2 For AC-powered systems only, after the card cage is out of the module, do the following:

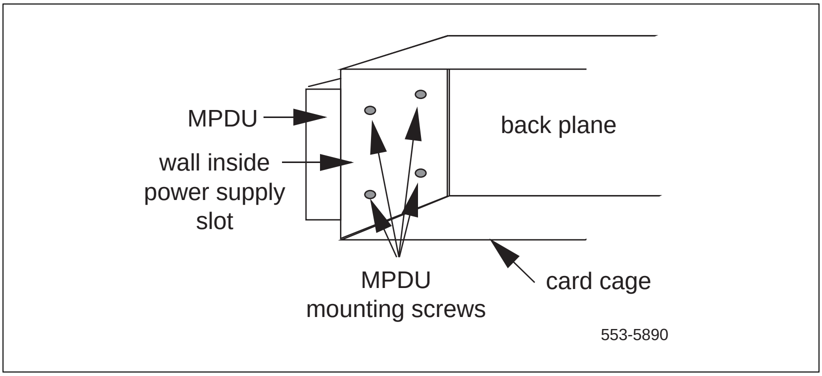
a. Remove the MPDU.

b. Reinstall the MPDU on the card cage.

c. Attach the new MPDU (part of the Upgrade kit) to the side of the NT4N41 card cage. The screws that secure the MPDU are accessible from the power supply slot, as shown in Figure 28 on page 237.

d. prethread two bottom mounting screws at the back of the Core/Net shelf.

Figure 28
Location of the screws for the MPDU



3 Check that the power harness at the right rear corner of the card cage has been transferred from the old card cage to the new card cage.

4 Slide the new NT4N41 card cage halfway into the module.

5 Hold the card cage firmly and make the following connections at the rear of the module.

a. In AC-powered systems, connect the remaining module power connectors to J2 on the MPDU. Then plug the module power cable (the short harness attached to the module power connector) into connector J3 on the MPDU (attached to the side of the card cage).

> **CAUTION — Service Interruption**
>
> **Damage to Equipment**
>
> Check for and remove any debris (such as screws) that may have fallen into the base of the UEM module.

b. In DC-powered systems, connect the module power connectors to each other. Then attach the system monitor ribbon cables. Connect the ribbon cable that goes down the column to connector J1 on the backplane. Connect the ribbon cable that goes up the column to J2 on the backplane.

c. Use a 11/32” socket wrench is used to attach the green ground wire to the frame ground bolt on the module. Remove the nut and the lock washer at the top of the bolt. Put the frame ground wire terminal over the bolt. Reinstall the top lock washer and the nut and then tighten down the nut.

Note: For all of the wire terminals to fit on the bolt, remove one of the lock washers. Leave one lock washer at the bottom of the bolt, leave a second lock washer at the top of the bolt, and a third lock washer between the second and third, or third and fourth, wire terminals.

d. Attach the orange logic return wire. Remove one nut and the lock washer from the LRTN bolt at the rear of the card cage. Put the wire terminal over the bolt, reinstall the lock washer and nut, then tighten down the nut. (You need a 1/4” socket wrench.)

6 Slide the new NT4N41 card cage completely into the module.

7 Check the position of the EMI shield. If the EMI shield has shifted, reposition it. Remove the tape holding the EMI shield.

8 preroute cables NT4N88AA, NT4N88BA and NT4N90BA before you secure the card cage.

a. Route cable NT4N88AA from COM1 on the Call Processor faceplate to J25 on the I/O panel. (NT4N88AA is used to connect a terminal.)

b. Route cable NT4N88BA from COM2 on the Call Processor faceplate to J21 on the I/O panel. (NT4N88BA is used to connect a modem.)

9 Route cable NT4N90BA from LAN 1 on the Call Processor faceplate to J31 (top) of the I/O panel.

10 Connect NTRC17BA crossover Cat5 Ethernet cable.

End of Procedure

Install the Security Device

The Security Device fits into the System Utility card. To install the Security Device, do the following.

1 Remove the original Security dongle from the Security Device holder on the System Utility Transition Card.

2 Insert the Security Device into the Security Device holder on the System Utility card with the “Avaya” side facing up. Do not bend the clip more than necessary.

3 Check that the Security Device is securely in place.

End of Procedure

Relocate Core and Network cards to CoreNet 1

Procedure 39
Relocating Core and Network cards to CoreNet 1

1 Move all Core cards from the NT4N46 card cage to the NT4N41 card cage.

2 Move all remaining Network cards from the NT4N46 card cage to the NT4N41 card cage.

3 Connect the tagged cables to the relocated cards.

End of Procedure

Cable Core 1

In Core 1, inspect factory installed cables

New NT4N29 cables must be installed for existing Network group 0. If the system has XSDI cards, reinstall the cards and attach the cables. Then inspect the system monitor cables (NT4N89).

Installing intermodule cables

Procedure 40
Installing intermodule cables

1. Connect the NT8D99AD and NT8D80BZ cables.
2. Install NT8D99AD cables between the D connectors on the backplane of each Core/Net module. Install another NT8D99AD cable between the E connectors on the backplane of each Core/Net module (see Figure 29 on page 241).
3. Install an NT8D80BZ cable between the J3 connector on the 3PE card in Core/Net 0 and the J3 connector on the 3PE card in Core/Net 1. Install another cable between the J4 connectors on the 3PE cards (see Figure 30 on page 242).

End of Procedure

Figure 29
Fanout Panel connections on the NT4N41 Core/Net backplane

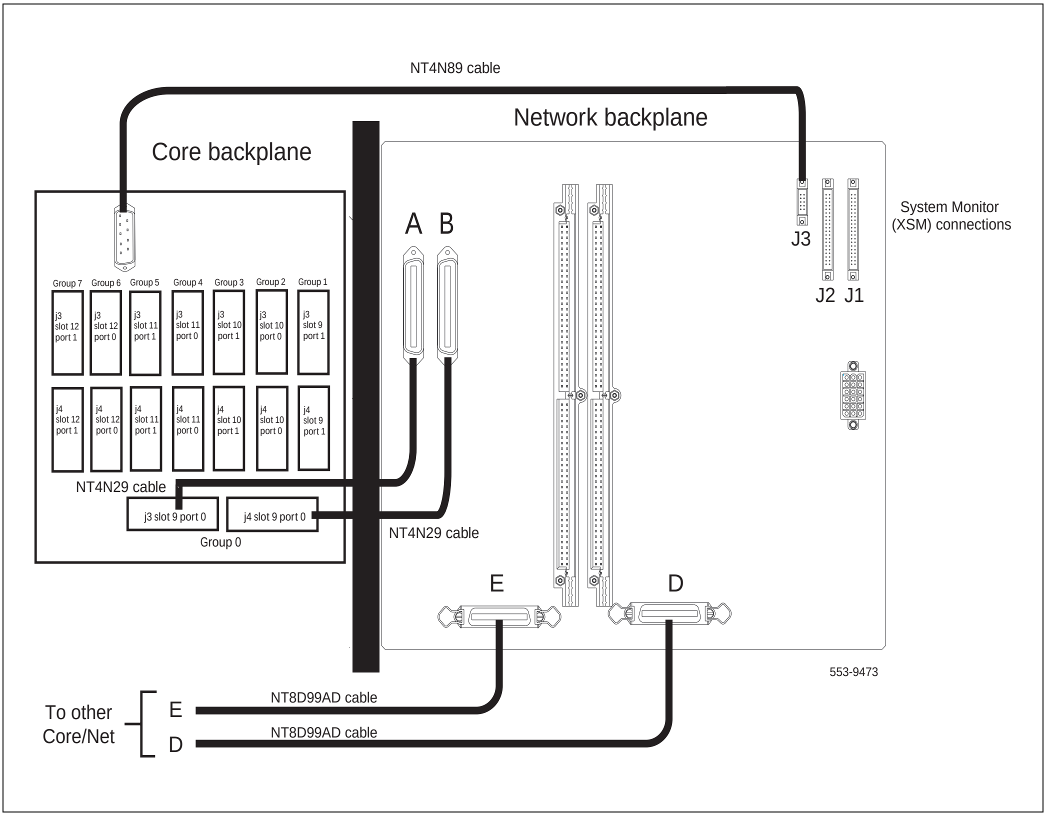


Figure 30
3PE card connections

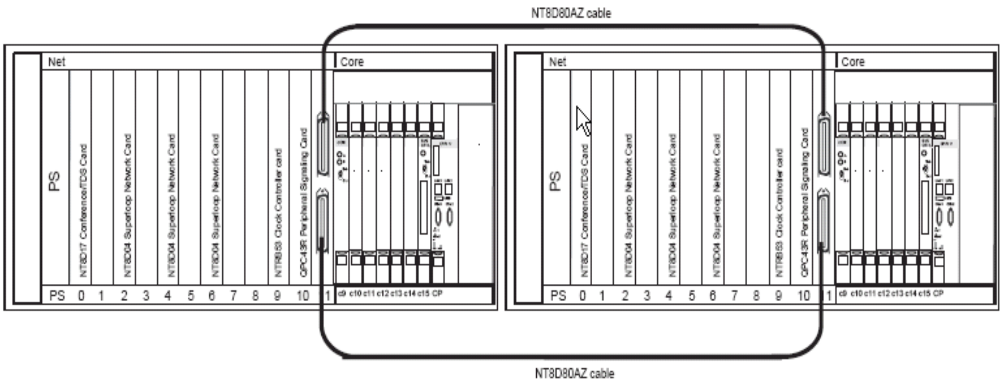
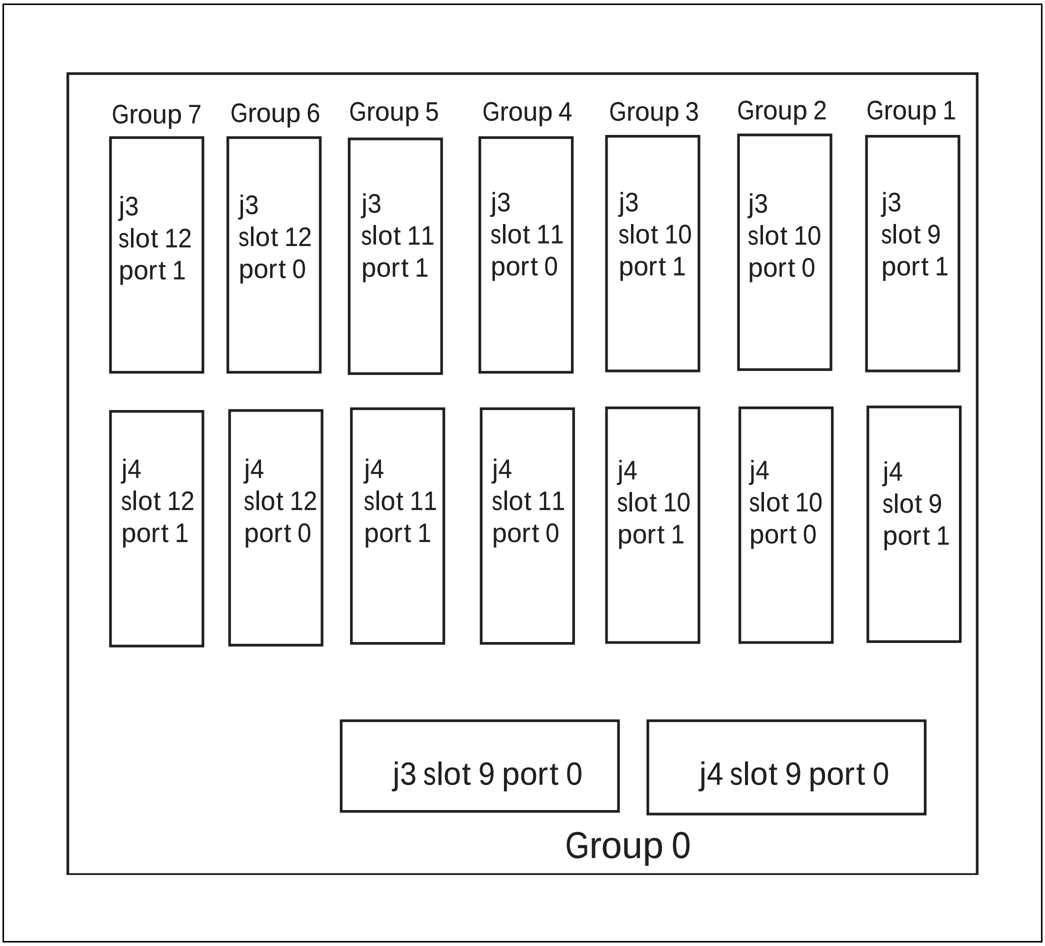


Figure 31
Connectors for CNI-3PE cables to the Fanout panel



In Core 1, route and connect the cCNI to 3PE (NTND14) cables

Each (NT8D35)Network shelf requires 2 NTND14 cables (for cCNI to 3PE connection) to a Core/Net Card cage. Cables are routed to a module beside the Core/Net module to allow for equipment removal. Once the NT4N46 card cage has been replaced with a new NT4N41 card cage, you can install the cables in the new Core/Net card cage.

1 Remove the existing NT8D76 cCNI to 3PE cables.

2 Label each cable at both ends with:

- Network group number
- Shelf 1 of the Network group
- J3 or J4 (of the 3PE card)

3 Route the NT4N14 cCNI to 3PE cables from the Side 1 3PE cards to a module above or adjacent to Core/Net 1.

Table 27
Fanout Panel to 3PE card connectors (Part 1 of 2)

Group Number	Fanout Panel connector	3PE card connector
0	**9-0, J3**	**A**
0	**9-0, J4**	**B**
1	**9-1, J3**	**J3**
1	**9-1, J4**	**J4**
2	**10-0, J3**	**J3**
2	**10-0, J4**	**J4**
3	**10-1, J3**	**J3**

Note: Group 0/shelf 1 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1.(see Figure 31 on page 243. Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 32 on page 246).

Table 27
Fanout Panel to 3PE card connectors (Part 2 of 2)

Group Number	Fanout Panel connector	3PE card connector
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4
Note: Group 0/shelf 1 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1.(see Figure 31 on page 243. Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 32 on page 246).		

End of Procedure

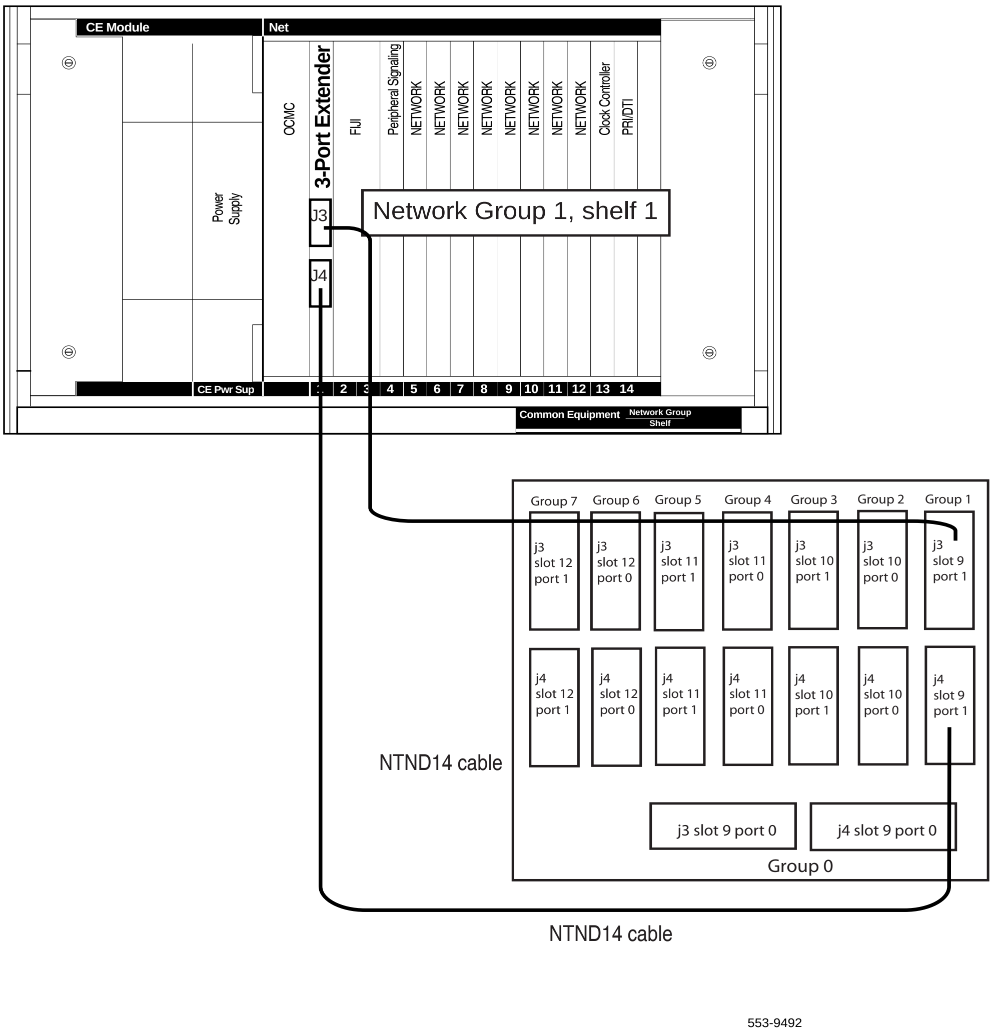
Power up Core 1

Procedure 41
Preparing for power up

1 Check that a terminal is connected to the J25 I/O panel connector (COM 1) on Core/Net 1.

Note: A maintenance terminal is required to access the Core/Net modules during the upgrade.

Figure 32
3PE Fanout Panel connections



2 Connect a terminal to the J25 port on the I/0 panel in Core 1.

3 Check the terminal settings as follows:

- **a.** 9600 Baud
- **b.** 8 data
- **c.** parity none
- **d.** 1 stop bit
- **e.** full duplex
- **f.** XOFF

Note: If only one terminal is used for both Cores, that terminal must be switched from side to side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

4 Faceplate *enable* the cCNI cards in Core 1.

End of Procedure

Procedure 42
Powering up Core 1

1 Power up the Core/Net Module.

2 Wait for the system to load/initialize.

3 Check that the Network and I/O cards have working power.

Result: CoreNet 1 should now come up with CoreNet 0 as Active Call processor.

End of Procedure

Reenable all network cards in CoreNet 1 from CoreNet 0

Reenable all network cards in CoreNet 1 from CoreNet 0 so full call processing can resume.

Procedure 43
Software enabling cards in network slots of Core/Net 1

1 In Core/Net 1 only, faceplate enable fiji, 3PE, PS and all network cards.

2 In Core/Net 1 only, software enable the QPC43 Peripheral Signaling Card:

LD 32	Load program
ENPS x	Enable the QPC43 card. See Table 28 below for Peripheral Signaling Card numbers
********	Exit program

Table 28
Peripheral Signaling Card numbers

Group/ shelf	Peripheral Signaling Card	Loops disabled/enabled		
0 / 0	0	0	–	15
0 / 1	1	16	–	31

3 In Core/Net 1 only, software enable all network and I/O cards such as XNET, TTY, Conf/XCT and ISDN cards:

a. In Core/Net 1 only, enable XNET.

LD 32	Load program
ENLL sl	Enable XNET, where sl = the superloop number of the XNET card
********	Exit program

b. In Core/Net 1 only, enable ENET.

LD 37	Load program
ENLL x	Enable ENET, where x = the loop number
********	Exit program

c. In Core/Net 1 only, software enable each port on the SDI cards:

LD 37	Load program
ENL TTY x	Enable each SDI port, where x = number of the interface devices attached to a port
********	Exit program

d. In Core/Net 1 only, enable DTI cards.

LD 60	Load program
ENLL x	Enable DTI card, where x = loop number
********	Exit program

e. In Core/Net 1 only, enable PRI cards.

LD 60	Load program
ENLL x	Enable PRI card, where x = loop number
********	Exit program

f. In Core/Net 1 only, enable MSDL cards.

LD 48	Load program
ENL MSDL x	Enable MSDL card, where x = MSDL card number. System will respond with group X
********	Exit program

g. In Core/Net 1 only, enable XCT cards.

LD 34	Load program
ENLX x	Enable XCT card, where x = the loop number of the XCT card
********	Exit program

End of Procedure

Enable Ring 1

Procedure 44
Software enabling Ring 1

1 Software enable ring 1:

LD 39	Load program
ENL RING 1	Enable all FIJI cards on ring (x = 0 or 1)
STAT RING x	Obtain status of ring on side x (x = 0 or 1)
RSET	Reset threshold for switchover functionality
RSTR	Restore ring
ARCV ON	Enable autorecovery operation for ring

2 Confirm ring is enabled and in Half/Half state:

LD 39	Load the program
STAT RING x	Obtain status of ring on side x (x = 0 or 1)
STAT ALRM x y FULL	Query status of all alarms (active and inactive) for FIJI card in group x, side y
********	Exit

3 Verify status of system clocks:

LD 60	Load the program
SSCK x	Obtain status of system clock (x = 0 or 1)
********	Exit

End of Procedure

Make the system redundant

Procedure 45
Making the system redundant

LD 135	Load program
JOIN	Join the 2 CPUs together to become redundant

Core/Net 1 will INI and become the inactive call processor.

End of Procedure

Complete the replacement

Test Core/Net 1

From Core/Net 1, perform the following tests.

1 Perform a redundancy sanity test:

LD 135	Load program
STAT CPU	Obtain status of CPU and memory
TEST CPU	Test the CPU

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs:

LD 135	Load program
TEST LCDs	Test LCDs
DSPL ALL	Display all

c. Check that the LCD display matches the software check.

3 Test the System Utility cards and the cCNI cards:

LD 135	Load program
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards
TEST SUTL	Test the System Utility (main and Transition) cards
STAT CNI c s	Obtain status of cCNI cards (core, slot)
TEST CNI c s	Test cCNI (core, slot)

4 Test system redundancy:

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	
TEST CMDU	Test the MMDU card

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load program
ENL TTY x	Enable the TTY, where x= system XMS
STAT XSM	Check the system monitors
********	Exit program

6 Clear the display and minor alarms on both Cores.

LD 135	Load program
CDSP	Clear the displays on the cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load program
SSCK *x*	To get the status of the clock controllers (*x* is "0" or "1" for Clock 0 or Clock 1
SWCK	Switch the Clock if necessary
********	Exit program

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock
SWCK	Switch the Clock again

8 Test the Fiber Rings

See the *Avaya Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

a. Check that the Fiber Rings operate correctly.

LD 39	Load program
STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state

c. Check that the Rings operate correctly:

STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

9 Check the status of the FIJI alarms

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups
****	Exit program

End of Procedure

Switch call processing

Procedure 46
Switching call processing

LD 135	Load program
SCPU	Switch call processing from CoreNet 0 to CoreNet 1

Core/Net 0 will INI and Core/Net 1 will become the active call processor.

End of Procedure

This concludes replacement of the NT4N46 Card Cage for Core/Net 1.

Verify that all system applications are active and functional (such as Avaya CallPilot and Symposium).

If the Core/Net 0 shelf is being replaced, repeat the procedures in this chapter for Core/Net 0.

Adding a Network Group (NT4N41)

Contents

This chapter contains information about the following topics:

Add a Core Network Group to Option 81C with FNF 256
Prepare for upgrade 257
Perform the upgrade 267
Add an NT8D35 Network Group to Option 81C with FNF 297
Prepare for upgrade 299
Perform the upgrade 310
Add a Core Network Group to Option 81C with IGS. 345
Prepare for upgrade 345
Perform the upgrade 355
Add an NT8D35 Network Group to Option 81C with IGS 378
Prepare for upgrade 378
Perform the upgrade 387
Postconversion procedure 413

Add a Core Network Group to Option 81C with FNF

Complete the following procedures to add a Network Group to the Core/Net module of a Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf.

The NT4N41 Core/Net shelf is factory configured with Network group 0 in the Core. Upgrades from Meridian Option 71 or Meridian Option 81 to Meridian Option 81C do not require Group 0 to be moved to the Core.

The Meridian 1 Option 81C CNI port to group number cannot be changed in software configuration. The NT4N29 cables must be connected to the proper group.

The Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf must meet the requirements of Product Bulletins P-2002-1658-NA and PAA-2003-0199-NA for firmware 19. Highlights of the bulletins include:

- NTRB53AA Clock Controller is required.
- The shortest fiber cable should always be used.
- The cables from group 0-1 must be the same length.
- The difference between the lengths of each fiber ring from group 0 to group 1 must not exceed 50 ft.

IMPORTANT!

Always use the shortest NTRC48 fiber cable.

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0.

The difference between the lengths of each fiber ring from group 0 to any other group must not exceed 50 ft. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional Network Group, fiber cables must be changed to adhere to the rules above.

To add a Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf:

- Clock Controller cards must be NTRB53AA.
- NTRB33 Fiber Junctor Interface (FIJI) card and the NTRE39 Optical Cable Management Card (OCMC) are added for FNF.
- NT4N65AC CNI card.

IMPORTANT!

When configuring NTND14 cables, observe the following rules:

- Always use the shortest NTND14 cable.
- A network group requires fourNTND14 cables, two to each half group. Both cables to each half group must be the same length.
- Check the existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50 ft. cables are manufacture discontinued.

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform, and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and to limit service interruptions.

Each section assumes any NT8D35 Network module installation is complete. For NT8D35 installation information see the *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

Before attempting any software or hardware upgrade field personnel must complete the steps in Table 29.

Table 29
Prepare for upgrade steps

Step	Page
Plan the upgrade	258
Upgrade checklists	259
Prepare	259
Identify the proper procedure	260
Connect a terminal	260
Print site data	261
Perform a template audit	264
Back up the database (data dump)	266

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications.
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Avaya Alerts that impact the site.
- Determine if software can be converted on site or must be sent to Avaya.
- Prepare a contingency plan if you abort the upgrade.

> **DANGER OF ELECTRIC SHOCK**
>
> In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers can print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Verify that current patch or Dep lists are installed at the source platform.
- Verify that the required patch or Dep lists are installed at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.

- Perform an inventory on required software and hardware.
- Secure the source software and keycode.
- Print site data.

Identify the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes can cause longer service interruptions.

IMPORTANT!

Preserve database backup information for a minimum of five days.

Connect a terminal

Procedure 47
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

2 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side to side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 30). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 30
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>

Table 30
Print site data (Part 2 of 3)

Site data	Print command	
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop

Table 30
Print site data (Part 3 of 3)

Site data	Print command	
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya CS 1000 Media Gateway 1000E (Avaya MG 1000E)
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

> ***Note:*** The template audit may take an extended period of time on Large Systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this LD until the audit is complete. If the LD is interrupted, data can be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**

TEMPLATE 0003 NO USERS FOUND

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 48
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump.

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

****	Exit the program.

> **IMPORTANT!**
>
> Preserve database backup information for a minimum of five days.

End of Procedure

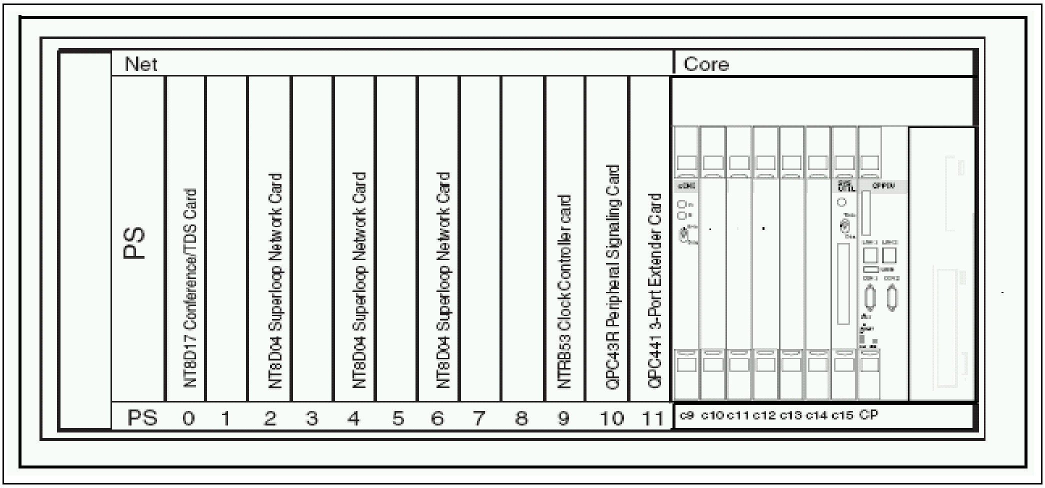
Perform the upgrade

Introduction

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/FNF equipped with an NT4N41 shelf.

Figure 33 on page 267 shows a Meridian 1 Option 81C/FNF (NT4N41).

Figure 33
CP PIV NT4N41 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for a system with FNF. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Do not proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- The NT4N65AC CNI card.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 31 describes the *minimum* equipment required to add a Core Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N41 shelf. Additional equipment for increased Network capacity must be ordered separately.

Table 31
Minimum equipment required to add a Core Network Group to an Option 81C/FNF equipped with an NT4N41 shelf

Order Number	Description	Quantity per system
NT8D80BZ	Cable, CPU Interface, 5 ft.	2
NT8D99AD	Cable, Network to Network, 6 ft.	2
NTRB33AC/AD	Card, Fibre Junctor Interface (FIJI)	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NT4N65AC	CNI card	(see Note)
NTRC48	FIJI fiber cable	4
NTRC47	FIJI to FIJI cable	1
Note: The quantity of CNI cards required is dependent on the system configuration.		

Tools

Table 32 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 32
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Route FIJI to FIJI cables

preroute an NTRC47AA cable between the FIJI cards in shelf 0 and shelf 1 of each added Network Group. See Figure 34 on page 274.

To minimize system downtime during the upgrade, all FIJI cables must be in place before the Network Groups are installed.

Note: Do not disconnect the existing Fiber cables.

Procedure 49
Label and route the shelf 0 fiber-optic cables (ascending)

Route the NTRC48 cables between the FIJI cards in each added Network shelf 0 in *ascending* order (Figure 34 on page 274).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

1 Start with shelf 0 in the current highest Network Group.

2 Label each cable on both sides with the appropriate connection information from Table 33 on page 272.

3 Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from the FIJI card in shelf 0 of the current highest Network Group, to the FIJI card in shelf 0 of the added Network Group.

4 If more than one Network Group is to be added, route a second NTRC48 cable of the appropriate length to shelf 0 of the second added group.

5 Continue to route NTRC48 cable of the appropriate length in *ascending* order between shelf 0 of each added Network Group.

6 To complete the Ring, route a final cable from the highest number group back to Group 0, shelf 0.

Table 33
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/0	P1	Tx - J1
1/0	P2	Rx - J2
1/0	P1	Tx - J1
2/0	P2	Rx - J2
2/0	P1	Tx - J1
3/0	P2	Rx - J2
3/0	P1	Tx - J1
4/0	P2	Rx - J2
4/0	P1	Tx - J1
5/0	P2	Rx - J2
5/0	P1	Tx - J1
6/0	P2	Rx - J2
6/0	P1	Tx - J1
7/0	P2	Rx - J2
7/0	P1	Tx - J1
0/0	P2	Rx - J2

End of Procedure

Procedure 50
Label and route the shelf 1 fiber optic cables (descending)

Route the NTRC48 cables between the FIJI cards in each Network shelf 1 in *descending* order (Figure 34 on page 274).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

Note 1: Do not disconnect FIJI cable.

Note 2: Each end of the NTRC48 cable is labeled “Tx” or Rx” in the factory.

1 Start with Group 0, shelf 1.

2 Label each cable on both sides with the appropriate connection information from Table 34 on page 275.

3 Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from shelf 1 of the FIJI card in Group 0, to the FIJI card in the added highest Network Group, shelf 1.

4 Route a NTRC48 cable from the FIJI card in the added highest Network Group, shelf 1 to the FIJI card in the second highest Network Group, shelf 1.

5 Continue to route NTRC48 FIJI Fiber Ring cables of the appropriate lengths between shelf 1 of each added Network Group. Route these cables in *descending* order of Network Groups.

6 Route a final cable to the current highest Network Group, shelf 1.

End of Procedure

Figure 34
Shelf 1 descending fiber-optic Ring (example)

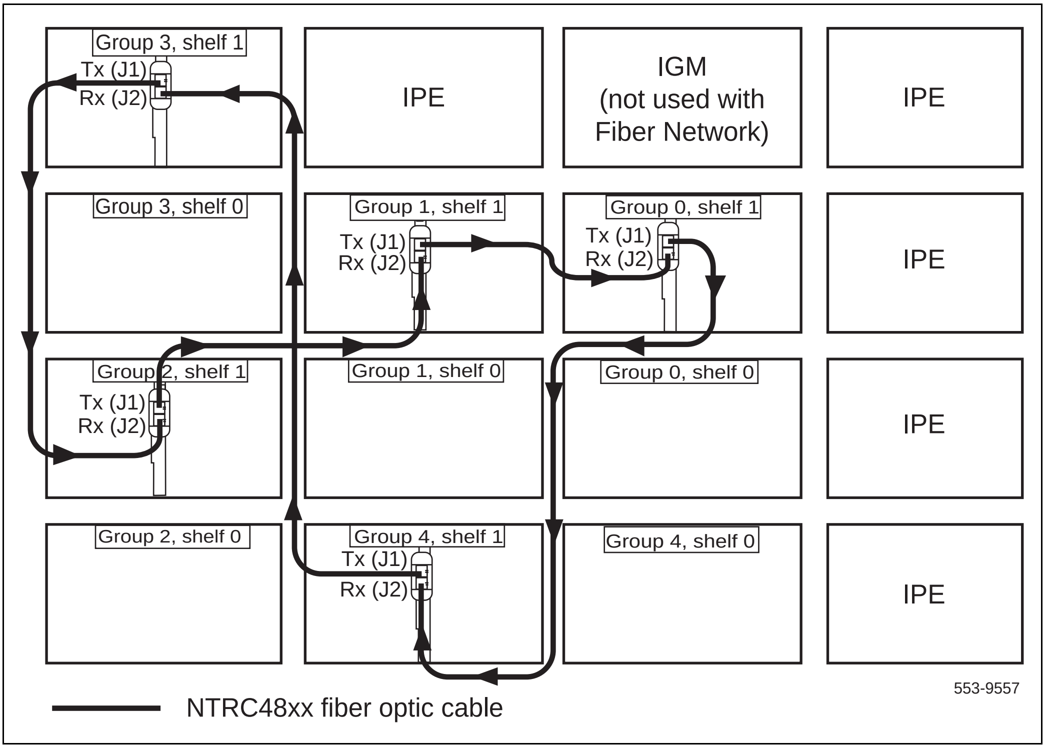


Table 34
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/1	P1	Tx - J1
7/1	P2	Rx - J2
7/1	P1	Tx - J1
6/1	P2	Rx - J2
6/1	P1	Tx - J1
5/1	P2	Rx - J2
5/1	P1	Tx - J1
4/1	P2	Rx - J2
4/1	P1	Tx - J1
3/1	P2	Rx - J2
3/1	P1	Tx - J1
2/1	P2	Rx - J2
2/1	P1	Tx - J1
1/1	P2	Rx - J2
1/1	P1	Tx - J1
0/1	P2	Rx - J2

Interconnect the Core/Net modules

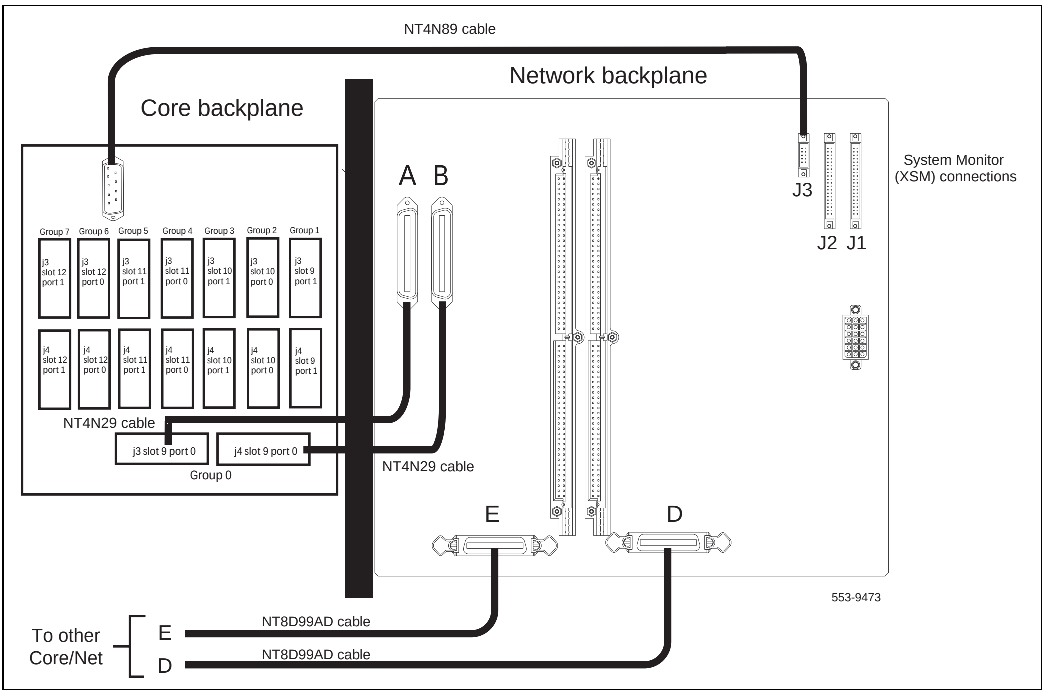
Procedure 51
Interconnecting the Core/Net modules

On the back of each Core/Net module backplanes are two connectors labeled D and E.

1. Connect the NT8D99AD cable from the D connector in shelf 0, to the D connector in shelf 1 of the NT4N41 Core/Net Module.
2. Connect the NT8D99AD cable from the E connector in shelf 0, to the E connector in shelf 1 of the NT4N41 Core/Net Module.

End of Procedure

Figure 35
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Add CNI cards if necessary

Procedure 52
Adding CNI cards

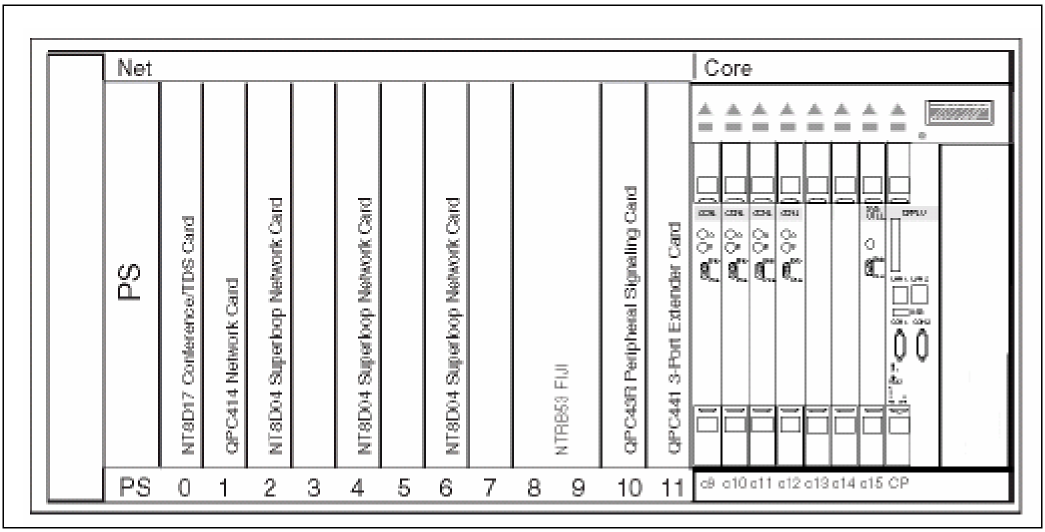
If additional CNI cards are required, add to each Core Module as required (see Figure 36 on page 277).

1 Faceplate disable CNI card.

2 Insert the card into Core/Net module, but do not seat the card into backplane at this time.

End of Procedure

Figure 36
NT4N41 Core/Net card cage



Connect the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE Fanout Panel.

If Network Group 0 will not be in the Core/Net module, reconfiguring of the processor module is required.

The NT4N41 shelf is factory installed with NT4N29 cables and is configured as group 0. If the Network portion of the Core/Net shelf is used as a higher Network Group, use the extraction tool to disconnect the NT4N29 cables from the Core backplane. Once the cables are disconnected, connect the cables to the appropriate group. For connector replacement, see Figure 37 on page 279 and Table 35 on page 278.

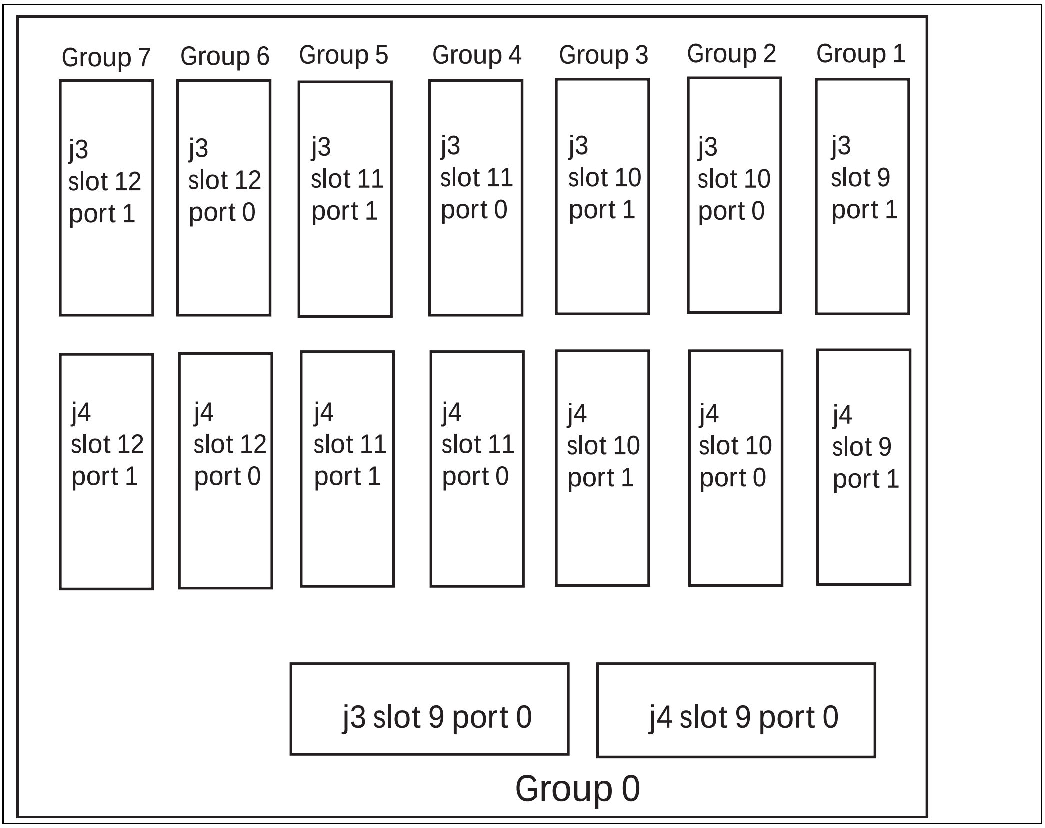
Table 35
Fanout Panel to 3PE card connectors

Group Number	Fanout Panel connector	3PE card connector
0	9-0, J3	A
0	9-0, J4	B
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

Note 1: Group 0 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1 (see Figure 37 on page 279).

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 37 on page 279).

Figure 37
3PE Fanout Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Install and enable the QPC441 3PE cards

Procedure 53
Installing the QPC441F 3PE cards.

1 Verify the 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 36 on page 281 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a 3PE card in slot 11 of each added Network module.

3 Seat the 3PE card and ensure it is faceplate disabled.

4 Attach the NT8D80BZ cables to the 3PE faceplates:

a. Attach the NT8D80BZ cable to the QPC441 3PE card J2 connector in shelf 0 to the QPC441 card J2 connector in shelf 1.

b. Attach the NT8D80BZ cable to the QPC441 3PE card J3 connector in shelf 0 to the QPC441 card J3 connector in shelf 1.

Table 36
QPC441 3PE Card installed in the NT4N41 Module

Jumper settings. Set Jumper RN27 at E35 to “A”.									
Switch Settings									
Module		D20 switch position							
NT4N41		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Core/Net 0 (Shelf 0)	Group 0	off	on	on	off	on	on	on	on
	Group 1	off	on	on	off	on	on	off	on
	Group 2	off	on	on	off	on	off	on	on
	Group 3	off	on	on	off	on	off	off	on
	Group 4	off	on	on	off	off	on	on	on
	Group 5	off	on	on	off	off	on	off	on
	Group 6	off	on	on	off	off	off	on	on
	Group 7	off	on	on	off	off	off	off	on
Core/Net 1 (Shelf 1)	Group 0	off	on	on	off	on	on	on	off
	Group 1	off	on	on	off	on	on	off	off
	Group 2	off	on	on	off	on	off	on	off
	Group 3	off	on	on	off	on	off	off	off
	Group 4	off	on	on	off	off	on	on	off
	Group 5	off	on	on	off	off	on	off	off
	Group 6	off	on	on	off	off	off	on	off
	Group 7	off	on	on	off	off	off	off	off

Note: Settings for the 3PE can be found in *Avaya Circuit card installation and testing* (553-3001-211).

End of Procedure

Procedure 54
Installing and enabling the Peripheral Signaling (Per Sig) cards

1. Install a QPC43R Per Sig card into slot 10 of each Core/Net module. Push the latches forward to lock the card in place.

2. Faceplate *enable* the cards.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Procedure 55
Disabling and inserting the FIJI cards

1. Faceplate *disable* the NTRB33AC/AD FIJI cards.

2. Insert the NTRB33AC/AD FIJI cards into slots 8 and 9 of each added Network module.

Do not plug the card into the backplane.

End of Procedure

Procedure 56
Disabling and inserting the NT8D17 Conf/TDS cards

If the NT8D17 Conf/TDS cards are used in the system, follow the procedures below.

1. Faceplate *disable* the NT8D17 Conf/TDS cards.

2. Insert a NT8D17 Conf/TDS card into each added Network module.

3. Seat the card and faceplate enable.

   Note: The NT8D17 Conference/XCT card is typically installed in slot 0 of the Core/Net module.

End of Procedure

Procedure 57
Installing new CNI cards if required

1 Faceplate *disable* new NT4N65AC CNI cards.

2 Insert a NT4N65AC CNI card on both cores.

Do not plug the card into the backplane.

End of Procedure

Adding the CNI cards or ports

> ***Note:*** CNI cards can be enabled and connected on the *inactive* Core only.

Core 0 is active, clock 0 is active, FIJI is half/half.

Perform these procedures to activate the added CNI ports.

Verifying Core/Net 0 is active.

1 Obtain the status of the CPUs. Verify that all common equipment is enabled.

LD 135	Load program.
STAT CPU	Obtain the status of both Core/Nets.

2 Ensure Core/Net 0 is active.

If Core/Net 1 is active, switch Core/Nets.

STAT CPU	Obtain the status of the Core/Nets.
SCPU	Switch to Core/Net 0.
********	Exit program.

3 Ensure Clock Controller 0 is active and tracking.

LD 60	Load program.
SSCK 0	Obtain the status of Clock 0.
SSCK 1	Obtain the status of Clock 1.
SWCK	Switch to Clock 0 (if necessary).

CP 0 is active, clock 0 is active, FIJI is half/half.

End of Procedure

Split the Cores

Procedure 58
Splitting the Cores

From Core 0 side, split the Cores.

LD 135	Load the program.
SPLIT	Split the Cores.
********	Exit the program.

Add new group in software on the inactive core

Procedure 59
Adding new group

1 In Core 1, define the XCT and extenders in the added group.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	Exit the program.
LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

Table 37 on page 286 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 37
CNI Network group designations

CNI card slot	CNI card port	3PE Fanout Panel label	Connected to Network group
c9	0	Port 9-0	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

End of Procedure

Procedure 60
Checking that Ring 0 is active in Core 0

1 Check the status of Ring 0.

LD 39	Load program.
STAT RING 0	Obtain the status of Ring 0 (Ring state should be half/half).

2 Disable Ring auto recovery.

LD 39	Load program.
ARCV OFF	Set or reset autorecovery operation for ring.

3 Swap to Ring 0.

LD 39	Load program.
SWRG 0	Swing traffic to ring 0.

4 Disable Ring 1.

LD 39	Load program.
DIS RING 1	Disable all FIJI cards on side 1.

WARNING

Cable Ring 1 to new network shelf only.

5 Seat the remaining cards (3PE, PER SIG, XCT, FIJI) in both network modules.

Note: Cards must be faceplate disabled before seating.

6 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and FIJI).

7 Break Ring 1 and cable the added FIJI cards. Ring 1 is descending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

8 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

9 In LD 135 switch Cores.

LD 135	Load the program.
CUTOVR	Switch Cores.

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active, FIJI ring 1 is full, FIJI ring 0 is none.

Note 1: On FNF based systems after the INI, a FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring; downloading up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process does not affect service. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note 2: Wait for new ring state change message to appear before proceeding:

```
New State Ring 0 None
          Ring 1 Full
```

10 Switch the clock controllers, if necessary:

LD 60	Load the program.
SSCK n	Obtain status of clock n where: n = 0 for clock controller 0 1 for clock controller 1
SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	Exit the program.

11 Disable Ring 0.

LD 39	Load the program.
DIS RING 0	Disables all FIJI cards on side 0.
********	Exit the program.

12 Break Ring 0 and cable the added FIJI cards. Ring 0 is ascending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

13 In LD 39, enable and stat Ring 0.

LD 39	Load the program.
ENL Ring 0	Enable Ring 0.
Stat Ring 0	Status of Ring x.
********	Exit the program.

> The system is in split mode with Core 1 active, Clock 1 active, and FIJI half and half.

14 **In Core 0 only,** define the XCT and Extenders to the added group.

Note: See Table 37 on page 286.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

<cr>	Continue to the last prompt.
********	Exit the program.

15 Data dump the software changes.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

16 Seat the CNI card in Core 0 and faceplate enable it.

17 In Core 1, Stat the CNIs.

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	Exit the program.

End of Procedure

Test the Cores

Procedure 61
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x = system XMS.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1).
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings.

See the *Avaya Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
********	Exit program.

