Nortel Communication Server 1000
Nortel Communication Server 1000 Release 6.0

Communication Server 1000M and Meridian 1

61C to CS 1000M MG CP PIV FNF Upgrade

Document Number: NN43021-463
Document Release: 03.03
Date: June 2009

Contents

New in this release

This chapter contains information about Nortel Communication Server 1000 Release 6.0 new features.

Features

SIP Line provides an IP solution to deliver Business Grade Telephony features to IP end points. SIP Line integrates SIP end points in the Communication Server 1000 system and extends telephony features to SIP clients with the use of the Call Server, a SIP Line Gateway, and a SIP Line Management Service.

Signaling Server hardware and software contain updates. New Commercial-off-the-Shelf (COTS) servers are available from IBM and Dell. Communication Server 1000 Release 6.0 Signaling Servers require a Linux Operating System, and Linux Signaling Server applications.

Unified Communications Management (UCM) is a new name for the previous Enterprise Common Manager. UCM includes new configuration features for Centralized Deployment Manager, and Element Manager (EM).

Other

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

Revision history

June 2009

Standard 03.03. This document is upissued to update the CP PM BIOS upgrade procedures.

May 2009

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

May 2009

Standard 03.01. This document is issued to support Nortel Communication Server 1000 Release 6.0.

November 2007

Standard 02.01. This document is issued to support Nortel Communication Server 1000 Release 5.5.

July 2007

Standard 01.03. This document is upissued with corrections for invoking the install menu during CP PIV and CP P4 upgrades.

June 2007

Standard 01.02. This document is upissued with corrections for ABKO procedures and converting the database disk.

May 2007

Standard 01.01. This document is issued for Communication Server 1000 Release 5.0.

May 2006

Standard 5.00. This document is upissued with corrections for installing clock controllers and keycode database 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 a new NTP 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).

Finding the latest updates on the Nortel web site

The content of this documentation was current at the time the product was released. To check for updates to the latest documentation and software for CS 1000 Release 6.0, click one of the links below.

Latest Software	Go directly to the Nortel page for CS 1000 Release 6.0 software.
Latest Documentation	Go directly to the Nortel page for CS 1000 Release 6.0 documentation.

How to get help

This chapter explains how to get help for Nortel products and services.

Getting help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. More specifically, the site enables you to:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

If you don't find the information you require on the Nortel Technical Support Web site, and have a Nortel support contract, you can also get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following Web site to obtain the phone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

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

System information

This document is a global document. Contact your system supplier or your Nortel 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 also contains information about converting Release 3.0 software to CS 1000 Release 6.0 on Meridian 1 Options 61C, CS 1000M SG and CS 1000M MG systems. For software conversion procedures prior to Release 3.0, see the *Software conversion procedures* (553-2001-320) NTP for software Release 24.

IMPORTANT!

Database conversion for Meridian 1 Options 21E, 51, 61, 71, STE, NT, and XT must be completed by Nortel's Software Conversion Lab. Consult the current Nortel price book for cost and contact information.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 6.0 software. For more information about legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com/

Applicable systems

This document applies to the following systems:

- Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 PBX 61C
- Meridian 1 PBX 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 Release 6.0 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 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 81C	CS 1000M Multi Group

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 6.0:

- CP PM Signaling Server
- Commercial off-the-shelf (COTS) Signaling Server

For more information, see “Installing a CP PM or COTS server” on page 195.

Upgrade paths

This document contains information about the following Large System upgrades:

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

The upgrades documented in this NTP are structured as source platform to target platform upgrades.

Intended audience

This document is intended for individuals responsible for upgrading Large Systems.

This document is intended for individuals responsible for software conversion and memory upgrades.

Conventions

Terminology

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

- Communication Server 1000M Half Group (CS 1000M HG)
- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 81
- Meridian 1 PBX 81C

NTP feedback

Nortel strives to provide accurate documentation for our customers. However, if you feel there are errors or omissions in this document, your feedback is welcome.

Send comments via email to gntsdoc@nortel.com or open a problem report via the normal procedures.

Please provide as much information as possible including the NTP number, standard version and date of the document, as well as the page, problem description, and any supporting documentation and capture files.

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 pre-conversion and postconversion procedures for every system conversion.