10 Check applications.

11 Check for dial tone.

End of Procedure

Switch call processing

1 Seat new CNI cards, faceplate enable.

2 Check that all new cards are seated and faceplate enabled (CNI, FIJI, PS and XCT).

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

Procedure 62
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain the status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.

STAT XSM	Check the system monitors.
****	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135

CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings.

For more information about LD 39 commands, see *Avaya Software Input/ Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
****	Exit program.

10 Check applications such as Avaya CallPilot and Symposium.

11 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the “Postconversion procedure” on page 413.

Add an NT8D35 Network Group to Option 81C with FNF

Complete the following procedure to add an NT8D35 Network Group to the Core/Net module of a Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf.

The NT4N41 Core/Net shelf is factory configured with Network group 0 in the Core. Upgrades from Meridian Option 71 or Meridian Option 81 to Meridian Option 81C do not require Group 0 to be moved to the Core.

The Meridian 1 Option 81C CNI port to group number cannot be changed in software configuration. The NT4N29 cables must be connected to the proper group.

The Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf must meet the requirements of Product Bulletins P-2002-1658-NA and PAA-2003-0199-NA for firmware 19. Highlights of the bulletins include:

- NTRB53AA Clock Controller is required.
- The shortest fiber cable should always be used.
- The cables from group 0-1 must be the same length.
- The difference between the lengths of each fiber ring from group 0 to group 1 must not exceed 50 ft.

IMPORTANT!

The shortest fiber cable must always be used (NTRC48).

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0.

The difference between the lengths of each fiber ring from group 0 to any other group must not exceed 50 ft. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional Network Group, fiber cables must be changed to adhere to the rules above.

To add a Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N41 Core/Net shelf:

- The Clock Controller cards must be NTRB53AA.
- The NTRB33 Fiber Junctor Interface (FIJI) card and the NTRE39 Optical Cable Management Card (OCMC) are added for FNF.

- NT4N65AC CNI card.

IMPORTANT!

When configuring NTND14 cables, observe the following rules:

- The shortest NTND14 Cable should always be used.
- A network group requires 4 NTND14 cables, 2 to each half group. Both cables to each half group must be the same length.
- A check should be made on the existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50 ft. cables are manufacture discontinued.

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade, field personnel must complete the steps in Table 38.

Table 38
Prepare for upgrade steps

Step	Page
Plan the upgrade	300
Upgrade checklists	301
Prepare	301
Identifying the proper procedure	302
Connect a terminal	302
Print site data	303
Perform a template audit	306
Back up the database (data dump)	308

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications.
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Avaya Alerts that impact the site.
- Prepare a contingency plan if you abort the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers can print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Verify that the current patch or Dep lists are installed at the source platform.
- Verify that the required patch or Dep lists are installed at the target platform.
- Determine and communicate the required maintenance window, contingency plan, and the impact to the customer to complete the procedure.

- Perform an inventory on required software and hardware.
- Secure the source software and keycode.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

Connect a terminal

Procedure 63
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

2 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side to side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 39). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 39
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>

Table 39
Print site data (Part 2 of 3)

Site data	Print command	
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>

Table 39
Print site data (Part 3 of 3)

Site data	Print command	
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

> ***Note:*** The template audit may take an extended period of time on Large Systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**
•	
•	
TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 64
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump.

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

****	Exit the program.

End of Procedure

IMPORTANT!

Preserve database backup information for a minimum of five days.

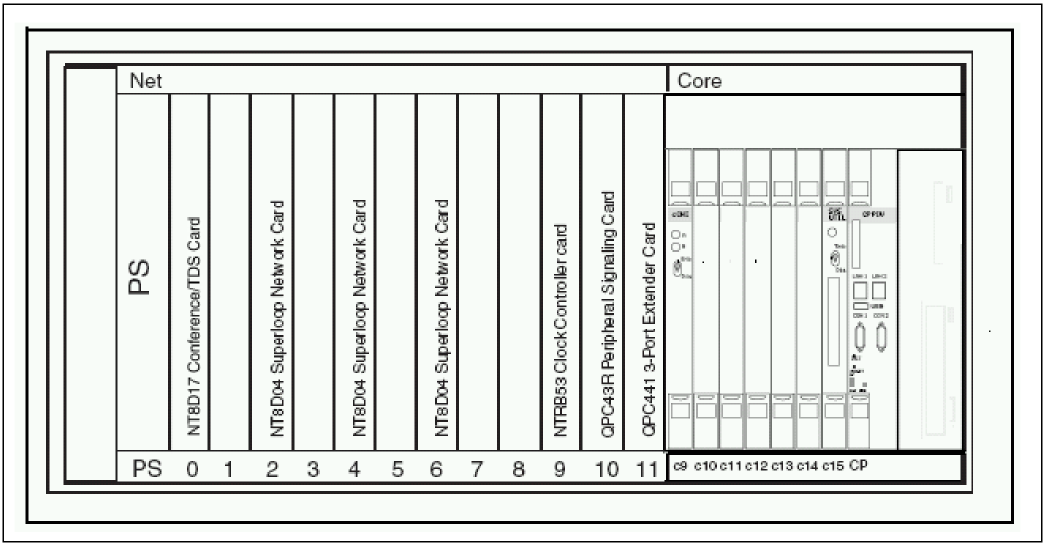
Perform the upgrade

Introduction

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/FNF equipped with an NT4N41 shelf.

Figure 38 shows a Meridian 1 Option 81C/FNF (NT4N41).

Figure 38
CP PIVNT4N41 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for a system with FNF. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Do not proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- NT4N65AC CNI card Vintage AC.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 40 describes the *minimum* equipment required to add a Core Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N41 shelf. Additional equipment for increased Network capacity must be ordered separately.

Table 40
Minimum equipment required to add a Core Network Group to an Option 81C/FNF equipped with an NT4N41 shelf

Order Number	Description	Quantity per system
NT8D99AB	Cable, Network to Network, 2 ft.	2
NTRB33AC/AD	Card, Fibre Junctor Interface (FIJI)	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NTRC48	FIJI fiber cable	4
NTRC47	FIJI to FIJI Cable	1
NT8D35	Network Module	5
NTND14	CNI to 3PE cable	4
NT4N65AC	CNI card	(see Note)
Note: The quantity of CNI cards required is dependent on the system configuration.		

Tools

Table 41 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 41
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Route FIJI to FIJI cables

preroute an NTRC47AA cable between the FIJI cards in shelf 0 and shelf 1 of each added Network Group. See Figure 38 on page 310.

To minimize system downtime during the upgrade, all FIJI cables must be in place before the Network Groups are installed.

> ***Note:*** Do not disconnect the existing Fiber cables.

Procedure 65
Labeling and routing the shelf 0 fiber optic cables (ascending)

Route the NTRC48 cables between the FIJI cards in each added Network shelf 0 in *ascending* order (Figure 39 on page 317).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

1 Start with shelf 0 in the current highest Network Group.

2 Label each cable on both sides with the appropriate connection information from Table 42 on page 315.

3 Route an NTRC48 FIJI Fiber Ring cable of the appropriate length from the FIJI card in shelf 0 of the current highest Network Group, to the FIJI card in shelf 0 of the added Network Group.

4 If more than one Network Group is to be added, route a second NTRC48 cable of the appropriate length to shelf 0 of the second added group.

5 Continue to route the NTRC48 cable of the appropriate length in *ascending* order between shelf 0 of each added Network Group.

6 To complete the Ring, route a final cable from the highest number group back to Group 0, shelf 0.

Table 42
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/0	P1	Tx - J1
1/0	P2	Rx - J2
1/0	P1	Tx - J1
2/0	P2	Rx - J2
2/0	P1	Tx - J1
3/0	P2	Rx - J2
3/0	P1	Tx - J1
4/0	P2	Rx - J2
4/0	P1	Tx - J1
5/0	P2	Rx - J2
5/0	P1	Tx - J1
6/0	P2	Rx - J2
6/0	P1	Tx - J1
7/0	P2	Rx - J2
7/0	P1	Tx - J1
0/0	P2	Rx - J2

End of Procedure

Procedure 66
Labeling and routing the shelf 1 fiber optic cables (descending)

Route the NTRC48 cables between the FIJI cards in each Network shelf 1 in *descending* order (Figure 39 on page 317).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

Note: Each end of the NTRC48 cable is labeled “Tx” or Rx” in the factory.

1. Start with Group 0, shelf 1.
2. Label each cable on both sides with the appropriate connection information from Table 43 on page 318.
3. Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from shelf 1 of the FIJI card in Group 0, to the FIJI card in the added highest Network Group, shelf 1.
4. Route a NTRC48 cable from the FIJI card in the added highest Network Group, shelf 1 to the FIJI card in the second highest Network Group, shelf 1.
5. Continue to route NTRC48 FIJI Fiber Ring cables of the appropriate lengths between shelf 1 of each added Network Group. Route these cables in *descending* order of Network Groups.
6. Route a final cable to the current highest Network Group, shelf 1.

End of Procedure

Figure 39
Shelf 1 descending fiber-optic Ring (example)

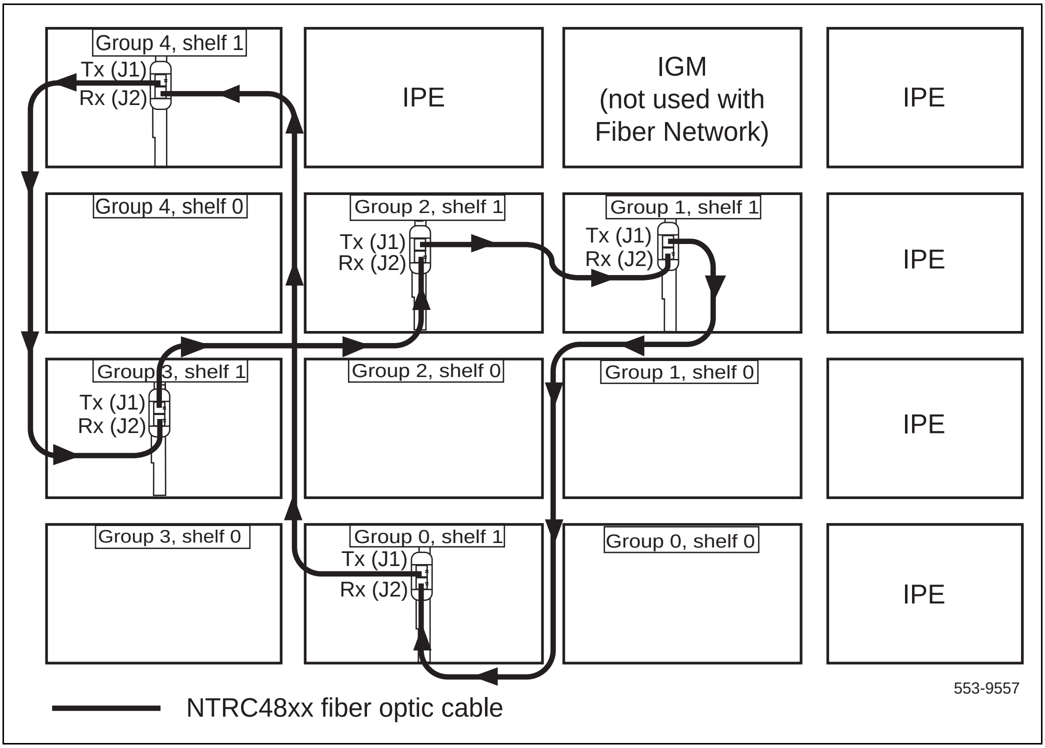


Table 43
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/1	P1	Tx - J1
7/1	P2	Rx - J2
7/1	P1	Tx - J1
6/1	P2	Rx - J2
6/1	P1	Tx - J1
5/1	P2	Rx - J2
5/1	P1	Tx - J1
4/1	P2	Rx - J2
4/1	P1	Tx - J1
3/1	P2	Rx - J2
3/1	P1	Tx - J1
2/1	P2	Rx - J2
2/1	P1	Tx - J1
1/1	P2	Rx - J2
1/1	P1	Tx - J1
0/1	P2	Rx - J2

Procedure 67
Interconnecting the network modules

> ***Note:*** The back of each network module backplane has five connectors: A, B, C, D and E. See Figure 40 on page 320. The shelf 0 connectors in Network groups 1 through 7 must be connected to the shelf 1 connectors of the Network groups 1 through 7. For example, for Network group 1, the shelf 0 connector must be connected to the shelf 1 connector.k group. To add modules to a system, see *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

1 Connect an NT8D99AB cable from the A connector in shelf 0 of Network group 1 to the A connector in shelf 1 Network group 1.

2 Connect the B connector in shelf 0 to the B connector in shelf 1.

3 Connect the C connector in shelf 0 to the C connector in shelf 1.

4 Connect the D connector in shelf 0 to the D connector in shelf 1.

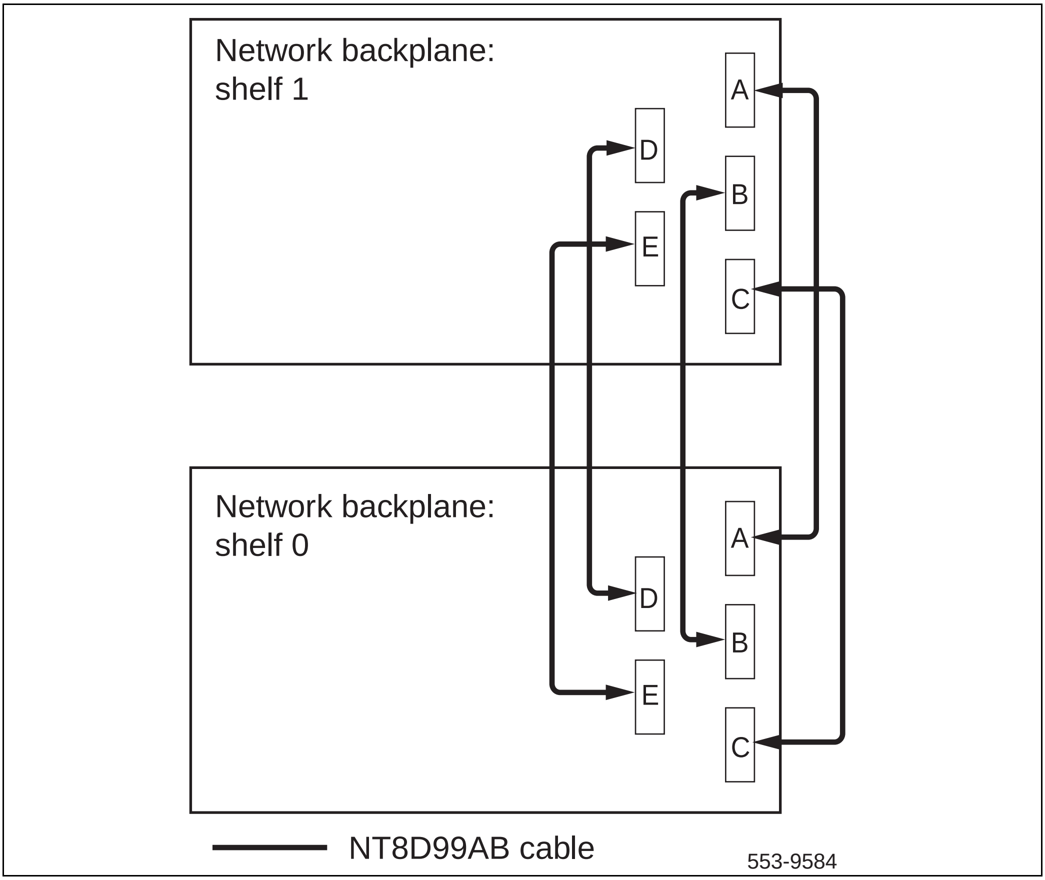
5 Connect the E connector in shelf 0 to the E connector in shelf 1.

6 Connect the A, B, C, D, and E connectors between shelf 0 and shelf 1 for all other Network groups in the system (except group 0).

> ***Note:*** All connections are made with an NT8D99AB cable.

End of Procedure

Figure 40
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Add CNI cards if necessary

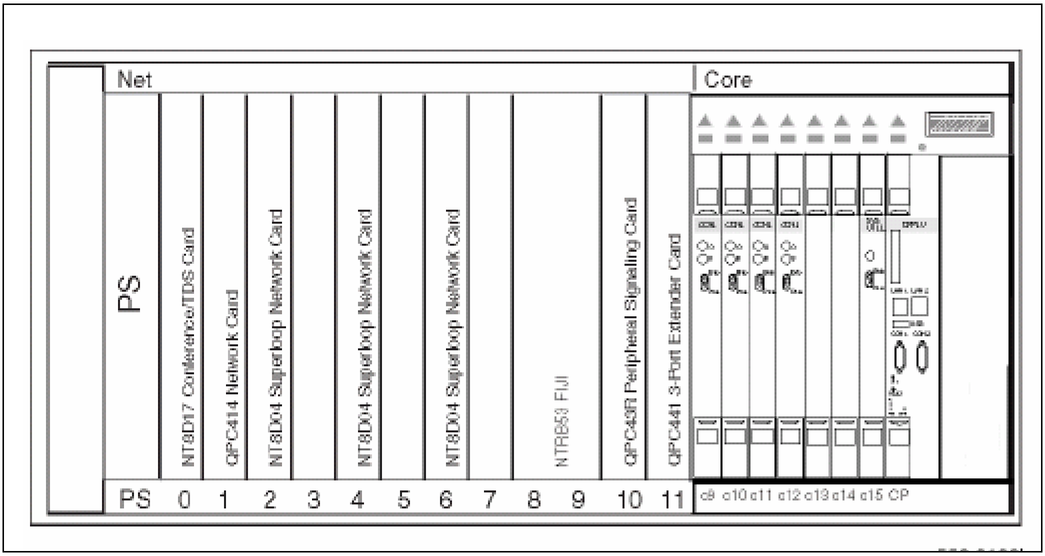
Procedure 68
Adding CNI cards if necessary

1 Faceplate *disable* the CNI card.

2 Place the card in the proper slot location but do not seat the cards.

If additional CNI cards are required, add to each Core Module as required (see Figure 41).

Figure 41
NT4N41 Core/Net card cage



Procedure 69
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE Fanout Panel.

> ***Note:*** See Table 44, Figure 42 on page 324, and Figure 43 on page 325 for NT4N14 cable connections.

1 Connect the NTND14 cables to J3 and J4 of the 3PE cards.

2 Connect the NTND14 cables to the Fanout Panel in the Core/Net.

Table 44
Fanout Panel to 3PE card connectors

Group Number	Fanout Panel connector	3PE card connector
0	9-0, J3	A
0	9-0, J4	B
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

Note 1: Group 0 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1. See Figure 37 on page 279.

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1. See Figure 37 on page 279.

IMPORTANT!

When configuring the NTND14 cables, observe the following rules:

- Always use the shortest NTND14 cable.
- A network group requires four NTND14 cables, two to each half group. Both cables to each half group must be the same length.
- Check the existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50 ft. cables are manufacture discontinued.

End of Procedure

Figure 42
3PE faceplate to 3PE Fanout Panel connection

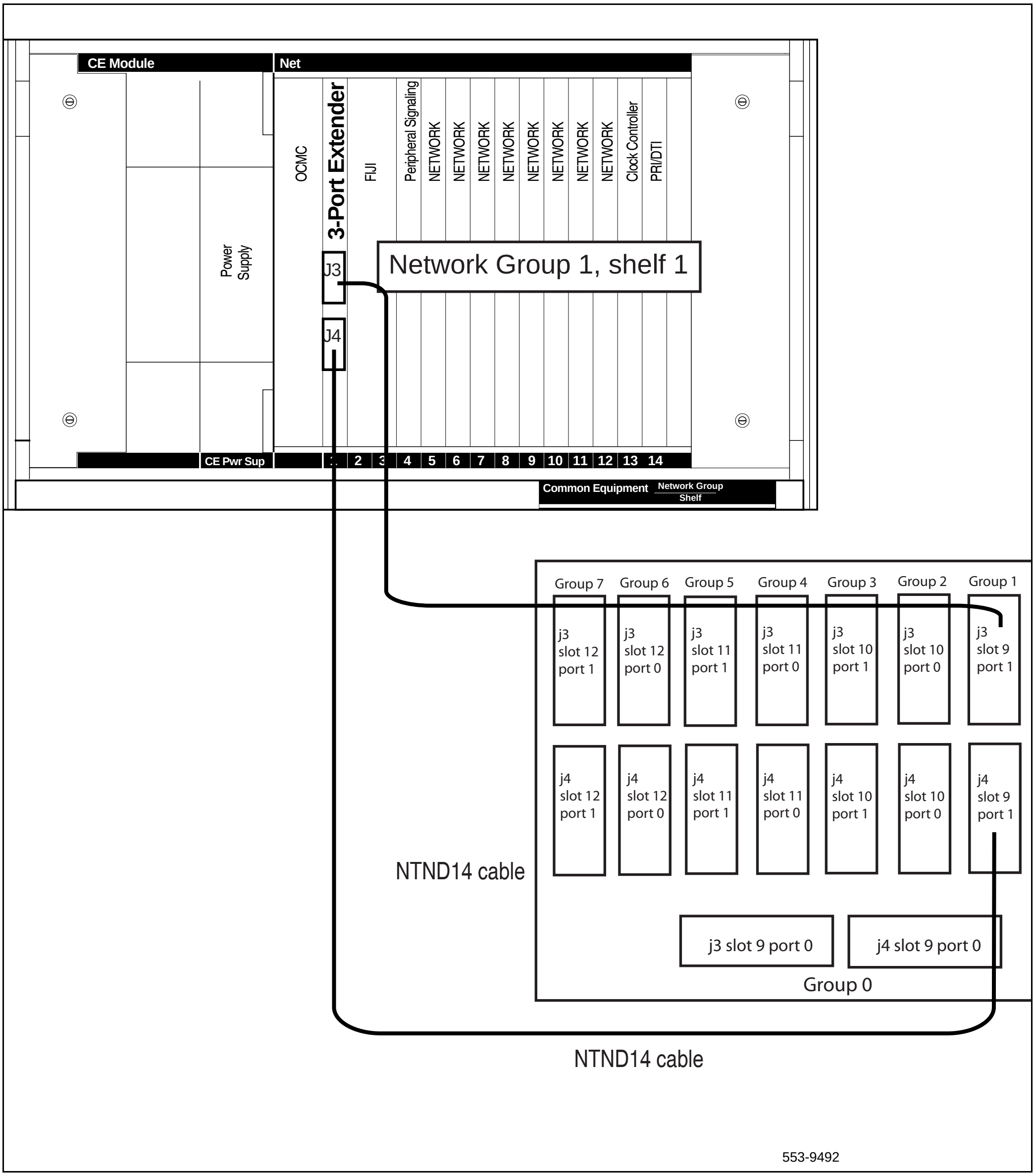
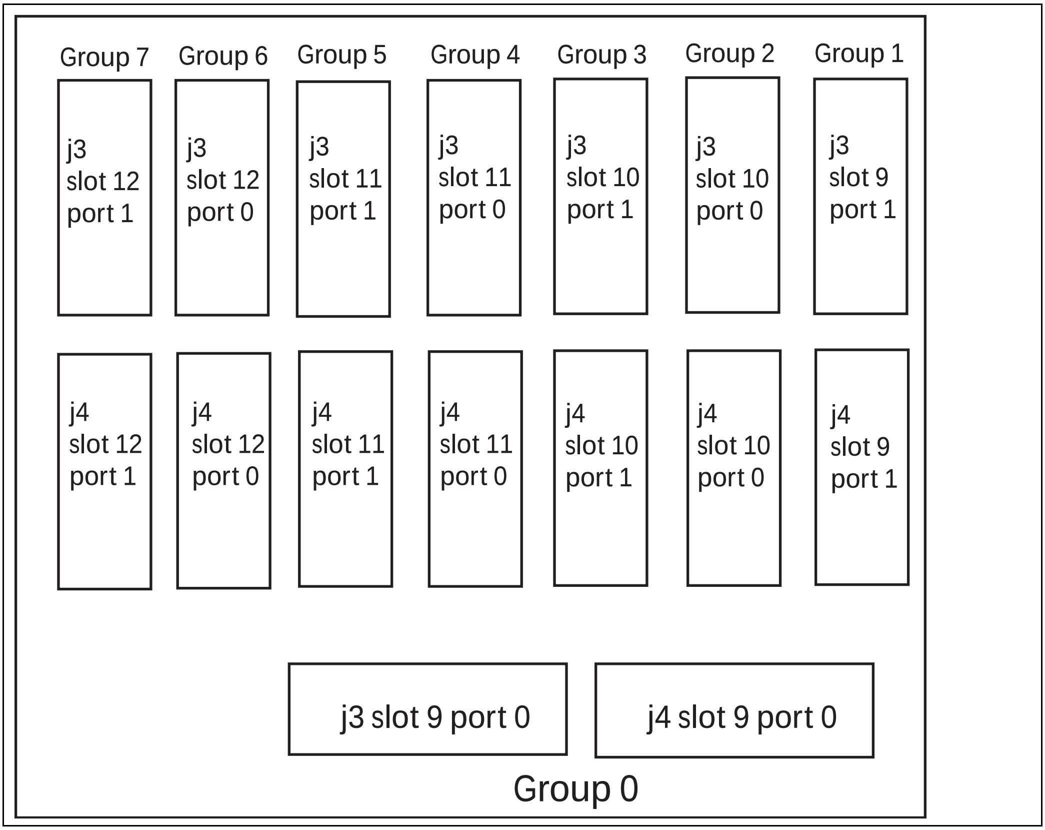


Figure 43
3PE Fanout Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Procedure 70
Installing and enabling the QPC441 3PE cards

1 Verify the QPC 441F 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 45 on page 327 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a QPC 441F 3PE card in slot 1 of each added Network module.

3 Faceplate disable the QPC 441F 3PE cards and seat them in the proper network shelf location.

Table 45
3PE card settings for the NT8D35 Module

<table>
<tr><th colspan="10">Jumper Settings</th></tr>
<tr><td colspan="10">Set Jumper RN27 at E35 to “A”.</td></tr>
<tr><th colspan="10">Switch Settings</th></tr>
<tr><td colspan="2">D20 switch position:</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">81, 81C (Note)</td><td>off</td><td>on</td><td>on</td><td>on</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Shelf</td><td>Group</td><td colspan="4">D20 switch position:</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td rowspan="8">0

(3PE cards connected to the a CNI in Core or Core/Net 0)</td><td>0</td><td colspan="4"></td><td>on</td><td>on</td><td>on</td><td>on</td></tr>
<tr><td>1</td><td colspan="4"></td><td>on</td><td>on</td><td>off</td><td>on</td></tr>
<tr><td>2</td><td colspan="4"></td><td>on</td><td>off</td><td>on</td><td>on</td></tr>
<tr><td>3</td><td colspan="4"></td><td>on</td><td>off</td><td>off</td><td>on</td></tr>
<tr><td>4</td><td colspan="4"></td><td>off</td><td>on</td><td>on</td><td>on</td></tr>
<tr><td>5</td><td colspan="4"></td><td>off</td><td>on</td><td>off</td><td>on</td></tr>
<tr><td>6</td><td colspan="4"></td><td>off</td><td>off</td><td>on</td><td>on</td></tr>
<tr><td>7</td><td colspan="4"></td><td>off</td><td>off</td><td>off</td><td>on</td></tr>
<tr><td rowspan="8">1

(3PE cards connected to the a CNI in Core or Core/Net 1)</td><td>0</td><td colspan="4"></td><td>on</td><td>on</td><td>on</td><td>off</td></tr>
<tr><td>1</td><td colspan="4"></td><td>on</td><td>on</td><td>off</td><td>off</td></tr>
<tr><td>2</td><td colspan="4"></td><td>on</td><td>off</td><td>on</td><td>off</td></tr>
<tr><td>3</td><td colspan="4"></td><td>on</td><td>off</td><td>off</td><td>off</td></tr>
<tr><td>4</td><td colspan="4"></td><td>off</td><td>on</td><td>on</td><td>off</td></tr>
<tr><td>5</td><td colspan="4"></td><td>off</td><td>on</td><td>off</td><td>off</td></tr>
<tr><td>6</td><td colspan="4"></td><td>off</td><td>off</td><td>on</td><td>off</td></tr>
<tr><td>7</td><td colspan="4"></td><td>off</td><td>off</td><td>off</td><td>off</td></tr>
<tr><td colspan="10">Note: For option 81C systems, QPC441 vintage F or later must be used in all modules.</td></tr>
</table>

End of Procedure

Procedure 71
Installing and enabling the Peripheral Signaling (Per Sig) cards

1. Install a QPC43R Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.
2. Faceplate *enable* the cards.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Procedure 72
Disabling and inserting the FIJI cards

1. Faceplate *disable* the NTRB33AC/AD FIJI cards.
2. Insert the NTRB33AC/AD FIJI cards into slots 2 and 3 of each added Network module.

End of Procedure

Procedure 73
Disabling and inserting the NT8D17 Conf/TDS cards

If the NT8D17 Conf/TDS cards are used in the system, complete the following steps.

1. Faceplate *disable* the NT8D17 Conf/TDS cards.
2. Insert a NT8D17 Conf/TDS card into each added Network module.

Do not plug the card into the backplane.

End of Procedure

Enable the Network Group

Note: If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 74
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program.
STAT CPU	Obtain the status of the CPUs.

2 If Core 1 is active, make Core 0 active.

SCPU	Switch to Core 0 (if necessary).
********	Exit program.

End of Procedure

Procedure 75
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers.

LD 60	Load program.
SSCK 0	Obtain the status of Clock Controller 0.
SSCK 1	Obtain the status of Clock Controller 1.

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary).
DIS CC 1	Disable Clock Controller 1.
********	Exit program.

End of Procedure

Add the CNI cards or ports

Procedure 76
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In LD 135 split the Cores.

LD 135	Load the program.
SPLIT	Split the Cores.
********	Exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1.

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 45 on page 327.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	Exit the program.

Table 46 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 46
CNI Network group designations

CNI card slot	CNI card port	3PE Fanout Panel label	Connected to Network group
c9	0	Port 9-0	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

3 Perform a data dump.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

End of Procedure

Procedure 77
Checking that Ring 0 is active in Core 0

1 Check the status of Ring 0.

LD 39	Load program.
STAT RING 0	Obtain the status of Ring 0 (Ring state should be HALF/HALF).

2 Disable Ring auto recovery.

LD 39	Load program.
ARCV OFF	Set or reset autorecovery operation for ring.

3 Swap to Ring 0.

LD 39	Load program.
SWRG 0	Swing Traffic to Ring x.

4 Disable Ring 1.

LD 39	Load program.
DIS RING 1	Disable all FIJI cards on side 1.

WARNING

Cable Ring 1 to new network shelf only.

5 Seat the remaining cards (3PE, PER SIG, XCT, FIJI) in both network modules.

Note: Cards must be faceplate disabled before seating.

6 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and FIJI).

7 Break Ring 1 and cable the added FIJI cards. See Figure 34 on page 274. Ring 1 is descending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

8 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

9 In LD 135 switch Cores.

LD 135	Load the program.
CUTOVR	Switch Cores.

WARNING

All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active, FIJI ring 1 is full, FIJI ring 0 is none.

CAUTION

Service Interruption

Allow the system to recover from all downloads after the INI completes.

Note 1: On FNF based systems after the INI, a FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring; downloading up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process does not affect service. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note 2: Wait for new ring state change message to appear before proceeding:

```
New State Ring 0 None
          Ring 1 Full
```

10 Switch the clock controllers, if necessary:

LD 60	Load the program.
SSCK n	Obtain the status of clock n where: n = 0 for clock controller 0 1 for clock controller 1

SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
****	Exit the program.

11 Disable Ring 0:

LD 39	Load the program.
DIS RING 0	Disable Ring 0.
****	Exit the program.

12 Break Ring 0 and cable the added FIJI cards. Ring 0 is ascending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

13 In LD 39, enable and stat Ring 0:

LD 39	Load the program.
ENL Ring 0	Enable Ring 0.
Stat Ring 0	Status of Ring x.
****	Exit the program.

The system is in split mode with Core 1 active. Clock 1 active and FIJI half and half.

14 **In Core 0 only,** define the XCT and Extenders to the added group.

Note: See Table 46 on page 332:

LD 17	Load the program.
REQ	CHG
TYPE	CEQU

XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	Exit the program.

15 Data dump the software changes.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

16 Seat the CNI card in Core 0 and faceplate enable it.

17 In Core 1, Stat the CNIs:

LD 135	Load the program.
STAT CNI	Obtain the status of CNI card. ***Note:*** If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	Exit the program.

End of Procedure

Test the Cores

Procedure 78
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain the status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain the status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x = system XMS.
STAT XSM	Check the system monitors.
****	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings.

For more information about LD 39 commands, see *Avaya Software Input/ Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
********	Exit program.

10 Check applications.

11 Check for dial tone.

End of Procedure

Procedure 79
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 80
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain the status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain the status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors.
****	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings.

Note: For more information about LD 39 commands, see *Avaya Software Input/Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.

****	Exit program.

10 Check applications such as Avaya CallPilot and Symposium.

11 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the “Postconversion procedure” on page 413.

Add a Core Network Group to Option 81C with IGS

Complete the following procedures to add a Network Group to the Core/Net module of a Meridian 1 Option 81C/IGS equipped with an NT4N41 Core/Net shelf.

The NT4N41 Core/Net shelf is factory configured with Network group 0 in the Core. Upgrades from Meridian Option 71 or Meridian Option 81 to Meridian Option 81C do not require Group 0 to be moved to the Core.

The Meridian 1 Option 81C CNI port-to-group number cannot be changed in software configuration. The NT4N29 cables must be connected to the proper group.

> **IMPORTANT!**
>
> When configuring NTND14 cables, observe the following rules:
>
> - Always use the shortest NTND14 cable.
> - A network group requires four NTND14 cables, two to each half group. Both cables to each half group must be the same length.
> - Check the existing NTND14 cables. Replace any cables that do not meet the above requirement.
>
> ***Note:*** The NTND14 BX 50 ft. cables are manufacture discontinued.

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel should complete the steps in Table 47.

Table 47
Prepare for upgrade steps

Step	Page
Plan the upgrade	346
Upgrade checklists	347
Prepare	347
Identifying the proper procedure	348
Connect a terminal	348
Print site data	349
Perform a template audit	351

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications.
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Avaya Alerts that impact the site.
- Prepare a contingency plan if you abort the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers can print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Verify that the current patch or Dep lists are installed at the source platform.
- Determine and communicate the required maintenance window, contingency plan, and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.

- Secure the source software and keycode.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

IMPORTANT!

Preserve database backup information for a minimum of five days.

Connect a terminal

Procedure 81
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

2 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side to side to access each module. An "A/B" switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 48). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 48
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>

Table 48
Print site data (Part 2 of 3)

Site data	Print command	
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop

Table 48
Print site data (Part 3 of 3)

Site data	Print command	
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on Large Systems. Run the audit during a low traffic period.

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**

TEMPLATE 0003 NO USERS FOUND

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 82
Performing a data dump

1. On the Meridian 1 Option 81C, log on to the system.
2. Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3. When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

********	Exit the program.

IMPORTANT!

Preserve database backup information for a minimum of five days.

End of Procedure

Perform the upgrade

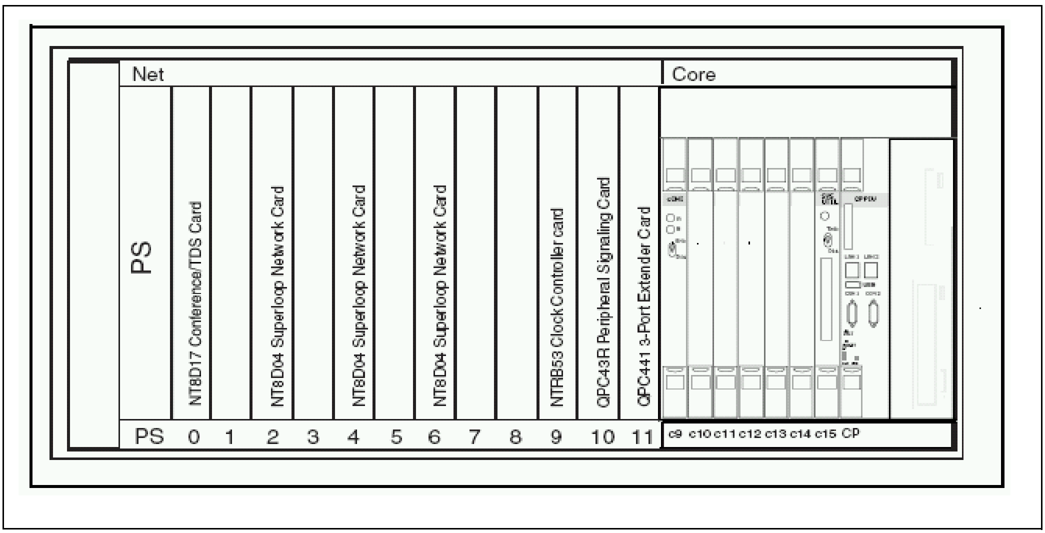
Introduction

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/IGS (NT4N41).

Figure 44
CP PIV NT4N41 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for a system with IGS. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Do not proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- NT4N65AC CNI card.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 49 describes the *minimum* equipment required to add a Network Group to Meridian 1 Option 81C/IGS (NT4N41). Additional equipment for increased Network capacity must be ordered separately.

Table 49
Minimum equipment required to add a Core Network Group to an Option 81C/IGS equipped with an NT4N41 shelf

Order Number	Description	Quantity per system
NT8D80BZ	Cable, CPU Interface, 5 ft.	2
NT8D99AD	Cable, Network to Network, 6 ft.	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NT8D76	IGS to IGM Cable 6’	4
NT4N64AC	CNI card	(see Note)
Note: The quantity of CNI cards required is dependent on the system configuration.		

Tools

Table 50 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 50
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Add CNI cards if necessary

If additional CNI cards are required, add to each Core Module as required.

Procedure 83
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE cables to the appropriate group. For connector replacement see Table 51 on page 359 and Figure 45 on page 360.

Note: If Network Group 0 will not be in the Core/Net module, reconfiguring of the processor module is required. The NT4N41 shelf is factory installed with NT4N29 cables and is configured as group 0. If the Network portion of the Core/Net shelf is used as a higher Network Group, use the extraction tool to disconnect the NT4N29 cables from the Core backplane.

1 Connect the NT4N29 cables to A and B of the Core/Net backplane.

2 Connect the NT4N29 cables to the Fanout Panel of the Core/Net.

Table 51
Fanout Panel to 3PE card connectors

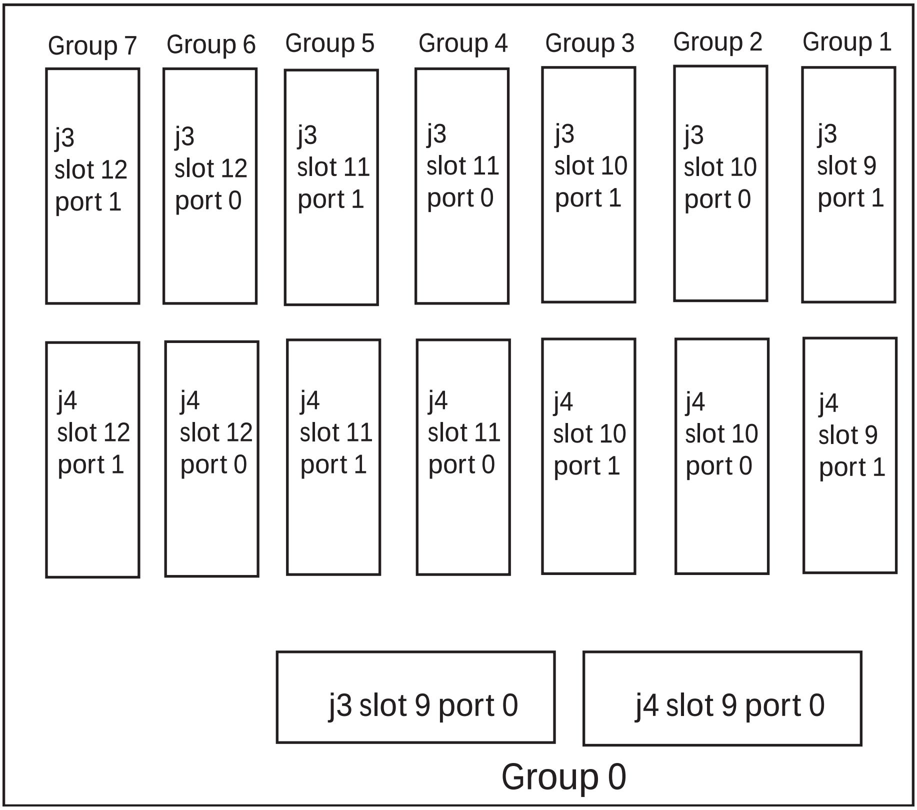
Group Number	Fanout Panel connector	3PE card connector
0	9-0, J3	A
0	9-0, J4	B
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

Note 1: Group 0 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1 (see Figure 37 on page 279).

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 37 on page 279).

End of Procedure

Figure 45
3PE Fanout Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Procedure 84
Installing and enable the QPC441 3PE cards

1 Verify the QPC 441F 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 52 on page 362 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a QPC 441F 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the NT8D80BZ cables to the QPC 441F 3PE faceplates.

a. Connect 1 NT8D80BZ cable from QPC441F J3 of Core/Net 0 to QPC441F J3 of Core/Net 1.

b. Connect 1 NT8D80BZ cable from QPC441F J4 of Core/Net 0 to QPC 441F J4 of Core/Net 1.

Table 52
QPC441 3PE Card installed in the NT4N41 Module

Jumper settings. Set Jumper RN27 at E35 to “A”.									
Switch Settings									
Module		D20 switch position							
NT4N41		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Core/Net 0 (Shelf 0)	Group 0	off	on	on	off	on	on	on	on
	Group 1	off	on	on	off	on	on	off	on
	Group 2	off	on	on	off	on	off	on	on
	Group 3	off	on	on	off	on	off	off	on
	Group 4	off	on	on	off	off	on	on	on
	Group 5	off	on	on	off	off	on	off	on
	Group 6	off	on	on	off	off	off	on	on
	Group 7	off	on	on	off	off	off	off	on
Core/Net 1 (Shelf 1)	Group 0	off	on	on	off	on	on	on	off
	Group 1	off	on	on	off	on	on	off	off
	Group 2	off	on	on	off	on	off	on	off
	Group 3	off	on	on	off	on	off	off	off
	Group 4	off	on	on	off	off	on	on	off
	Group 5	off	on	on	off	off	on	off	off
	Group 6	off	on	on	off	off	off	on	off
	Group 7	off	on	on	off	off	off	off	off

End of Procedure

Procedure 85
Installing and enabling the Peripheral Signaling (Per Sig) cards

1 Install a QPC43R Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Procedure 86
Disabling and inserting the NT8D17 Conf/TDS cards

If the NT8D17 Conf/TDS cards are used in the system, complete the following steps.

1 Faceplate *disable* the NT8D17 Conf/TDS cards.

2 Insert a NT8D17 Conf/TDS card into each added Network module.

3 Seat and Faceplate Enable cards.

End of Procedure

Enable the Network Group

Note: If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 87
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active:

LD 135	Load program.
STAT CPU	Obtain the status of the CPUs.

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary).
**** **	Exit program.

End of Procedure

Procedure 88
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers.

LD 60	Load program.
SSCK 0	Obtain the status of Clock Controller 0.
SSCK 1	Obtain the status of Clock Controller 1.

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary).
DIS CC 1	Disable Clock Controller 1.
**** **	Exit program.

End of Procedure

Add the CNI cards or ports

Procedure 89
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In LD 135 split the Cores.

LD 135	Load the program.
SPLIT	Split the Cores.
********	Exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1.

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 52 on page 362.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

<cr>	Continue to the last prompt.
********	Exit the program.

3 Perform a data dump.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

Table 53 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 53
CNI Network group designations

CNI card slot	CNI card port	3PE Fanout Panel label	Connected to Network group
c9	0	Port 9-0	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

End of Procedure

Procedure 90
Seating the remaining cards

1 Seat the remaining cards (3PE, PER SIG, XCT, DIGS) in both network modules. See Table 54 on page 367 and Figure 46 on page 368.

Note: Cards must be faceplate *disabled* before seating.

2 Faceplate *enable* all cards in both network modules (3PE, PER SIG, XCT and DIGS).

3 Cable the added DIGS cards.

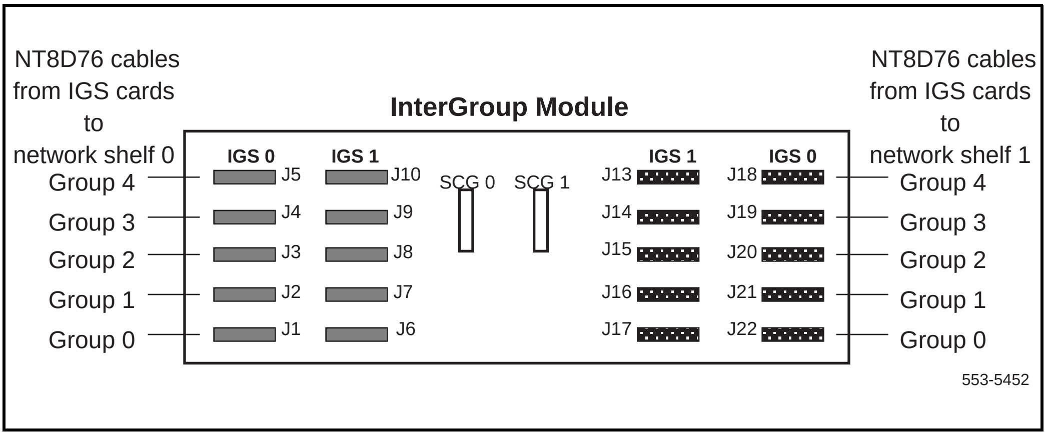
Table 54
IGS to intergroup cable assignment — use NT8D76 cables (Part 1 of 2)

From				To
Network Group	**Network Shelf**	**Slot**	**IGS Connector J1**	**InterGroup Connector**
0 0 0 0	0 (Core/Net 0) 0 (Core/Net 0) 1 (Core/Net 1) 1 (Core/Net 1)	8 9 9 8	0 1 1 0	J1 J6 J17 J22
1 1 1 1	0 0 1 1	3 2 2 3	0 1 1 0	J2 J7 J16 J21
2 2 2 2	0 0 1 1	3 2 2 3	0 1 1 0	J3 J8 J15 J20

Table 54
IGS to intergroup cable assignment — use NT8D76 cables (Part 2 of 2)

From				To
Network Group	**Network Shelf**	**Slot**	**IGS Connector J1**	**InterGroup Connector**
3	0	3	0	J4
3	0	2	1	J9
3	1	2	1	J14
3	1	3	0	J19
4	0	3	0	J5
4	0	2	1	J10
4	1	2	1	J13
4	1	3	0	J18

Figure 46NT8D36 intergroup module connections for IGS cards



4 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

5 In LD 135 switch Cores.

LD 135	Load the program.
CUTOVR	Switch Cores.

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active.

6 Switch the clock controllers, if necessary.

LD 60	Load the program.
SSCK n	Obtain status of clock n where: n = 0 for clock controller 0 1 for clock controller 1

SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	Exit the program.

The system is in split mode with Core 1 active. Clock 1 is active.

7 **In Core 0 only,** define the XCT and extenders to the added group.

Note: See Table 53 on page 366.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	Exit the program.

8 Data dump the software changes:

LD 43	Load the program.
EDD	Invoke the data dump program.
****	Exit the program.

9 Seat the CNI card in Core 0 and faceplate enable it.

10 In Core 1, Stat the CNIs.

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
****	Exit the program.

End of Procedure

Test the Cores

Procedure 91
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x = system XMS.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number.) See Table 55.
********	Exit program.

Table 55
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications.

10 Check for dial tone.

End of Procedure

Switch call processing

Procedure 92
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

Procedure 93
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.

STAT XSM	Check the system monitors.
****	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 56).
****	Exit program.

Table 56
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications such as Avaya CallPilot and Symposium.

10 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the “Postconversion procedure” on page 413.

Add an NT8D35 Network Group to Option 81C with IGS

Prepare for upgrade

Complete this procedures to add an NT8D35 Network group to an Option 81C/IGS system equipped with an NT4N41 Core/Net shelf.

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action. Each section is written to maintain dial tone where possible and limit service interruptions.

Before attempting any software or hardware upgrade field personnel must complete the steps in Table 57.

Table 57
Prepare for upgrade steps

Step	Page
Plan the upgrade	379
Upgrade checklists	379
Prepare	379
Identifying the proper procedure	380
Connect a terminal	381
Print site data	381
Perform a template audit	384
Back up the database (data dump)	386

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications.
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.
- Review all product bulletins and Avaya Alerts that impact the site.
- Prepare a contingency plan if you abort the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers may print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.

- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Verify that the current patch or Dep lists are installed at the source platform.
- Verify that the required patch or Dep lists are installed at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.
- Secure the source software and keycode.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

IMPORTANT!

Preserve database backup information for a minimum of five days.

Connect a terminal

Procedure 94
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

2 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side to side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 58 on page 382). Verify that all information is correct. Make corrections as necessary.

Note: Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 58
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN

Table 58
Print site data (Part 2 of 3)

Site data	Print command	
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB

Table 58
Print site data (Part 3 of 3)

Site data	Print command	
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97	
	REQ TYPE SUPL	CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

> ***Note:*** The template audit may take an extended period of time on Large Systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 95
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When “EDD000” appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” will appear once the data dump is complete.

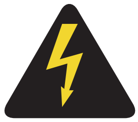
********	Exit the program.

IMPORTANT!

Preserve database backup information for a minimum of five days.

Perform the upgrade

Introduction

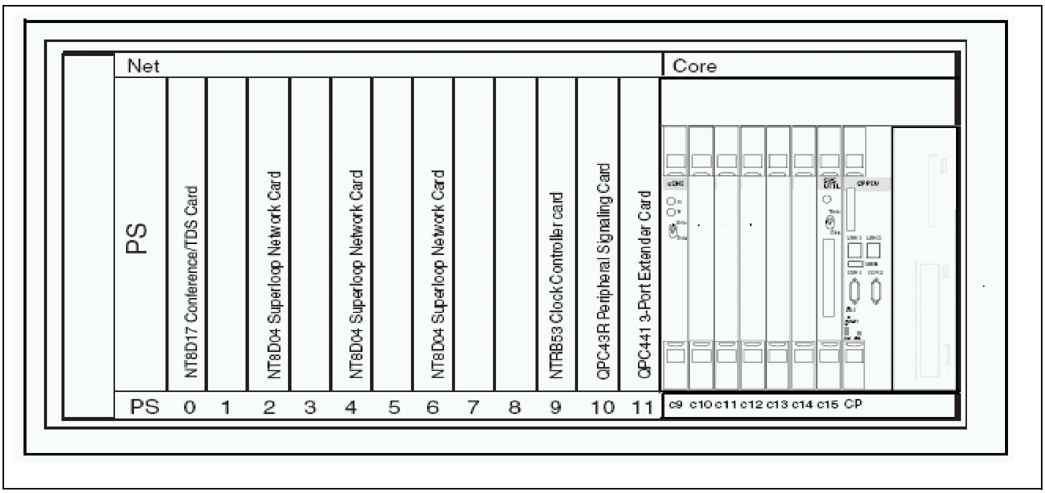


DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Complete the procedure in this section to add an NT8D35 Network Group to the Meridian 1 Option 81C/IGS (NT4N41).

Figure 47
CP PIV NT4N41 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for the system. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Do not proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- The NT4N65AC CNI card.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 59 describes the *minimum* equipment required to add an NT8D35 Network Group to a Meridian 1 Option 81C/IGS (NT4N41). Table 59 and Table 60 on page 390 and Table 61 on page 390 list the DC and AC power equipment requirements. Additional equipment for increased Network capacity must be ordered separately.

Table 59
Minimum equipment required to add an NT8D35 Network Group to an Option 81C/IGS equipped with an NT4N41 shelf

Order Number	Description	Quantity per system
NT8D99AB	Cable, Network to Network, 2 ft.	5
NT8D35	Network Module AC/DC	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	XCT/Conf/MFS	2
NT8D76	Intergroup Switch to Intergroup Module cables	4
NT4N65AC	CNI cards	(see Note)
NTND14	3PE CNI cables	4

Note: The quantity of CNI cards required is dependent on the system configuration.

Check required power equipment

Table 60
DC power requirements for Meridian 1 Option 81C IGS upgrades

Order number	Description	Quantity per system
NT6D41	Common Equipment	2

Table 61
AC power requirements for Meridian 1 Option 81C IGS upgrades

Order number	Description	Quantity per system
NT8D29	Common Equipment	2

Tools

Table 62 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 62
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Check personnel requirements

Avaya recommends that a minimum of two people perform the upgrade.

Procedure 96
Interconnecting the network modules

The back of each network module backplane has five connectors: A, B, C, D and E. See Figure 48 on page 392. The shelf 0 connectors in Network groups 1 through 7 must be connected to the shelf 1 connectors of the Network groups 1 through 7. For example, for Network group 1, the shelf 0 connector must be connected to the shelf 1 connector.k group.

1 Connect an NT8D99AB cable from the A connector in shelf 0 of Network group 1 to the A connector in shelf 1 Network group 1.

2 Connect the B connector in shelf 0 to the B connector in shelf 1.

3 Connect the C connector in shelf 0 to the C connector in shelf 1.

4 Connect the D connector in shelf 0 to the D connector in shelf 1.

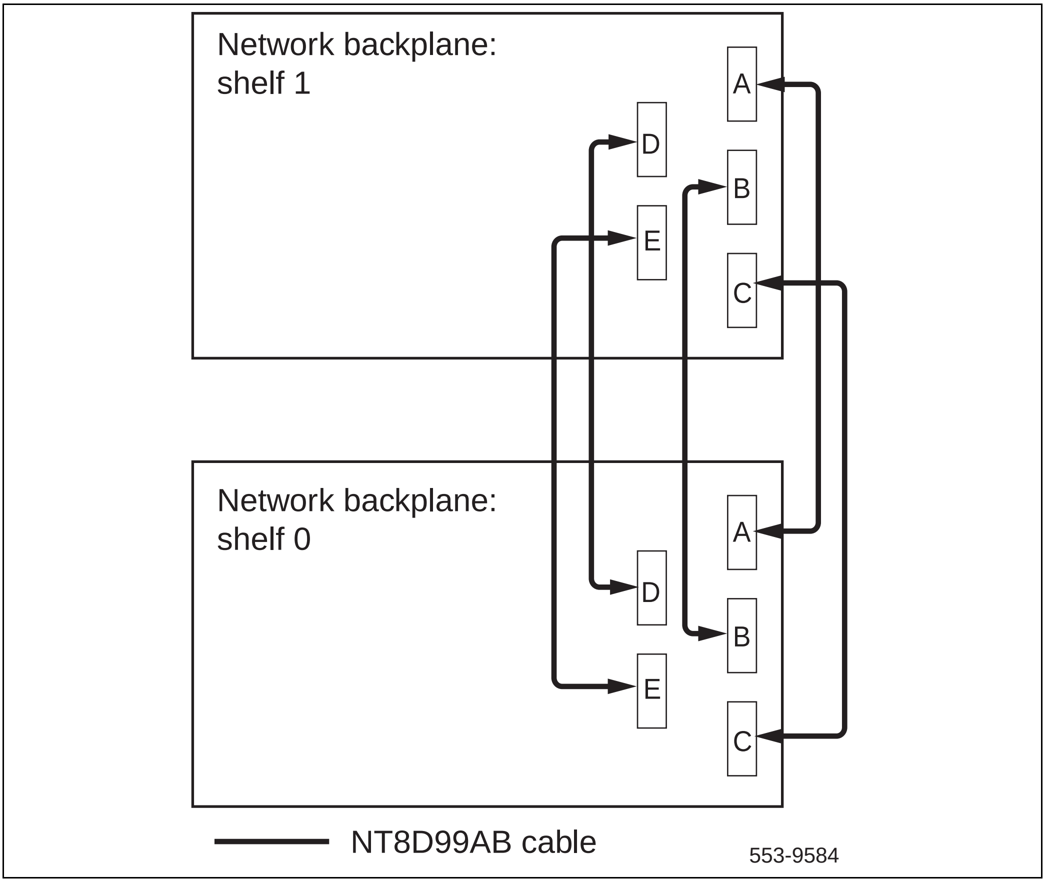
5 Connect the E connector in shelf 0 to the E connector in shelf 1.

6 Connect the A, B, C, D, and E connectors between shelf 0 and shelf 1 for all other Network groups in the system (except group 0).

Note: All connections are made with an NT8D99AB cable.

End of Procedure

Figure 48
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Connect the network to the Core/Net module

Add CNI cards if necessary

If additional CNI cards are required, add to each Core Module as required.

Procedure 97
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE Fanout Panel.

> ***Note:*** See Table 63 on page 394, Figure 49 on page 395, and Figure 50 on page 396 for NTND14 cable connections.

1 Connect the NTND14 cables to J3 and J4 of the 3PE cards.

2 Connect the new NTND14 cables to the Fanout Panel in the Core/Net.

End of Procedure

Table 63
Fanout Panel to 3PE card connectors

Group Number	Fanout Panel connector	3PE card connector
0	9-0, J3	A
0	9-0, J4	B
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

Note 1: Group 0 cables (NT4N29) connect from the Fanout panel directly to the backplane of Core/Net 1. See Figure 37 on page 279.

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1. See Figure 37 on page 279.

Figure 49
Example of 3PE faceplate to 3PE Fanout Panel connection

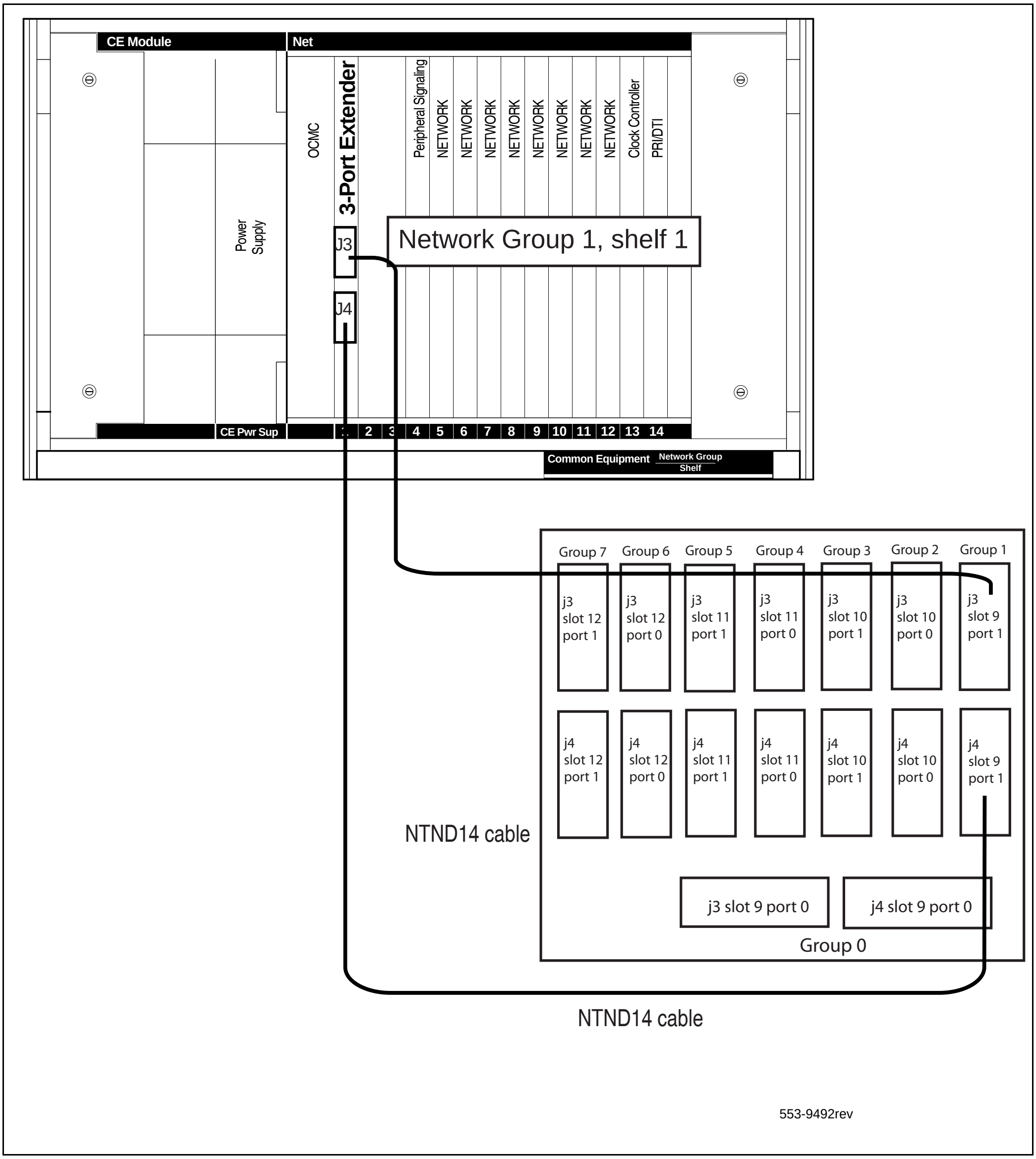
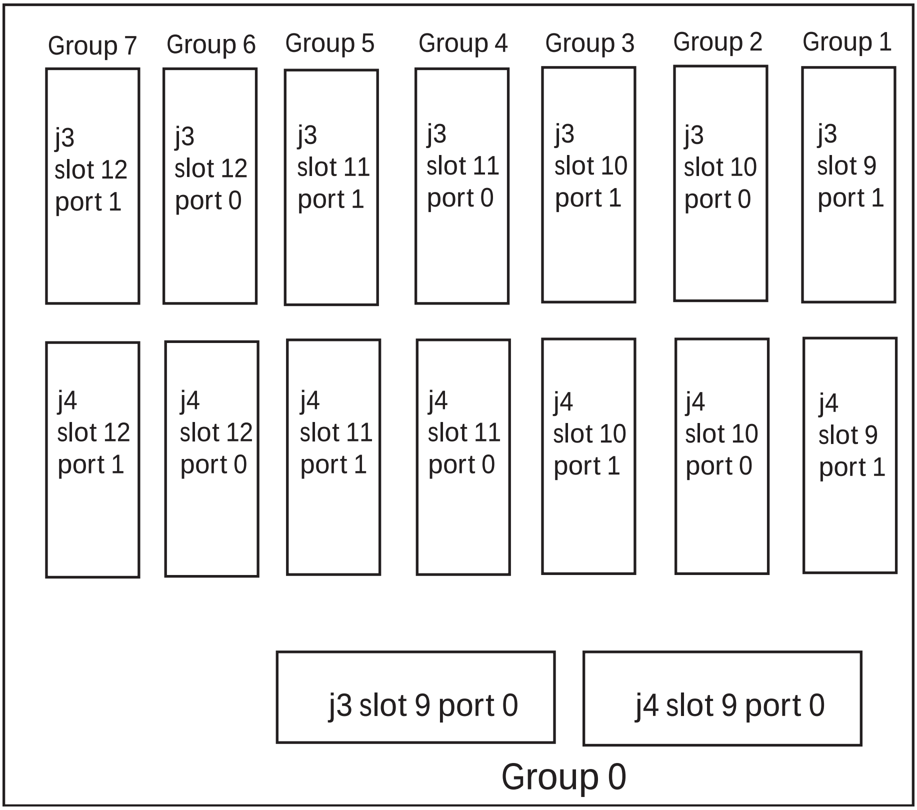


Figure 50
3PE Fanout Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Procedure 98
Installing and enabling the QPC441 3PE cards

Three steps are required to install the QPC441F 3PE cards.

1 Verify the QPC 441F 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 64 on page 398 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a QPC 441F 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the NT8D80BZ cables to the QPC 441F 3PE faceplates.

- **a.** Connect 1 NT8D80BZ cable from QPC441F J3 of Core/Net 0 to QPC441F J3 of Core/Net 1.
- **b.** Connect 1 NT8D80BZ cable from QPC441F J4 of Core/Net 0 to QPC441F J4 of Core/Net 1.

Table 64
3PE card settings for the NT8D35 Module

<table>
<tr><th colspan="11">Jumper Settings</th></tr>
<tr><td colspan="11">Set Jumper RN27 at E35 to “A”.</td></tr>
<tr><th colspan="11">Switch Settings</th></tr>
<tr><td colspan="2">D20 switch position:</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">81, 81C (Note)</td><td>off</td><td>on</td><td>on</td><td>on</td><td></td><td></td><td></td><td></td></tr>
<tr><td>Shelf</td><td>Group</td><td colspan="4">D20 switch position:</td><td>5</td><td>6</td><td>7</td><td>8</td></tr>
<tr><td rowspan="8">0

(3PE cards connected to the a CNI in Core or Core/Net 0)</td><td>0</td><td colspan="4"></td><td>on</td><td>on</td><td>on</td><td>on</td></tr>
<tr><td>1</td><td colspan="4"></td><td>on</td><td>on</td><td>off</td><td>on</td></tr>
<tr><td>2</td><td colspan="4"></td><td>on</td><td>off</td><td>on</td><td>on</td></tr>
<tr><td>3</td><td colspan="4"></td><td>on</td><td>off</td><td>off</td><td>on</td></tr>
<tr><td>4</td><td colspan="4"></td><td>off</td><td>on</td><td>on</td><td>on</td></tr>
<tr><td>5</td><td colspan="4"></td><td>off</td><td>on</td><td>off</td><td>on</td></tr>
<tr><td>6</td><td colspan="4"></td><td>off</td><td>off</td><td>on</td><td>on</td></tr>
<tr><td>7</td><td colspan="4"></td><td>off</td><td>off</td><td>off</td><td>on</td></tr>
<tr><td rowspan="8">1

(3PE cards connected to the a CNI in Core or Core/Net 1)</td><td>0</td><td colspan="4"></td><td>on</td><td>on</td><td>on</td><td>off</td></tr>
<tr><td>1</td><td colspan="4"></td><td>on</td><td>on</td><td>off</td><td>off</td></tr>
<tr><td>2</td><td colspan="4"></td><td>on</td><td>off</td><td>on</td><td>off</td></tr>
<tr><td>3</td><td colspan="4"></td><td>on</td><td>off</td><td>off</td><td>off</td></tr>
<tr><td>4</td><td colspan="4"></td><td>off</td><td>on</td><td>on</td><td>off</td></tr>
<tr><td>5</td><td colspan="4"></td><td>off</td><td>on</td><td>off</td><td>off</td></tr>
<tr><td>6</td><td colspan="4"></td><td>off</td><td>off</td><td>on</td><td>off</td></tr>
<tr><td>7</td><td colspan="4"></td><td>off</td><td>off</td><td>off</td><td>off</td></tr>
<tr><td colspan="10">Note: For option 81C systems, QPC441 vintage F or later must be used in all modules.</td></tr>
</table>

End of Procedure

Procedure 99
Installing and enabling the Peripheral Signaling (Per Sig) cards

1 Install a QPC 43R Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

> **IMPORTANT!**
>
> Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Procedure 100

Procedure 101
Disabling and inserting the NT8D17 Conf/TDS cards

Note: If the NT8D17 Conf/TDS cards are used in the system, follow the procedures below.

1 Faceplate *disable* the NT8D17 Conf/TDS cards.

2 Insert a NT8D17 Conf/TDS card into each added Network module.

End of Procedure

Enable the Network Group

Note: To add more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 102
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program.
STAT CPU	Obtain status of the CPUs.

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary).
********	Exit program.

End of Procedure

Procedure 103
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers.

LD 60	Load program.
SSCK 0	Obtain the status of Clock Controller 0.
SSCK 1	Obtain the status of Clock Controller 1.

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary).
DIS CC 1	Disable Clock Controller 1.
********	Exit program.

End of Procedure

Add the CNI cards or ports

Procedure 104
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In LD 135 split the Cores.

LD 135	Load the program.
SPLIT	Split the Cores.
********	Exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1.

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 64 on page 398.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

<cr>	Continue to the last prompt.
********	Exit the program.

3 Perform a data dump.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

Table 65 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 65
CNI Network group designations

CNI card slot	CNI card port	3PE Fanout Panel label	Connected to Network group
c9	0	Port 9-0	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

End of Procedure

Procedure 105
Seating remaining cards

1 Seat the remaining cards (3PE, PER SIG, XCT, DIGS) in both network modules.

Note: Cards must be faceplate disabled before seating.

2 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and DIGS).

3 Cable the DIGS cards.

Table 66
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

4 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

5 In LD 135 switch Cores.

LD 135	Load the program.
CUTOVR	Switch Cores.

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active.

6 Switch the clock controllers, if necessary:

LD 60	Load the program.
SSCK n	Obtain status of clock n, where n = 0 for clock controller 0 1 for clock controller 1
SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	Exit the program.

The system is in split mode with Core 1 active. Clock 1 is active.

7 **In Core 0 only,** define the XCT and extenders to the added group.

Note: See Table 66 on page 403.

LD 17	Load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	Exit the program.

8 Data dump the software changes.

LD 43	Load the program.
EDD	Invoke the data dump program.
********	Exit the program.

9 Seat the CNI card in Core 0 and faceplate enable it.

10 In Core 1, Stat the CNIs.

LD 135	Load the program.
STAT CNI	Obtain status of CNI card. ***Note:*** If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	Exit the program.

End of Procedure

Test the Cores

Procedure 106
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x = system XMS.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1).
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 67).
********	Exit program.

Table 67
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications.

10 Check for dial tone.

End of Procedure

Procedure 107
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 108
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test.

LD 135	Load the program.
STAT CPU	Obtain the status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states.

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number.) See Table 68.
********	Exit program.

Table 68
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications such as Avaya CallPilot and Symposium.

10 Check for dial tone.

End of Procedure

Postconversion procedure

This procedure verifies that the conversion process was successful, and system data converted completely. This is the last part of the total conversion procedure. Perform these steps **after** completing all other procedures for the system.

The site data should be printed before and after conversion. See Table 70 on page 418. If the data has changed, make the necessary updates on the **Target** release, and datadump to the new system media. Print out the items marked with an asterisk (*) to be sure everything converted properly. All other items on Table 70 on page 418 are provided to be printed if desired.

Check the General Release Bulletin (GRB), and the Conversion notes (earlier in this document) to verify any database updates that need to be made as a result of conversion. Be sure to verify all SYSxxx messages that might appear during the conversion process. These messages might indicate some database updates are required.

CAUTION — Service Interruption

Service Interruption

Test call processing thoroughly. This can include more testing than is described in this procedure, depending on system configuration. This procedure is intended to show some of the basic tests performed to complete the conversion process.

Note: When parallel reload is complete, the attendant consoles will be in Night mode. If performing these procedures during the day, contact the attendant. If these procedures are taking place during the evening, it might not be desirable to perform these call processing steps.

Postconversion steps

Perform the steps in Procedure 109 to perform the postconversion procedure.

Procedure 109
Performing the postconversion procedure

1. Print system data listed in Table 70 on page 418. Verify that all information matches the printouts created before conversions. Make changes if necessary.
2. From any unrestricted telephone, dial the access code for an outside line (usually 9), and dial the listed Directory Number (DN) for the customer. Verify that the correct Incoming Call Indicator (ICI) lights at the attendant console.
3. If the customer is equipped with more than one console, transfer the call to another console.
4. Extend the call to a telephone, and release the call from the console.
5. From the called telephone, transfer the call back to the attendant.
6. Answer and release the call.
7. From any telephone dial the DN for the attendant. Verify that the correct ICI lights at the console, then release the call.
8. Busy-out one trunk group using a Trunk Group Busy (TGB) key on the console.
9. From any telephone with TGAR 0-7, dial the access code of the busied-out trunk group, to verify that the call is intercepted to the console and receives either overflow tone or a recorded announcement.
10. Restore the trunk group to the in-service state using the Trunk Group Busy (TGB) key on the console.
11. During the conversion procedure the Central Office might have busied-out the DID trunks. If DID trunks are equipped, from any unrestricted telephone, dial the access code for an outside line, and dial a DID number into the system.
12. If a private network is used, from any unrestricted telephone, dial the network access code and place a CDP, ESN, BARS/NARS, or ISDN call as applicable to the system.

13 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

Note: Test all applications and call handling.

14 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

15 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

16 Load LD 135 to test and switch CPUs. (Omit this step for Option 51C.)

LD 135	Load the program.
TEST CPU	Test CPU.
SCPU	Switch CPUs.
********	Exit LD.

17 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, the system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

******** Exit LD.

Note: If equipped with FNF, perform steps 21-24. If equipped with IGS, perform step 20.

18 Test the IGS

Note: For more information about LD 39 commands, see *Avaya Software Input/Output: Maintenance* (NN43001-711).

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number.) See Table 69.
********	Exit program.

Table 69
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
0	0	IGS/DIGS 0 & 2
1	0	IGS/DIGS 4 & 6
2	0	IGS/DIGS 8 & 10
3	0	IGS/DIGS 12 & 14
4	0	IGS/DIGS 16 & 18

Table 69
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
0	1	IGS/DIGS 1 & 3
1	1	IGS/DIGS 5& 7
2	1	IGS/DIGS 9 & 11
3	1	IGS/DIGS 13 & 15
4	1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

19 Check that Fiber Ring 1 operates correctly.

LD 39	Load the program
STAT RING 1	to check the status of Ring 1

20 Reset the Rings.

RSET	to reset the Rings and prepare them for redundancy
RSTR	to restore both Rings to HALF state

21 Check that the Rings operate correctly.

STAT RING 0	to check the status of Ring 0 (HALF/HALF)
STAT RING 1	to check the status of Ring 1 (HALF/HALF)

22 If any Ring problems occur, correct them now.

STAT ALRM <X> <Y>	to check the alarm status of individual FIJI cards or all FIJI cards. See *Avaya Software Input/Output: Administration* (NN43001-611) for more information.

23 Verify that call processing operates correctly. This includes, but is not limited to the following:

- Check for dial tone.
- Make internal, external, and network calls.
- Check attendant console activity.
- Check DID trunks.
- Check any auxiliary processors.

24 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

25 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.

Table 70
Print site data (Part 1 of 3)

Site data	Print command	
Terminal Blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	CUST	<cr>
Directory Numbers	LD 20	
	REQ	PRT
	TYPE	DNB
	CUST	<cr>
Attendant Console data block for all customers	LD 20	

Table 70
Print site data (Part 2 of 3)

Site data	Print command	
	REQ	PRT
	TYPE	ATT, 2250
	CUST	<cr>
*Customer Data Block for all customers	LD 21	
	REQ	PRT
	TYPE	CDB
	CUST	<cr>
Route Data Block for all customers	LD 21	
	REQ	PRT
	TYPE	RDB
	CUST	Customer number
	ROUT	<cr>
	ACOD	<cr>
*Configuration Record	LD 22	
	REQ	PRT
	TYPE	CFN
*Software Packages	LD 22	
	REQ	PRT
	TYPE	PKG
*Software Issues, Patches, ROM and Tape ID	LD 22	
	REQ REQ REQ	ISSP ROM TID

Table 70
Print site data (Part 3 of 3)

Site data	Print command	
* Peripheral software versions	LD 22	
	REQ	PRT
	TYPE	PSWV
ACD data block for all customers	LD 23	
	REQ	PRT
	TYPE	ACD
	CUST	Customer Number
	ACDN	ACD DN (or <CR>)
Superloop card IDs and software version	LD 32	
(peripheral controller, superloop network and controller cards)	.	IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ	PRT
	TYPE	MISP
	LOOP	loop number (0–158)
	APPL	<cr>
	PH	<cr>
DTI/PRI data block for all customers	LD 73	
	REQ	PRT
	TYPE	DDB

Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.

26 Obtain status of CNI cards.

LD 135	Load the program.
STAT CNI	Obtain the status of CNI cards.
****	Exit the program.

End of Procedure

Adding a Network Group (NT4N46)

Contents

This chapter contains information about the following topics:

Add a Core Network Group to Option 81C with FNF 424
Prepare for upgrade 427
Perform the upgrade 437
Add an NT8D35 Network Group to Option 81C with FNF 471
Prepare for upgrade 472
Perform the upgrade 482
Add a Core Network Group to Option 81C with IGS. 518
Prepare for upgrade 518
Perform the upgrade 528
Add an NT8D35 Network Group to Option 81C with IGS 555
Prepare for upgrade 555
Perform the upgrade 563
Postconversion procedure 593

Add a Core Network Group to Option 81C with FNF

Complete the following procedure to add a Network Group to the Core/Net Module of a Meridian 1 Option 81C with FNF equipped with an NT4N46 Core/Net shelf.

The NT4N46 Core/Net shelf is factory configured with Network Group 0 in the Core. Upgrades from Meridian Option 71 or Meridian Option 81 to Meridian Option 81C do not require Group 0 to be moved to the Core.

The Meridian 1 Option 81C CNI port to group number cannot be changed in software configuration. In order to configure a group other than group 0, an NT4N72 kit must be ordered and installed.

The Meridian 1 Option 81C with FNF equipped with an NT4N46 Core/Net shelf must meet the requirements of Product Bulletins P-2002-1658-NA and PAA-2003-0199-NA for firmware 19. Highlights of the bulletins include:

- PB requires NTRB53AA Clock Controller.
- Shortest fiber cable should be used.
- Cables from group 0 - 1 must be same length.
- Distance between each ring from group 0 - group 1 must not exceed 50 ft.

IMPORTANT!

The shortest fiber cable must always be used (NTRC48).

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0.

The distance between the lengths of each fiber ring from group 0 to any other group must not exceed 50 ft. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional Network Group, fiber cables must be changed to adhere to the rules above.

To add a Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N46 Core/Net shelf:

- Clock Controller cards must be NTRB53AA.
- NTRB33 Fiber Junctor Interface (FIJI) card and the NTRE39 Optical Cable Management Card (OCMC) are added for FNF.

IMPORTANT!

When configuring NT8D76 cables, observe the following rules:

- The shortest NT8D76 Cable should always be used.
- A network group requires four NT8D76 cables, two to each half group. Both cables to each half group must be the same length.
- Check the existing NT8D76 cables. Replace any cables that do not meet the above requirement.

In a Meridian 1 Option 81C, the Core/Net shelf is factory configured to house Network Group 0. For new installations, this is satisfactory, as it promotes a standard layout for Meridian 1 Option 81C installations and eases maintenance.

However, when upgrading a system with earlier processors, this configuration is not always ideal. In particular, Meridian 1 Option 71, Meridian 1 Option 81 systems, or Meridian 1 Option 81C systems that have previously been upgraded from these earlier Options frequently have Network Group 0 configured in regular Network modules.

Due to the amount of customer data and hardware reconfiguration required, customers with these configurations do not want to place group 0 in the Core/ Net. Instead, the Core/Net is used to house a higher numbered group (e.g. Network group 4).

The layout of the NT4N46 Core/Net shelf does not currently lend itself to easily doing this. It is also not possible to reconfigure the CNI to Network map in software.

This has led to nonstandard cabling arrangements behind the Core, and to cases where the Network portion of the Core/Net has had to be left empty.

Avaya recommends modifying the NT4N46 shelf. These modifications can be retrofitted to existing systems equipped with the NT4N46 shelf.

Two new pieces of hardware are being introduced:

- P0942500 3PE Termination Panel, 8 group
- NT4N72AA A0860193 CNI to Core/Net Cable (19 inch.)

3PE Termination Panel

> ***Note:*** Check the current termination panel to determine if it is currently a P0942599 3PE termination panel. If the panel is the older 7 group version (P0908658), it must be changed.

The 3PE Termination Panel is mounted behind the Core shelf, and is used to mount the connectors from the CNI Transition Cards. The previous panel (P0908658) has sufficient cutouts to mount the connectors for 7 groups, those corresponding to groups 1 to 7. The connectors from CNI in slot 9, port 0 typically pass through a slot in the panel and are directly connected to the Network portion of the Core/Net backplane. This panel has 14 connector cutouts, is supplied as part of the Call Processor complex, and does not need to be ordered separately or installed on site.

The new 3PE termination panel P0942500 differs in that it has cutouts for 16 connectors, thus allowing CNI terminations for all 8 groups to be terminated. In new systems and hardware upgrades as supplied from the factory, only 14 connectors (those corresponding to groups 1 – 7) are terminated, with the two remaining cutouts left empty.

The CNI cables corresponding to Network group 0 still pass through a slot in this panel to terminate directly on the Network backplane, and this is how new systems continue to be delivered. However, it is possible to disconnect these Group 0 connectors from the Network backplane and mount them into the panel, which facilitates connecting 3PE cables connected to a remote Network group 0.

These new panels are included as standard on all NT4N46 shelf systems manufactured after February 18th 2002. The panels are also included with hardware upgrades, beginning approximately with the introduction of X11/ 25.40 software in early 2002. The panels are also available as merchandise to retrofit into any prior system.

NT4N72AA cable

This short (19 inch – 48 cm) cable is designed to interconnect the connectors mounted in the 3PE Termination Panel discussed above to the 3PE Network connectors on the Network portion of the Core/Net backplane. Any Network group CNI cards are easily connected to the Network backplane, allowing any Network group to be placed in the Core/Net.

Two cables are required in each Core/Net module, and 4 are required in a complete Meridian 1 Option 81C system. These cables are not required when Network group 0 is installed in the Core/Net shelf, since the CNI Transition Card cables for group 0 pass directly through the 3PE Termination Panel and terminate on the Network backplane (the standard factory configuration). These cables are delivered as part of any marketing packages, and have to be ordered as merchandise when needed.

> ***Note:*** It is still required that the two Core/Net shelves only contain a single Network group. For example, it is not possible to place one half of Group 1 in a Core/Net shelf and the other half in a Network shelf, and then proceed to split up Group 2 in the same way using the other Core/ Net shelf.

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions. Each section assumes any NT8D35 Network module installation is complete. For NT8D35 installation information see the *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

Before attempting any software or hardware upgrade, field personnel should follow the steps in Table 71.

Table 71
Prepare for upgrade steps

Procedure Step	Page
Plan the upgrade	428
Upgrade checklists	429
Prepare	429
Identifying the proper procedure	430
Connect a terminal	430
Print site data	431
Perform a template audit	433
Back up the database (data dump)	436

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications.
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.

- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.
- Review all product bulletins and Avaya Alerts that impact the site.
- Determine a contingency plan for backing out of the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers may print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Install Current patch or Dep lists at the source platform.
- Install Current patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.

- Perform an inventory on required software and hardware.
- Secure the source software and keycode.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

Connect a terminal

Procedure 110
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

2 The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

3 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 72). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 72
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>

Table 72
Print site data (Part 2 of 3)

Site data	Print command	
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>

Table 72
Print site data (Part 3 of 3)

Site data	Print command	
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya CS 1000 Media Gateway 1000E (Avaya MG 1000E)
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on Large Systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

IMPORTANT!

Preserve database backup information for a minimum of 5 days.

To backup existing data, perform the following procedure:

Procedure 111
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" will appear once the data dump is complete.

********	Exit the program.

End of Procedure

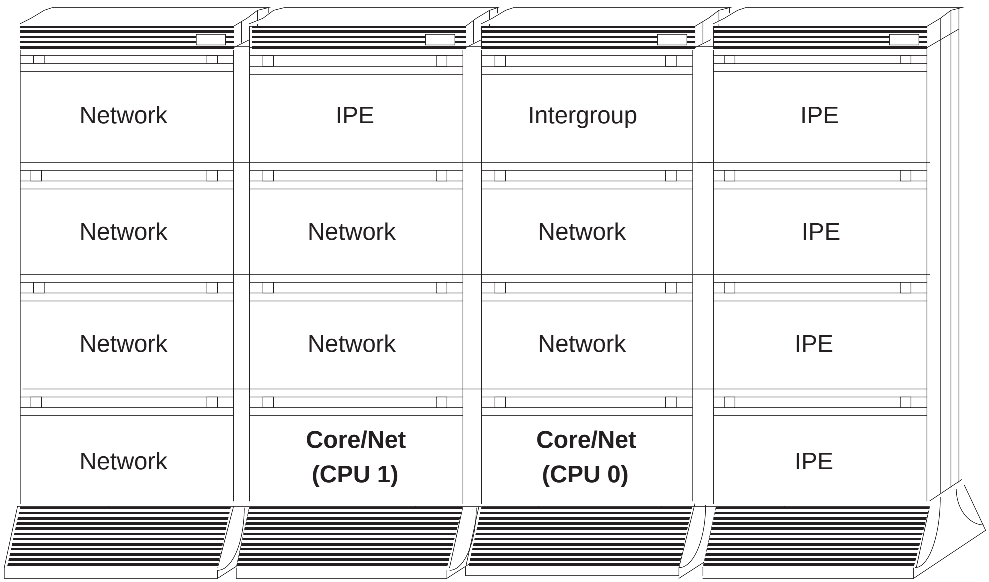
Perform the upgrade

Introduction

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/FNF equipped with an NT4N46 shelf.

Figure 51 shows a Meridian 1 Option 81C/FNF (NT4N46).

Figure 51
Meridian 1 Option 81C/FNF (NT4N46)



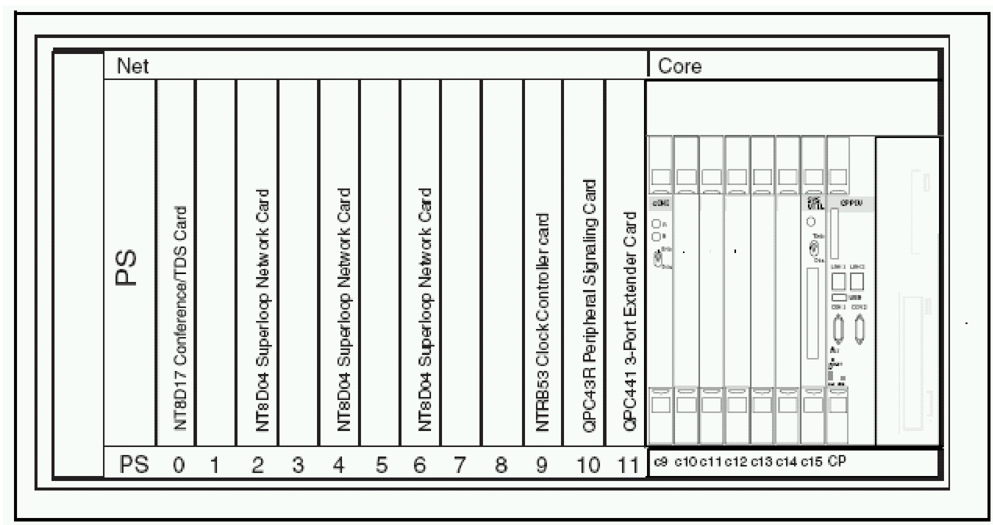
DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/FNF (NT4N46).

Figure 52 shows the NT4N46 Core/Net shelf.

Figure 52
NT4N46 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for a system with FNF. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

DO NOT proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- NTRB53AA Clock Controller
- NTRB33 AC or AD FIJI

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 73 describes the *minimum* equipment required to add a Core Network Group to a Meridian 1 Option 81C/FNF equipped with an NT4N46 shelf. Additional equipment for increased Network capacity must be ordered separately.

Table 73
Minimum equipment required to add a Core Network Group to an Option 81C/FNF equipped with an NT4N46 shelf

Order Number	Description	Quantity per system
NT8D80BZ	Cable, CPU Interface, 5 ft.	2
NT8D99AD	Cable, Network to Network, 6 ft.	2
NTRB33AC/AD	Card, Fibre Junctor Interface (FIJI)	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NTRC47	FIJI to FIJI Cable	1
NT4N72	CNI to Core/Net Cable	4
PO942500	16-connector cutout 3PE Termination Panel	2
NTRC48	fiber-optic cables	2

Tools

Table 74 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 74
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Placing a Group other then Group 0 in the core

Procedure 112
Placing a Group other then Group 0 in the core

If it is desired to modify a system that is already installed, or is currently being installed, so that a group other than Group 0 is in the Core/Net, some reconfiguration of the factory arrangement will be required.

Complete the following steps on ***both*** Core/Net modules.

1 Power down the Core/Net shelf (after transferring call processing to the other Core if required).

2 Ensure that the 16-connector cutout 3PE Termination Panel P0942500 is equipped. This can be retrofitted into systems initially equipped with the 14-connector cutout Panel P0908658 by removing all the cable connectors and then the 4 screws that attach the panel to its frame.

3 Remove the connections from the Network backplane connectors that originate from CNI card 9, port 0. This may involve removing the screws that hold in the panel, so that the connectors can be moved through the slot.

4 Connect all eight pairs of cables from the CNI Transition Cards to this panel.

5 Using two cables NT4N72AA, connect the appropriate pair of connectors on the 3PE Termination Panel corresponding to the desired Group to the two connectors on the Network backplane.

6 Use standard NT8D76 cables to connect all other groups, including Group 0, to the 3PE cards in the respective Network modules.

7 Restore power to the Core/Net shelf, transfer call processing if required, and proceed to upgrade the other Core/Net shelf.

End of Procedure

Route FIJI to FIJI cables

preroute an NTRC47AA cable between the FIJI cards in shelf 0 and shelf 1 of each added Network Group.

To minimize system downtime during the upgrade, all FIJI cables must be in place before the Network Groups are installed.

> ***Note:*** Do not disconnect the existing Fiber cables.

Procedure 113
Labeling and routing the shelf 0 fiber-optic cables (ascending)

Route the NTRC48 cables between the FIJI cards in each added Network shelf 0 in *ascending* order.

CAUTION
Damage to Equipment
Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

1 Start with shelf 0 in the current highest Network Group.

2 Label each cable on both sides with the appropriate connection information from Table 75 on page 444.

3 Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from the FIJI card in shelf 0 of the current highest Network Group, to the FIJI card in shelf 0 of the added Network Group.

4 If more than one Network Group is to be added, route a second NTRC48 cable of the appropriate length to shelf 0 of the second added group.

5 Continue to route the NTRC48 cable of the appropriate length in *ascending* order between shelf 0 of each added Network Group.

IMPORTANT!

The shortest Fiber Cable must always be used (NTRC48).

The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0

The distance between the lengths of each fiber ring from group 0 to any other group must not exceed 50'. Rings are directional. Ring 0 is ascending and ring 1 is descending.

Note: When adding an additional network group, fiber cables must be changed to adhere to the rules above.

6 To complete the Ring, route a final cable from the highest number group back to Group 0, shelf 0.

Table 75
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/0	P1	Tx - J1
1/0	P2	Rx - J2
1/0	P1	Tx - J1
2/0	P2	Rx - J2
2/0	P1	Tx - J1
3/0	P2	Rx - J2
3/0	P1	Tx - J1
4/0	P2	Rx - J2
4/0	P1	Tx - J1
5/0	P2	Rx - J2
5/0	P1	Tx - J1
6/0	P2	Rx - J2
6/0	P1	Tx - J1
7/0	P2	Rx - J2
7/0	P1	Tx - J1
0/0	P2	Rx - J2

End of Procedure

Procedure 114
Labeling and routing the shelf 1 fiber-optic cables (descending)

Route the NTRC48 cables between the FIJI cards in each Network shelf 1 in *descending* order (Figure 53 on page 446).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

Note 1: Do not disconnect existing Fiber cables

Note 2: Each end of the NTRC48 cable is labeled “Tx” or Rx” in the factory.

1 Start with Group 0, shelf 1.

2 Label each cable on both sides with the appropriate connection information from Table 76 on page 447.

3 Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from shelf 1 of the FIJI card in Group 0, to the FIJI card in the added highest Network Group, shelf 1.

4 Route a NTRC48 cable from the FIJI card in the added highest Network Group, shelf 1 to the FIJI card in the second highest Network Group, shelf 1.

5 Continue to route NTRC48 FIJI Fiber Ring cables of the appropriate lengths between shelf 1 of each added Network Group. Route these cables in *descending* order of Network Groups.

6 Route a final cable to the current highest Network Group, shelf 1.

End of Procedure

Figure 53
Shelf 1 descending fiber-optic Ring (example)

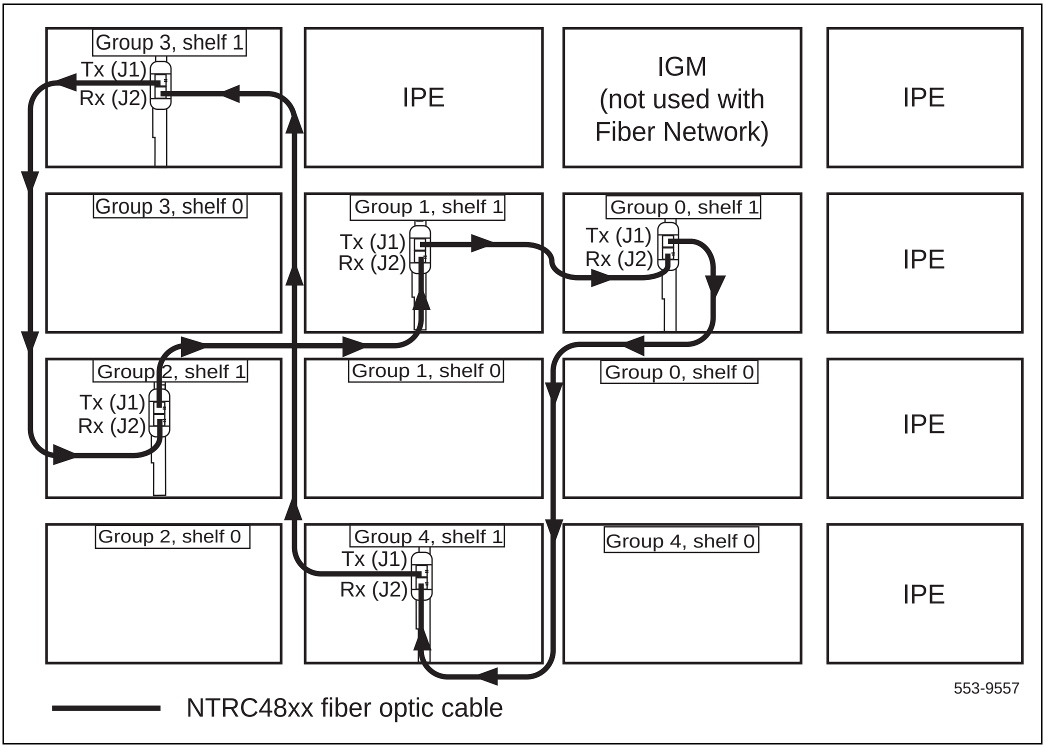


Table 76
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/1	P1	Tx - J1
7/1	P2	Rx - J2
7/1	P1	Tx - J1
6/1	P2	Rx - J2
6/1	P1	Tx - J1
5/1	P2	Rx - J2
5/1	P1	Tx - J1
4/1	P2	Rx - J2
4/1	P1	Tx - J1
3/1	P2	Rx - J2
3/1	P1	Tx - J1
2/1	P2	Rx - J2
2/1	P1	Tx - J1
1/1	P2	Rx - J2
1/1	P1	Tx - J1
0/1	P2	Rx - J2

Interconnect the network modules

On the back of each Core/Net module backplanes are two connectors labeled D and E.

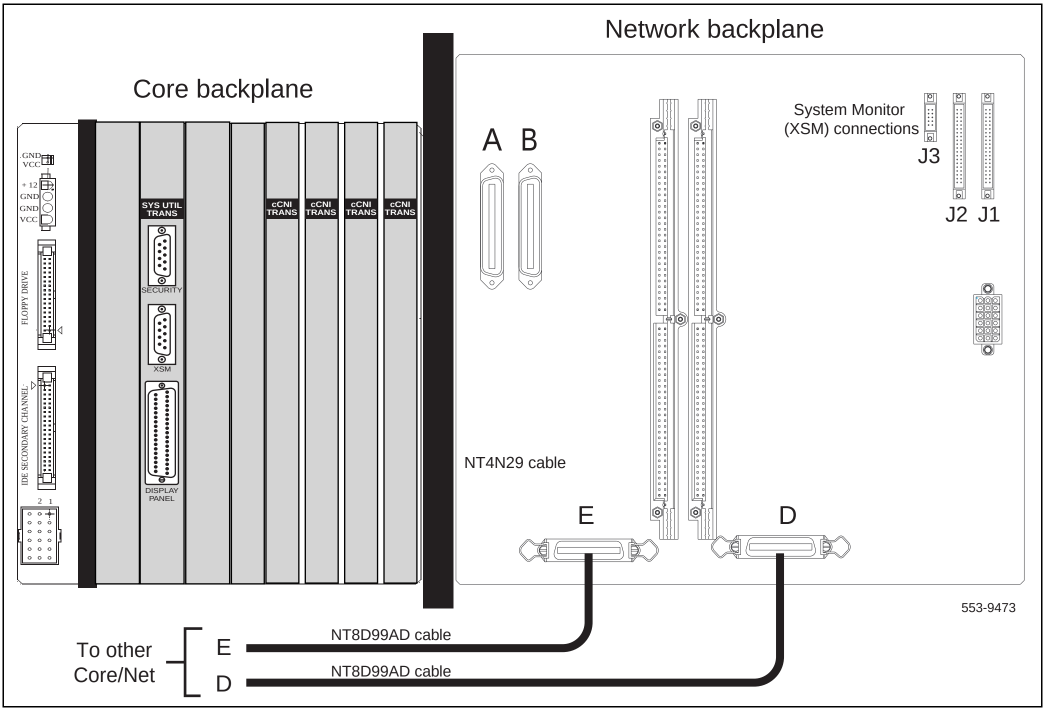
Procedure 115
Interconnecting the network modules

1 Connect the NT8D99AD cable from the D connector in shelf 0 to the D connector in shelf 1 of the NT4N46 Core/Net Module.

2 Connect the NT8D99AD cable from the E connector in shelf 0 to the E connector in shelf 1 of the NT4N46 Core/Net Module.

End of Procedure

Figure 54
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Add CNI cards if necessary

If additional CNI cards are required, add to each Core Module as required. See Figure 55.

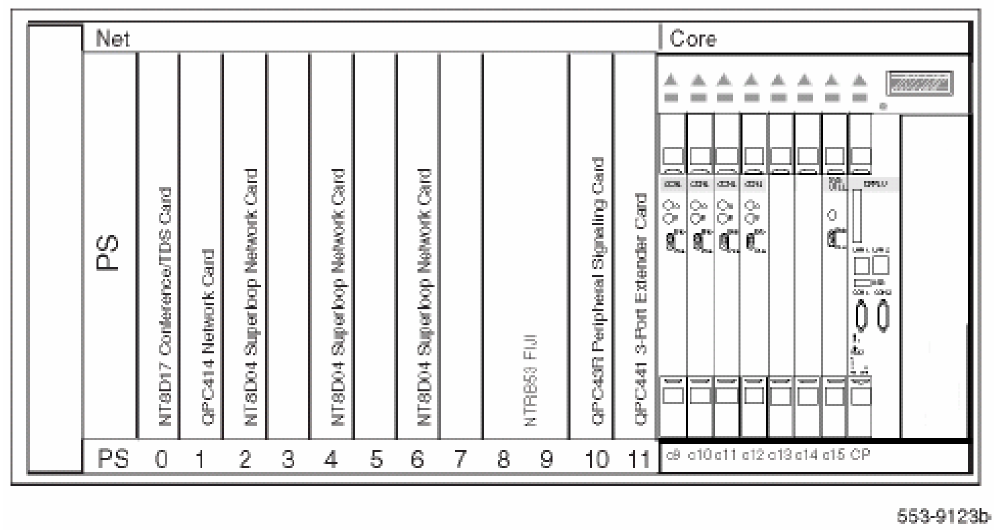
Procedure 116
Adding CNI cards

1 Face plate disable CNI card.

2 Insert card into Core/Net module, but do not seat card into backplane at this time.

End of Procedure

Figure 55
Core/Net card cage



Procedure 117
Connecting the 3PE to CNI cables

Using two NT4N72AA cables, connect the appropriate pair of connectors on the 3PE Termination Panel corresponding to the desired Group to the two connectors on the Network backplane.

The CNI slot and port connections are labeled on the 3PE Fanout Panel. See Table 77, and Figure 56 on page 451 for NT8D72 cable connections.

1 Connect the NT4N72 cables to Core/Net backplane of the 3PE cards.

2 Connect the new NT4N72 cables to the Fanout Panel in the Core/Net.

Table 77
Fanout Panel to 3PE card connectors

Group Number	Connects from the Fanout Panel connector	To the 3PE card connector
0	9-0, J3	J3
0	9-0, J4	J4
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

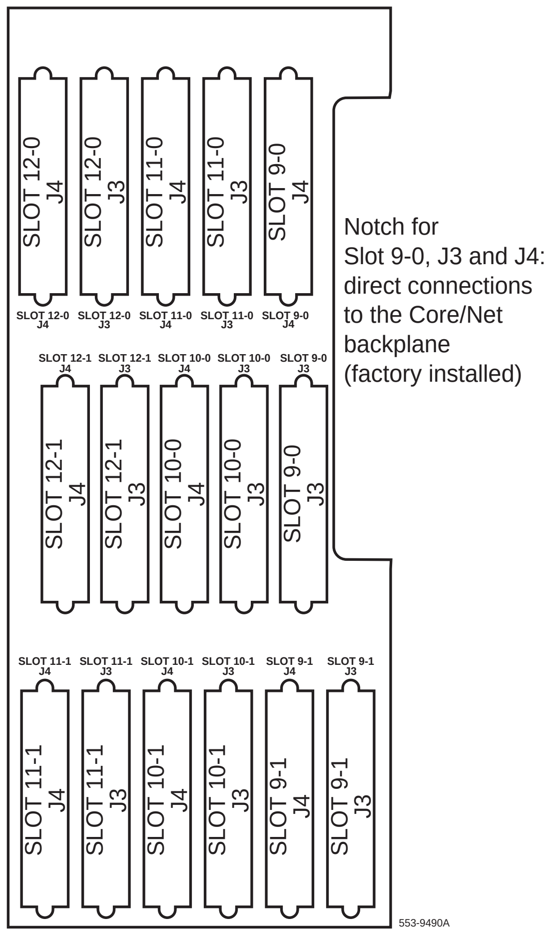
Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **or**
to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

3 Connect NT8D80BZ cable from J3 of the 3PE card in Core 0 to the J3 of 3PE card in Core 1.

4 Connect NT8D80BZ cable from J4 of the 3PE card in Core 0 to the J4 of 3PE card in Core 1.

End of Procedure

Figure 56
3PE Termination Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the Core/Net modules as described below. Each card must be installed and enabled or disabled as indicated.

Install and enable the QPC441 3PE cards

Procedure 118
Installing and enable the QPC441 3PE cards

Three steps are required to install the QPC441 3PE cards.

1 Verify the QPC441 3PE card settings.

The group and shelf number of each Network module is determined by the switch settings on the QPC441 3PE card. Use the information in Table 78 on page 453 to verify that the QPC441 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a QPC441 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the cables to the QPC441 3PE faceplates.

Table 78
QPC441 3PE Card installed in the NT4N46 Module

Jumper settings. Set Jumper RN27 at E35 to "A".									
Switch Settings									
Module		D20 switch position							
NT4N46		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Core/Net 0 (Shelf 0)	Group 0	off	on	on	off	on	on	on	on
	Group 1	off	on	on	off	on	on	off	on
	Group 2	off	on	on	off	on	off	on	on
	Group 3	off	on	on	off	on	off	off	on
	Group 4	off	on	on	off	off	on	on	on
	Group 5	off	on	on	off	off	on	off	on
	Group 6	off	on	on	off	off	off	on	on
	Group 7	off	on	on	off	off	off	off	on
Core/Net 1 (Shelf 1)	Group 0	off	on	on	off	on	on	on	off
	Group 1	off	on	on	off	on	on	off	off
	Group 2	off	on	on	off	on	off	on	off
	Group 3	off	on	on	off	on	off	off	off
	Group 4	off	on	on	off	off	on	on	off
	Group 5	off	on	on	off	off	on	off	off
	Group 6	off	on	on	off	off	off	on	off
	Group 7	off	on	on	off	off	off	off	off

End of Procedure

Install and enable the QPC43R Peripheral Signaling (Per Sig) cards

Procedure 119
Installing and enable the Peripheral Signaling (Per Sig) cards

1 Install a Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Disable and insert the NTRB33AC FIJI cards

Procedure 120
Disabling and inserting the FIJI cards

1 Faceplate *disable* the FIJI cards.

2 Insert the FIJI cards into slots 2 and 3 of each added Network module.

3 Do not plug the card into the backplane.

End of Procedure

Disable and insert the NT8D17 Conf/TDS cards

Procedure 121
Disabling and inserting the Conf/XCT cards

If Conf/XCT cards are used in the system, complete the steps below.

1 Faceplate *disable* the Conf/XCT cards.

2 Insert a Conf/XCT card into each added Network module.

3 Do not plug the card into the backplane.

End of Procedure

Enable the Network Group

Note: If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 122
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program
STAT CPU	Obtain status of the CPUs

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary)
********	Exit program

End of Procedure

Procedure 123
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary)
DIS CC 1	Disable Clock Controller 1
********	Exit program

End of Procedure

Add the CNI cards or ports

Procedure 124
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In OVL 135 split the Cores.

LD 135	To load the program.
SPLIT	Split the Cores.
********	To exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1:

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 87 on page 500.

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	To exit the program.

3 Perform a data dump

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

Table 79 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 79
Fanout Panel to 3PE card connectors

Group Number	Connects from the Fanout Panel connector	To the 3PE card connector
0	**9-0, J3**	**J3**
0	**9-0, J4**	**J4**
1	**9-1, J3**	**J3**
1	**9-1, J4**	**J4**
2	**10-0, J3**	**J3**
2	**10-0, J4**	**J4**
3	**10-1, J3**	**J3**
3	**10-1, J4**	**J4**
4	**11-0, J3**	**J3**
4	**11-0, J4**	**J4**
5	**11-1, J3**	**J3**
5	**11-1, J4**	**J4**
6	**12-0, J3**	**J3**
6	**12-0, J4**	**J4**
7	**12-1, J3**	**J3**
7	**12-1, J4**	**J4**

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **or**
to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

End of Procedure

Procedure 125
Checking that Ring 0 is active in Core 0

1 Check the status of Ring 0.

LD 39	Load program
STAT RING 0	Obtain the status of Ring 0 (Ring state should be HALF/HALF)

2 Disable Ring auto recovery.

LD 39	Load program
ARCV OFF	Set or reset autorecovery operation for ring

3 Swap to Ring 0.

LD 39	Load program
SWRG 0	Swing Traffic to Ring x.

4 Disable Ring 1.

LD 39	Load program
DIS RING 1	Disable all FIJI cards on side 1

WARNING

Cable Ring 1 to new network shelf only.

5 Seat the remaining cards (3PE, PER SIG, XCT, FIJI) in both network modules.

Note: Cards must be faceplate disabled before seating.

6 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and FIJI).

7 Break Ring 1 and cable the added FIJI cards. Ring 1 is descending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

8 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

9 In LD 135 switch Cores.

LD 135	To load the program.
CUTOVR	Switch Cores.

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active, FIJI ring 1 is full, FIJI ring 0 is none.

Note 1: On FNF based systems after the INI:
A FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring; downloading up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process does not affect service. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note 2: Wait for new ring state change message to appear before proceeding:

```
New State Ring 0 None
          Ring 1 Full
```

10 Switch the clock controllers, if necessary:

LD 60	To load the program.
SSCK n	Obtain status of clock n where n = 0 for clock controller 0 1 for clock controller 1
SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	To exit the program.

11 Disable Ring 0.

LD 39	To load the program.

DIS RING 0	Disables all FIJI cards on side 0.
****	To exit the program.

12 Break Ring 0 and cable the added FIJI cards. Ring 0 is ascending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

> The system is in split mode with Core 1 active. Clock 1 active and FIJI half and half.

13 In LD 39, enable and stat Ring 0:

LD 39	To load the program.
ENL Ring 0	Enable Ring 0.
Stat Ring 0	Status of Ring x.
****	To exit the program.

14 **In Core 0 only,** define the XCT and Extenders to the added group.

Note: See Table 87 on page 500:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	To exit the program.

15 Data dump the software changes.

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

16 Seat the CNI card in Core 0 and faceplate enable it.

17 In Core 1, Stat the CNIs:

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	To exit the program.

End of Procedure

Test the Cores

Procedure 126
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states:

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.

DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x= system XMS.
STAT XSM	Check the system monitors.
****	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	To get the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings

For more information about LD 39 commands, see *Avaya Software Input/ Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
********	Exit program.

10 Check applications.

11 Check for dial tone.

End of Procedure

Procedure 127
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 128
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.

STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings

Note: For more information about LD 39 commands, see *Avaya Software Input/Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
****	Exit program.

10 Check applications (such as CallPilot and Symposium).

11 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the "Postconversion procedure" on page 593.

Add an NT8D35 Network Group to Option 81C with FNF

The target platform, the Meridian 1 Option 81C/FNF (NT4N46) must meet the requirements of Product Bulletins P-2002-1658-NA and PAA-2003-0199-NA for firmware 19. Highlights of the bulletins include:

- PB requires NTRB53AA Clock Controller.
- shortest fiber cable should be used.
- cables from group 0 - 1 must be same length.
- Distance between each ring from group 0 - group 1 must not exceed 50 ft.

> **IMPORTANT!**
>
> The shortest Fiber Cable must always be used (NTRC48).
>
> The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0
>
> The distance between the lengths of each fiber ring from group 0 to any other group must not exceed 50'. Rings are directional. Ring 0 is ascending and ring 1 is descending.
>
> ***Note:*** When adding an additional Network Group, fiber cables must be changed to adhere to the rules above.

To add an NT8D35 Network Group to a Meridian 1 Option 81C/FNF (NT4N46) system:

- Clock Controller cards must be NTRB53AA.

NTRB33 AC/AD Fiber Junctor Interface (FIJI) card and the NTRE39 Optical Cable Management Card (OCMC) are added for FNF.

IMPORTANT!

When configuring NT8D76 cables, observe the following rules:

- The shortest NT8D76 Cable should always be used.
- A network group requires 4 NT8D76 cables, 2 to each half group. Both cables to each half group must be the same length.
- A check should be made on the existing NT8D76 cables. Replace any cables that do not meet the above requirement.

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions.

Each section assumes any NT8D35 Network module installation is complete. For NT8D35 installation information see the *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

Before attempting any software or hardware upgrade field personnel should complete the steps in Table 80.

Table 80
Prepare for upgrade steps

Procedure Step	Page
Plan the upgrade	473
Upgrade checklists	474
Prepare	474
Identifying the proper procedure	475
Connect a terminal	475
Print site data	476
Perform a template audit	478
Back up the database (data dump)	481

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Avaya Alerts that impact the site.
- A contingency plan for backing out of the upgrade.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers may print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Current patch or Dep lists installed at the source platform.
- Required patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.

- Perform an inventory on required software and hardware.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

IMPORTANT!

Preserve database backup information for a minimum of 5 days.

Connect a terminal

Procedure 129
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

1 Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.

2 The settings for the terminal are:

- **a.** 9600 Baud
- **b.** 8 data
- **c.** parity none
- **d.** 1 stop bit
- **e.** full duplex
- **f.** XOFF

3 If only one terminal is used for both Core or Core/Net modules, connect the terminal from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 81). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 81
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>

Table 81
Print site data (Part 2 of 3)

Site data	Print command	
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop

Table 81
Print site data (Part 3 of 3)

Site data	Print command	
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for Avaya MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**
•	
•	
TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 130
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" will appear once the data dump is complete.

********	Exit the program.

IMPORTANT!

Preserve database backup information for a minimum of 5 days.

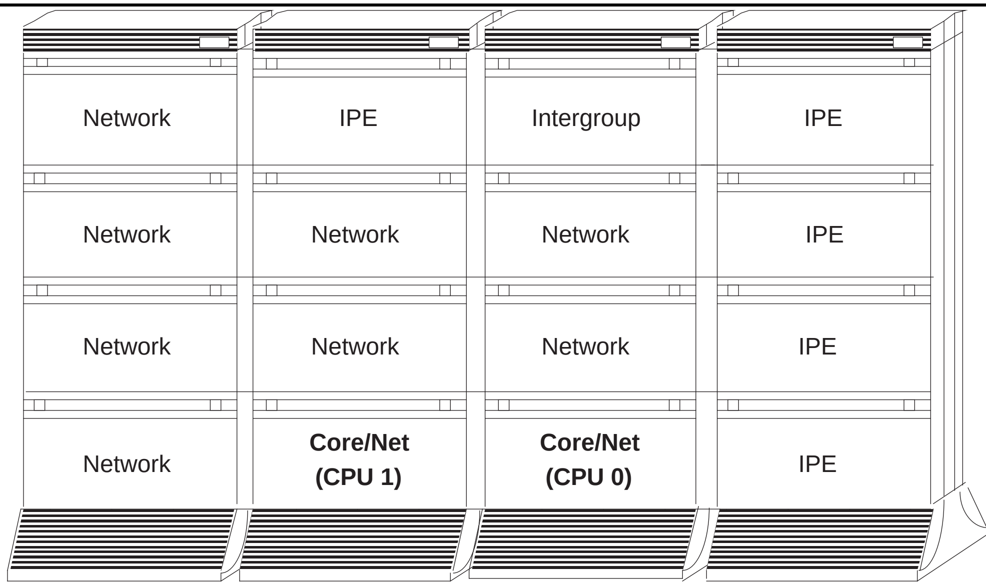
End of Procedure

Perform the upgrade

Introduction

Figure 57 shows a Meridian 1 Option 81C/FNF (NT4N46).

Figure 57
Meridian 1 Option 81C/FNF (NT4N46)

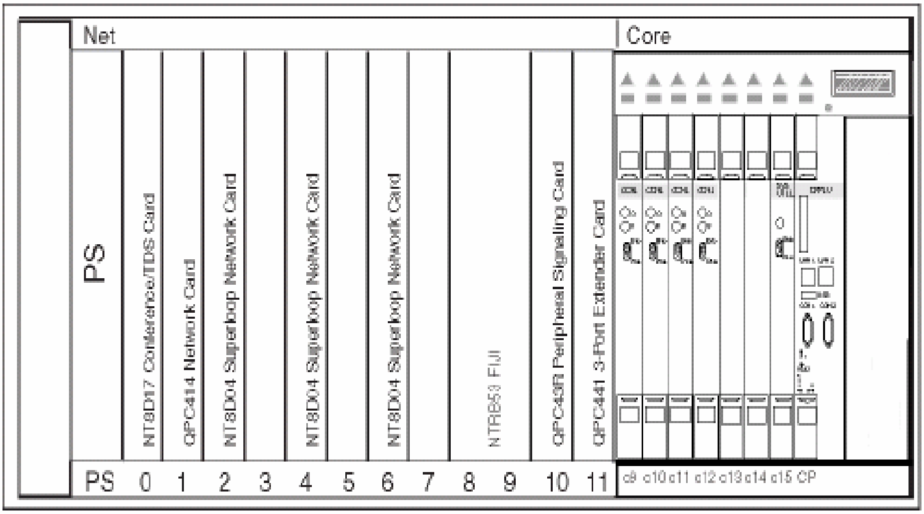


DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Complete the procedure in this section to add an NT8D35 Network Group to the Meridian 1 Option 81C/FNF (NT4N46).

Figure 58
NT4N46 Core/Net shelf



553-9123b

Review upgrade requirements

This section describes the *minimum* equipment required for a system with FNF. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

DO NOT proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.
- NTRB53AA Clock Controller
- NTRB33AC/AD FIJI

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 82 describes the *minimum* equipment required to upgrade a system. Additional equipment for increased Network capacity must be ordered separately.Check required power equipment

Table 82
Minimum equipment required to add an NT8D35 Network Group to an Option 81C/FNF equipped with an NT4N46 shelf

Order Number	Description	Quantity per system
NT8D99AB	Cable, Network to Network, 6 ft.	5
NTRB33AC/AD	Card, Fibre Junctor Interface (FIJI)	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NTRC47	FIJI to FIJI Cable	1
NT8D76	CNI to 3PE Cables	4
NT8D35	Network Shelves	2
NTRC48	Fiber-Optic cables	2

Tools

Table 83 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 83
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Check personnel requirements

Avaya recommends that a minimum of two people perform the upgrade.

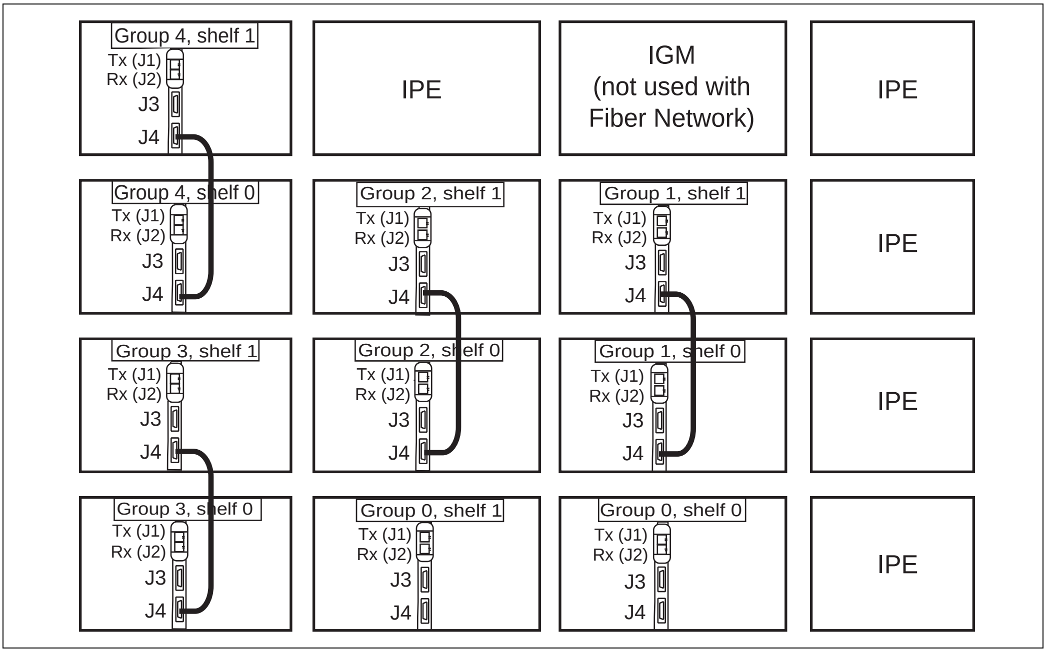
Route FIJI to FIJI cables

preroute an NTRC47AA cable between the FIJI cards in shelf 0 and shelf 1 of each added Network Group. See Figure 59 on page 487.

To minimize system downtime during the upgrade, all FIJI cables must be in place before the Network Groups are installed.

Note: Do not disconnect the existing Fiber cables.

Figure 59
FIJI to FIJI cables (Option 81C example)



Procedure 131
Labeling and routing the shelf 0 fiber-optic cables (ascending)

Route the NTRC48 cables between the FIJI cards in each added Network shelf 0 in *ascending* order (Table 75 on page 444):

CAUTION
Damage to Equipment
Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

1 Start with shelf 0 in the current highest Network Group.

2 Label each cable on both sides with the appropriate connection information from Table 84 on page 489.

3 Route a NTRC48 FIJI Fiber Ring cable of the appropriate length from the FIJI card in shelf 0 of the current highest Network Group, to the FIJI card in shelf 0 of the added Network Group.

4 If more than one Network Group is to be added, route a second NTRC48 cable of the appropriate length to shelf 0 of the second added group.

5 Continue to route NTRC48 cable of the appropriate length in *ascending* order between shelf 0 of each added Network Group.

6 To complete the Ring, route a final cable from the highest number group back to Group 0, shelf 0.

Table 84
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/0	P1	Tx - J1
1/0	P2	Rx - J2
1/0	P1	Tx - J1
2/0	P2	Rx - J2
2/0	P1	Tx - J1
3/0	P2	Rx - J2
3/0	P1	Tx - J1
4/0	P2	Rx - J2
4/0	P1	Tx - J1
5/0	P2	Rx - J2
5/0	P1	Tx - J1
6/0	P2	Rx - J2
6/0	P1	Tx - J1
7/0	P2	Rx - J2
7/0	P1	Tx - J1
0/0	P2	Rx - J2

End of Procedure

Procedure 132
Labeling and routing the shelf 1 fiber-optic cables (descending)

Route the NTRC48 cables between the FIJI cards in each Network shelf 1 in *descending* order (Figure 60 on page 491).

> **CAUTION**
> **Damage to Equipment**
> Do not excessively bend or cinch the Fiber Ring cables. These cables are easily damaged. Use the Optical Cable Management Card (OCMC) to manage and protect the Fiber Ring cables.

Note: Each end of the NTRC48 cable is labeled “Tx” or Rx” in the factory.

1 Start with Group 0, shelf 1.

2 Label each cable on both sides with the appropriate connection information from Table 85 on page 492.

3 Route an NTRC48 FIJI Fiber Ring cable of the appropriate length from shelf 1 of the FIJI card in Group 0, to the FIJI card in the added highest Network Group, shelf 1.

4 Route a NTRC48 cable from the FIJI card in the added highest Network Group, shelf 1 to the FIJI card in the second highest Network Group, shelf 1.

5 Continue to route NTRC48 FIJI Fiber Ring cables of the appropriate lengths between shelf 1 of each added Network Group. Route these cables in *descending* order of Network Groups.

6 Route a final cable to the current highest Network Group, shelf 1.

End of Procedure

Figure 60
Shelf 1 descending fiber-optic Ring (example

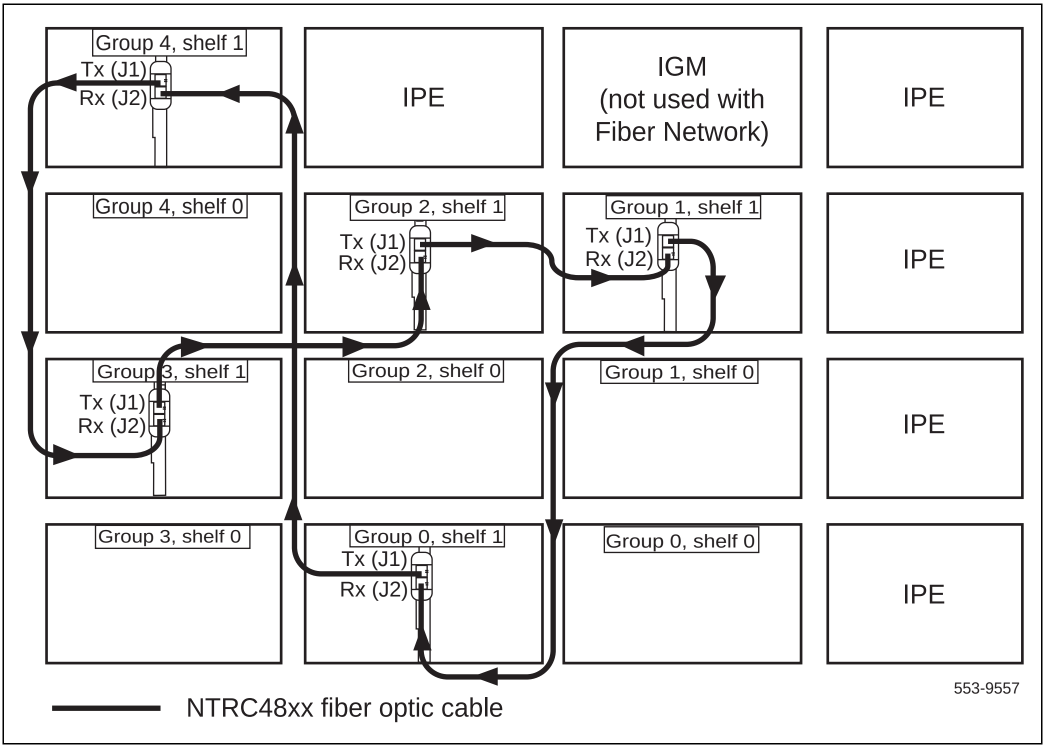


Table 85
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/shelf	**NTRC48 fiber cable connector**	**FIJI card connector**
0/1	P1	Tx - J1
7/1	P2	Rx - J2
7/1	P1	Tx - J1
6/1	P2	Rx - J2
6/1	P1	Tx - J1
5/1	P2	Rx - J2
5/1	P1	Tx - J1
4/1	P2	Rx - J2
4/1	P1	Tx - J1
3/1	P2	Rx - J2
3/1	P1	Tx - J1
2/1	P2	Rx - J2
2/1	P1	Tx - J1
1/1	P2	Rx - J2
1/1	P1	Tx - J1
0/1	P2	Rx - J2

Procedure 133
Interconnecting the network modules

The back of each network module backplane has five connectors: A, B, C, D and E. See Figure 61 on page 494. The shelf 0 connectors in Network groups 1 through 7 must be connected to the shelf 1 connectors of the Network groups 1 through 7. For example, for Network group 1, the shelf 0 connector must be connected to the shelf 1 connector.k group.

1 Connect an NT8D99AB cable from the A connector in shelf 0 of Network group 1 to the A connector in shelf 1 Network group 1.

2 Connect the B connector in shelf 0 to the B connector in shelf 1.

3 Connect the C connector in shelf 0 to the C connector in shelf 1.

4 Connect the D connector in shelf 0 to the D connector in shelf 1.

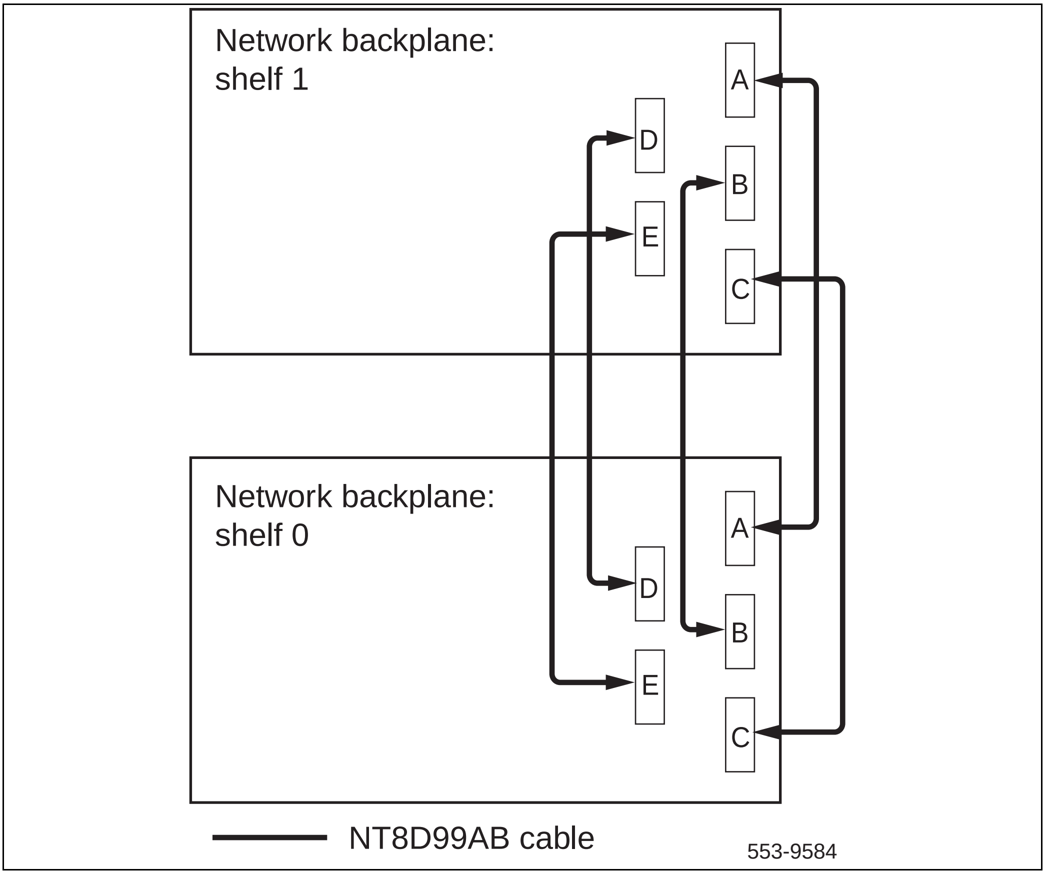
5 Connect the E connector in shelf 0 to the E connector in shelf 1.

6 Connect the A, B, C, D, and E connectors between shelf 0 and shelf 1 for all other Network groups in the system (except group 0).

Note: All connections are made with an NT8D99AB cable.

End of Procedure

Figure 61
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Add CNI cards if necessary

If additional CNI cards are required, add to each Core Module as required. See Figure 62.

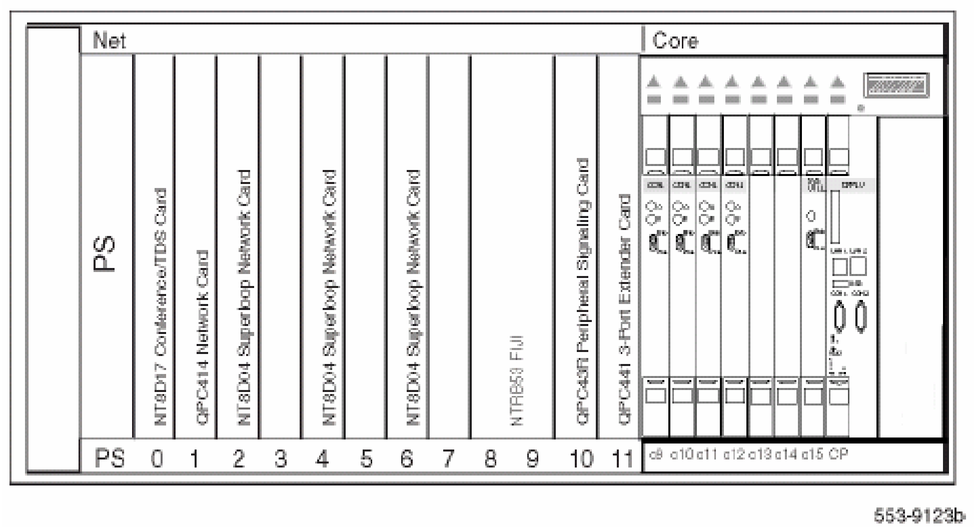
Procedure 134
Adding CNI cards

1 Faceplate disable CNI card.

2 Insert card into Core/Net module, but do not seat card into backplane at this time.

End of Procedure

Figure 62
NT4N46 Core/Net card cage



Procedure 135
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE Fanout Panel.

> ***Note:*** See Table 86, Figure 63 on page 497, and Figure 64 on page 498 for NT8D76 cable connections.

1 Connect the NT8D76 cables to J3 and J4 of the 3PE cards.

2 Connect the new NT8D76 cables to the Fanout Panel in the Core/Net.

Table 86
Fanout Panel to 3PE card connectors

Group Number	Connects from the Fanout Panel connector	To the 3PE card connector
0	9-0, J3	J3
0	9-0, J4	J4
1	9-1, J3	J3
1	9-1, J4	J4
2	10-0, J3	J3
2	10-0, J4	J4
3	10-1, J3	J3
3	10-1, J4	J4
4	11-0, J3	J3
4	11-0, J4	J4
5	11-1, J3	J3
5	11-1, J4	J4
6	12-0, J3	J3
6	12-0, J4	J4
7	12-1, J3	J3
7	12-1, J4	J4

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **OR** to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

End of Procedure

Figure 63
Example of 3PE faceplate to 3PE Fanout Panel connection

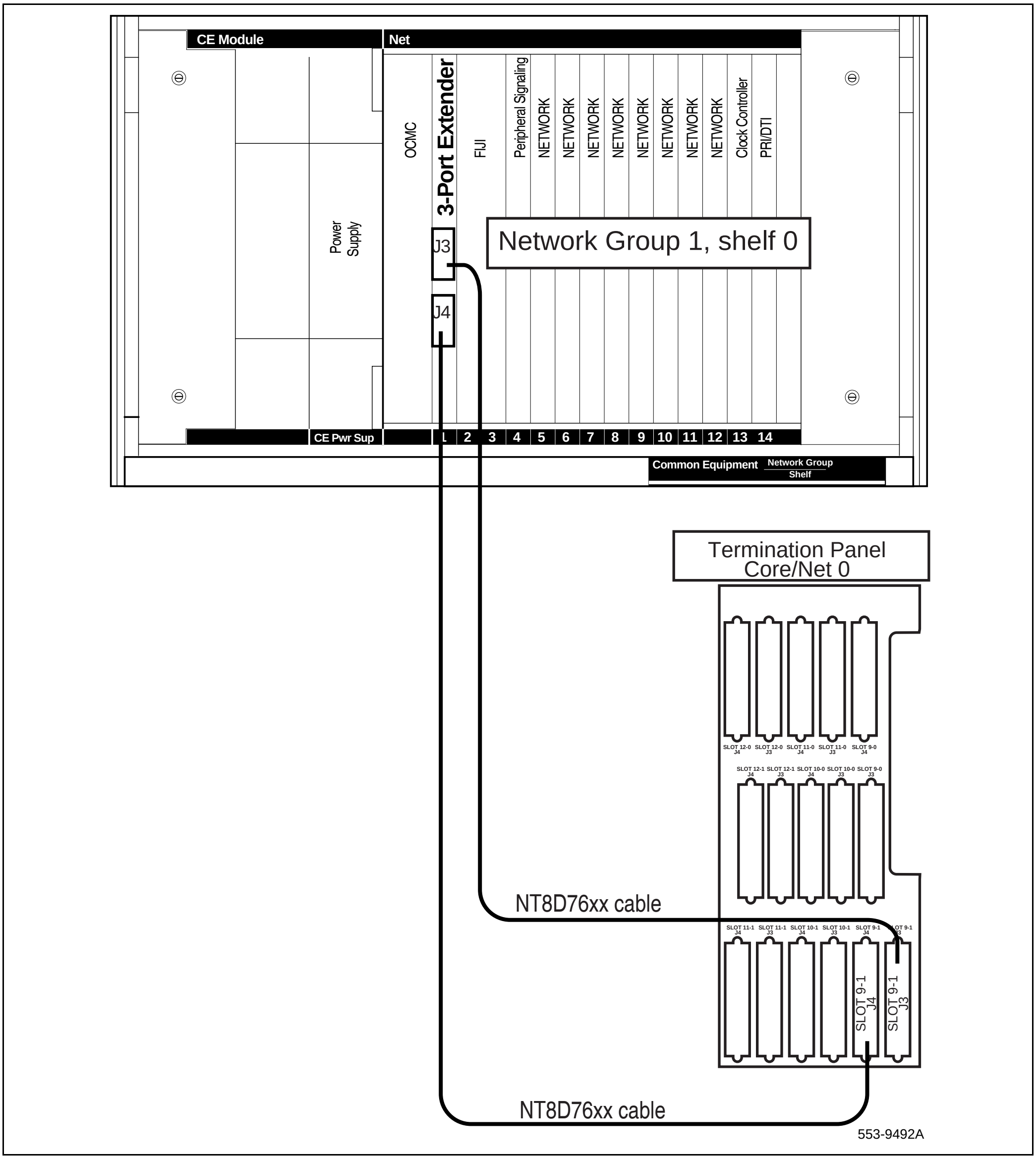
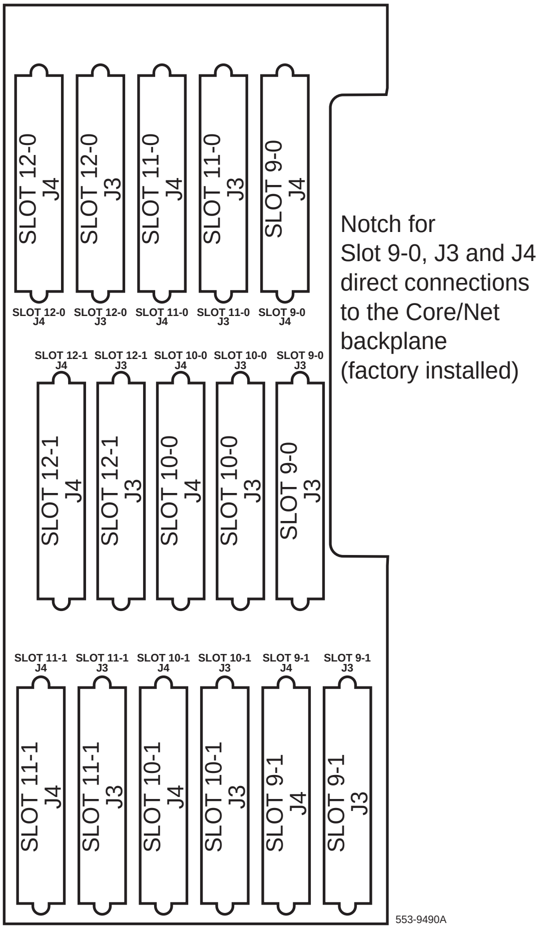


Figure 64
3PE Fanout Panel (Core/Net module)



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Procedure 136
Installing and enabling the 3PE cards

1 Verify the 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 87 on page 500 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the cables to the 3PE faceplates.

Table 87
3PE card settings for the NT8D35 Module

Jumper Settings
Set Jumper RN27 at E35 to “A”.

Switch Settings				
D20 switch position:	**1**	**2**	**3**	**4**
81, 81C (Note)	off	on	on	on

Shelf	Group	**D20 switch position:**	**5**	**6**	**7**	**8**
0 (3PE cards connected to the a CNI in Core or Core/Net 0)	0		on	on	on	on
	1		on	on	off	on
	2		on	off	on	on
	3		on	off	off	on
	4		off	on	on	on
	5		off	on	off	on
	6		off	off	on	on
	7		off	off	off	on
1 (3PE cards connected to the a CNI in Core or Core/Net 1)	0		on	on	on	off
	1		on	on	off	off
	2		on	off	on	off
	3		on	off	off	off
	4		off	on	on	off
	5		off	on	off	off
	6		off	off	on	off
	7		off	off	off	off

End of Procedure

Procedure 137
Installing and enabling the
QPC43R Peripheral Signaling (Per Sig) cards

1 Install a Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

End of Procedure

Procedure 138
Disabling and inserting the NTRB33AC FIJI cards

1 Faceplate *disable* the FIJI cards.

2 Insert the FIJI cards into slots 2 and 3 of each added Network module.

3 Do not plug the card into the backplane.

End of Procedure

Procedure 139
Disabling and inserting the NT8D17 Conf/TDS cards

If Conf/XCT cards are used in the system, follow the procedures below.

1 Faceplate *disable* the Conf/XCT cards.

2 Insert a Conf/XCT card into each added Network module.

3 Do not plug the card into the backplane.

End of Procedure

Enable the Network Group

> ***Note:*** If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 140
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program
STAT CPU	Obtain status of the CPUs

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary)
********	Exit program

End of Procedure

Procedure 141
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary)
DIS CC 1	Disable Clock Controller 1
********	Exit program

End of Procedure

Add the CNI cards or ports

Procedure 142
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In OVL 135 split the Cores.

LD 135	To load the program.
SPLIT	Split the Cores.
********	To exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1:

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 87 on page 500:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
****	To exit the program.

Table 88 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 88
Fanout Panel to 3PE card connectors

Group Number	connects from	Fanout Panel connector	to	3PE card connector
0		**9-0, J3**		**J3**
0		**9-0, J4**		**J4**
1		**9-1, J3**		**J3**
1		**9-1, J4**		**J4**
2		**10-0, J3**		**J3**
2		**10-0, J4**		**J4**
3		**10-1, J3**		**J3**
3		**10-1, J4**		**J4**
4		**11-0, J3**		**J3**
4		**11-0, J4**		**J4**
5		**11-1, J3**		**J3**
5		**11-1, J4**		**J4**
6		**12-0, J3**		**J3**
6		**12-0, J4**		**J4**
7		**12-1, J3**		**J3**
7		**12-1, J4**		**J4**

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **or**
to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

3 Perform a data dump:

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

End of Procedure

Procedure 143
Checking that Ring 0 is active in Core 0

1 Check the status of Ring 0.

LD 39	Load program
STAT RING 0	Obtain the status of Ring 0 (Ring state should be HALF/HALF)

2 Disable Ring auto recovery.

LD 39	Load program
ARCV OFF	Set or reset autorecovery operation for ring

3 Swap to Ring 0.

LD 39	Load program
SWRG 0	Swing Traffic to Ring x.

4 Disable Ring 1.

LD 39	Load program
DIS RING 1	Disable all FIJI cards on side 1

WARNING

Cable Ring 1 to new network shelf only.

5 Seat the remaining cards (3PE, PER SIG, XCT, FIJI) in both network modules.

Note: Cards must be faceplate disabled before seating.

6 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and FIJI).

7 Break Ring 1 and cable the added FIJI cards. See Figure 53 on page 446. Ring 1 is descending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

8 **In Core 1 only**, seat the new CNI card and faceplate enable.

> **IMPORTANT!**
>
> Power down all applications.

> **CAUTION**
>
> **Service Interruption**
>
> Call processing is interrupted for approximately 10 minutes while the INI is completed.

9 In LD 135 switch Cores.

LD 135	To load the program.
CUTOVR	Switch Cores

> **WARNING**
> All call processing may be interrupted.

> **IMPORTANT!**
>
> Power up all applications.

Core 1 is active, Clock 0 is active, FIJI ring 1 is full, FIJI ring 0 is none.

CAUTION

Service Interruption

Allow the system to recover from all downloads after the INI completes.

Note 1: On FNF based systems after the INI:
A FIJI download will occur if the FIJI firmware on Bank 1 of the FIJI card is different from the firmware on the system hard drive (PSDL file). This is automatic and no attempt should be made to prevent the download. The system will switch full to one ring; downloading up to 4 FIJI cards on the opposite ring at a time. This process continues on both rings until all FIJI's have been downloaded. The rings will then reset and come into service with the highest firmware available. This process does not affect service. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note 2: Wait for new ring state change message to appear before proceeding:

```
New State Ring 0 None
          Ring 1 Full
```

10 Switch the clock controllers, if necessary:

LD 60	To load the program.
SSCK n	Obtain status of clock n where n = 0 for clock controller 0 1 for clock controller 1

SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	To exit the program.

11 Disable Ring 0.

LD 39	To load the program.
DIS RING 0	Disable Ring 0.
********	To exit the program.

12 Break Ring 0 and cable the added FIJI cards. Ring 0 is ascending. Transmit from the lower Group FIJI card to Receive of next higher Group FIJI card. Transmit of the highest Group FIJI card cables to the Receive of Group FIJI card.

> The system is in split mode with Core 1 active. Clock 1 active and FIJI half and half.

13 In LD 39, enable and stat Ring 0:.

LD 39	To load the program.
ENL Ring 0	Enable Ring 0.
Stat Ring 0	Status of Ring x.
********	To exit the program.

14 **In Core 0 only,** define the XCT and Extenders to the added group.

Note: See Table 87 on page 500:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU

XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	To exit the program.

15 Data dump the software changes.

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

16 Seat the CNI card in Core 0 and faceplate enable it.

17 In Core 1, Stat the CNIs:

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	To exit the program.

End of Procedure

Test the Cores

Procedure 144
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x= system XMS.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	To get the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings

For more information about LD 39 commands, see *Avaya Software Input/ Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
********	Exit program.

10 Check applications.

11 Check for dial tone.

End of Procedure

Procedure 145
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will initialize and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 146
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Test the Fiber Rings

Note: For more information about LD 39 commands, see *Avaya Software Input/Output: Maintenance* (NN43001-711).

a. Check that the Fiber Rings operate correctly.

LD 39	Load the program.
STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

b. If necessary, restore the Rings to Normal State.

RSTR	Restore both Rings to HALF state.

c. Check that the Rings operate correctly.

STAT RING 0	Check the status of Ring 0 (HALF/HALF).
STAT RING 1	Check the status of Ring 1 (HALF/HALF).

9 Check the status of the FIJI alarms.

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups.
****	Exit program.

10 Check applications (such as CallPilot and Symposium).

11 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the “Postconversion procedure” on page 593.

Add a Core Network Group to Option 81C with IGS

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions.

Each section assumes any NT8D35 Network module installation is complete. For NT8D35 installation information see the *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

3PE Termination Panel

> ***Note:*** Check the current termination panel to determine if it is currently a P0942599 3PE termination panel. If the panel is the older 7 group version (P0908658), it must be changed.

The 3PE Termination Panel is mounted behind the Core shelf, and is used to mount the connectors from the CNI Transition Cards. The previous panel (P0908658) has sufficient cutouts to mount the connectors for 7 groups, those corresponding to groups 1 to 7. The connectors from CNI in slot 9, port 0 typically pass through a slot in the panel and are directly connected to the

Network portion of the Core/Net backplane. Thus this panel has 14 connector cutouts. This is supplied as part of the Call Processor complex, and does not need to be ordered separately or installed on site.

The new 3PE termination panel P0942500 differs in that it has cutouts for 16 connectors, thus allowing CNI terminations for all 8 groups to be terminated. In new systems and hardware upgrades as supplied from the factory, only 14 connectors (those corresponding to groups 1 – 7) are terminated, with the two remaining cutouts left empty.

The CNI cables corresponding to Network group 0 still pass through a slot in this panel to terminate directly on the Network backplane, and this is how new systems continue to be delivered. However, it is possible to disconnect these Group 0 connectors from the Network backplane and mount them into the panel, which facilitates connecting 3PE cables connected to a remote Network group 0.

These new panels are included as standard on all NT4N46 shelf systems manufactured after February 18th 2002. The panels are also included with hardware upgrades, beginning approximately with the introduction of X11/ 25.40 software in early 2002. The panels are also available as merchandise to retrofit into any prior system.

NT4N72AA cable

This short (19 inch – 48 cm) cable is designed to interconnect the connectors mounted in the 3PE Termination Panel discussed above to the 3PE Network connectors on the Network portion of the Core/Net backplane. Any Network group CNI cards are easily connected to the Network backplane, allowing any Network group to be placed in the Core/Net.

Two cables are required in each Core/Net module, and 4 are required in a complete Meridian 1 Option 81C system. These cables are not required when Network group 0 is installed in the Core/Net shelf, since the CNI Transition Card cables for group 0 pass directly through the 3PE Termination Panel and terminate on the Network backplane (the standard factory configuration). These cables are delivered as part of any marketing packages, and have to be ordered as merchandise when needed.

> ***Note:*** It is still required that the two Core/Net shelves only contain a single Network group. For example, it is not possible to place one half of Group 1 in a Core/Net shelf and the other half in a Network shelf, and then proceed to split up Group 2 in the same way using the other Core/ Net shelf.

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 89.

Table 89
Prepare for upgrade steps

Procedure Step	**Page**
Plan the upgrade	520
Upgrade checklists	521
Prepare	521
Identifying the proper procedure	522
Connect a terminal	522
Print site data	523
Perform a template audit	525
Back up the database (data dump)	527

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.

- Review all product bulletins and Avaya Alerts that impact the site.
- A contingency plan for backing out of the upgrade.

> **DANGER OF ELECTRIC SHOCK**
>
> In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers may print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.
- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Current patch or Dep lists installed at the source platform.
- Required patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.

- Secure the source software and keycode.
- Print site data.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

Connect a terminal

Procedure 147
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

- Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.
- The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

If only one terminal is used for both Core or Core/Net modules, connect the terminal from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (see Table 90 on page 523). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 90
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>

Table 90
Print site data (Part 2 of 3)

Site data	Print command	
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop

Table 90
Print site data (Part 3 of 3)

Site data	Print command	
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

Note: The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

CAUTION — Service Interruption

Loss of Data

Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**
•	
•	
TEMPLATE 0120 USER COUNT OK	**CHECKSUM OK**

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 148
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" will appear once the data dump is complete.

****	Exit the program.

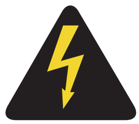
IMPORTANT!

Preserve database backup information for a minimum of 5 days.

End of Procedure

Perform the upgrade

Introduction



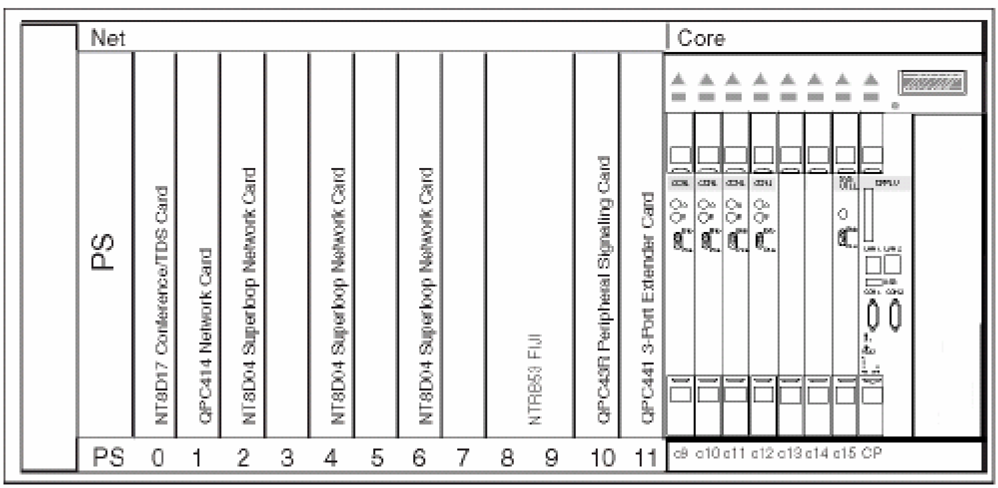
DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Complete the procedure in this section to add a Core Network Group to the Meridian 1 Option 81C/IGS (NT4N46).

Figure 65 shows the NT4N46 Core/Net shelf.

Figure 65
NT4N46 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for a system with IGS. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

DO NOT proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 91 describes the *minimum* equipment required to add a Network Group to Meridian 1 Option 81C/IGS (NT4N46). Additional equipment for increased Network capacity must be ordered separately.

Table 91
Minimum equipment required to add a Core Network Group to an Option 81C/IGS equipped with an NT4N46 shelf

Order Number	Description	Quantity per system
NT8D80BZ	Cable, CPU Interface, 5 ft.	2
NT8D99AD	Cable, Network to Network, 6 ft.	2
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NT8D76	IGS to IGM DIGS cards cable	4
NT4N72	CNI Core/Net Cable	4
PO942500	16-connector cutout 3PE Termination Panel	2
NT4N65AC	CNI card	4

Tools

Table 74 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 92
List of recommended tools (Part 1 of 2)

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch

Table 92
List of recommended tools (Part 2 of 2)

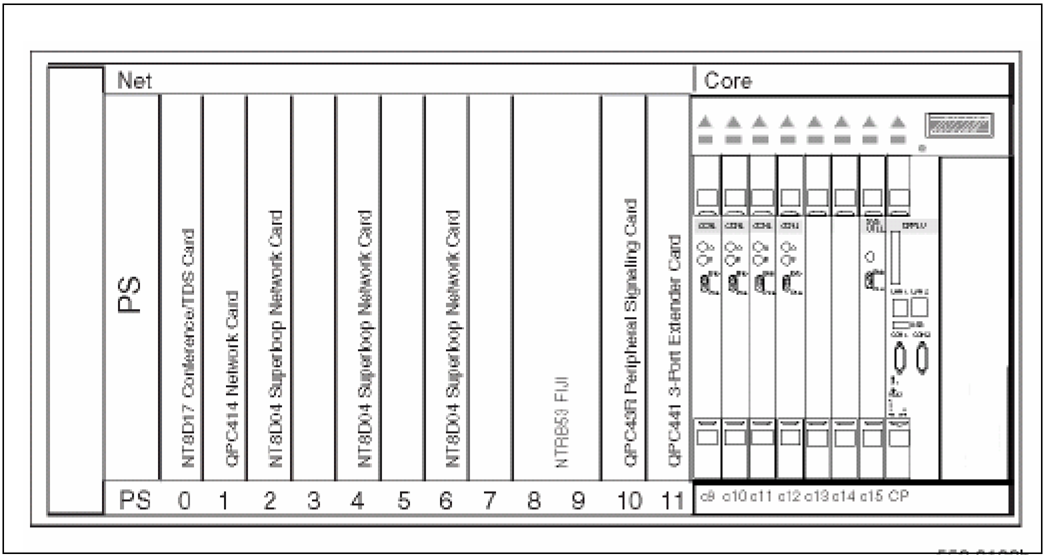
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Placing a Group other than Group 0 in the core

Procedure 149
Placing a Group other than Group 0 in the core

If it is desired to modify a system that is already installed, or is currently being installed, so that a group other than Group 0 is in the Core/Net, some reconfiguration of the factory arrangement will be required.

Figure 66
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Complete the following steps on ***both*** Core/Net modules.

1 Power down the Core/Net shelf (after transferring call processing to the other Core if required).

2 Ensure that the 16-connector cutout 3PE Termination Panel P0942500 is equipped. This can be retrofitted into systems initially equipped with the 14-connector cutout Panel P0908658 by removing all the cable connectors and then the 4 screws that attach the panel to its frame.

3 Remove the connections from the Network backplane connectors that originate from CNI card 9, port 0. This may involve removing the screws that hold in the panel, so that the connectors can be moved through the slot.

4 Connect all eight pairs of cables from the CNI Transition Cards to this panel.

5 Using two cables NT4N72AA, connect the appropriate pair of connectors on the 3PE Termination Panel corresponding to the desired Group to the two connectors on the Network backplane.

6 Use standard NT8D76 cables to connect all other groups, including Group 0, to the 3PE cards in the respective Network modules.

7 Restore power to the Core/Net shelf, transfer call processing if required, and proceed to upgrade the other Core/Net shelf.

End of Procedure

Interconnect the network modules

On the back of each Core/Net module backplanes are 2 connectors labeled D and E.

Procedure 150
Interconnecting the network modules

1 Connect the NT8d99AD cable from the D connector in shelf 0 to the D connector in shelf 1 of the NT4N41 Core/Net Module.

2 Connect the NT8d99AD cable from the E connector in shelf 0 to the E connector in shelf 1 of the NT4N41 Core/Net Module.

Add CNI cards if necessary

If additional CNI cards are required, add to each Core Module as required. See Figure 55.

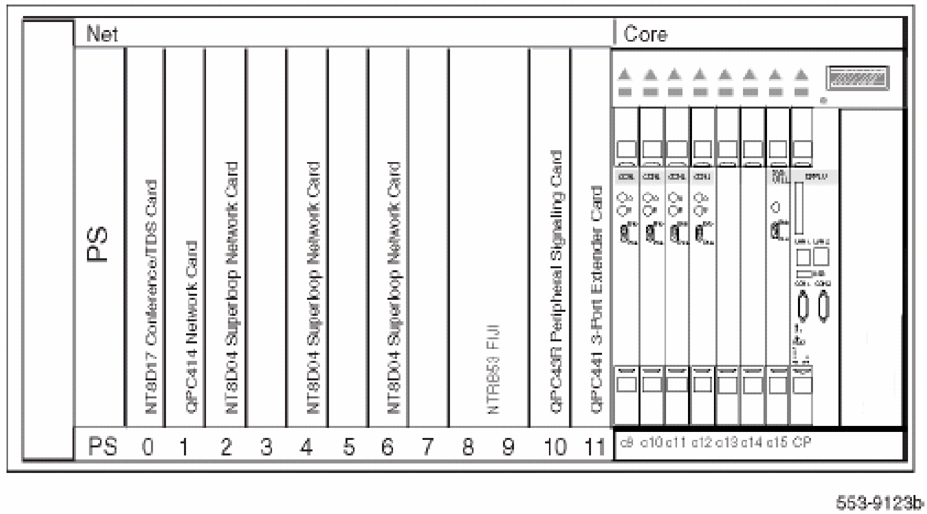
Procedure 151
Adding CNI cards

1 Face plate disable CNI card.

2 Insert card into Core/Net module, but do not seat card into backplane at this time.

End of Procedure

Figure 67
NT4N46 Core/Net card cage



Connect the 3PE to CNI cables

Procedure 152
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel.

See Table 93 on page 536 and Figure 68 on page 535 for NT4N72 cable connections.

1 Connect NT4N72 cable from the Fanout Panel J3 to the Backplane Connector marked "A".

2 Connect NT4N72 cable from the Fanout Panel J4 to the Backplane Connector marked "B"

3 Connect NT8D80BZ cable from J3 of the 3PE card in Core 0 to the J3 of 3PE card in Core 1.

4 Connect NT8D80BZ cable from J4 of the 3PE card in Core 0 to the J4 of 3PE card in Core 1.

Figure 68
3PE Fanout Panel (Core/Net module

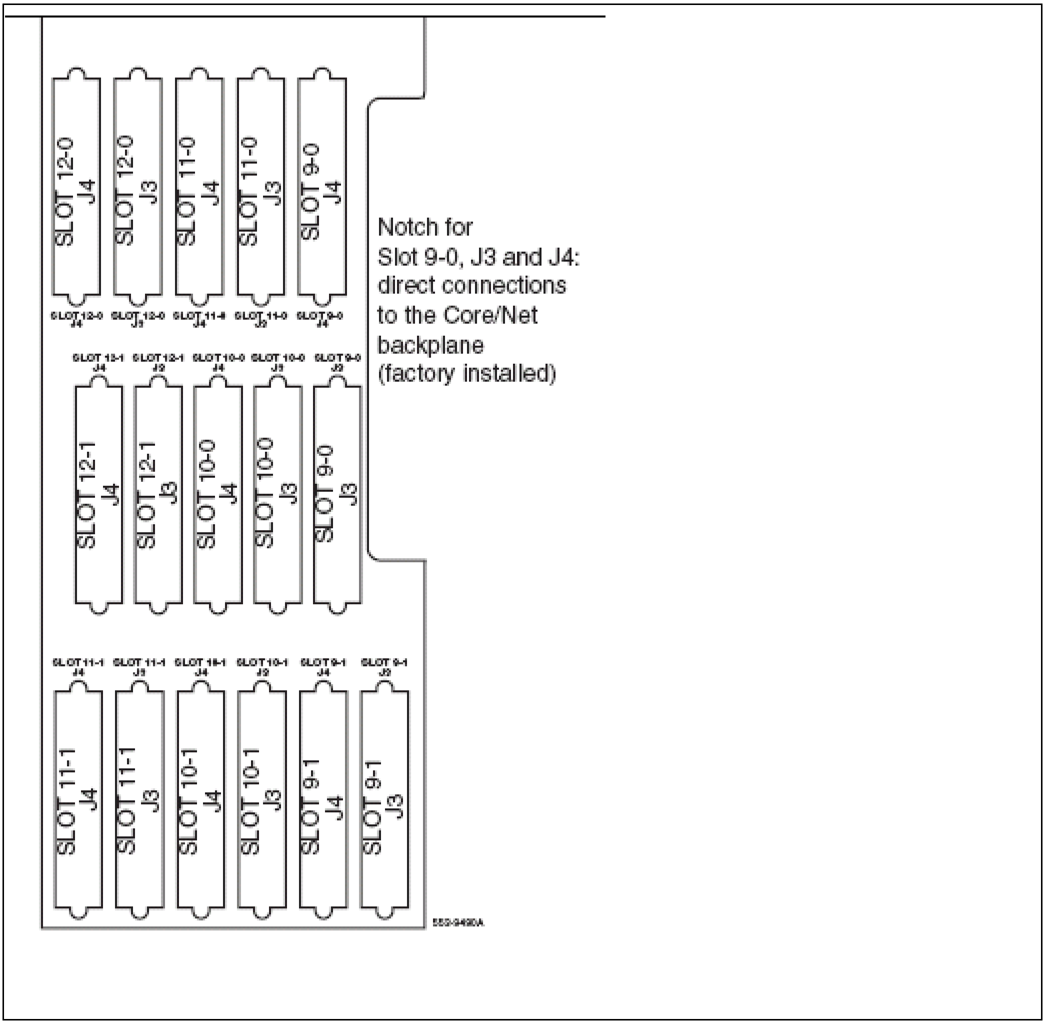


Table 93
Termination Panel to 3PE card connectors

Group Number	connects from	Fanout Panel connector	to	3PE card connector
0		9-0, J3		J3
0		9-0, J4		J4
1		9-1, J3		J3
1		9-1, J4		J4
2		10-0, J3		J3
2		10-0, J4		J4
3		10-1, J3		J3
3		10-1, J4		J4
4		11-0, J3		J3
4		11-0, J4		J4
5		11-1, J3		J3
5		11-1, J4		J4
6		12-0, J3		J3
6		12-0, J4		J4
7		12-1, J3		J3
7		12-1, J4		J4

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **OR**
to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Procedure 153
Installing and enabling the 3PE cards

1 Verify the 3PE card settings.

Switch settings on the 3PE card determine the group and shelf number of each Network module. Use the information in Table 94 and Table 95 on page 538 to verify that the 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the cables to the 3PE faceplates.

Table 94
Settings for switch D20 on QPC441 3PE card in Option 81C network shelf 1 modules

Group	Switch position							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
0	off	on	on	off	on	on	on	off
1	off	on	on	off	on	on	off	off
2	off	on	on	off	on	off	on	off
3	off	on	on	off	on	off	off	off
4	off	on	on	off	off	on	on	off
Note: Jumper RN27 at location E35: set to A								

Table 95
Settings for switch D20 on QPC441 3PE card in Option 81C network shelf 0 modules

Group	Switch position							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
0	off	on	on	off	on	on	on	on
1	off	on	on	off	on	on	off	on
2	off	on	on	off	on	off	on	on
3	off	on	on	off	on	off	off	on
4	off	on	on	off	off	on	on	on
Note: Jumper RN27 at location E35: set to A								

End of Procedure

Procedure 154
Installing and enabling the
QPC43R Peripheral Signaling (Per Sig) cards

1 Install a Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

> **IMPORTANT!**
>
> Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

Procedure 155
Disabling and inserting the NT8D17 Conf/TDS cards

If Conf/XCT cards are used in the system, complete the following steps.

1 Faceplate *disable* the Conf/XCT cards.

2 Insert a Conf/XCT card into each added Network module.

Do not plug the card into the backplane.

End of Procedure

Enable the Network Group

Note: If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 156
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program
STAT CPU	Obtain status of the CPUs

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary)
********	Exit program

End of Procedure

Procedure 157
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary)
DIS CC 1	Disable Clock Controller 1
********	Exit program

End of Procedure

Add the CNI cards or ports

Procedure 158
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In OVL 135 split the Cores.

LD 135	To load the program.
SPLIT	Split the Cores.
****	To exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1:

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 93 on page 536:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)

<cr>	Continue to the last prompt.
********	To exit the program.

3 Perform a data dump

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

Table 96 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software

Table 96
Fanout Panel to 3PE card connectors

Group Number	connects from	Fanout Panel connector	to	3PE card connector
0		9-0, J3		J3
0		9-0, J4		J4
1		9-1, J3		J3
1		9-1, J4		J4
2		10-0, J3		J3
2		10-0, J4		J4
3		10-1, J3		J3
3		10-1, J4		J4
4		11-0, J3		J3
4		11-0, J4		J4
5		11-1, J3		J3
5		11-1, J4		J4
6		12-0, J3		J3
6		12-0, J4		J4
7		12-1, J3		J3
7		12-1, J4		J4

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **or**
to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

End of Procedure

Procedure 159
Seating remaining cards

1 Seat the remaining cards (3PE, PER SIG, XCT, DIGS) in both network modules.

Note: Cards must be faceplate disabled before seating.

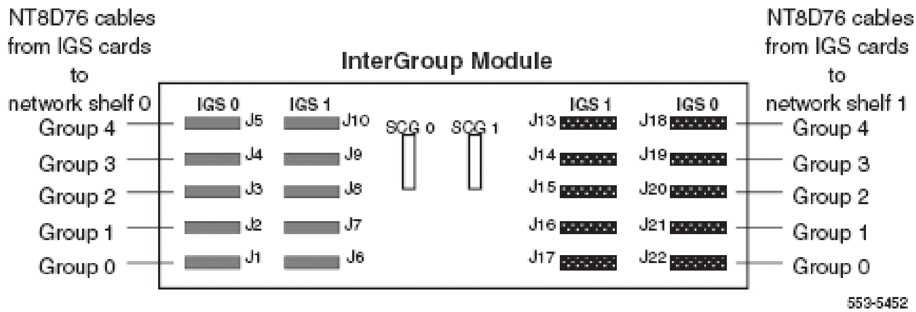
2 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and DIGS).

3 Cable the added DIGS cards. See Table 97 and Figure 69 on page 545.

Table 97
IGS to intergroup cable assignment—use NT8D76 cables

From				To
Network Group	**Network Shelf**	**Slot**	**IGS Connector J1**	**InterGroup Connector**
0	0 (Core/Net 0)	8	0	J1
0	0 (Core/Net 0)	9	1	J6
0	1 (Core/Net 1)	9	1	J17
0	1 (Core/Net 1)	8	0	J22
1	0	3	0	J2
1	0	2	1	J7
1	1	2	1	J16
1	1	3	0	J21
2	0	3	0	J3
2	0	2	1	J8
2	1	2	1	J15
2	1	3	0	J20
3	0	3	0	J4
3	0	2	1	J9
3	1	2	1	J14
3	1	3	0	J19
4	0	3	0	J5
4	0	2	1	J10
4	1	2	1	J13
4	1	3	0	J18

Figure 69
NT8D36 intergroup module connections for IGS cards



4 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

5 In LD 135 switch Cores.

LD 135	To load the program.
CUTOVR	Switch Cores

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications.

Core 1 is active, Clock 0 is active.

6 Switch the clock controllers, if necessary:

LD 60	To load the program.
SSCK n	Obtain status of clock n where n = 0 for clock controller 0 1 for clock controller 1
SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
****	To exit the program.

The system is in split mode with Core 1 active. Clock 1 is active.

7 **In Core 0 only,** define the XCT and extenders to the added group.

Note: See Table 87 on page 500:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	To exit the program.

8 Data dump the software changes.

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

9 Seat the CNI card in Core 0 and faceplate enable it.

10 In Core 1, Stat the CNIs:

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	To exit the program.

End of Procedure

Test the Cores

Procedure 160
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x= system XMS.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	To get the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 98).
********	Exit program.

Table 98
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11

Table 98
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications.

10 Check for dial tone.

End of Procedure

Procedure 161
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 162
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors.
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.

CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 99).
********	Exit program.

Table 99
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3

Table 99
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications (such as CallPilot and Symposium).

10 Check for dial tone.

End of Procedure

Postconversion steps must now be performed. See the “Postconversion procedure” on page 593.

Add an NT8D35 Network Group to Option 81C with IGS

Prepare for upgrade

This document uses a source-to-target approach to performing an upgrade. It is important to correctly identify the source platform, target platform and maintenance window required to perform the upgrade.

Each chapter features check boxes that indicate which condition the system should be in at that stage of the upgrade. If the system is not in the proper condition you must take corrective action.

Each section is written to maintain dial tone where possible and limit service interruptions. Each section assumes any NT8D35 Network module installation is complete. For NT8D35 installation information see the *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310).

Before attempting any software or hardware upgrade field personnel should follow the steps in Table 100:

Table 100
Prepare for upgrade steps

Procedure Step	Page
Plan the upgrade	556
Upgrade checklists	556
Prepare	556
Identifying the proper procedure	557
Connect a terminal	557
Print site data	558
Perform a template audit	561
Back up the database (data dump)	562

Plan the upgrade

Planning for an upgrade includes the following details:

- Conduct a site inspection to determine proper power and grounding.
- Review the site profile to determine proper foot space if adding new columns or modules.
- Ensure Sufficient power for new columns/modules or applications
- Identify all applications currently installed on the source platform.
- Identify and correct outstanding service problems.
- Verify the site log is updated with current trunking, call routing, application notes, and site contact information.
- Review all product bulletins and Avaya Alerts that impact the site.

DANGER OF ELECTRIC SHOCK

In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

Upgrade checklists

Upgrade checklists can be found in the “Upgrade checklists” chapter of the *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474). Engineers may print this section for reference during the upgrade.

Prepare

Preparing for an upgrade includes the following details:

- Identify and become familiar with all procedures.

- Verify that all installed applications meet the minimum software requirements for the target platform. See the “General software conversion information” chapter in *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade Technical Publications* (NN43021-458 to 474).
- Verify proper cable lengths for the target platform.
- Verify card vintage requirements of the target platform.
- Current patch or Dep lists installed at the source platform.
- Required patch or Dep lists at the target platform.
- Determine and communicate the required maintenance window, contingency plan and the impact to the customer to complete the procedure.
- Perform an inventory on required software and hardware.
- Secure the source software and keycode.

Identifying the proper procedure

Each procedure has been written in a source-to-target format. Each procedure features warning boxes and check boxes placed at critical points. Changing the procedure or ignoring the warning boxes could cause longer service interruptions.

Connect a terminal

Procedure 163
Connecting a terminal

A maintenance terminal is required to access the Core or Core/Net modules during the upgrade procedure.

- Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core or Core/Net module.
- The settings for the terminal are:

a. 9600 Baud

b. 8 data

c. parity none

d. 1 stop bit

e. full duplex

f. XOFF

If only one terminal is used for both Core or Core/Net modules, connect the terminal from side-to-side to access each module. An “A/B” switch box can also be installed to switch the terminal from side to side.

End of Procedure

Print site data

Print site data to preserve a record of the system configuration (Table 101). Verify that all information is correct. Make corrections as necessary.

> ***Note:*** Items marked with an asterisk (*) are required. Other items are recommended for a total system status.

Table 101
Print site data (Part 1 of 3)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>

Table 101
Print site data (Part 2 of 3)

Site data	Print command	
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)

Table 101
Print site data (Part 3 of 3)

Site data	Print command	
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)
Superloops and XPEs	LD 97 REQ TYPE SUPL	 CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

Perform a template audit

A template audit (LD 01) reviews the templates in your system. Corrupted and duplicate templates are cleaned up. An example of the information generated during the audit is listed below.

> ***Note:*** The template audit may take an extended period of time on large systems. Run the audit during a low traffic period.

> **CAUTION — Service Interruption**
>
> **Loss of Data**
>
> Do not abort this LD until the audit is complete. If the LD is interrupted, data will be corrupted.

LD 01 The audit begins as soon as LD 01 is entered.

TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW	**CHECKSUM OK**
TEMPLATE 0002 USER COUNT HIGH	**CHECKSUM OK**
TEMPLATE 0003 NO USERS FOUND	

STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK	**CHECKSUM OK**

•

•

TEMPLATE 0120 USER COUNT OK CHECKSUM OK

TEMPLATE AUDIT COMPLETE

Back up the database (data dump)

Procedure 164
Performing a data dump

1 On the Meridian 1 Option 81C, log on to the system.

2 Load the Equipment Data Dump Program (LD 43). Always enter LD 43 from the source (current) media. At the prompt, enter:

LD 43	Load the program.

3 When "EDD000" appears on the terminal, enter:

EDD	Begin the data dump.

CAUTION — Service Interruption

Loss of Data

If the data dump does not succeed, do not continue. Contact your technical support organization. You must correct a data dump problem before the system can be upgraded.

The messages "DATADUMP COMPLETE" and "DATABASE BACKUP COMPLETE" will appear once the data dump is complete.

****	Exit the program.

IMPORTANT!

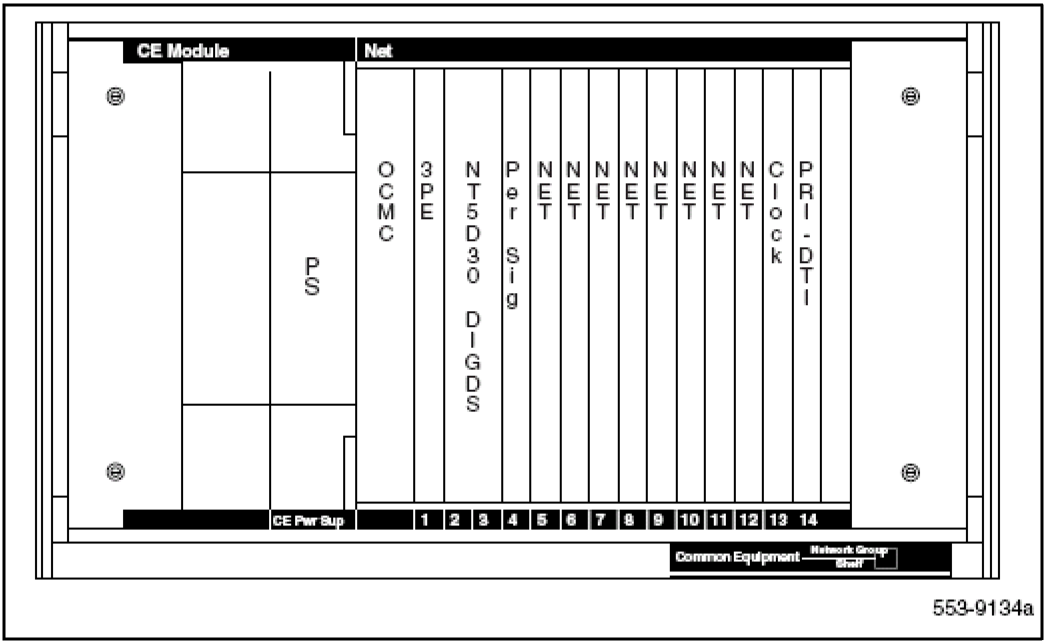
Preserve database backup information for a minimum of 5 days.

Perform the upgrade

Introduction

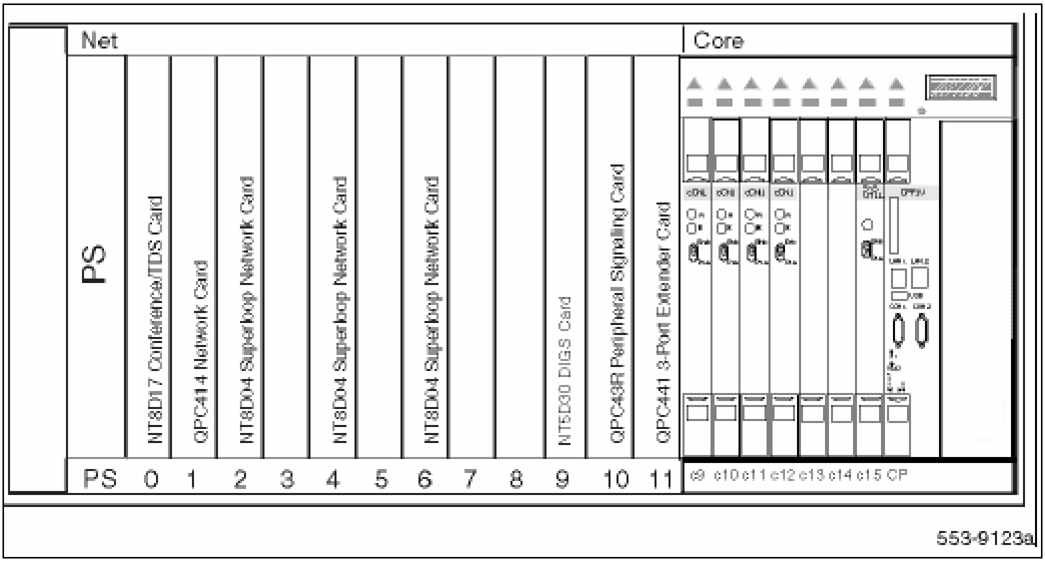
Complete the procedure in this section to add an NT8D35 Network Group to the Meridian 1 Option 81C/IGS (NT4N46).

Figure 70
NT8D35 Network Shelf



Note: An IGS QPC-412 card uses slots 2 & 3.

NT4N46 Core/Net shelf



Review upgrade requirements

This section describes the *minimum* equipment required for the system. Additional equipment can also be installed during the upgrade. Verify that *all* equipment has been received.

Check equipment received

Before the upgrade, check that the equipment on the order form is also on the packing slip. Check that all equipment has been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

> **CAUTION — Service Interruption**
>
> **Service Interruption**
>
> DO NOT proceed with the upgrade if any of the required equipment is missing. All equipment must be received to complete the upgrade.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for the system.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The QPC43 Peripheral Signaling cards must be minimum vintage R.

If equipment does not meet the requirements, replace it before you begin the upgrade.

> **CAUTION — Service Interruption**
>
> **Service Interruption**
>
> Equipment that does not meet the minimum vintage requirements can cause system malfunctions and loss of call processing.

Check required hardware

Table 102 describes the *minimum* equipment required to add an NT8D35 Network Group to a Meridian 1 Option 81C/IGS (NT4N46). Table 103 on page 567 and Table 104 on page 567 list the DC and AC power equipment requirements. Additional equipment for increased Network capacity must be ordered separately.

Table 102
Minimum equipment required to add an NT8D35 Network Group to an Option 81C/IGS equipped with an NT4N46 shelf

Order Number	Description	Quantity per system
NT8D99AB	Cable, Network to Network, 2 ft.	5
QPC43R	Pack, Peripheral Signaling (PS)	2
QPC441F	Pack, 3 Port Extender (3PE)	2
NT8D17	Pack, Conference, Tone and Digit Switch (CT)	2
NT8D76	IGS to IGM DIGS cards cable ***Note:*** There are a total of 8 cables required for installation; 4 for IGS to IGM, and 4 for 3PE to CNI.	8
NT8D35	Network Shelf	2
NT4N65AC	CNI card	4

Check required power equipment

Table 103 lists the equipment required for AC-powered systems. Table 104 lists the equipment required for DC-powered systems.

Table 103
Ac power requirements for Meridian 1 Option 81C with IGS upgrades

Order number	Description	Quantity per system
Peripheral Equipment Power Supply AC	NT8D06AA	1
Common Equipment Power Supply AC	NT8D29AB	2

Table 104
Dc power requirements for Meridian 1 Option 81C with IGS upgrades

Order number	Description	Quantity per system
Peripheral Equipment Power Supply DC	NT6D40AB	1
Common Equipment Power Supply DC	NT6D41AB	2

Tools

Table 74 lists the tools required to upgrade an Avaya system. Special tools required in a procedure are listed in that procedure.

Table 105
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Check personnel requirements

Avaya recommends that a minimum of two people perform the upgrade.

Procedure 165
Interconnecting the network modules

The back of each network module backplane has five connectors: A, B, C, D and E. See Figure 71 on page 569. The shelf 0 connectors in Network groups 1 through 7 must be connected to the shelf 1 connectors of the Network groups 1 through 7. For example, for Network group 1, the shelf 0 connector must be connected to the shelf 1 connector.k group.

1 Connect an NT8D99AB cable from the A connector in shelf 0 of Network group 1 to the A connector in shelf 1 Network group 1.

2 Connect the B connector in shelf 0 to the B connector in shelf 1.

3 Connect the C connector in shelf 0 to the C connector in shelf 1.

4 Connect the D connector in shelf 0 to the D connector in shelf 1.

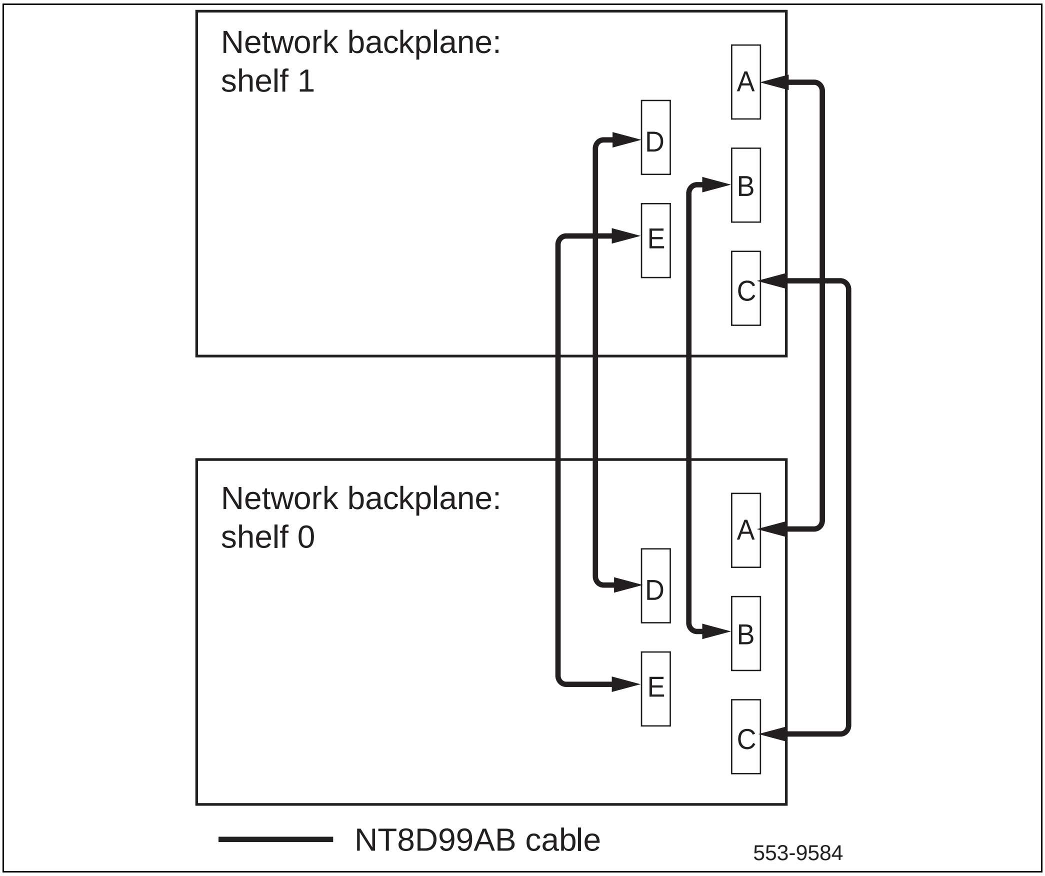
5 Connect the E connector in shelf 0 to the E connector in shelf 1.

6 Connect the A, B, C, D, and E connectors between shelf 0 and shelf 1 for all other Network groups in the system (except group 0).

Note: All connections are made with an NT8D99AB cable.

End of Procedure

Figure 71
Network shelf 0 to shelf 1 backplane connections (groups 1 through 7)



Add CNI cards if necessary

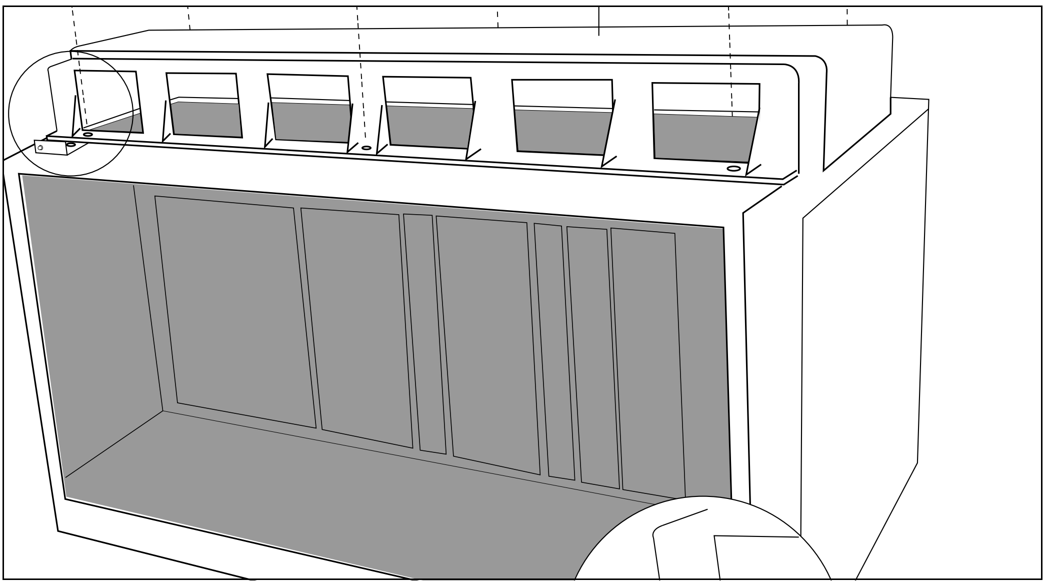
If additional CNI cards are required, add to each Core Module as required. See Figure 72 on page 570.

Procedure 166
Adding CNI cards

1. Face plate disable CNI card.
2. Insert card into Core/Net module, but do not seat card into backplane at this time.

End of Procedure

Figure 72
NT4N46 Core/Net card cage



Install cards in the network modules

Network cards must be installed in the added Network modules as described below. Each card must be installed and enabled or disabled as indicated.

Install and enable the QPC441 3PE cards

Procedure 167
Installing and enable the QPC441 3PE cards

Three steps are required to install the QPC441 3PE cards.

1 Verify the QPC441 3PE card settings.

The group and shelf number of each Network module is determined by the switch settings on the QPC441 3PE card. Use the information in Table 106 on page 572 to verify that the QPC441 3PE cards in the added Network modules have the correct switch and jumper settings.

The FIJI card displays group and shelf setting.

2 Install a QPC441 3PE card in slot 1 of each added Network module. Do not seat the cards yet.

3 Attach the cables to the QPC441 3PE faceplates.

Table 106
QPC441 3PE Card installed in the NT4N46 Module

Jumper settings. Set Jumper RN27 at E35 to "A".									
Switch Settings									
Module		D20 switch position							
NT4N46		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Core/Net 0 (Shelf 0)	Group 0	off	on	on	off	on	on	on	on
	Group 1	off	on	on	off	on	on	off	on
	Group 2	off	on	on	off	on	off	on	on
	Group 3	off	on	on	off	on	off	off	on
	Group 4	off	on	on	off	off	on	on	on
	Group 5	off	on	on	off	off	on	off	on
	Group 6	off	on	on	off	off	off	on	on
	Group 7	off	on	on	off	off	off	off	on
Core/Net 1 (Shelf 1)	Group 0	off	on	on	off	on	on	on	off
	Group 1	off	on	on	off	on	on	off	off
	Group 2	off	on	on	off	on	off	on	off
	Group 3	off	on	on	off	on	off	off	off
	Group 4	off	on	on	off	off	on	on	off
	Group 5	off	on	on	off	off	on	off	off
	Group 6	off	on	on	off	off	off	on	off
	Group 7	off	on	on	off	off	off	off	off

End of Procedure

Procedure 168
Connecting the 3PE to CNI cables

The CNI slot and port connections are labeled on the 3PE Fanout Panel. Each 3PE card is connected from J3 and J4 of each 3PE faceplate to the 3PE Fanout Panel.

> ***Note:*** See Table 107, Figure 73 on page 574, and Figure 74 on page 575 for NT8D76 cable connections.

1 Connect the NT8D76 cables to J3 and J4 of the 3PE cards.

2 Connect the new NT8D76 cables to the Fanout Panel in the Core/Net.

Table 107
Fanout Panel to 3PE card connectors

Group Number	connects from	Fanout Panel connector	to	3PE card connector
0		9-0, J3		J3
0		9-0, J4		J4
1		9-1, J3		J3
1		9-1, J4		J4
2		10-0, J3		J3
2		10-0, J4		J4
3		10-1, J3		J3
3		10-1, J4		J4
4		11-0, J3		J3
4		11-0, J4		J4
5		11-1, J3		J3
5		11-1, J4		J4
6		12-0, J3		J3
6		12-0, J4		J4
7		12-1, J3		J3
7		12-1, J4		J4

Note: Group 0 cables connect from the CNI Transition card directly to the backplane of Core/Net 0 **or** to the NT8D76 cable (depending on your CNI group configuration). If the Core/Net module contains a Network Group other than group 0, use NT4N72AA cables to connect the Fanout panel to the network portion of the Core/Net backplane.

End of Procedure

Figure 73
Example of 3PE faceplate to 3PE Fanout Panel connection

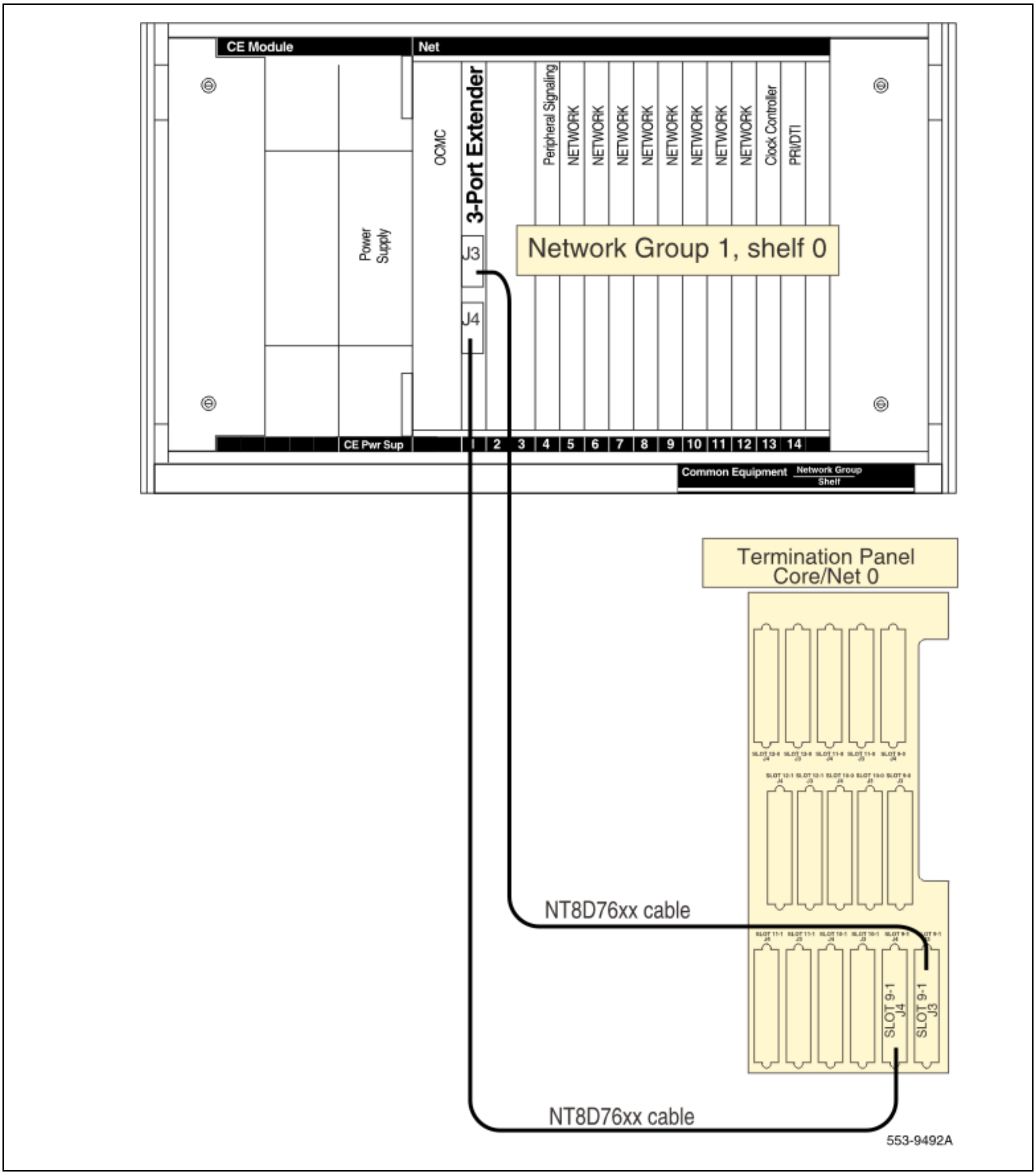


Figure 74
3PE Fanout Panel (Core/Net module)

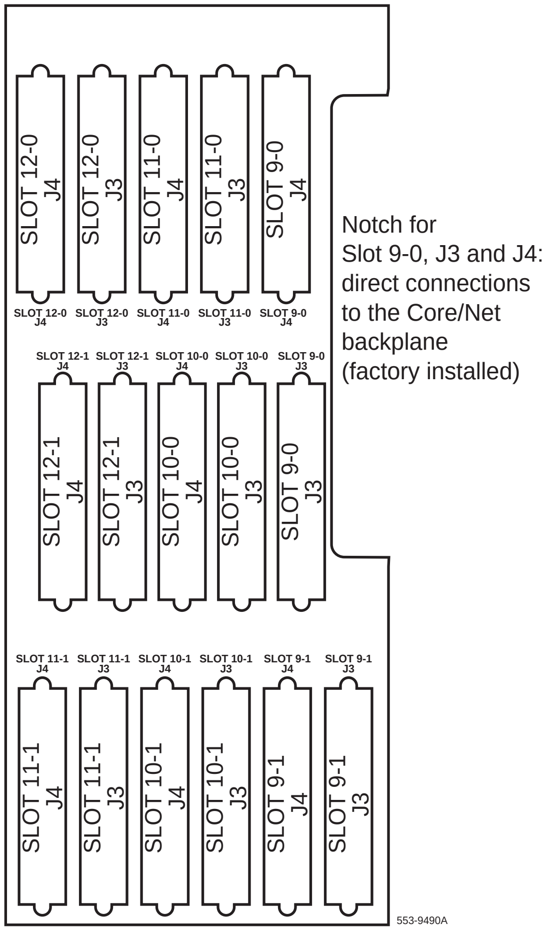


Table 108
3PE card settings for the NT8D35 Module

Jumper Settings									
Set Jumper RN27 at E35 to "A".									
Switch Settings									
	D20 switch position:	**1**	**2**	**3**	**4**				
81, 81C (Note)		off	on	on	on				
Shelf	Group	**D20 switch position:**				**5**	**6**	**7**	**8**
0 (3PE cards connected to the a CNI in Core or Core/Net 0)	0					on	on	on	on
	1					on	on	off	on
	2					on	off	on	on
	3					on	off	off	on
	4					off	on	on	on
	5					off	on	off	on
	6					off	off	on	on
	7					off	off	off	on
1 (3PE cards connected to the a CNI in Core or Core/Net 1)	0					on	on	on	off
	1					on	on	off	off
	2					on	off	on	off
	3					on	off	off	off
	4					off	on	on	off
	5					off	on	off	off
	6					off	off	on	off
	7					off	off	off	off
Note: For option 81C systems, QPC441 vintage F or later must be used in all modules.									

Procedure 169
Installing and enabling the
QPC43R Peripheral Signaling (Per Sig) cards

1 Install a Per Sig card into slot 4 of each added Network module. Push the latches forward to lock the card in place.

2 Faceplate *enable* the cards.

3 Insert card into slot 2 of each added Network group

4 Cable DIGS cards with NT8D76 IGS to IGM cable.

IMPORTANT!

Never install an unequipped Peripheral Signaling card. Installing an unequipped Peripheral Signaling card in the system can cause undesirable system behavior

Table 109
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

End of Procedure

Disable and insert the NT8D17 Conf/TDS cards

Procedure 170
Disabling and inserting the Conf/XCT cards

If Conf/XCT cards are used in the system, complete the following steps.

1 Faceplate disable the Conf/XCT cards.

2 Insert a Conf/XCT card into each added Network module.

3 Seat the Con/TDS card and faceplate Enable.

End of Procedure

Enable the Network Group

Note: If you are adding more than one Network Group, add one group at a time in software. Perform all the remaining procedures in this chapter to enable one group before enabling another group.

Procedure 171
Checking that Core 0 is active

To upgrade Core 1, verify that Core 0 is the active side performing call processing.

1 Verify that Core 0 is active.

LD 135	Load program
STAT CPU	Obtain status of the CPUs

2 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0 (if necessary)
********	Exit program

End of Procedure

Procedure 172
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load program
SSCK 0	Obtain the status of Clock Controller 0
SSCK 1	Obtain the status of Clock Controller 1

2 If Clock Controller 1 is active, switch to Clock Controller 0.

SWCK	Switch to Clock Controller 0 (if necessary)
DIS CC 1	Disable Clock Controller 1
********	Exit program

End of Procedure

Add the CNI cards or ports

Procedure 173
Adding the CNI cards or ports

Note: CNI cards can be enabled and connected on the *inactive* Core only.

1 In OVL 135 split the Cores.

LD 135	To load the program.
SPLIT	Split the Cores.
********	To exit the program.

Perform these steps to activate the added CNI ports. Wait until the INI is complete on Core 1:

2 On Core 1 only, define the XCT and extenders to the added group.

Note: See Table 107 on page 573:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
********	To exit the program.

3 Perform a data dump

LD 43	To load the program.
EDD	Invoke data dump program.
********	To exit the program.

Table 110 specifies the Network group assignments for each CNI slot and port. These are fixed and cannot be changed in software.

Table 110
CNI Network group designations

CNI card slot	CNI card port	3PE Fanout Panel label	Connected to Network group
c9	0	Port 9-0	0
c9	1	Port 9-1	1
c10	0	Port 10-0	2
c10	1	Port 10-1	3
c11	0	Port 11-0	4
c11	1	Port 11-1	5
c12	0	Port 12-0	6
c12	1	Port 12-1	7

End of Procedure

Procedure 174
Seating remaining cards

1 Seat the remaining cards (3PE, PER SIG, XCT, DIGS) in both network modules.

Note: Cards must be faceplate disabled before seating.

2 Faceplate enable all cards in both network modules (3PE, PER SIG, XCT and DIGS).

Table 111
Shelf 0 and 1 IGS/DIGS card locations

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

3 **In Core 1 only**, seat the new CNI card and faceplate enable.

IMPORTANT!

Power down all applications.

CAUTION

Service Interruption

Call processing is interrupted for approximately 10 minutes while the INI is completed.

4 In LD 135 switch Cores.

LD 135	To load the program.
CUTOVR	Switch cores.

WARNING
All call processing may be interrupted.

IMPORTANT!

Power up all applications .

Core 1 is active, Clock 0 is active.

5 Switch the clock controllers, if necessary:

LD 60	To load the program.
SSCK n	Obtain status of clock n where n = 0 for clock controller 0 1 for clock controller 1
SWCK	Switch system clock from active to standby. ***Note:*** Make clock controller 1 the active clock.
********	To exit the program.

The system is in split mode with Core 1 active. Clock 1 is active.

6 **In Core 0 only,** define the XCT and extenders to the added group.

Note: See Table 107 on page 573:

LD 17	To load the program.
REQ	CHG
TYPE	CEQU
XCT X	X = the extended conference/XCT/MFS
EXT0 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
EXT1 3PE	
CNI s p g	Core to Network Interface card location where: s = slot (9 to 12) p = port number (0 to 1) g = group number (0 to 7)
<cr>	Continue to the last prompt.
****	To exit the program.

7 Data dump the software changes.

LD 43	To load the program.
EDD	Invoke data dump program.
****	To exit the program.

8 Seat the CNI card in Core 0 and faceplate enable it.

9 In Core 1, Stat the CNIs:

LD 135	Load the program.
STAT CNI	Obtain status of CNI card.
	Note: If any CNIs are disabled they must be enabled.
JOIN	Synchronize the memory and drives.
********	To exit the program.

End of Procedure

Test the Cores

Procedure 175
Testing Core/Net 1

From Core/Net 1, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Install the two system monitors. Test that the system monitors are working.

LD 37	Load the program.
ENL TTY x	Enable the XMS, where x= system XMS.
STAT XSM	Check the system monitors
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	Load the program.
CDSP	Clear the displays on the cores.
CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	To get the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 112).
********	Exit program.

Table 112
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11

Table 112
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications.

10 Check for dial tone.

End of Procedure

Procedure 176
Switching call processing

LD 135	Load the program.
SCPU	Switch call processing from Core/Net 1 to Core/Net 0.

Core/Net 1 will INI and Core/Net 0 will become the active call processor.

End of Procedure

Procedure 177
Testing Core/Net 0

From Core/Net 0, perform these tests.

1 Perform a redundancy sanity test:

LD 135	Load the program.
STAT CPU	Obtain status of CPU and memory.
TEST CPU	Test the CPU.

2 Check the LCD states

a. Perform a visual check of the LCDs.

b. Test LCDs.

LD 135	Load the program.
TEST LCDs	Test LCDs.
DSPL ALL	Display all.

3 Test the System Utility cards and the CNI cards.

LD 135	Load the program.
STAT SUTL	Obtain the status of the System Utility (main and Transition) cards.
TEST SUTL	Test the System Utility (main and Transition) cards.
STAT CNI c s	Obtain status of CNI cards (core, slot).
TEST CNI c s	Test CNI (core, slot).

4 Test system redundancy.

LD 137	Load the program.
TEST RDUN	Test redundancy.
DATA RDUN	
TEST CMDU	Test the MMDU card.

5 Test that the system monitors are working.

LD 37	Load the program.
STAT XSM	Check the system monitors
********	Exit the program.

6 Clear the display and minor alarms on both Cores.

LD 135	
CDSP	Clear the displays on the cores.

CMAJ	Clear major alarms.
CMIN ALL	Clear minor alarms.

7 Test the clocks.

a. Verify that the clock controller is assigned to the *active* Core.

LD 60	Load the program.
SSCK *x*	Obtain the status of the clock controllers (*x* is “0” or “1” for Clock 0 or Clock 1.
SWCK	Switch the Clock if necessary.

b. Verify that the Clock Controllers are switching correctly.

SWCK	Switch the Clock.
SWCK	Switch the Clock again.

8 Check the IGS status.

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 113).
********	Exit program.

Table 113
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18
Network Group 0	Shelf 1	IGS/DIGS 1 & 3

Table 113
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

9 Check applications (such as CallPilot and Symposium).

10 Check for dial tone.

End of Procedure

Postconversion procedure

Introduction

This procedure verifies that the conversion process was successful, and system data converted completely. This is the last part of the total conversion procedure. Perform these steps **after** completing all other procedures for the system.

The site data should be printed before and after conversion. See Table 115 on page 598. If the data has changed, make the necessary updates on the **Target** release, and datadump to the new system media. Print out the items marked with an asterisk (*) to be sure everything converted properly. All other items on Table 115 on page 598 are provided to be printed if desired.

Check the General Release Bulletin (GRB), and the Conversion notes (earlier in this document) to verify any database updates that need to be made as a result of conversion. Be sure to verify all SYSxxx messages that might appear during the conversion process. These messages might indicate some database updates are required.

CAUTION — Service Interruption

Service Interruption

Test call processing thoroughly. This can include more testing than is described in this procedure, depending on system configuration. This procedure is intended to show some of the basic tests performed to complete the conversion process.

Note: When parallel reload is complete, the attendant consoles will be in Night mode. If performing these procedures during the day, contact the attendant. If these procedures are taking place during the evening, it might not be desirable to perform these call processing steps.

Postconversion steps

Perform the steps in Procedure 178 to perform the postconversion procedure.

Procedure 178
Performing the postconversion procedure

1 Print system data listed in Table 115 on page 598. Verify that all information matches the printouts created before conversions. Make changes if necessary.

2 From any unrestricted telephone, dial the access code for an outside line (usually 9), and dial the listed Directory Number (DN) for the customer. Verify that the correct Incoming Call Indicator (ICI) lights at the attendant console.

3 If the customer is equipped with more than one console, transfer the call to another console.

4 Extend the call to a telephone, and release the call from the console.

5 From the called telephone, transfer the call back to the attendant.

6 Answer and release the call.

7 From any telephone dial the DN for the attendant. Verify that the correct ICI lights at the console, then release the call.

8 Busy-out one trunk group using a Trunk Group Busy (TGB) key on the console.

9 From any telephone with TGAR 0-7, dial the access code of the busied-out trunk group, to verify that the call is intercepted to the console and receives either overflow tone or a recorded announcement.

10 Restore the trunk group to the in-service state using the Trunk Group Busy (TGB) key on the console.

11 During the conversion procedure the Central Office might have busied-out the DID trunks. If DID trunks are equipped, from any unrestricted telephone, dial the access code for an outside line, and dial a DID number into the system.

12 If a private network is used, from any unrestricted telephone, dial the network access code and place a CDP, ESN, BARS/NARS, or ISDN call as applicable to the system.

13 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

Note: Test all applications and call handling

14 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

15 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

16 Load LD 135 to test and switch CPUs. (Omit this step for Option 51C.)

LD 135	Load the program.
TEST CPU	Test CPU.
SCPU	Switch CPUs.
********	Exit LD.

17 If not done previously, set the time and date. If Call Detail Recording (CDR) is used, the system message ERR225 will appear. This is normal.

LD 02

STAD dd mm yyyy hh mm ss

dd = day (for example, 05 for the fifth)

mm = month (for example, 09 for September)

yyyy = year (last 2 or all four digits, for example, 92 or 1992)

hh = hour (in 24-hour time, for example, 13:00 for 1:00 pm)

mm = minute (for example, 25)

ss = seconds (for example, 00)

******** Exit LD.

Note: If equipped with FNF, perform steps 21-24. If equipped with IGS, perform step 20.

18 Test the IGS

Note: For more information about LD 39 commands, see *Avaya Software Input/Output: Maintenance* (NN43001-711).

LD 39	Load the program.
STAT IGS X	Check the status of IGS (X = IGS/DIGS card number. See Table 114).
********	Exit program.

Table 114
Shelf 0 and 1 IGS/DIGS card locations (Part 1 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 16 & 18

Table 114
Shelf 0 and 1 IGS/DIGS card locations (Part 2 of 2)

Network Group	Shelf	IGS/DIGS card locations
Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the Core/Net shelf and slot 2 of the NT8D35 network shelf.		

19 Check that Fiber Ring 1 operates correctly.

LD 39	to load the program
STAT RING 1	to check the status of Ring 1

20 Reset the Rings:

RSET	to reset the Rings and prepare them for redundancy
RSTR	to restore both Rings to HALF state

21 Check that the Rings operate correctly.

STAT RING 0	to check the status of Ring 0 (HALF/HALF)
STAT RING 1	to check the status of Ring 1 (HALF/HALF)

22 If any Ring problems occur, correct them now.

STAT ALRM <X> <Y>	to check the alarm status of individual FIJI cards or all FIJI cards. See *Avaya Software Input/Output: Administration* (NN43001-611) for more information.

Note: if equipped with IGS, you must STAT IGS.

23 Verify that call processing operates correctly. this includes, but is not limited to the following:

- Check for dial tone.
- Make internal, external, and network calls.
- Check attendant console activity.
- Check DID trunks.
- Check any auxiliary processors.

24 If auxiliary processors are working with the system, ensure they are powered up. Be sure the Application Module Links (AML) are up. DCH and AML messages might indicate problems during the conversion. Investigate any of these messages.

25 Keep one copy of the **Source** software, as it was backed up in the preconversion procedure, in case it becomes necessary to reconvert. After the **Target** software has been running well for a few weeks, return the original software to Avaya through the usual distribution channel.

Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.

Table 115
Print site data (Part 1 of 4)

Site data	**Print command**	
Terminal blocks for all TNs	LD 20	
	REQ TYPE CUST	PRT TNB <cr>

Table 115
Print site data (Part 2 of 4)

Site data	Print command	
Directory Numbers	LD 20	
	REQ TYPE CUST	PRT DNB <cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ TYPE CUST	PRT ATT, 2250 <cr>
*Customer data block for all customers	LD 21	LD 21
	REQ TYPE CUST	PRT CDB <cr>
Route data block for all customers	LD 21	
	REQ TYPE CUST ROUT ACOD	PRT RDB Customer number <cr> <cr>
*Configuration Record	LD 22	
	REQ TYPE	PRT CFN
*Software packages	LD 22	
	REQ TYPE	PRT PKG
*Software issue and tape ID	LD 22	
	REQ REQ	ISS TID

Table 115
Print site data (Part 3 of 4)

Site data	Print command	
* Peripheral software versions	LD 22	
	REQ TYPE	PRT PSWV
ACD data block for all customers	LD 23	
	REQ TYPE CUST ACDN	PRT ACD Customer Number ACD DN (or <CR>)
Superloop card IDs and software version (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multipurpose ISDN Signaling Processor (MISP) card	LD 27	
	REQ TYPE LOOP APPL PH	PRT MISP loop number (0-158) <cr> <cr>
DTI/PRI data block for all customers	LD 73	
	REQ TYPE	PRT DDB
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)

Table 115
Print site data (Part 4 of 4)

Site data	Print command	
Superloops and XPEs	LD 97	
	REQ TYPE SUPL	CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E
Note: Items marked with asterisks (*) are required printout for conversion. Other items are recommended for a total system status.		

26 Obtain status of CNI cards.

LD 135	To load the program.
STAT CNI	Obtain the status of CNI cards.
********	To exit the program.

End of Procedure

Using the Distributor Keycode Application

Contents

This chapter contains information about the following topics:

Introduction 871
Hardware and Software Requirements 872
Installing DKA 872
Adding the KDS network client in Dial-up Networking 878
Downloading from KDS 882
Reading from a File 890
Manually entering a keycode 891

Introduction

The Distributor Keycode Application (DKA) is a Windows-based utility program which enables distributors to download keycodes from a remote server (known as Keycode Delivery Server (KDS). DKA makes use of a standard Wizard Windows interface to guide the user's operation.

> ***Note:*** Electronic retrieval of keycodes via DKA is not supported in European markets. If downloading keycodes from Europe, see "Using the Keycode Retrieval Utility" on page 201.

This section contains the following procedures:

- "Install DKA" on page 604

- “Adding the KDS network client in Dial-up Networking” on page 610
- “Downloading from KDS” on page 614
- “Reading from a File” on page 621
- “Manually enter a keycode” on page 623

Note: The “Installing DKA” and “Adding the KDS connection in Dial-Up Networking ®” procedures must be completed before the “Downloading from KDS” procedure can be performed.

Hardware and Software Requirements

To install and use the DKA program, certain requirements must be met:

- A PC or compatible computer with a Pentium or compatible Intel processor running the Windows 95 or Windows 95B operating system.
- A modem that supports 14.4kbps or less must be installed and configured on the PC. To ensure that a modem is configured correctly under Windows 95, configure a modem through the Control Panel (using 8 data bits, Parity None, Stop Bits 1). Additionally, the modem must be configured with the correct Dial Prefix (Access Code) used by the telephone system to access an outside line. This modem must access a standard analog telephone line.
- Approximately 5 MB free hard drive space for installation of the DKA program and, if desired, storage of keycodes.
- Microsoft Dial-up Networking software must be installed on the PC (provided with Windows 95)
- The following procedures must be performed before downloading keycodes: “Installing DKA.” and “Adding the KDS connection in Dial-Up Networking ®.”

Install DKA

Once it is determined that the PC and modem meet the system requirements listed above, the DKA program can be installed on the PC. Once the program is installed, make a Shortcut to the program to appear on the Windows desktop. Double-clicking this Shortcut provides easy access to the program.

Procedure 179
Installing the DKA program

1 Locate the DKA Installation diskette.

2 Insert the diskette, label facing upwards, into the floppy drive on the PC.

3 Run the Windows Explorer ® application by clicking **Start** | **Program Files** | **Windows Explorer**.

4 In the **Windows Explorer** application, click the 3.5” Floppy drive (A:) from the left side of the window.

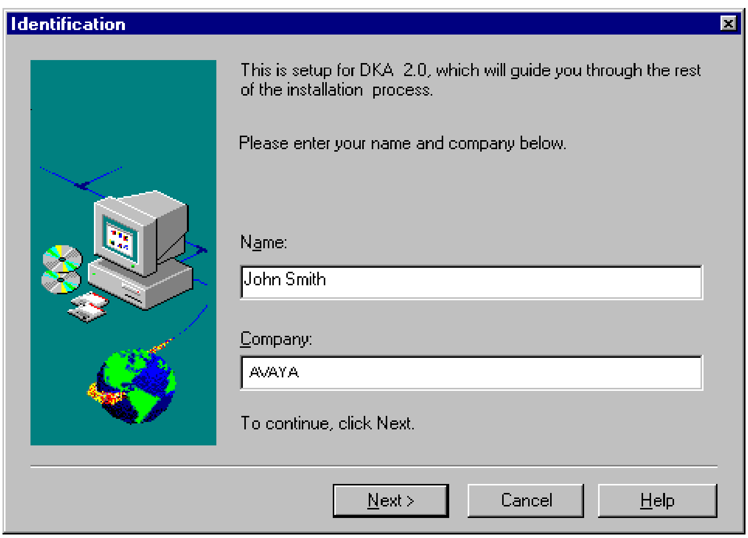
5 In the right side of the window, double-click the **Setup.exe** file (which has a computer icon to the left of it).

Wait for the **Setup** program to prepare for installation.

The Identification Screen is displayed.

6 Enter the requested information in the **Name** and **Company** fields. See Figure 75 below.

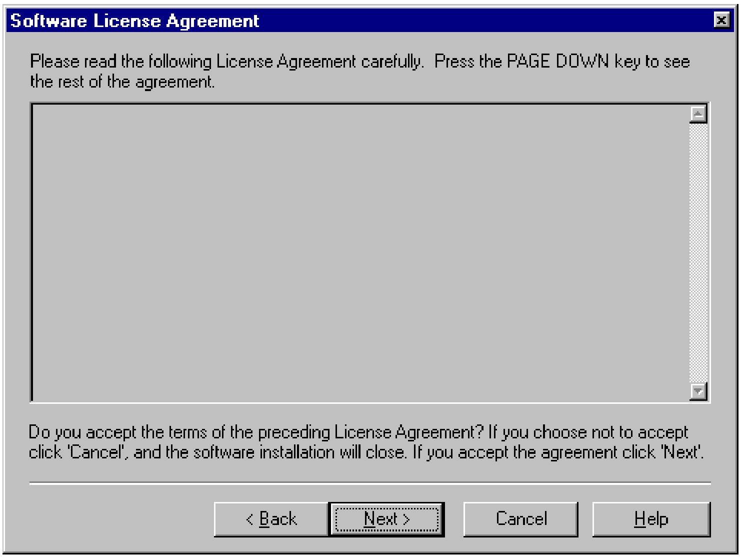
Figure 75
Identification screen



7 Click **Next** or press return.

The Software License screen is displayed. This screen contains a scrollable text box that contains the legal agreement governing the use of the DKA software. See Figure 76 below.

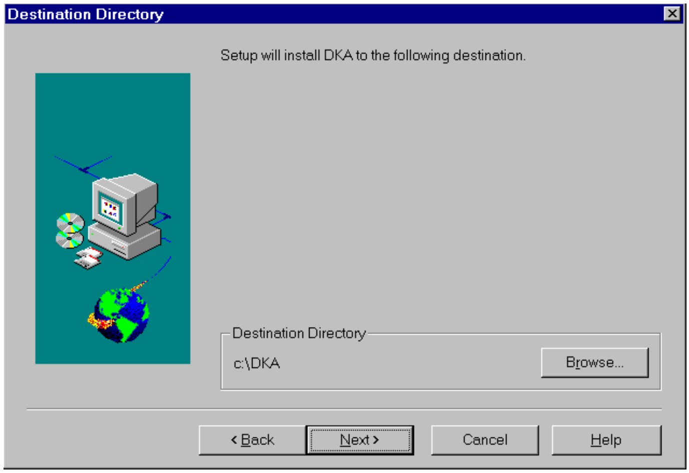
Figure 76
License agreement screen



8 If accepting the terms of the license agreement, click the **Next** button. If not accepting the terms, click **Cancel** and the program installation is stopped.

The Destination Directory screen appears. This screen indicates that the DKA program will be installed on the hard drive in a folder called DKA. See Figure 77 on page 607.

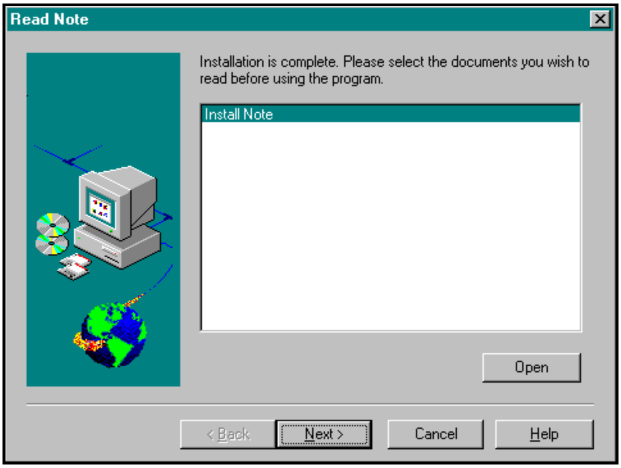
Figure 77
Destination directory



9 Click **Next** or press return.

10 The Read Note screen appears. This screen is used to read any Read me files for the DKA program. See Figure 78 on page 608.

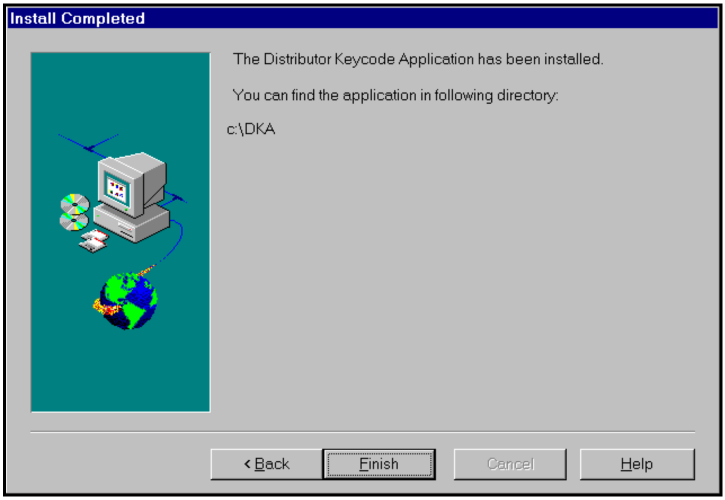
Figure 78
Read note screen



11 Read the contents of the Read Me files: Select the desired file, then click **Open**.

12 Click **Next** or press return.
The Install Completed screen appears. This screen indicates that the Distributor Keycode Application has been successfully installed on the PC. See Figure 79 on page 609.

Figure 79
Install Completed screen



13 Click the **Finish** button to close the setup program.

End of Procedure

Create a Shortcut

Procedure 180
Creating a shortcut

1 Select the **dka.exe** file located in the DKA folder on the (C:) drive.

2 Click on the **File** menu and drag down to **Create Shortcut**.

A file called **Shortcut to dka.exe** appears in the DKA folder.

3 Click and drag the **Shortcut to dka.exe** file to a convenient location on the desktop and release.

End of Procedure

Now the Distributor Keycode Application can be accessed easily by double-clicking on the **Shortcut to dka.exe** file on the desktop.

Adding the KDS network client in Dial-up Networking

Before keycodes can be downloaded, it is necessary to configure the Dial-up Networking KDS client. Dial-up Networking stores and manages all communication parameters (such as phone number, dial prefixes, user name, password) necessary for connecting to the Keycode Download Server.

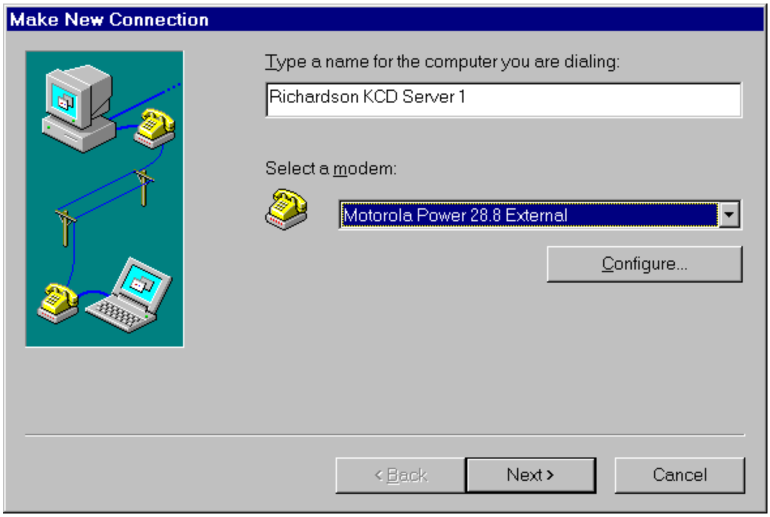
Procedure 181
Configuring Dial-up Networking

1 Click the **Start** button on the lower left corner of the PC desktop and drag to **Programs|Accessories|Dial-up Networking**.

2 Double-click the **Make a New Connection** icon in the Dial-Up Networking window and enter the following:

Type a name for the computer you are dialing:
Richardson KCD Server 1 (example)

3 Select a modem:
The modem must support 14.4 kbps or less with the following configuration:
Data Bits 8, Parity None, Stop Bits 1



4 Click **Next**. The telephone number entry screen appears. See Figure 80 on page 612. Enter the following for regions where the 888 Area Code is available:

Enter the Area Code as follows: 888

Telephone Number: 685-3923

Country code: United States of America

Note 1: The information entered in the Make New Connection window must match this information. If using DKA in a market other than the United States of America, ensure that the Area Code, Telephone Number, Dial Prefix, and Country code are configured correctly.

Note 2: In regions where the 888 Area Code is not applicable, the number which must be substituted is: **(972) 685-1764**. This number must be configured in Dial-Up Networking.

Figure 80
Make New Connection screen – telephone numbers.

5 Click **Next**.

A message Is received that states a new Dial-Up Networking connection has been successfully completed.

6 Click **Finish** or press return to complete the procedure.

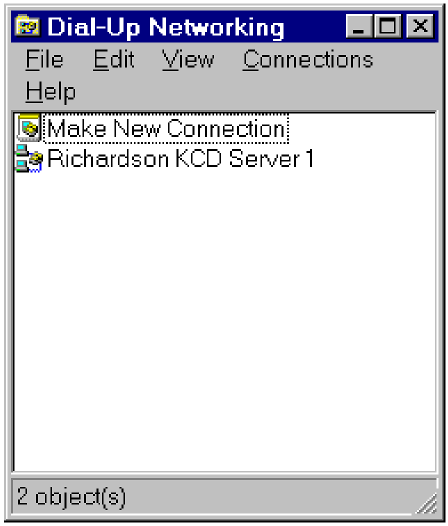
End of Procedure

Configure the Type of Dial-Up Server

Procedure 182
Configuring the Type of Dial-Up Server

1 Click the **Start** button on the lower left corner of the PC desktop and drag to **Programs|Accessories|Dial-up Networking**.

2 Click on **Richardson KCD Server 1.**



3 Select the **File menu** and choose **Properties**.

4 Click **Server Type...** to continue.

5 Configure the **Server Type** window with the following information:

Type of Dial-Up Server: PPP Windows 95 Windows NT 3.5 Internet

Advanced's: Enable software compression

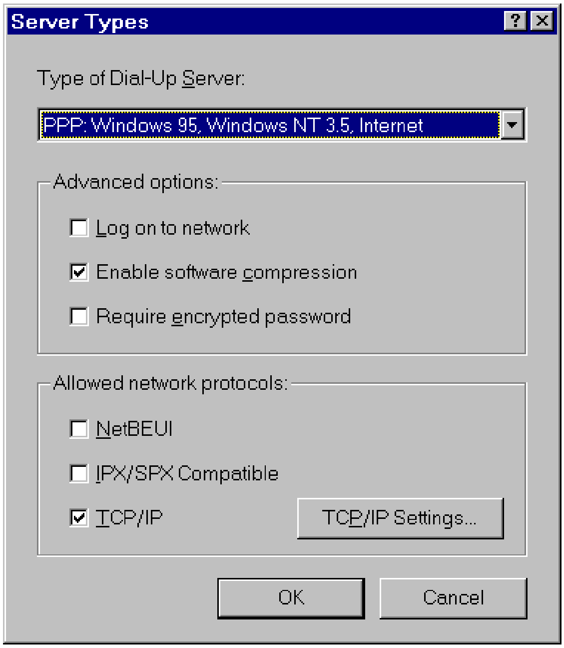
Advanced network protocols: TCP/IP

TCP/IP Settings....: *use the default settings*

6 Click **OK** or press return.

7 Click **OK** again to return to the Dial-Up Networking window**.**

End of Procedure



Downloading from KDS

The following procedure is used to request and receive keycodes from a remote server, known as KDS (Keycode Delivery Server). This procedure assumes that you have already installed the DKA program as described in "Install DKA" on page 604, and have added and configured the Dial-up Networking client as described in "Adding the KDS network client in Dial-up Networking" on page 610.

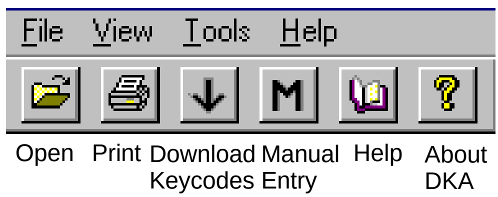
Procedure 183
Establishing the PPP connection to the KDS server via Dial-up Networking

1 Double click on the Richardson KCD Server 1 Dial-Up Networking client. Enter user name “avaya-keycode” and password “97enable.” Click the Connect button and verify that the modem dials a call and the Dial-Up Networking client successfully connects to the Richardson KCD Server 1.

Once the Dial-up Networking PPP connection has been established, continue with the download by starting the DKA application:

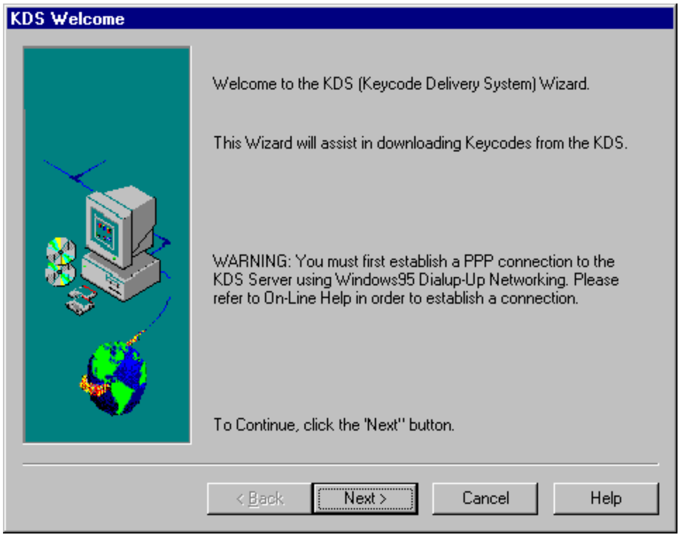
2 Double-click on the **Shortcut to DKA** icon on the PC desktop.

A gray screen appears that includes four menus and a Toolbar with buttons for essential commands.



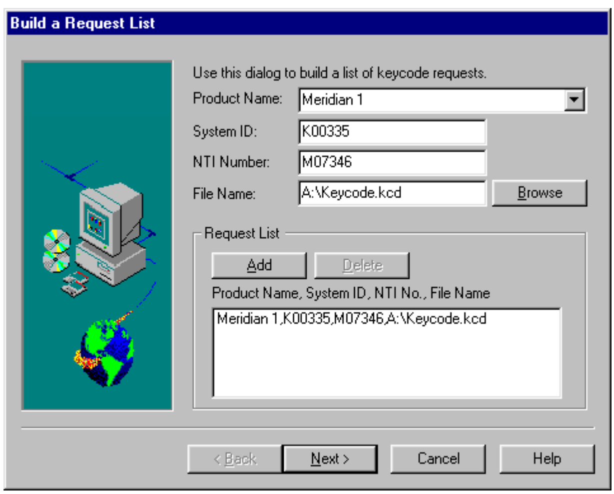
3 Click on the **Tools** menu and select **Download Keycodes.**

The KDS Welcome screen appears.



4 Click **Next** or return to download a keycode from KDS.

The Build a Request List screen is displayed. This screen has four information fields which must be completed for each keycode request that is submitted.



5 Enter the information into the four fields as described in Table 116 below.

Table 116
“Build a Request List” fields

Name of field	How the information is entered in the field
Product Name	Select the product family of the system for which you are requesting a keycode.
System ID	Enter the System ID for the system for which you are requesting a keycode.
NTI Number	Click in the field and type in the NTI Number for the system for which you are requesting a keycode (the NTI Number is the same as the NT order number).
File Name	Enter a file name for the keycode you will be downloading. If the keycode will be downloaded to the hard drive ((C:) drive), use the following file naming convention: c:\DKA\<System ID>\NTI Number>. When you click Add, a.kcd file extension is added to the file name. If the keycode will be downloaded to a floppy diskette in the 3.5" Floppy drive (A:), the file name must be named “keycode” so the Meridian 1 can recognize the file. When you click Add, a.kcd file extension is added to the file name.

6 Click **Add** to continue. The request will appear in the Request List scroll box.

When a request is added to the list, another request may be added by filling out the fields with information for another keycode, and again clicking the Add button.

To remove a request from the list, select the request in the Request List scroll box and click the Delete button.

7 Click the **Next** or press return.

The KDS Billing Notice screen is displayed

8 Enter the information in Table 117 below into the KDS Billing Notice screen.

Table 117
Fields on the KDS Billing Notice screen

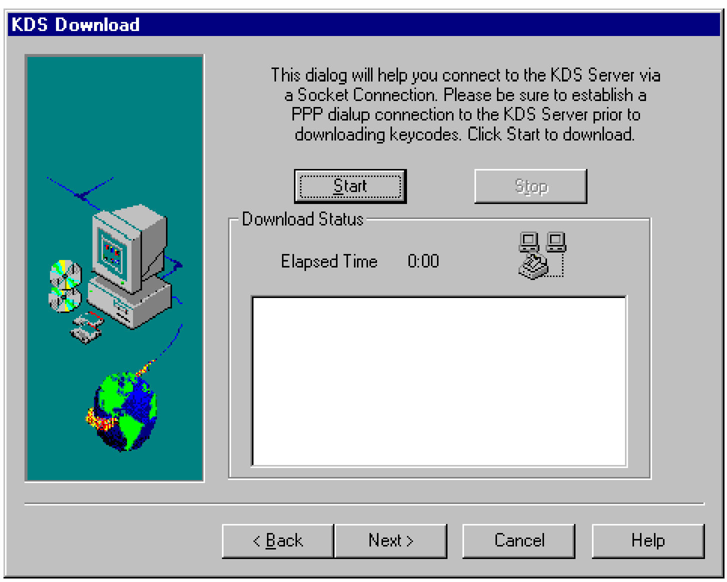
Name of field	How the information is entered in the field
Distributor Name	Enter the name of the Distributor who is requesting the keycode(s).
User Name	Enter the name of the person requesting the keycode(s).
Telephone Number	Enter the telephone number that can be used to contact the individual who is requesting the keycode(s). For example: (408) 555-1212.

9 Click the **Next** button or press return.

10 Click **Next** or press return.

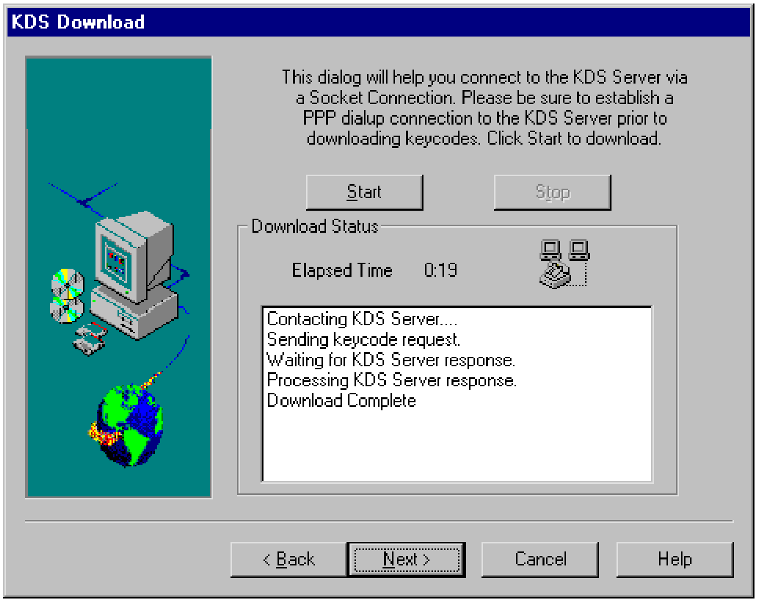
The KDS Download screen is displayed.

Note: The Dial-up Networking connection must have been established, as described in “Establishing the PPP connection to the KDS server via Dial-up Networking” on page 615.

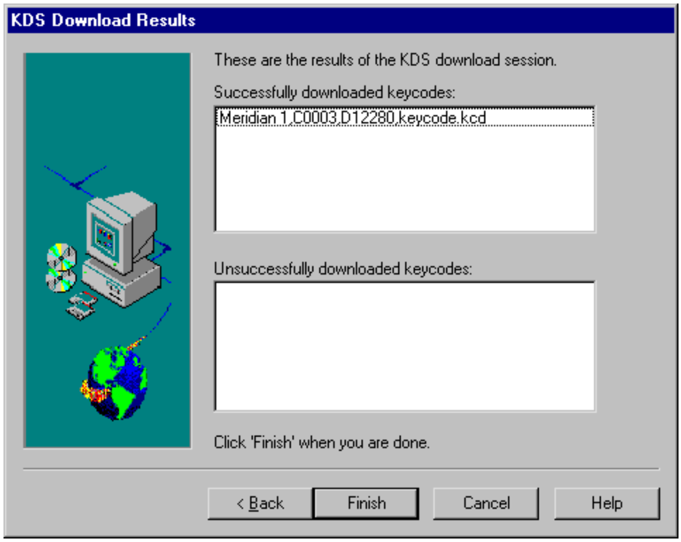


11 Click **Start** to begin downloading the keycode(s).

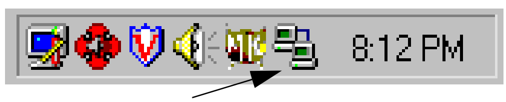
Note: This starts the keycode download process. A socket connection is established over the existing PPP connection. Next, the provided login information is sent to the Keycode Delivery Server and verified. Then the requested keycodes are downloaded to your PC in the location you specified in the Build a Request List window. Status is displayed in the Download Status box.



12 Click **Next** to receive the “KDS Download Results” screen, summarizing the results of the download.



13 Double-click the network icon in the lower right corner of the screen.



14 The Dial-up Networking status window appears. Click the **Disconnect** button to end the connection to the network.

The “Download from KDS” procedure is complete. For keycode installation instructions, see “Installing a new keycode” on page 130.

If there was a problem downloading keycodes, the problem keycodes are listed in the “Unsuccessfully downloaded keycodes” scroll box.

Note: If the download was unsuccessful, verify that the correct telephone number and Dial Prefix are configured in Dial-up Networking.

Once the requested keycode downloads from the Keycode Delivery System to your PC, see “Installing a new keycode” on page 130.

End of Procedure

Reading from a File

Procedure 184
Reading from a File

The following procedure is used to learn information about the properties of an existing keycode, or a keycode that was just downloaded from KDS. In this procedure you will specify a keycode file in a location on your hard drive or on a floppy diskette that is inserted in your floppy disk drive.

You will also specify a “Product type” to examine within the keycode file, in case there are multiple keycodes within the keycode file being examined.

This procedure assumes that you have already installed the DKA program as described in “Install DKA” on page 604.

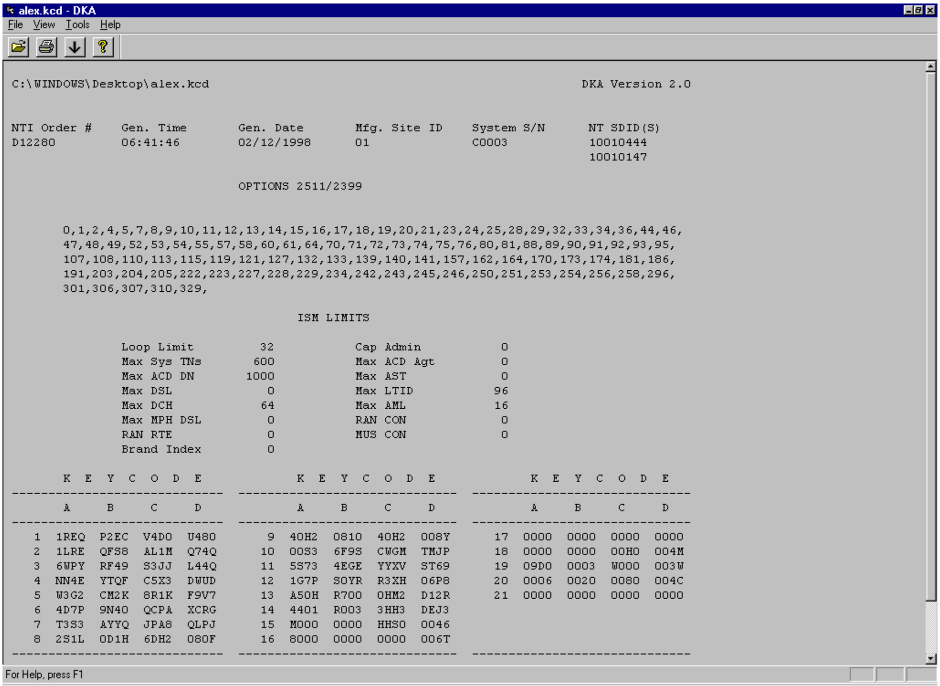
1 Double-click on the **Shortcut to DKA** icon on the PC desktop.

2 Select **Open** from the **File** menu.

A navigation dialog box appears. In the navigation dialog box, locate the keycode. For a keycode residing on a floppy drive, this is the 3.5" Floppy drive (A:); for a keycode residing on the hard drive, this is most likely the C: drive.

3 Click **OK**.

The Keycode file is displayed in a format similar to the hardcopy Keycode Acknowledgment sent to a customer. The Keycode itself is displayed at the bottom of the file, in 21 rows of 16 characters each.



```
alex.kcd - DKA
File  View  Tools  Help

C:\WINDOWS\Desktop\alex.kcd                                                DKA Version 2.0

NTI Order #    Gen. Time      Gen. Date      Mfg. Site ID    System S/N     NT SDID(S)
D12280         06:41:46       02/12/1998     01              C0003          10010444
                                                                            10010147

                              OPTIONS 2511/2399

       0,1,2,4,5,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,23,24,25,28,29,32,33,34,36,44,46,
       47,48,49,52,53,54,55,57,58,60,61,64,70,71,72,73,74,75,76,80,81,88,89,90,91,92,93,95,
       107,108,110,113,115,119,121,127,132,133,139,140,141,157,162,164,170,173,174,181,186,
       191,203,204,205,222,223,227,228,229,234,242,243,245,246,250,251,253,254,256,258,296,
       301,306,307,310,329,

                                      ISM LIMITS

               Loop Limit        32            Cap Admin          0
               Max Sys TNs      600            Max ACD Agt        0
               Max ACD DN      1000            Max AST            0
               Max DSL            0            Max LTID          96
               Max DCH           64            Max AML           16
               Max MPH DSL        0            RAN CON            0
               RAN RTE            0            MUS CON            0
               Brand Index        0

       K  E  Y  C  O  D  E              K  E  Y  C  O  D  E              K  E  Y  C  O  D  E
-----------------------------    ------------------------------    ------------------------------
       A     B     C     D                A     B     C     D                A     B     C     D
-----------------------------    ------------------------------    ------------------------------
   1  1REQ  P2EC  V4D0  U480          9  40H2  0810  40H2  008Y         17  0000  0000  0000  0000
   2  1LRE  QFS8  AL1M  Q74Q         10  00S3  6F9S  CWGM  TMJP         18  0000  0000  00H0  004M
   3  6WPY  RF49  S3JJ  L44Q         11  5S73  4EGE  YYXV  ST69         19  09D0  0003  W000  003W
   4  NN4E  YTQF  C5X3  DWUD         12  1G7P  S0YR  R3XH  06P8         20  0006  0020  0080  004C
   5  W3G2  CM2K  8R1K  F9V7         13  A50H  R700  0HM2  D12R         21  0000  0000  0000  0000
   6  4D7P  9N40  QCPA  XCRG         14  4401  R003  3HH3  DEJ3
   7  T3S3  AYYQ  JPA8  QLPJ         15  M000  0000  HHS0  0046
   8  2S1L  0D1H  6DH2  080F         16  8000  0000  0000  006T
-----------------------------    ------------------------------    ------------------------------
For Help, press F1
```

The "Reading from a File" procedure is complete.

End of Procedure

Manually enter a keycode

Procedure 185
Manually entering a keycode

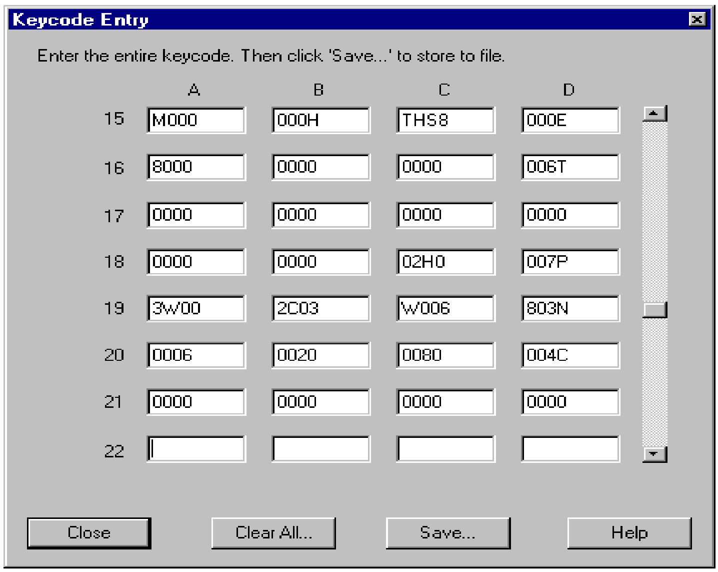
The following procedure is used to manually enter a keycode for the purpose of creating and storing a keycode file.

This procedure assumes that you have already installed the DKA program as described in “Install DKA” on page 604.

1 Double-click on the **Shortcut to DKA** icon on the PC desktop.

2 Select **Manual Entry** from the **Tools** menu.

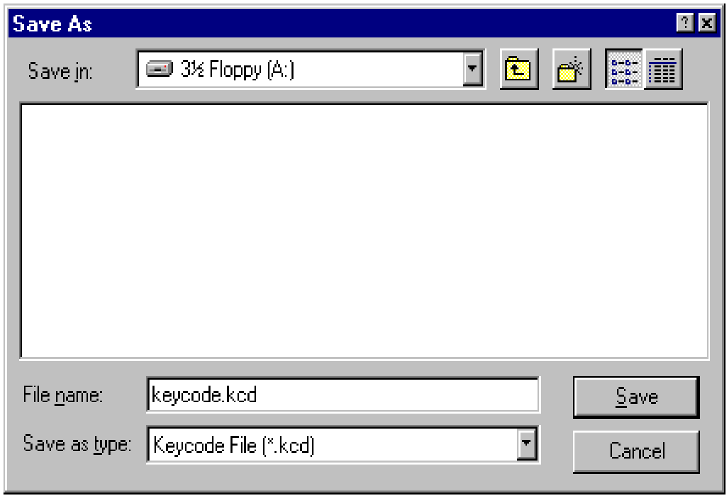
The Keycode Entry screen is displayed. This screen consists of rows and four columns (A-D) into which the keycode is entered four characters at a time. When 16 characters (four cells) are entered in a row, the program tries to validate that row. If the row does not validate, a red X appears to the left of that row to indicate invalidity.



The Clear All... button is used to erase all characters in the cells that have been entered on the Keycode Entry screen. A dialog box will prompt “Are you sure you want to clear the Keycode characters?” when this button is selected. Confirming the dialog erases all characters in all cells.

3 When the entire keycode has been entered, click the **Save...** button.

If the keycode is valid, the Save As screen is displayed. This screen allows you to specify the file name your keycode will be saved as and the directory where it will be saved.



4 From the **Save in** pull-down menu, select the drive location where you want to save the keycode.

5 In the **File Name** field, type the name you want your keycode file to be saved as. Note that the.kcd extension will be appended to that filename.

To save the keycode file nested within folders, double-click on the folder in which the keycode file will ultimately be saved. When you have navigated to the folder where you would like to save the keycode file, click the **Save** button.

6 Click **Save** or press return.

The keycode file has been saved as specified.

End of Procedure

Terminal and modem connections

Contents

This chapter contains information about the following topics:

Introduction 625
Existing modems on upgraded systems 640
Available modem for an upgraded system 640

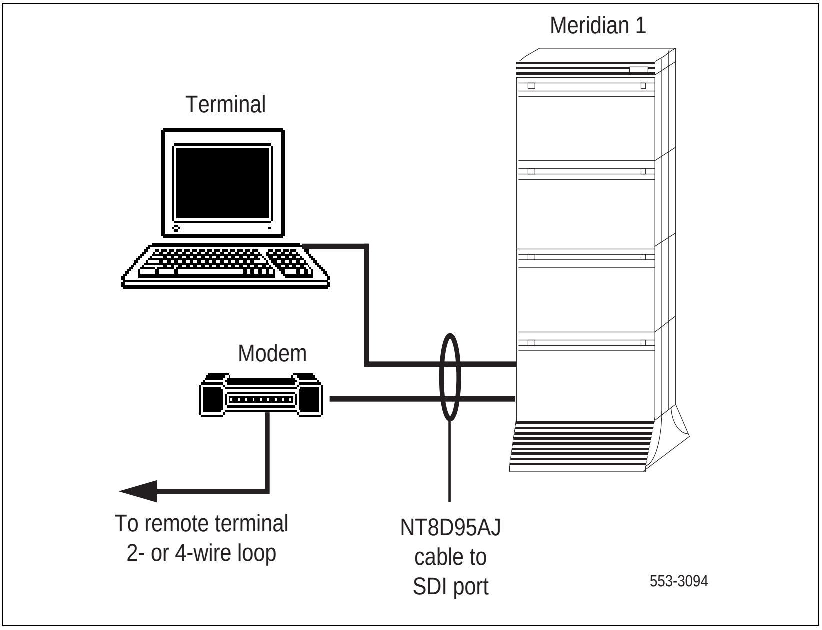
Introduction

During the system upgrade, a terminal must be connected to a serial data interface (SDI) port to provide an I/O interface to the system. When the upgrade is complete, a terminal (for local access) or a modem (for remote access) must remain permanently connected to an SDI port to provide a constant I/O interface to the system (see Figure 81 on page 626).

When upgrading a dual CPU system, you may want to temporarily install additional terminals for split mode monitoring, or programming, or both.

> ***Note:*** In Meridian 1 Option 61 and Meridian 1 Option 71, SDI cards can be temporarily installed in CPU slots during a software conversion. In Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV, I/O ports on the call processing (Call Processor) cards, can be used to monitor CPU operations. On the Meridian 1 Option 81C, COM 1 port on the Call Processor card can be used to monitor CPU operations. These configurations should not be used as the permanent I/O connection for the system because the port is only active when the associated CPU is active.

Figure 81
Terminal connection diagram



CAUTION — Service Interruption

Service Interruption

If a Hayes command-set compatible (smart) modem is used at the Meridian 1 end, you *must* select the dumb mode of operation, Command Recognition OFF and Command Echo OFF, before connecting the modem to the SDI port. For information about the mode of operation, see your modem instruction manual.

If a printer is connected to an SDI port (locally or remotely), you must disable XON/XOFF flow control, so no characters or signals are sent to the port, to avoid a “ping-pong” effect.

Note: For information specific to Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV, see “Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV terminal and modem connections” on page 633.

Configure the system

Procedure 186
Configuring the system

1 Install and cable a system terminal or a modem:

- **a.** Unpack the terminal/modem and place it in its assigned location.
- **b.** Install the terminal/modem according to the manufacturer’s instructions.
- **c.** Connect an NT8D95AJ cable to a matching connector on the terminal/modem.

Note: At a remote location, install and connect a compatible modem and terminal. Connect the NT8D95AJ cable to the modem.

2 Install and cable the SDI card:

- **a.** Set the Enb/Dis switch to Dis (down).
- **b.** See *Avaya Circuit Card Reference* (NN43001-311) to set the option switches for each port.
- **c.** See Figure 82 for switch locations on an NT8D41 SDI Paddle Board. (The paddle board cannot be used in Meridian 1 Option 71 and Meridian 1 Option 81C CP PII or CP PIV.)
- **d.** See Figure 83 for switch locations on an NTND02 MSPS Card. (The MSPS card is used in Option 21E only.)
- **e.** Insert the SDI card into its assigned slot.
- **f.** Cable the SDI card:
- **g.** See Figure 84 to cable the NT8D41 SDI Paddle Board. (There is no faceplate on the paddle board; Figure 84 identifies the ports.)
- **h.** See Figure 84 on page 631 to cable an NTND02 MSPS Card.
- **i.** See Figure 85 to cable a QPC841 Four-Port SDI Card.
- **j.** Set the Enb/Dis switch to Enb (up).

3 Software enable the SDI card:

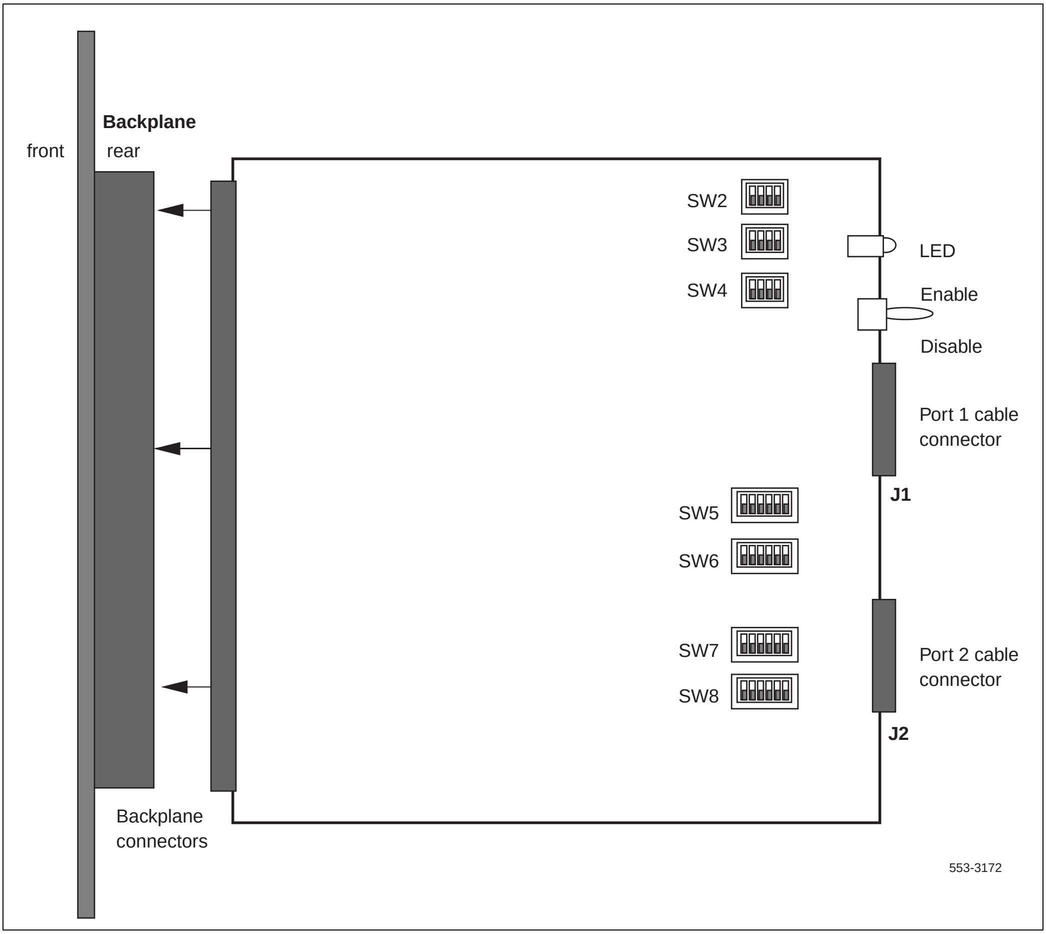
a. Define each SDI port in the Configuration Record (LD 17).

b. Enable each SDI port using the appropriate software program for the port application. Typical SDI applications and associated programs include:

Terminal and printer ports	LD 37
Call Detail Recording (CDR) ports	LD 42
Automatic Call Distribution (ACD) ports	LD 48

4 Connect an NT8D95AJ cable from the terminal, or modem, to the assigned SDI port.

Figure 82
Ports and switches on the NT8D41 SDI Paddle Board



End of Procedure

Figure 83
Switch locations on the NTND02 MSPS Card

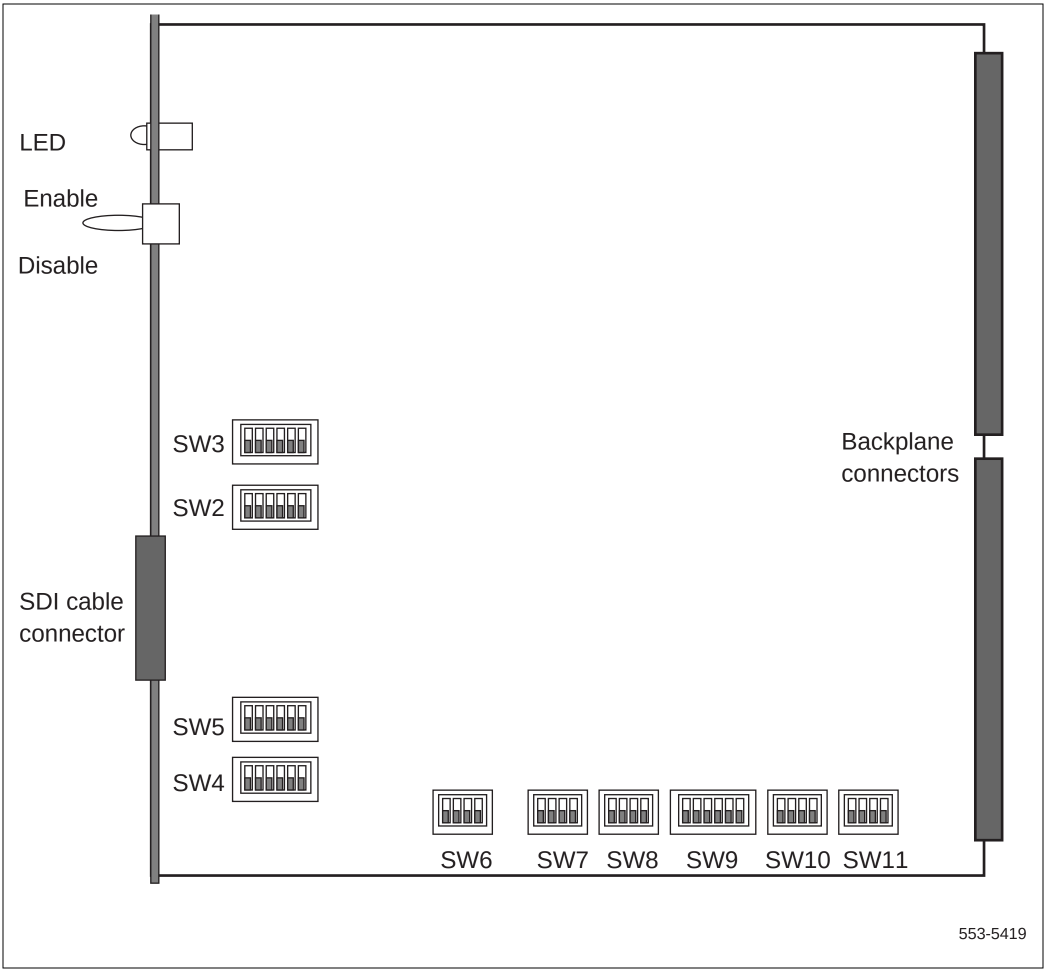
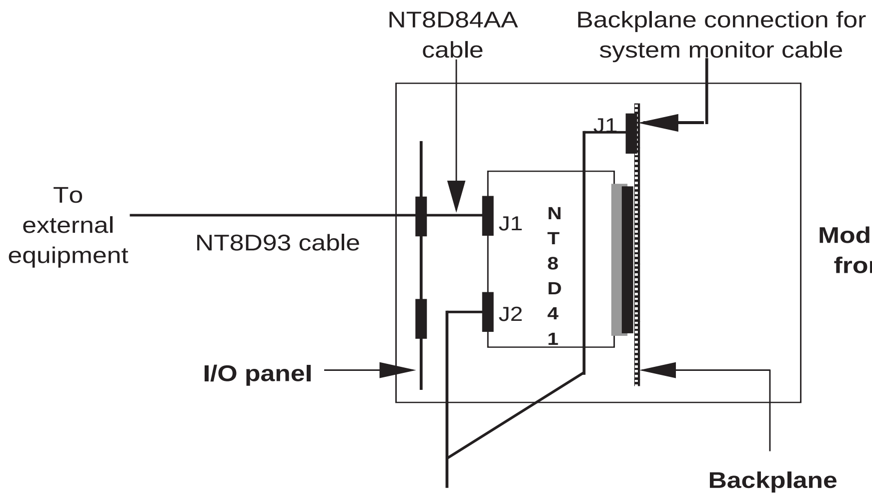


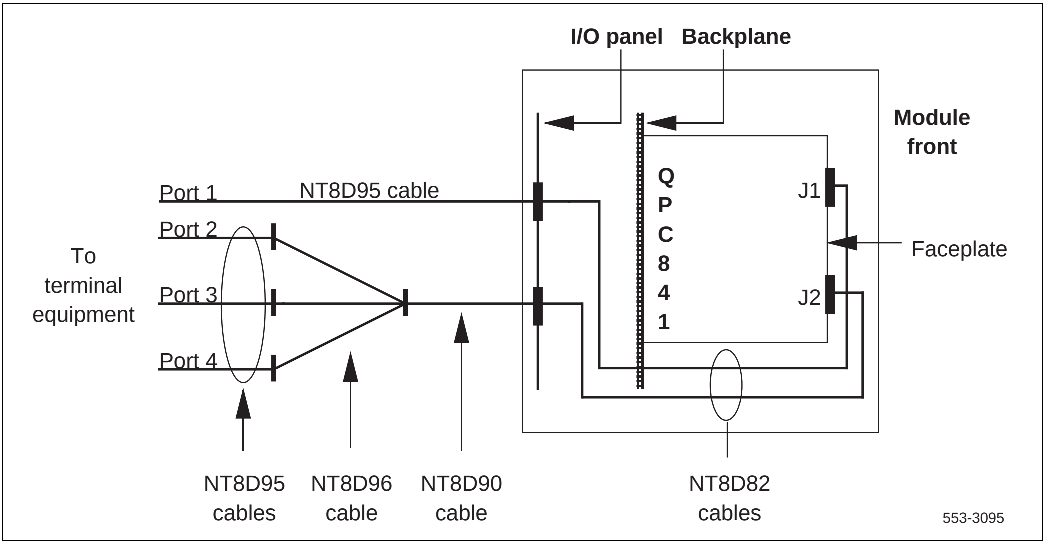
Figure 84
Cabling diagram for the NT8D41 SDI Paddle Board



Note: To connect J2 to external equipment, cable as shown for J1.

553-5381

Figure 85
Cabling diagram for the QPC841 Four-Port SDI Card



Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV terminal and modem connections

During the system upgrade and for continuing system operation, a terminal must be connected to an SDI port in a network slot to provide an I/O interface to the active CPU in the system.

In addition, a data terminal equipment (DTE) port and a data communication equipment (DCE) port on each Call Processor Card can be used for direct access to the Core or Core/Network Module that houses the card.

The designations DTE and DCE refer to the function of the port, not the type of device that connects to the port. Therefore, a modem (which is DCE) connects to the DTE port at J21, and a terminal (which is DTE) connects to the DCE port at J25. Typically, the CPSI ports are preconfigured on I/O addresses four and five.

The data terminal equipment (DTE) port, COM 1 and a data communication equipment (DCE) port, COM 2 on each NT4N39 CP PIV can be used for direct access to the Core or Core/Network Module that houses the card.

The Call Processor card ports (CPSI/COM1 COM2 ports) are active only when the CPU associated with the Call Processor card is active. Therefore, the CPSI/COM1 COM2 ports should not be used as the only I/O connection for the system.

When the upgrade is complete, you must leave a terminal or a modem connected to the system. One SDI port in a network slot must be permanently connected to a terminal or modem.

On the CPSI ports you can:

- disconnect the ports
- leave terminals connected for local monitoring
- connect modems for remote monitoring

The Black Box ABCDE-Switch, which provides up to four-to-one switching, is available from Avaya as part number A0377992. The switch box can be used to connect the SDI and CPSI/COM1 COM2 ports to a terminal or a modem. If used, one switch box must be used for terminals and one for modems.

Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV terminal guidelines

During an upgrade, you can connect terminals to the CPSI/COM1 ports for split mode monitoring, or programming, or both. (Due to the speed of the system messages displayed, personal computers are useful for file capture and review.) Terminals connected to the CPSI/COM1 ports can be installed as follows:

- One terminal connects to a CPSI/COM1 port in one CPU (the cable is switched from module to module as needed); one terminal is required in addition to the terminal for the SDI port connection (see Figure 86 on page 635).
- One terminal connects to a switch box that connects to a CPSI/COM1 port in each CPU: one terminal and a switch box are required in addition to the terminal for the SDI port connection (see Figure 87 on page 637).
- One terminal connects to a switch box that connects to an SDI port and to a CPSI/COM1 port in each CPU: one terminal and a switch box are required (see Figure 88 on page 638).

The Meridian 1 Option 51C has only one CPU module and requires only one CPSI terminal connection and one SDI port connection. A single terminal with a switch box can be used.

Connect a terminal to a CPSI port

Procedure 187
Connecting a terminal to a CPSI port

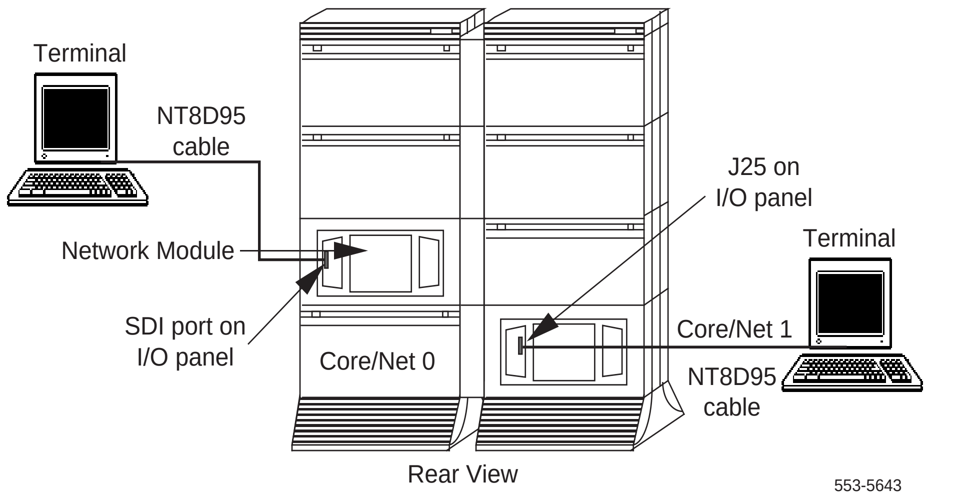
Use the following procedure to connect a CPSI/COM1 port directly (no switch box) to a terminal (see Figure 86):

1. Set the terminal to 9600 baud, 7 data, space parity, one stop bit, full duplex, XON.
2. Connect an NT8D95 cable to a matching connector on the terminal.

3 Connect the NT8D95 cable to J25 on the I/O panel in the rear of the Core or Core/Network Module.

4 If you are using only one terminal for both CPSI/COM1 ports, switch the cable as needed. The terminal connected to the SDI port will always communicate with whichever CPU is active.

Figure 86
One terminal for the CPSI ports



End of Procedure

Connect a switch box and terminal to CPSI ports

Procedure 188
Connecting a switch box and terminal to CPSI ports

Use the following procedure to connect CPSI/COM 1 ports to a switch box and a terminal (see Figure 87):

1 Set the terminal to 9600 baud, 7 data, space parity, one stop bit, full duplex, XON.

2 Connect an NT8D95 cable to the terminal and to the switch box.

3 Connect NT8D95 cables to a matching connector on the switch box.

4 If you are using an A0377992 ABCDE box, connect cables as follows:

5 Connect CPU 0 to connector A.

6 Connect CPU 1 to connector B.

7 Connect the NT8D95 cables from the switch box to J25 on the I/O panel in the rear of the Core/Network Modules.

8 To communicate directly with a CPSI/COM 1 port, switch the cable as needed. The terminal connected to the SDI port will always communicate with whichever CPU is active.

End of Procedure

Connect a switch box and terminal to the SDI and CPSI ports

Procedure 189
Connecting a switch box and terminal to the SDI and CPSI ports

Use the following procedure to connect CPSI/COM 1 ports to a switch box and a terminal (see Figure 87 and Figure 88):

1 Set the terminal to 9600 baud, 7 data, space parity, one stop bit, full duplex, XON.

2 Connect an NT8D95 cable to the terminal and to the switch box.

3 Connect NT8D95 cables to a matching connector on the switch box.

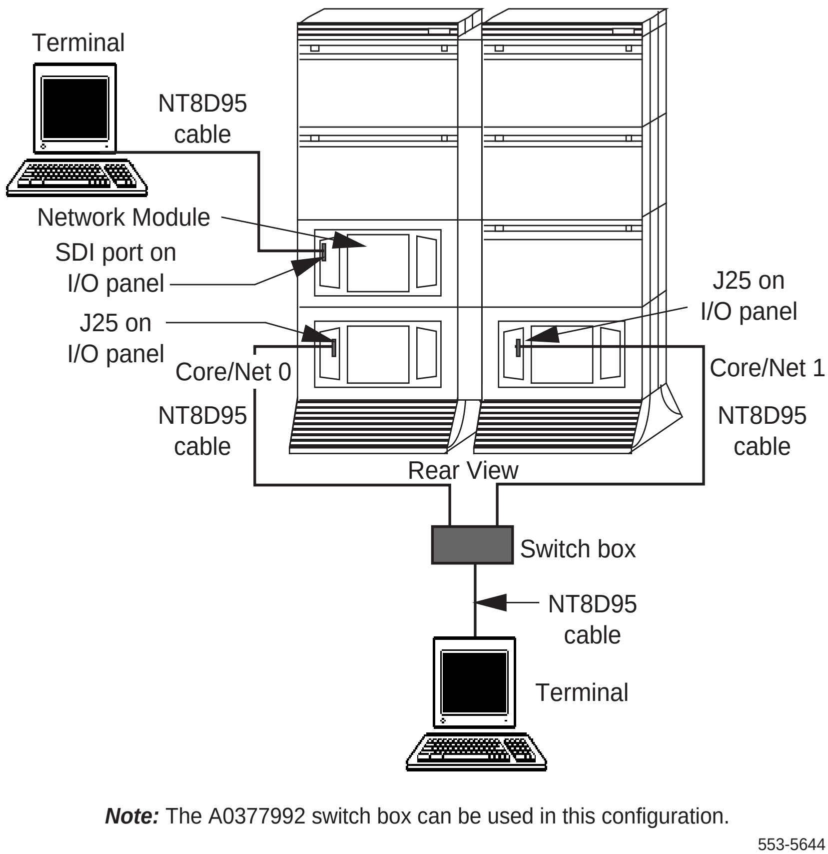
4 If you are using an A0377992 ABCDE box, connect cables as follows:

- **a.** Connect CPU 0 to connector A.
- **b.** Connect CPU 1 to connector B.
- **c.** Connect the SDI port to connector D (connector C is common).

5 Connect NT8D95 cables from the switch box to J25 on the I/O panel in the rear of each Core or Core/Network Module.

6 Connect an NT8D95 cable from the switch box to the I/O panel slot for the SDI card.

Figure 87
One terminal and a switch box to two CPSI ports

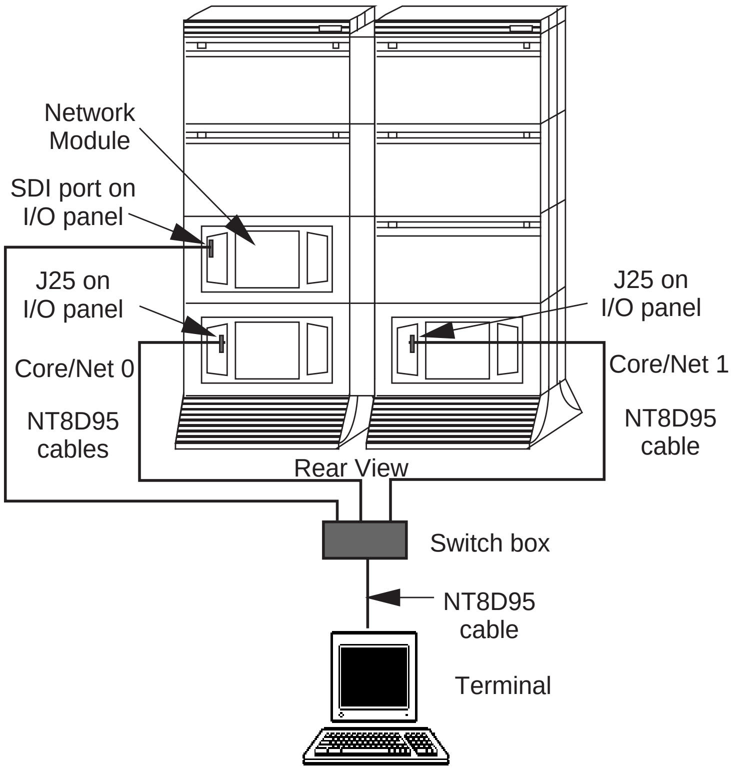


Note: The A0377992 switch box can be used in this configuration.

7 To communicate with the system in general, set the switch box to the SDI port. To communicate directly with a CPSI/COM 1 port, switch the cable as needed.

End of Procedure

Figure 88
One terminal and a switch box to the SDI and CPSI ports



Note: The A0377992 switch box can be used in this configuration.

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Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV modem guidelines

You can connect a modem to an SDI port to remotely monitor general system operation. Or you can connect a modem to the CPSI/COM2 ports for debugging and patch downloading (through your Avaya representative). Or you may want a remote connection to both the SDI and CPSI ports.

At the Meridian 1 end (the local end), modems must be set to dumb mode (command recognition OFF, command echo OFF). Modems at the local end can be connected as follows:

- One modem connects to the SDI port and the cable is switched to each CPSI/COM2 port as needed (see Figure 89 on page 648).
- One modem connects to a switch box that connects to the SDI and CPSI/COM2 ports (see Figure 90 on page 651).

  Note: The second method listed here is preferred. Other configurations, such as a separate modem for each port, are possible.

At the remote end, at least one modem (which can be set to smart mode), one terminal, and one RS-232 cable are required in all modem configurations.

Modems at the local end must meet the following required specifications to be compatible with Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV. Modems that meet the following recommended specifications must also meet the required specifications.

- required*:* true, not buffered, 9600 baud support (required for remote Avaya technical support)
- required*:* CCITT V.32 or V.32bis compliance
- recommended: the ability to adjust to lower and higher speeds, depending on line quality, while maintaining 9600 baud at local DTE
- recommended: V.42 error correction
- recommended: V.42 bis data compression

A dispatch or call back modem, normally connected to the SDI port, can be used if it meets the requirements. If you want to use a modem of this type that does not meet the requirements, the modem can only be used in addition to a modem that does meet specifications.

Existing modems on upgraded systems

Any modem that meets the required specifications should be compatible with Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV.

The following modems listed below, are no longer available. However, if your system uses these modems now, they will work with the upgraded system:

- Hayes V-series ULTRA Smartmodem 9600
- UDS FastTalk V.32/42b
- US Robotics Courier HST Dual Standard V.32bis
- Motorola 28.8 Data/Fax

Available modem for an upgraded system

The US Robotics, Sportster External 33.5 Data/Fax modem model is tested and verified as compatible. The US Robotics, Sportster External 33.5 Data/Fax modem is available through Avaya as part number A0663901.

Configure the US Robotics 33.5 Data/Fax modem

Procedure 190
Configuring the US Robotics 33.5 Data/Fax modem

Use the following procedure to configure a US Robotics, Sportster External 33.5 Data/Fax modem for operation with Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV. This procedure must be done before you connect the modem to the Meridian 1 system. You need a terminal such as a PC computer, to configure the modem.

1 Turn the modem off.

2 Set the modem DIP switches as follows:

- DIP switches 1, 3, 7, and 8 to ON (down).
- DIP switches 2, 4, 5, and 6 to OFF (up).

3 Connect an RS-232 cable to the modem and to a terminal.

4 Set the terminal with the following values:

- 9600 baud
- 8 bits
- 1 stop bit
- no parity

5 Turn the modem on and enter each command listed below with a carriage return (press Enter or Return key):

- AT&FLoad active profile
- AT&H0Flow control disabled
- AT&D3Resets on receipt of DTR
- AT&S1Modem controls DSR
- ATS0=1Answer after 1 ring
- ATS2=128Escape character = ASCII 128
- ATS7=60Pause 1s for carrier detection
- ATQ1Quiet mode
- AT&WStore active profile

The modem responds **OK** to every command (except for the last two commands ATQ1 and AT&W).

6 Disconnect the power cord and serial from the modem.

7 Set DIP switches 1 and 4 to ON (down) and the remaining switches OFF (up).

End of Procedure

Configuring an A0638930 Motorola 28.8 Data/Fax Modem

Use the following procedure to configure a Motorola 28.8 Data/Fax Model 3400 modem for operation with Meridian 1 Option 61C CP PIV and Meridian 1 Option 81C CP PIV.

The modem can be configured:

- for local mode of operation
- for remote mode of operation

Note: After the modem is configured, power down of the modem will not result in loss of the configuration settings. However, by pushing the RESET button on the modem and holding it down until the "MR" light flashes 5 only, and by releasing the RESET button before the next 5 flashes start, will reset the modem to its factory default settings. It will then be necessary to reconfigure the modem to the settings required for operation with Meridian 1 systems.

Procedure 191
Installing the modem

1 Unpack the modem and read the installation instructions included with the modem.

2 Position the modem in its designated space, install its power cord, and plug it into the power receptacle.

3 Connect a 25-pin RS-232 cable to the modem and to a terminal.

i. For Local configuration

a. Set the terminal with these parameters:

— 9600 baud

— 8 data bits

— 1 stop bit

— no parity

b. Install the communication utility program shipped with the modem or use an appropriate alternate communication utility program such as Procomm, Telix, SmartCom, Bitcom, or CrossTalk.

c. Enter the following command string in one line, followed by the carriage return <cr>:

AT&F \Q0 &S1 S0=1 S7=60 S2=128 Q1 E0 &W &W1 <cr>

d. After you press the carriage return <cr>, the modem will appear to have stopped functioning. This is normal.

e. Power off the modem and connect it to a Call Processor CPSI or CP PIV COM2 port in the Meridian 1 system. To do this:

— Set the power switch to OFF.

— Connect the NT8D95 cable between the modem and the J25 on the I/O panel at the rear of the Core/Network module.

— Connect the modem to the telephone jack (RJ11) using the RJ11 telephone cord. If the cord is not supplied, use the NT8D46 cable.

— Turn the power switch on the modem to ON.

The modem is now configured for local communication with the Meridian 1 system.

ii. For Remote configuration

To configure a modem in the remote mode, connect the modem as described above in “Local configuration procedure” and proceed as follows:

a. To place the modem in the remote configuration mode:

b. Press and hold the RESET button until the “MR” light flashes 10 times. There is a 3 second pause before each set of five flashes are received. The “AA” light comes on at the beginning of the last five flashes and remains on.

c. Do not release the RESET button until you receive all 10 flashes, the “MR”, and the “AA” lights are on. The modem is now placed in the remote mode.

d. Dial up the modem at 9600 bps.

e. Dialing up the modem at a baud rate other than 9600 bps will result in configuration errors.

f. Enter five equal signs (= = = = =) after you received the connection message.

g. Press carriage return <cr> after the PASSWORD prompt appears.

h. RC ESTABLISHED prompt will appear. Now you can enter the following commands, each followed by the carriage return <cr>:

AT\Q0	<cr>	Disable Computer Flow Control
AT&S1	<cr>	DSR on when ready to accept data
ATS0=1	<cr>	Answer on the first ring
ATS7=60	<cr>	How long to wait for carrier
ATS2=128	<cr>	Escape sequence character
AT*NT	<cr>	Turn AT command set OFF (very important)
ATQ1	<cr>	Response display OFF
AT&W	<cr>	Write to first profile
AT&W1	<cr>	Write to second profile
AT*RQ	<cr>	End remote configuration and save changes

The modem is now configured for remote communication with the Meridian 1 system.

End of Procedure

Configure an A0381391 UDS FastTalk modem

Use the following procedure to configure a UDS FastTalk modem for operation with Meridian 1 Option 61C CP PIV and Meridian 1 Option 81/81C CP PIV.

Procedure 192
Configuring an A0381391 UDS FastTalk modem

Note: With the exception of the smart/dumb mode jumper setting, configuration changes to the modem are made through software. The modem must remain in smart mode (as shipped) until the software configuration is complete.

- ATE turn off local character echo
- ATS0=2 enable autoanswer on second ring
- ATDT set for tone dialing (default is pulse dialing)
- AT&W store changes in profile 0
- AT&Y use profile 0 at power up

1. Disconnect the power cord, RS-232 cable, and any other cables from the modem.
2. Remove the top cover on the modem.
3. Stand the unit on its side.
4. Using a medium-size flat screwdriver, lightly pry the four lock tabs off the locks (located on the bottom of the case) and pull the cover away from the modem as the locks release.
5. Set the modem to smart mode.
6. Locate the option jumper. The jumper is located just to the left of the speaker (when viewed from the front of the modem).
7. Place the jumper on the two pins farthest from the speaker.
8. Connect a 25-pin RS-232 cable to the modem and to a terminal.
9. Set the terminal with these parameters:
   - — 9600 baud (no other speeds will work)
   - — 8 data bits

- — 1 stop bit
- — no parity

Note: The modem will communicate at 9600 bps *only;* the terminal or computer must be set to 9600 bps also.

10 Enter the following commands to set compatible parameters. Follow each command with a carriage return (press the "Return" or "Enter" key):

AT&F	load active profile containing factory settings
AT\N0	select normal mode, error control disabled
AT\Q0	set serial port flow control
ATV3	form-of-response message = DTE
AT&D2	modem disconnects when DTR signal is lost
AT&S1	select DSR control
ATS0=1	answer after 1 ring
ATS2=128	escape character = ascii 128
ATS7=60	pause 1 second for carrier detection
ATQ1	

11 After you enter this last command (ATQ1), the modem no longer responds with "OK". Enter the next command:

AT&W	store active profile

12 The modem should respond to every command (except the last two commands) with "OK". If you do not get this response, turn the modem off and on and try again.

13 Disconnect the power cord and serial cable.

14 Set the modem to dumb mode:

15 Locate the option jumper. The jumper is located just to the left of the speaker (when viewed from the front of the modem).

16 Place the jumper on the two pins closest to the speaker.

17 Replace the cover on the modem.

18 Align the tabs, locks, and rear guide grooves.

19 Press the cover into place until the locks and the tabs snap together.

20 Reconnect the power cord and any other cables that will be used.

End of Procedure

Connect a modem to an SDI port

Use the following procedure to connect an SDI port directly (no switch box) to a modem (see Figure 89 on page 648):

Procedure 193
Connecting a modem to an SDI port

1 At the remote end, connect an RS-232 cable to the terminal and to the modem.

2 At the remote end, connect the cable from the modem to an RJ11 telephone jack. (If a cable is required, connect an NT8D46 cable to the modem and to the RJ11 jack.)

3 At the local end, configure the modem:

   a. If you are using a Motorola 28.8 Data/Fax modem, follow the instructions in this document. (See “Configuring an A0638930 Motorola 28.8 Data/Fax Modem” on page 642.)

   b. If you are using an UDS FastTalk modem, follow the instructions in this document. (See “Configure an A0381391 UDS FastTalk modem” on page 645.)

   c. If you are using a different type of modem, follow the manufacturer’s instructions to set the modem for 9600 baud, auto answer, dumb mode, command recognition OFF, command echo OFF.

4 At the local end, connect an NT8D95 cable to the SDI port on the I/O panel in the rear of the module and to the modem.

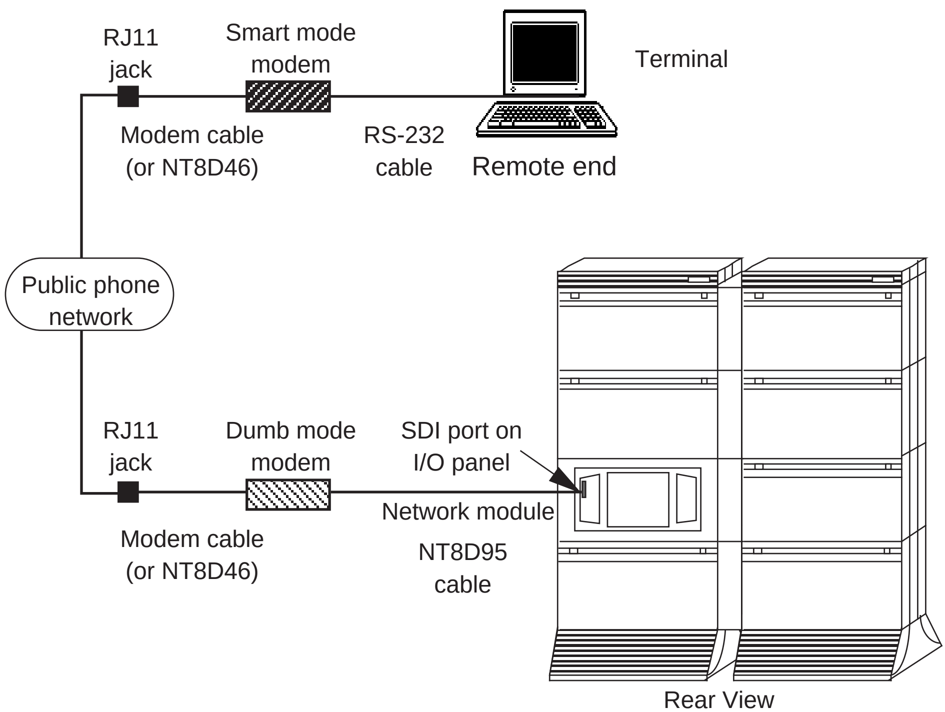
5 At the local end, connect the cable from the modem to an RJ11 telephone jack. (If a cable is required, connect an NT8D46 cable to the modem and to the RJ11 jack.)

6 To communicate with a CPSI/COM2 port, switch the cable from the modem to the port as needed:

a. For debugging or monitoring, connect the cable to the *active* CPU at J21 on the I/O panel in the rear of the Core/Network Module.

b. For patch downloading, connect the cable to the *inactive* CPU at J21 on the I/O panel in the rear of the Core or Core/Network Module.

Figure 89
Modem to SDI port



Note: The A0381391 modem can be used in this configuration.

End of Procedure

Connecting a modem to a switch box and CPSI and SDI ports

Procedure 194
Connecting a modem to a switch box and CPSI and SDI ports

Use the following procedure to connect SDI and CPSI ports to a switch box and a modem (see Figure 90 on page 651 and Figure 91 on page 652):

1 At the remote end, connect an RS-232 cable to the terminal and to the modem.

2 At the remote end, connect the cable from the modem to an RJ11 telephone jack. (If a cable is required, connect an NT8D46 cable to the modem and to the RJ11 jack.)

3 At the local end, configure the modem:

- **a.** If you are using a Motorola 28.8 Data/Fax modem, follow the instructions in this document. (See “Configuring an A0638930 Motorola 28.8 Data/Fax Modem” on page 642.)
- **b.** If you are using an UDS FastTalk modem, follow the instructions in this document. (See “Configure an A0381391 UDS FastTalk modem” on page 645.)
- **c.** If you are using a different modem, follow the manufacturer’s instructions to set the modem for 9600 baud, autoanswer, dumb mode, command recognition OFF, command echo OFF.

4 At the local end, connect NT8D95 cables to

- **a.** J21 on the I/O panel in the rear of the Core or Core/Network Modules
- **b.** the SDI port on the I/O panel in the rear of the Network module

5 At the local end, connect NT8D84 cables to the SDI Paddle Board at the Core/Network backplane to the I/O panel in the rear of the Core/Network Module.

6 At the local end, connect NT8D95 cables from the I/O panels to a matching connector on the switch box.

If you are using an A0377992 ABCDE box, connect cables as follows:

a. Connect CPU 0 to connector A.

b. Connect CPU 1 to connector B.

c. Connect the SDI port to connector D (connector C is common).

7 At the local end, connect an NT8D95 cable from the switch box to the modem.

8 At the local end, connect the cable from the modem to an RJ11 telephone jack. (If a cable is required, connect an NT8D46 cable to the modem and to the RJ11 jack.)

9 At the local end, set the switch box as needed to communicate with the CPSI ports:

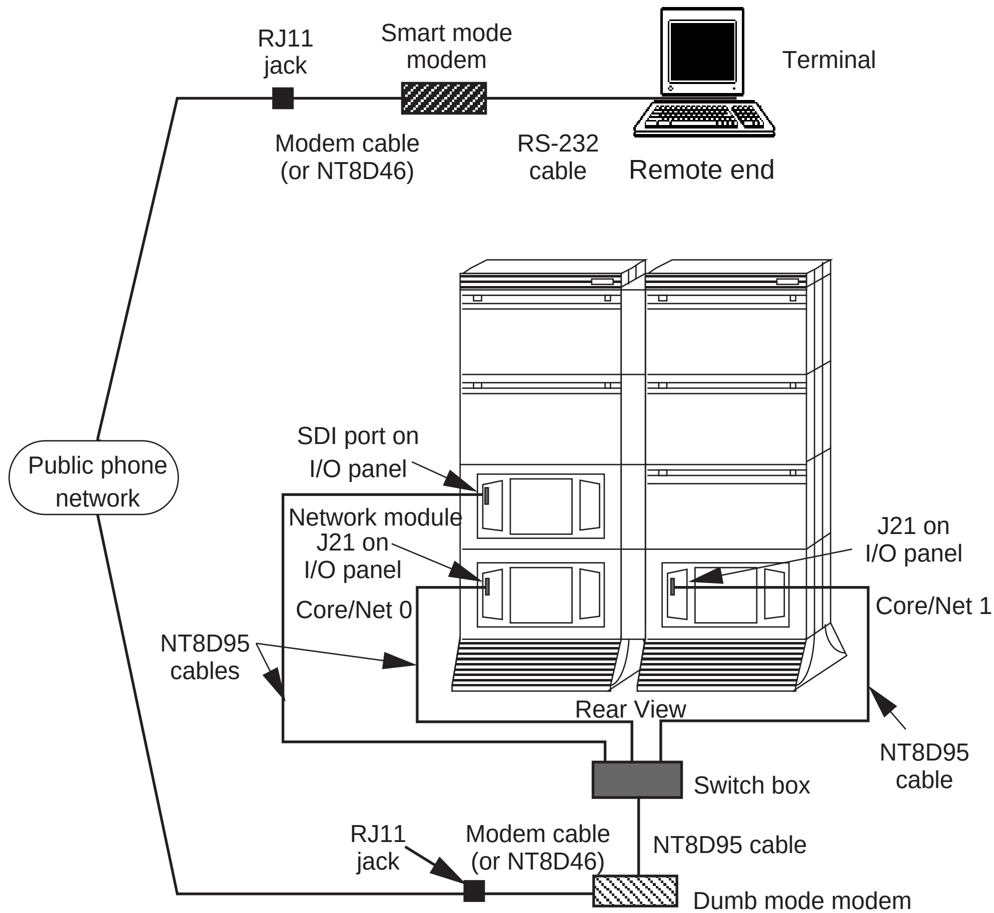
a. During normal operation, set the switch to the SDI port.

b. For debugging, set the switch to the *active* CPU.

10 For patch downloading, set the switch to the *inactive* CPU.

End of Procedure

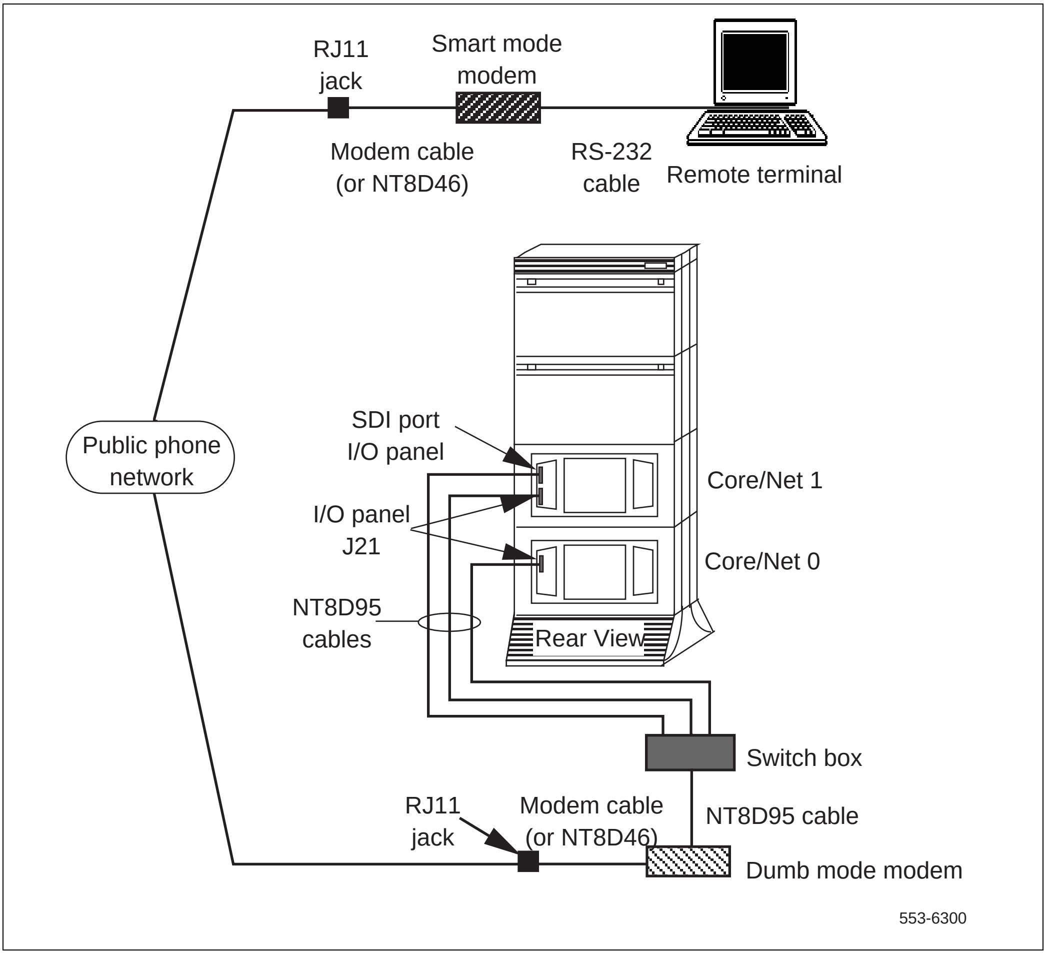
Figure 90
Modem to a switch box and SDI and CPSI ports (dual-column systems)



Note: The A0377992 switch box and A0381391 modem can be used in this configuration.

553-5809

Figure 91
Modem to a switch box and SDI and CPSI ports (single-column systems)



Installing a Signaling Server

Contents

This chapter contains the following topics:

Introduction 663
Signaling Server task flow 664
Readiness checklist 666
Server card hardware installation 668
Connections 683
Upgrading and reconfiguring the software 691

Introduction

This chapter contains general instructions to install and connect Server card hardware. This chapter also contains general instructions to connect Commercial off-the-shelf (COTS) servers.

The Avaya Communication Server 1000M (Avaya CS 1000M) system supports the Common Processor Pentium Mobile (CP PM) card model NTDW66, the Common Processor Dual Core (CP DC) model NTDW54, and the Commercial off-the-shelf (COTS) servers.

A CP PM, CP DC or COTS server that you deploy with Signaling Server applications is referred to as a Signaling Server. A CP PM or COTS server that you deploy with SIP Line can be referred to as a SIP Line Gateway.

IMPORTANT!

Instructions to install an IBM X306m, IBM x3350, or HP DL320-G4, or Dell R300 COTS server are not included in this chapter. Detailed installation instructions are in the IBM xSeries 306m User Guide, IBM x3350 User Guide, HP ProLiant DL320 Generation 4 Server User Guide, or the Dell PowerEdge R300 User Guide shipped with the server.

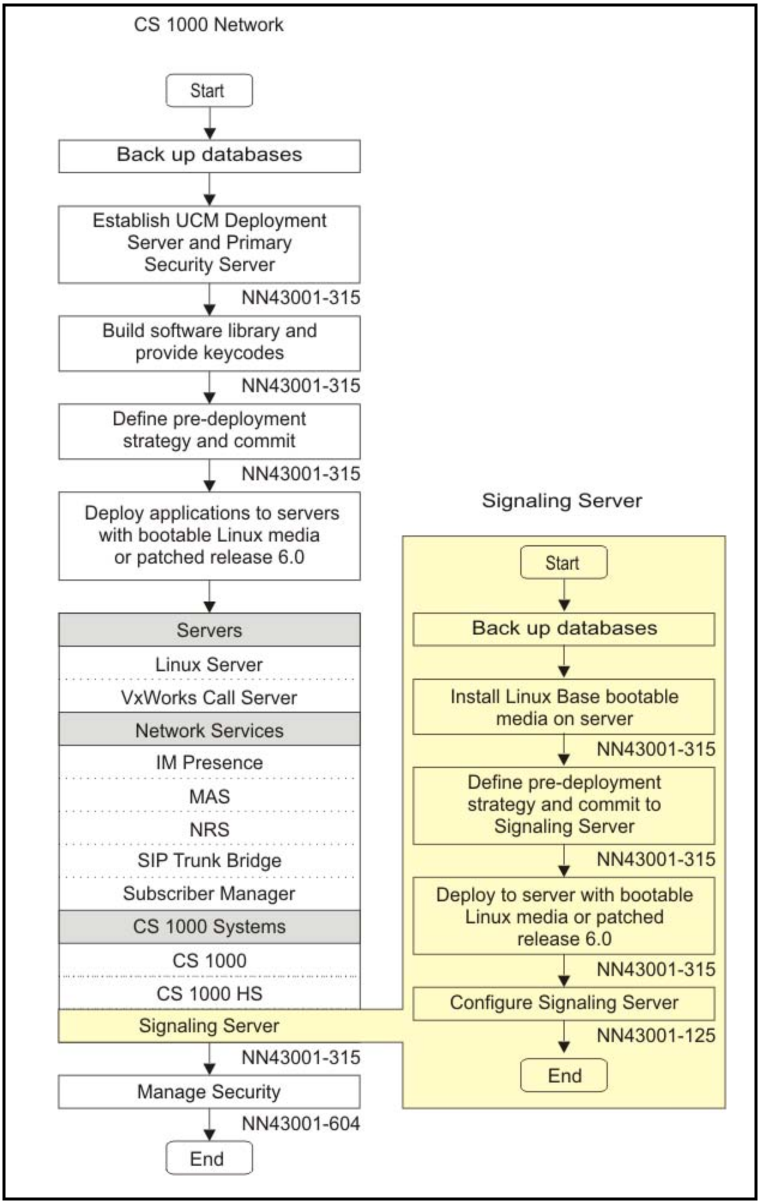
Signaling Server task flow

This section provides a high-level task flow for the installation or upgrade of an Avaya Communication Server 1000 (Avaya CS 1000) system. The task flow indicates the recommended sequence of events to follow when configuring a system and provides the document number that contains the detailed procedures required for the task.

For more information refer to the following documents, which are referenced in Figure 92 on page 665:

- *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Avaya Element Manager: System Administration* (NN43001-632)
- *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125)

Figure 92
Signaling Server task flow



Readiness checklist

Before installing a Signaling Server in a Communication Server 1000 system, complete the following checklist.

> **WARNING**
> Do not modify or use a supplied AC-power cord if it is not the exact type required in the region where you install and use the Signaling Server. Be sure to replace the cord with the correct type.

Table 128
Readiness checklist (Part 1 of 2)

<table>
<tr><th colspan="2">Have you:</th></tr>
<tr><td>Read all safety instructions in Communication Server 1000M and Meridian 1 Large System Installation and Commissioning (NN43021-310), as appropriate for your Communication Server 1000 system?</td><td></td></tr>
<tr><td>Do you have all equipment and peripherals?
For COTS servers:
• installation accessories for rack-mounting the server
• AC-power cord
• a DTE-DTE null modem cable (supplied)
NTE90672: Linux Signaling Server software DVD for COTS servers

For Server cards (NTDW66 CP PM, and NTDW54 CP DC)
• (CP PM only) CP PM Signaling Server Linux Upgrade kit, which includes
— Linux OS preloaded hard drive kit (Optional, provided if required)
— 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF
— 1 GB DDR SO-DIMM memory upgrade (Optional, provided if required)
• 2 port SDI Cable assembly kit
• Large System Cabling kit
• Large System Cabling
• a DTE-DTE null modem cable (supplied)
Note: Save the packaging container and packing materials in case you must ship the product.</td><td></td></tr>
<tr><td>Confirmed the area meets all environmental requirements?</td><td></td></tr>
<tr><td>Checked for all power requirements?</td><td></td></tr>
<tr><td>Verified the CP PM meets all required specifications (2GB ram, 40GB hard drive, NTDW66AAE6 CP PM BIOS version 18 or higher)?</td><td></td></tr>
</table>

Table 128
Readiness checklist (Part 2 of 2)

Have you:	
Checked for correct grounding facilities?	
Obtained the following • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of multimeter • appropriate cable terminating tools • a computer (maintenance terminal) to connect directly to the Signaling Server, with — teletype terminal (ANSI-W emulation, serial port, 9600 bps) — a Web browser for Element Manager (configure cache settings to check for new Web pages every time the browser is invoked, and to empty the cache when the browser is closed)	
Prepared the network data as suggested in *Converging the Data Network with VoIP* (NN43001-260) or *Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220), as appropriate for your Communication Server 1000 system?	
Read all safety instructions in *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310), as appropriate for your Communication Server 1000 system?	

Server card hardware installation

This section contains instructions for installing a Server in a Communication Server 1000M system. The Communication Server 1000M system supports the NTDW66 CP PM card, NTDW54 CP DC card, and Comercial off-the-shelf (COTS) servers.

This section contains only general instructions to install the Server card in Communication Server 1000M systems. For more detailed installation instructions, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

> **IMPORTANT!**
>
> There are several switches on CP PM circuit cards. All switch settings must be factory defaults except for the switch labelled S5. Switch S5 must be in position 2 to support the internal hard drive used on the CP PM Signaling Server circuit card.

Installation in a Communication Server 1000M system

For CP PM cards, the first task that you must perform is to install the hard drive shipped with the server or Linux upgrade kit. For instructions, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

The NTDW66 CP PM card and NTDW54 CP DC card are double wide faceplate cards designed for use in a CS 1000M Universal Equipment Module (UEM). You can insert the double wide CP PM or CP DC card into any slot of a CS 1000M UEM except slot 7. When upgrading from a CS 1000M system to CS 1000E, the slot next to slot 7 is occupied by the External Peripheral Equipment Controller (XPEC). This prevents the CP PM or CP DC double wide faceplate from seating into slot 7.

The next task that you must perform is to install ELAN and TLAN Ethernet ports on the back of the Communication Server 1000M UEM. These ports are used to connect your Server to the ELAN and TLAN Ethernet subnets of your Communication Server 1000M system.

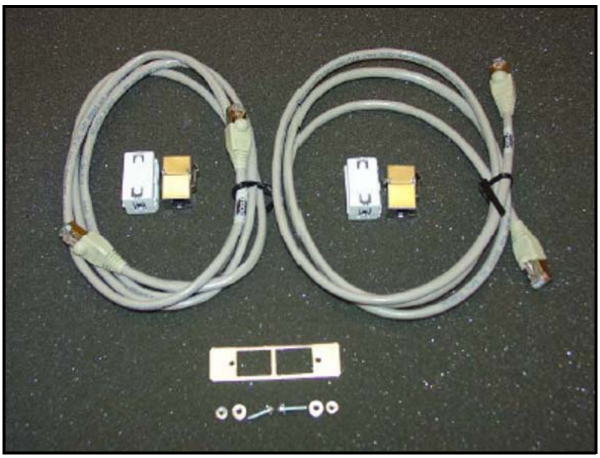
Use the following procedure to install ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM.

> **IMPORTANT!**
>
> Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M Universal Equipment Module (UEM) disrupts service. You must turn off power to the shelf during this procedure.

Procedure 195
Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM

1 Obtain the special cabling kit (NTDW69AAE5). The NTDW69AAE5 cabling kit includes the items shown in Figure 93.

Figure 93
NTDW69AAE5 Cabling Kit contents

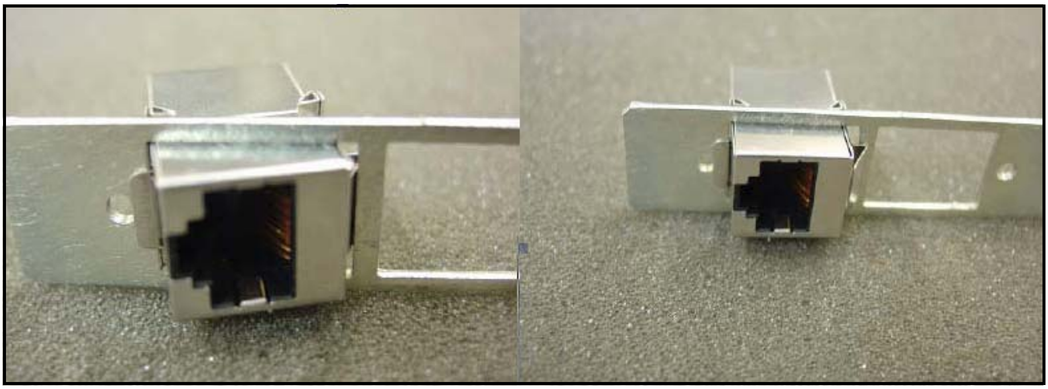


The following is a list of items in the NTDW69AAE5 cabling kit:

- two RJ-45 CAT5 Ethernet patch cables
- two Ethernet port couplers
- one Ethernet port adapter plate
- two screws
- two nuts
- two washers
- two ferrite beads

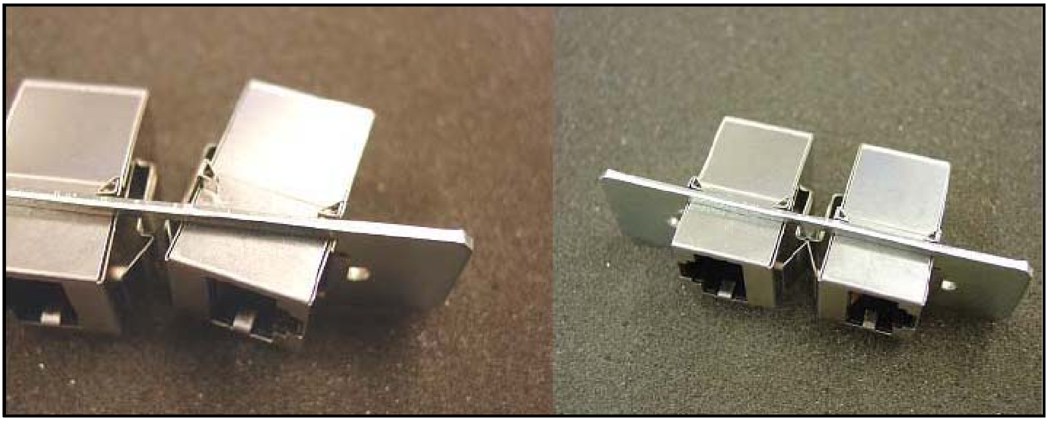
2 Insert an Ethernet port coupler into the adapter plate. See Figure 94.

Figure 94
One Ethernet port coupler in adapter plate



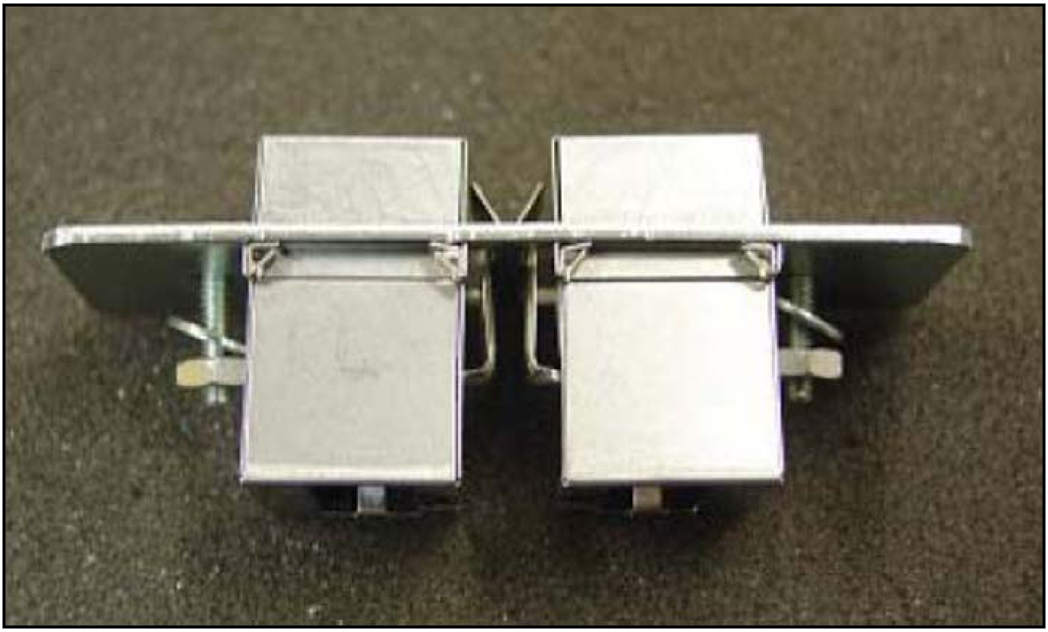
3 Insert the other Ethernet port coupler into the adapter plate. See Figure 95 on page 672.

Figure 95
Two Ethernet port couplers in adapter plate



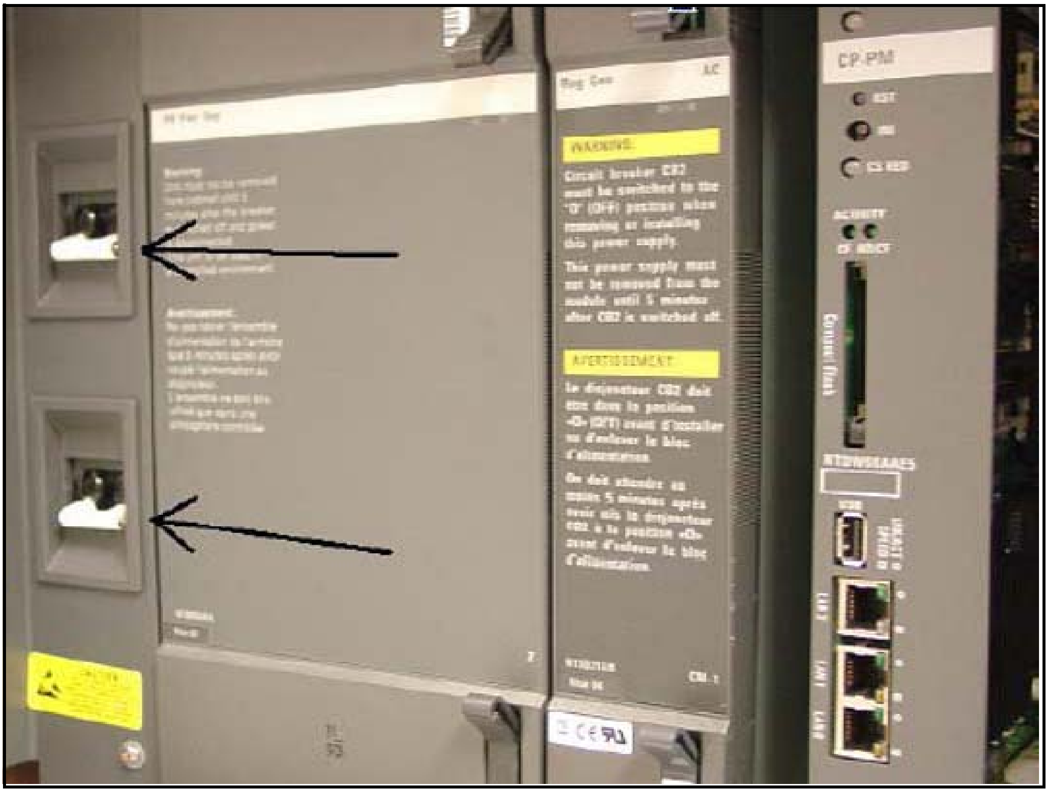
4 Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 96.

Figure 96
One Ethernet port coupler in adapter plate



5 Switch off the UEM power supplies. See Figure 97.

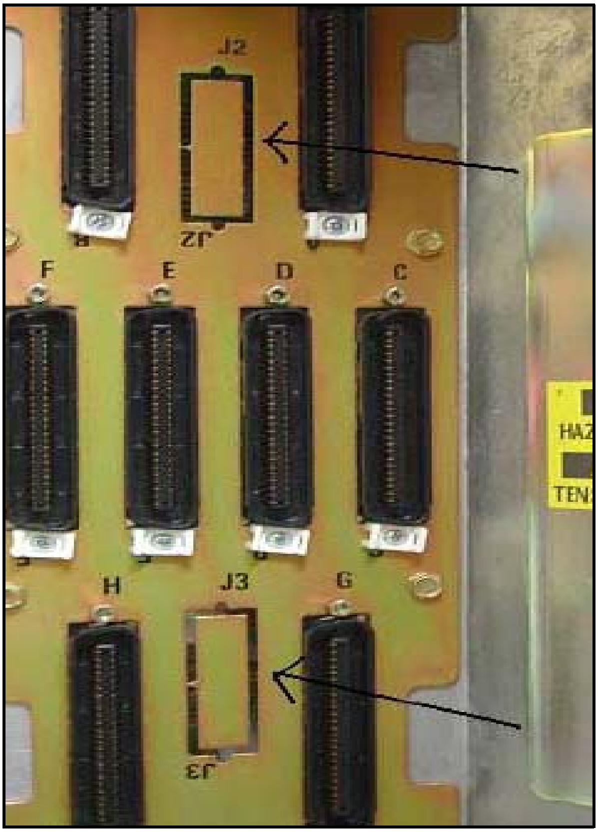
Figure 97
Shut down UEM power supplies



6 Select one of the J2-J5 knock-out plates on the back of the UEM. See Figure 98.

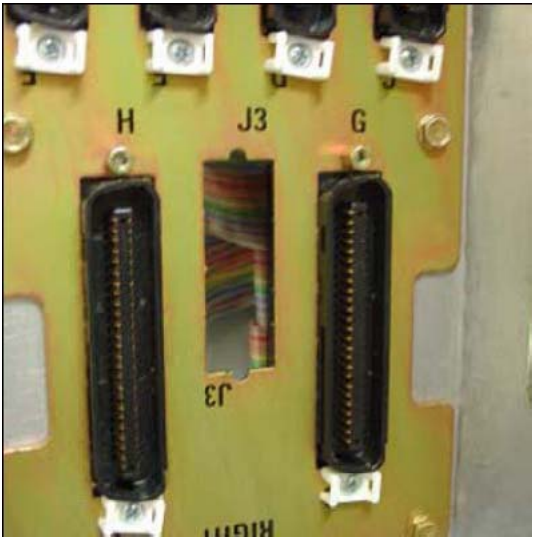
Note: For DC powered systems, turn off the breakers in the pedestal not on the shelf.

Figure 98
J2-J5 plates on back panel of UEM



7 Knock out the metal plate from the selected J2-J5 location to provide a hole through which the Ethernet patch cables are routed and to which the Ethernet port adapter plate is attached. See Figure 99.

Figure 99
Selected J2-J5 plate on back panel of UEM



8 Establish an ELAN port on the back panel of the UEM.

a. Insert the end of one of the RJ-45 CAT5 Ethernet patch cables (supplied) into the ELAN network interface (ELAN port) on the Server faceplate.

b. Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

c. Plug the other end of the Ethernet patch cable into one of the Ethernet port couplers mounted in the Ethernet port adapter plate.

d. Label the Ethernet port coupler as ELAN.

See Figure 100 and Figure 101.

Figure 100
ELAN connection on CP PM faceplate

Figure 101
ELAN connection on Ethernet port coupler

9 Connect the server to the TLAN subnet.

a. Insert one end of the remaining RJ-45 CAT5 Ethernet patch cable (supplied) into the TLAN network interface (TLAN port) on the Server faceplate.

b. Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

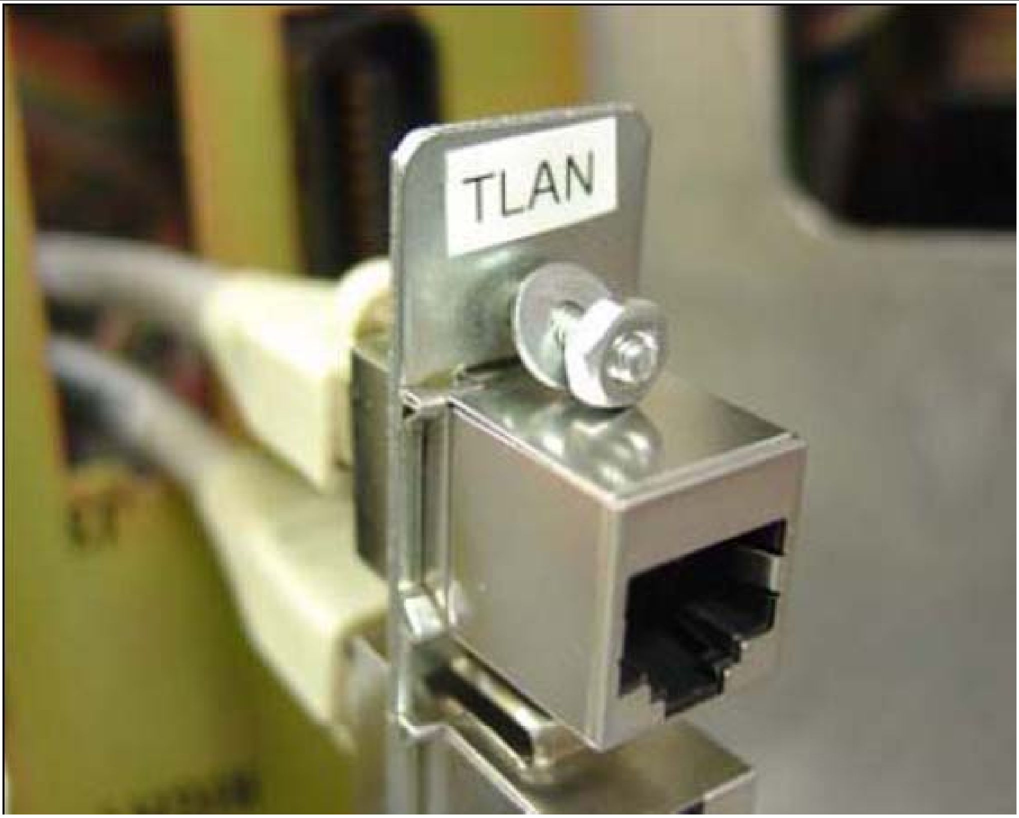
c. Plug the other end of the Ethernet patch cable into the remaining Ethernet port coupler mounted in the Ethernet port adapter plate.

d. Label the Ethernet port coupler as TLAN.

See Figure 102 and Figure 103.

Figure 102
TLAN connection on CP PM faceplate

Figure 103
TLAN connection on Ethernet port coupler



10 Fit the Ethernet port adapter plate into the hole on the back of the UEM and tighten the screws. See Figure 104.

Figure 104
Installed Ethernet port adapter plate

11 Attach the ferrite beads to the Ethernet patch cables.See Figure 105.

Figure 105
Attached Ethernet patch cable ferrite beads

End of Procedure

Connections

This section contains information about server connections.

Connection checklist

WARNING

Do not modify or use a supplied AC power cord if it is not the correct type required for the host region.

IMPORTANT!

Server cards are powered through the backplane of the Media Gateway, Universal Equipment Module, or Media Gateway cabinet into which they are installed and do not require a power cord.

Before connecting a Server, ensure that you have the following materials on-hand.

Table 129
Connections checklist

Do you have:	
A serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal? The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable.	
An NTAK19EC cable for each CP PM or CP DC card? This cable adapts the 50-pin MDF connector on the back of the shelf of the Media Gateway, Universal Equipment Module, or 11C cabinet to a 25-pin DB connector.	
Shielded CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets?	

Connecting a Signaling Server

This section contains instructions for connecting a Server to the ELAN and TLAN subnet of a CS 1000M system. It also contains instructions for connecting a maintenance terminal to the Server.

A Server card is inserted into a slot of a Universal Equipment Module (UEM). UEMs do not have built-in ELAN and TLAN Ethernet ports. You must install Ethernet ports on the back of the UEM to enable the Server to connect to the ELAN and TLAN subnets of your Communication Server 1000 system (see Procedure 195: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 670.)

Perform Procedure 196 to connect a Server card to the ELAN and TLAN subnets of a Communication Server 1000M system.

> **IMPORTANT!**
>
> Connecting a Signaling Server to the ELAN and TLAN subnets of a CS 1000M system causes a service disruption.

Procedure 196
Connecting a Server Card to the ELAN and TLAN subnets of a Communication Server 1000M system

1 Insert the end of an RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the back of the Communication Server 1000M UEM. (You installed this ELAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 195: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 670.

2 Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the ELAN Ethernet switch.

3 Insert the end of another RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the back of the Communication Server 1000M UEM. (You installed this TLAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 195: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 670.

4 Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the TLAN Ethernet switch.

End of Procedure

Verify or change the baud rate

To verify or change the baud rate on an Avaya CP PM Signaling Server, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Connecting an IBM COTS server

In geographic regions that are susceptible to electrical storms, Avaya recommends that you plug the IBM COTS server into an AC surge suppressor.

Figure 106 shows the rear view of the IBM X306m server.

Figure 106
IBM X306m (rear view)

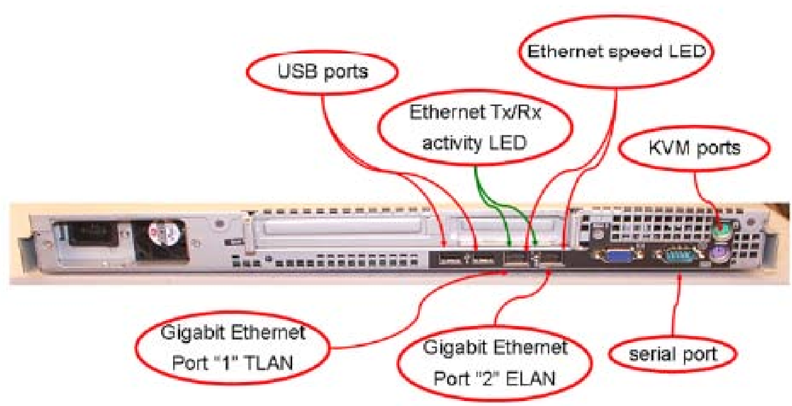
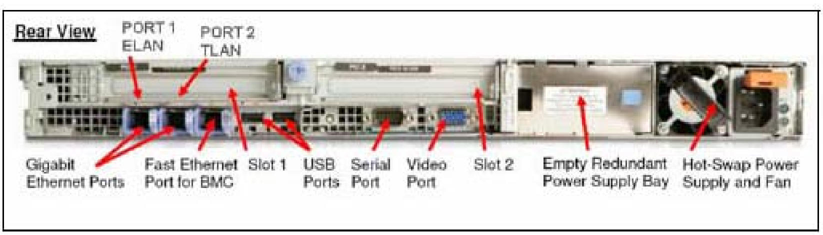


Figure 107 shows the rear view of the IBM x3350 server.

Figure 107
IBM x3350 (rear view)



Note: When you perform Procedure 197, “Connecting an IBM COTS server,” on page 687, see Figure 106 or Figure 107.

Procedure 197
Connecting an IBM COTS server

1 Connect the IBM server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2 Connect the IBM server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

3 Connect a DTE–DTE null modem serial cable from the serial port on the back of the server to the serial port on a maintenance terminal. The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable.

4 Connect the IBM server power cord.

a. Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

b. Attach the female end of the power cord to the mating AC power receptacle on the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

5 Set the baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Note: The IBM X306m Signaling Server ships with the serial port configured to 9600 b/ps.

6 Configure the connected maintenance terminal. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

7 Press the Power switch.

Note: For more information about operating information, see the IBM User Guide for your IBM server.

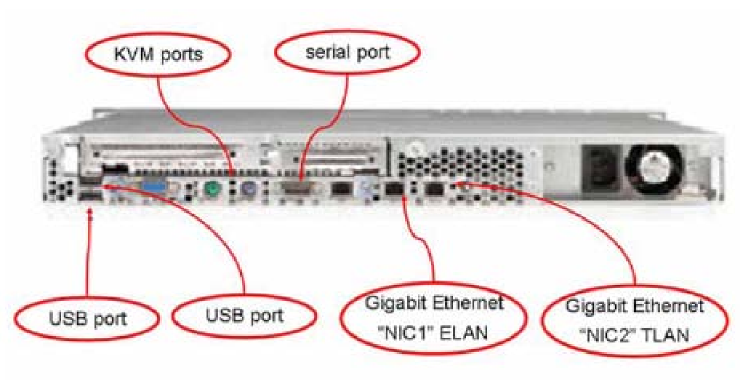
End of Procedure

Connecting an HP COTS server

In geographic regions that are susceptible to electrical storms, Avaya recommends that you plug the HP server into an AC surge suppressor.

Figure 108 shows the rear view of the HP DL320-G4 server.

Figure 108
HP DL320-G4 (rear view)



Note: When you perform Procedure 198, "Connecting an HP COTS server," on page 688, see Figure 108.

Procedure 198
Connecting an HP COTS server

1 Connect the HP server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2 Connect the HP server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

3 Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.

4 Connect the HP server power cord.

a. Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

b. Attach the female end of the power cord to the mating AC power receptacle on the right-hand side of the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

5 Configure the COM1 serial port as the communication port for the connected maintenance terminal. Configure the COM 1 baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

7 Press the Power switch.

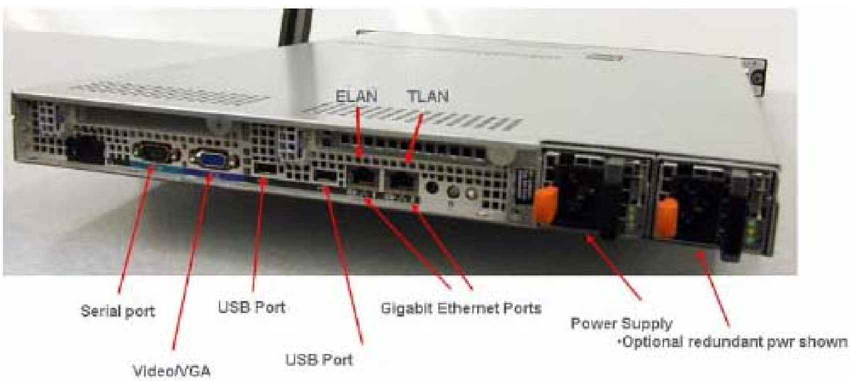
End of Procedure

Connecting a Dell COTS server

In geographic regions that are susceptible to electrical storms, Avaya recommends that you plug the Dell server into an AC surge suppressor.

Figure 109 shows the rear view of the Dell R300 server.

Figure 109
Dell R300 server (rear view)



Note: When you perform Procedure 199, "Connecting a Dell COTS server," on page 690, see Figure 109.

Procedure 199
Connecting a Dell COTS server

1. Connect the Dell server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.
2. Connect the Dell server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.
3. Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.
4. Connect the Dell server power cord.

a. Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

b. Attach the female end of the power cord to the mating AC power receptacle on the right-hand side of the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

5 Configure the COM1 serial port as the communication port for the connected maintenance terminal. Configure the COM 1 baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

7 Press the Power switch.

End of Procedure

Maintenance terminal configuration parameters

To configure Signaling Server maintenance terminal configuration parameters, see the Maintenance chapter of *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

IP subnet configuration

CS 1000 Release 7.5 Signaling Servers support IPv6 and IPv4 addresses. If the Signaling Server and Call Server reside in different IP subnets, you must manually add a route from Base Manager in order for Element Manager to communicate and interact with the Call Server. For more information, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Upgrading and reconfiguring the software

This section contains information and references for upgrading the Signaling Server software from a previous release to CS 1000 Release 7.5. Signaling Server applications in CS 1000 Release 7.5 require Linux. You must install

CS 1000 Linux Base on your CP PM, CP DC or COTS server before you can install any Signaling Server applications.

CS 1000 Release 7.5 supports the following Signaling Server hardware:

- CP PM server
- CP DC server
- IBM X306m server
- IBM x3350 server
- HP DL320-G4 server
- Dell R300 server

IMPORTANT!

Avaya CS 1000 Release 7.5 does not support the ISP1100 Signaling Server. You must replace the ISP1100 with a CP PM, CP DC, or COTS Signaling Server.

If you are upgrading from a Vxworks Signaling Server, Avaya recommends that you backup your IP Phone database and Network Routing Service (NRS) database on your current software release before upgrading to CS 1000 Linux Base and installing applications. You can restore your IP Phone database and NRS backups after you complete the Signaling Server upgrade.

CS 1000 Release 7.5 requires a Signaling Server to have at least 2 GB of RAM memory, and at least 40 GB of hard drive capacity. You must upgrade Signaling Servers with less than 2GB of RAM before installing CS 1000 Release 7.5 Linux Base and Signaling Server software. For detailed instructions on performing this memory upgrade, see *Avaya Circuit Card: Description and Installation* (NN43001-311).

You can upgrade a CP PM Signaling Server to support the CS 1000 Linux Base and applications for Communication Server 1000 with a CP PM Signaling Server Linux upgrade kit. The upgrade kit includes the following components.

- Linux OS preloaded hard drive kit (optional, provided if required)

- 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF
- 1 GB DDR SO-DIMM memory upgrade (optional, provided if required)

Overview

An upgrade of the Signaling Server software consists of the following steps:

- Back up application databases using Element Manager
- Install CS 1000 Linux Base and configure parameters
- Use Centralized Deployment manager to deploy and install Signaling Server applications
- Configure the system or import backup node files in Element Manager
- Use Element Manager to restore backups of application databases

Avaya recommends that you back up the application databases before performing the upgrade. The application databases consist of the IP Phone database and the NRS database.

If you do not know whether the Signaling Server being upgraded has an NRS, use Procedure 200, "Verifying the presence of an NRS," on page 694 to make this determination.

If you have an NRS database on the Signaling Server and want to back it up before performing the upgrade, you must use the backup tool in NRS Manager. After the Signaling Server is upgraded, use NRS Manager to restore the NRS database (from your local PC) and activate it for use by the NRS.

For instructions on backing up and restoring an NRS database, see *Avaya Network Routing Service Fundamentals* (NN43001-130).

For instructions on backing up and restoring the IP Phone database, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125).

Procedure 200
Verifying the presence of an NRS

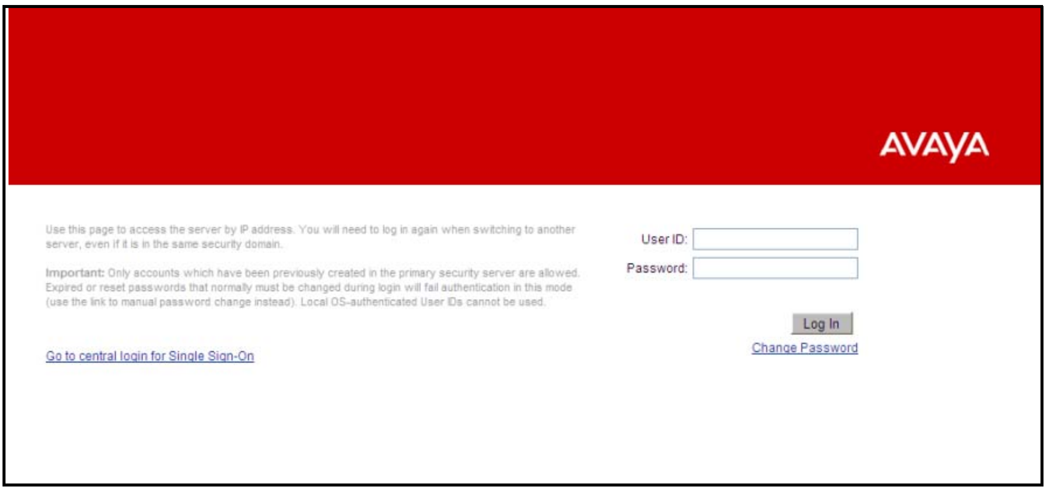
1. Open Internet Explorer.
2. Enter the ELAN or TLAN network interface IP Address of the primary Signaling Server as the URL.

   Note: Note: Do not assign the same IP address for the Node ID and the TLAN network interface IP address. This must be verified manually. The Node IP address must be on the same subnet as the TLAN network interface IP addresses of the Media Cards. In addition, the TLAN and ELAN network interfaces of the Media Card must reside on separate logical subnets.

   If additional configuration parameters were entered during installation, the node IP address can also be used as the URL.

   The Element Manager logon web page appears.

Figure 110
Element Manager logon page



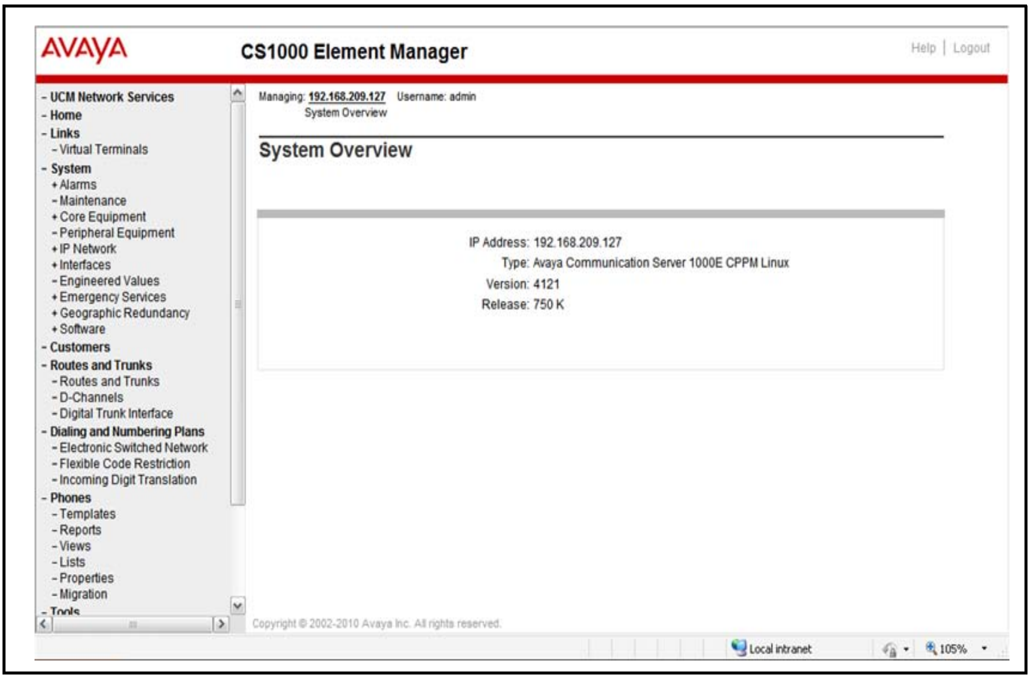
Initially, you can be prompted to enter the Call Server IP address, because the Call Server is used for web logon authorization. The Call Server IP address is a requirement, because unless you entered additional configuration parameters during the Signaling Server installation, the node configuration data file containing the Call Server IP address does not yet exist.

3 Enter a Level 1 or Level 2 user ID and password. If configured, you can also use a Limited Access Password (LAPW) user ID and password.

If this is the first time the Call Server is accessed, the default Level 1 or Level 2 user ID and password must be used.

If the logon is successful, the Element Manager "Home - System Overview" screen appears (see Figure 111 on page 695).

Figure 111
Element manager: Home - System Overview

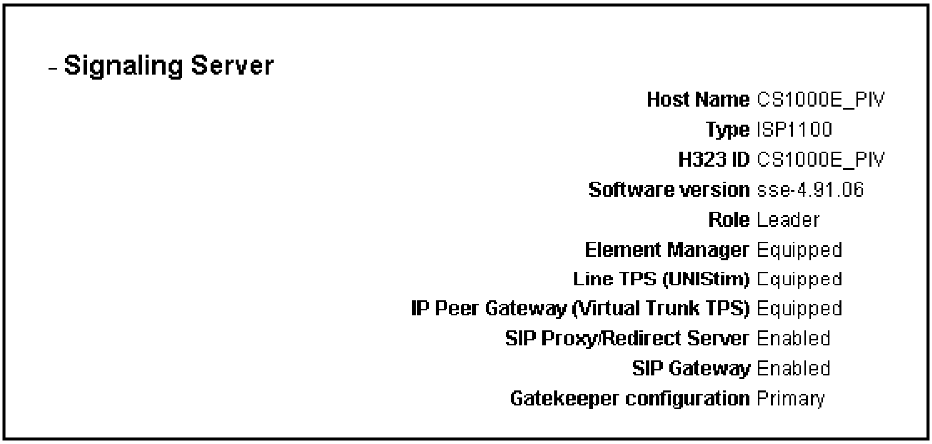


This screen identifies the components of your CS 1000 system.

4 Click the "+" symbol in front of the Signaling Server component.

The Signaling Server component expands to display the properties of the Signaling Server (see Figure 112 on page 696).

Figure 112
Signaling Server properties



5 View the contents of the "Gatekeeper configuration" property.

If the Gatekeeper configuration property indicates Primary (as is the case here), Alternate or Failsafe, the Signaling Server hosts an NRS. If the property indicates nothing, the Signaling Server does not host an NRS.

End of Procedure

Before you begin

Before upgrading the software, you must do the following:

- Connect the Signaling Server. For details, see “Connections” on page 683 or refer to *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).
- Take a precautionary backup of the IP Phones application database.
- Take a precautionary backup of the NRS database.

- Obtain the CS 1000 Release 7.5 version of the Signaling Server Software Install media. For details, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).
- Ensure that there is 2 GB of RAM and at least 40 GB of hard drive capacity on your CP PM or COTS Signaling Server.

Upgrade the CP PM BIOS

The NTDW66CAE6 CP PM card (CP PM version 2) does not require a BIOS upgrade. The CP PM version 2 uses an updated design, BIOS, and boot manager. Older NTDW66 CP PM cards (CP PM version 1) might require a BIOS upgrade to support Linux.

The Communication Server 1000 Linux Platform Base installer requires that a CP PM version 1 card runs BIOS version 18 or higher. If the installer detects a lower version on the CP PM card it automatically loads software for you to upgrade the CP PM BIOS. Perform the steps in Procedure 201 to upgrade the CP PM BIOS to version 18.

For information about manually upgrading the CP PM BIOS with VxWorks software, see *Avaya Communications Server 1000E Maintenance* (NN43041-700).

Procedure 201
Upgrading the CP PM BIOS with the CS 1000 Linux Base installer

1 Connect to serial port 1 on the CP PM.

2 Insert the CS 1000 Linux Base installation CF card into the faceplate CF slot.

3 Power on the system.

4 Once the initial boot and memory check completes for a CP PM version 1 card, Figure 113 appears. Press the **F** key to boot from the CS 1000 Linux Base installation faceplate CF card.

Note: For CP PM version 2 cards, press the **F** key to enter the boot menu, select Faceplate RMD, and press **Enter** to boot from the faceplate CF card.

Figure 113
CP PM faceplate drive boot

```
+--------------------------------------+---------------------------------------
| System CPU            : Pentium M    | Low Memory           : 632KB
| Coprocessor           : Enabled      | Extended Memory      : 1011MB
| Ide 0 Type            : 3            | Serial Ports 1-2     : 03F8 02F8
| Ide 1 Type            : 3            | ROM Shadowing        : Enabled
| Ide 2 Type            : 3            | BIOS Version         : NTDU74AA 14
+--------------------------------------+---------------------------------------

Press F to force board to boot from faceplate drive.
....................................................

Attempting to boot from faceplate drive.


CPU Frequency = 1400 MHz

V1.6a++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

5 The welcome screen appears. Press **ENTER** to direct the input and output to COM1.

6 Figure 114 appears if the CP PM card has a BIOS version lower than 18. Enter **yes** to proceed with the automatic upgrade.

CAUTION — Damage to Equipment

Do not interrupt the BIOS upgrade process.

Figure 114
CP PM BIOS automatic upgrade

```
#########################################################################
#                                                                       #
#    CP-PM BIOS version is less than 18. BIOS upgrade is required.    #
#                                                                       #
# To complete the upgrade, BIOS settings must be changed to defaults. #
#      Please refer to the documentation for more information.        #
#                                                                       #
#########################################################################


Do you want to upgrade BIOS ROM up to the version 18? (yes/no): yes

BIOS ROM upgrade. Please wait...


BIOS ROM upgrade is finished.

Machine will be rebooted right now... Press Enter key to continue
```

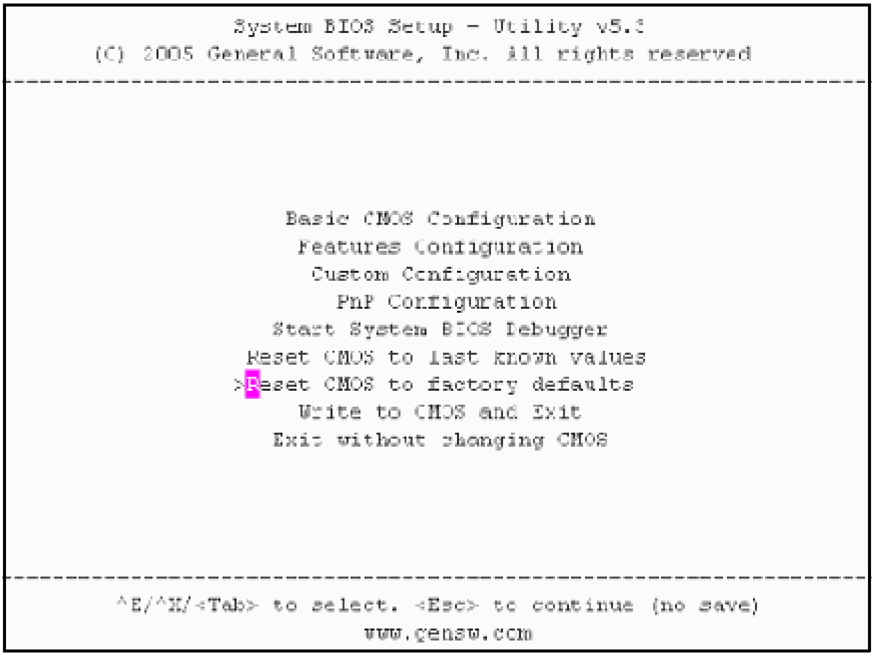
7 Verify that the BIOS upgrade is finished. Press **Enter** to reboot.

8 During the reboot memory check, press **Ctrl c** to access the CP PM BIOS setup menu.

Note: If you miss the timing to press **Ctrl c** you must reboot the system and try again. The Linux Platform Base installation software will display a warning if you do not reset the CP PM BIOS to factory defaults.

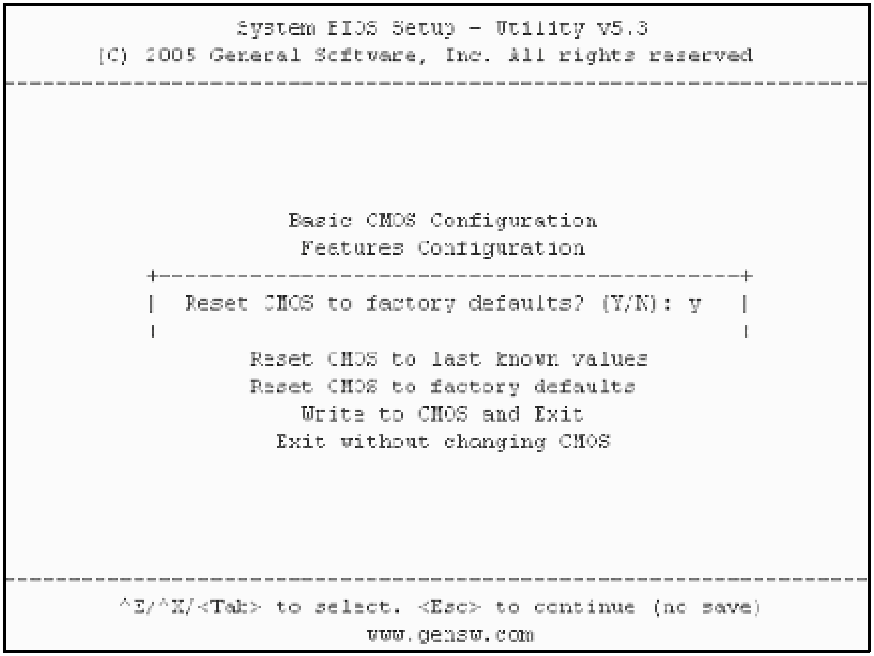
9 Figure 115 appears. Select **Reset CMOS to factory defaults** from the menu.

Figure 115
CP PM BIOS setup



10 Figure 116 appears. Press **y** to reset CMOS to factory defaults.

Figure 116
CP PM BIOS reset



11 The system reboots. After the initial boot, Figure 113 appears and the new BIOS version displays. Verify the BIOS version is 18. You can now press the **F** key to boot from the faceplate CF card and proceed with the Linux Platform Base software installation.

End of Procedure

Installing the CS 1000 Linux Base

You must install CS 1000 Linux Base if your Signaling Server is not running the latest CS 1000 Linux Base software release. The CP PM Linux upgrade kit contains a hard drive with CS 1000 Linux Base preloaded. You can install CS 1000 Linux Base from the command line interface (CLI) using a bootable CF card on CP PM, and using a bootable optical disk on COTS.

Configure the ELAN, TLAN, IP address, Gateway, subnet masks, date, and time settings during the CS 1000 Linux Base installation.

For information about installing or upgrading CS 1000 Linux Base, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Installing Linux applications

Avaya CS 1000 Release 7.5 Signaling Server and SIP line software are Linux applications. Linux applications install on CS 1000 Linux Base and interact with the CS 1000 Linux Base application framework. You can deploy and install Linux applications with the CS 1000 Linux Base Centralized Deployment Manager. You can configure and deploy SIP Line with Element Manager (EM).

For information about Linux applications and Centralized Deployment Manager, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125) and *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

For information about Element Manager, see *Avaya Element Manager: System Administration* (NN43001-632).

Joining the UCM security domain

The UCM Primary Security Server acts as the RADIUS server that CS 1000 devices use to obtain authentication and access control parameters for CLI access. The UCM Primary Security Server sends RADIUS related parameters to CS 1000 devices using the SSH protocol.

When a device joins the UCM security domain, a mutually-trusted SSH channel is created. You must manually confirm the fingerprint of the public key before the UCM Primary Security Server RSA public key is added to the authorized key file. This verification prevents third-party intercepts.

When a mutually-trusted SSH tunnel establishes a connection to a CS 1000 device, the UCM Primary Security Server can send SSH remote commands to the device using RSA public key-based authentication.

For more information about joining the UCM security domain, see *Avaya Security Management* (NN43001-604).

Appendix A: Upgrade checklists

Contents

This chapter contains information about the following topics:

Introduction 653
Site details 654
Upgrade details 654
preupgrade checklists 655
preconversion steps 657
Postconversion checks. 659
Quick reference 659

Introduction

The following section provides Large System upgrade checklists.

Technical Support

Avaya can provide an Installation and Upgrade Support team to assist with PBX upgrades on a scheduled bases. This service is billable and a purchase order is required. Refer to the current price book for rates.

> ***Note:*** This service requires that a service request be opened in advance of the upgrade.

Site details

Table 118
Site Details

Customer Name	
Tape ID (LD 22)	
Modem Number (Core)	
Switch Room Telephone	
Baud Rate	
Modem Password	
PBX Password	
System Type	
Software Generic	

Upgrade details

Table 119
Upgrade details

Current Software - Generic	
Target Software - Generic	
Hardware being added	
Feature Upgrade	
License Upgrade	

preupgrade checklists

Software Upgrade

Software audit

Table 120
Software audit

Software Audit		
Perform the software audit prior to the scheduled upgrade.		
Take corrective action if answer is no		
	Yes	No
Software CD Ready		
Keycode Disk Ready		
Install Disk Ready		
DEP Patch Disk Ready		
Review Keycode Data Sheet - (SDID,PKGS,License,TID)		
Review Site Specific Patches - (Non MDCS)		
Read GRB for target Release – (Verify Memory Requirements)		

License Upgrade

Table 121
Keycode audit

Keycode Audit		
Perform the keycode Audit prior to the scheduled upgrade.		
Take corrective action if answer is no		
	Yes	No
Keycode Disk Ready		
Keycode Data Sheet Ready		
SDID Matches System		
TID Matches System		
Perform a KDIFF in LD 143 to compare keycodes		

Conversion Required

Table 122
Conversion Procedures

Conversion Procedures	
Upgrades between different machine types require some type of conversion.	
If the disk media is changing the database must be physically transferred	
between storage devices. Please select source and target media.	

Hardware Upgrade

Hardware audit

Table 123
Hardware audit

Hardware Audit		
Perform the Hardware Audit prior to the scheduled upgrade.		
	Yes	No
Verify Shipping List - Complete and Accurate		
Audit Site for new hardware locations		
Pre Run Cables if possible		
Review All switch settings for new cards		
Read all applicable procedures completely		

preconversion steps

Table 124
preconversion steps (Part 1 of 2)

Pre Conversion Steps
A capture file should be made of the following information using a PC or Printer.
Perform an overall system check:
LD 135 SCPU (ensure that the system is redundant)
LD 137 STAT/TEST CMDU
LD 96 STAT DCH
LD 48 STAT AML
LD 32 STAT
LD 60 STAT

Table 124
preconversion steps (Part 2 of 2)

LD 30 LDIS (Verify what Is disabled if any)
Obtain Software Information from LD 22
ISSP - Patches in service - Future Reference if required LD 143 - MDP ISSP -Prints all in service patches and patch handle numbers (includes all DepList patches)
TID/SLT - License Parameters - To compare with converted database
LD 21 - PRT CFN
LD 97 - PRT SUPL/XPEC
Run a Template Audit
LD 1 - Auto Run
Perform a Datadump
Backup at least two copies of the current database, retain the copies.
Print History File or System Event Log
LD 22 - Print AHST - Capture Systems Events to compare will new software if required
LD 117 - PRT SEL 500 - Same as above

Postconversion checks

Table 125
Postconversion checks

Postconversion Checks
Perform these checks after a successful INI.
Test for dial tone
Stat D Channels for proper operation
Ensure that all XPEC's are in service via visual inspection
Ensure that all AUX applications are working
LD 30 LDIS (Verify that output is the same prior to upgrade)

Quick reference

IGS Cabling Chart - MultiGroup PBX - Opt 81/81C/CPP (5 Groups Maximum)

Table 126
IGS cabling chart (Part 1 of 2)

Net Group	Net Shelf	IGS Connector	IGS Net	Slot	Net	DIGS	Slot Connector	Intergroup connector	IGS	Clock
0	0	0	3	8	2	9	BOTTOM	J1	0	
0	0	1	2	9	2	9	TOP	J6	2	0
0	1	1	2	9	2	9	TOP	J17	3	1
0	1	0	3	8	2	9	BOTTOM	J22	1	
1	0	0	3	8	2	9	BOTTOM	J2	4	

Table 126
IGS cabling chart (Part 2 of 2)

1	0	1	2	9	2	9	TOP	J7	6	0
1	1	1	2	9	2	9	TOP	J16	7	1
1	1	0	3	8	2	9	BOTTOM	J21	5	
2	0	0	3	8	2	9	BOTTOM	J3	8	
2	0	1	2	9	2	9	TOP	J8	10	0
2	1	1	2	9	2	9	TOP	J15	11	1
2	1	0	3	8	2	9	BOTTOM	J20	9	
3	0	0	3	8	2	9	BOTTOM	J4	12	
3	0	1	2	9	2	9	TOP	J9	14	0
3	1	1	2	9	2	9	TOP	J14	15	1
3	1	0	3	8	2	9	BOTTOM	J19	13	
4	0	0	3	8	2	9	BOTTOM	J5	16	
4	0	1	2	9	2	9	TOP	J10	18	0
4	1	1	2	9	2	9	TOP	J14	19	1
4	1	0	3	8	2	9	BOTTOM	J18	17	

Note: A DIGS Card is located in the card slot position for IGS 1 in all network shelves. The IGS 1 slot detects the clock signals from the active clock controller and distributes the clock to the entire group. Three out of four IGS cards can be disabled at any given time via LD 39, the IGS 1 that is associated with the active clock cannot be disabled via software, e.g. if clock 1 is active then IGS's 3,7,11,15 and 19 can never be disabled as they are providing clock for their respective network groups.

Group/Loop/PS/FIJI/3PE Switch Settings

Table 127
Switch settings (Part 1 of 2)

Group	Shelf	PS	Loops	FIJI*	3PE NT8D35 Net**	3PE NT5D21 Core Net**
0	0	0	0-16	0 0	off on on on on on on on	off on on off on on on on
0	1	1	16-31	0 1	off on on on on on on off	off on on off on on on off
1	0	2	32-47	1 0	off on on on on on off on	off on on off on on off on
1	1	3	48-63	1 1	off on on on on on off off	off on on off on on off off
2	0	4	64-79	2 0	off on on on on off on on	off on on off on off on on
2	1	5	80-95	2 1	off on on on on off on off	off on on off on off on off
3	0	6	96-111	3 0	off on on on on off off on	off on on off on off off on
3	1	7	112-127	3 1	off on on on on off off off	off on on off on off off off
4	0	8	128-143	4 0	off on on on off on on on	off on on off off on on on
4	1	9	144-159	4 1	off on on on off on on off	off on on off off on on off
5	0	10	160-175	5 0	off on on on off on off on	off on on off off on off on
5	1	11	176-191	5 1	off on on on off on off off	off on on off off on off off

Table 127
Switch settings (Part 2 of 2)

6	0	1 2	192-207	6 0	off on on on off off on on	off on on off off off on on
6	1	1 3	208-233	6 1	off on on on off off on off	off on on off off off on off
7	0	1 4	224-239	7 0	off on on on off off off on	off on on off off off off on
7	1	1 5	240-255	7 1	off on on on off off off off	off on on off off off off off

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