Throughout this document the term *media* refers to tape, disk, CD-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" in *CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458) before performing any operations.

It contains information vital to the conversion process.

NTPs

The following NTPs are referenced in this document:

- *Product Compatibility* (NN43001-256)
- *Converging the Data Network with VoIP* (NN43001-260)
- *Circuit Card: Description and Installation* (NN43001-311)
- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *IP Peer Networking: Installation and Commissioning* (NN43001-313)
- *Features and Services* (NN43001-106)
- *Software Input/Output: Administration* (NN43001-611)
- *Element Manager: System Administration* (NN43001-632)
- *IP Trunk: Description, Installation, and Operation* (NN43001-563)
- *Signaling Server IP Line Applications Fundamentals* (NN43001-125)
- *ISDN Basic Rate Interface: Features* (NN43001-580)
- *Software Input/Output: Maintenance* (NN43001-711)
- *Communication Server 1000M and Meridian 1: Large System Planning and Engineering* (NN43021-220)
- *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310)

- *Communication Server 1000M and Meridian 1: Large System Maintenance* (NN43021-700)
- *Communication Server 1000M and Meridian 1 Large System Upgrade NTPs* (NN43021-458 – NN43021-475)

Online

To access Nortel documentation online, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer representative.

Technical support

For technical support contact information, see "Technical Assistance service" on page 245.

Introduction

Contents

This chapter contains the following topic:

Meridian 1 Option 61C upgrade to Option 81C CP PIV/FNF

The source platform for this procedure is the Meridian Option 61C CP1, CP2, CP3, CP4 with NT5D21 or NT9D11 shelves.

DANGER OF ELECTRIC SHOCK

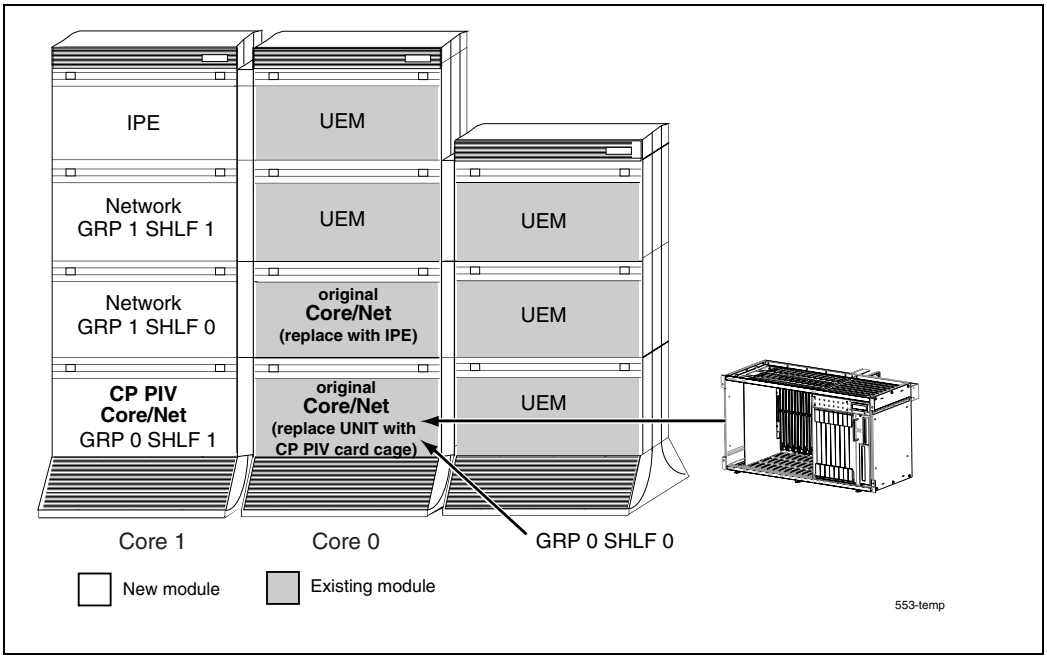
In a DC-powered system, power to the column can remain on during the following procedures. In an AC-powered system, however, power to the entire column *must* be shut down throughout the procedures.

The target upgrade, Meridian 1 Option 81C CP PIV with FNF, must meet the requirements of Product Bulletins P2002-1658-NA, PAA-2003-0199-NA, and 2000-047 rev 1. These bulletins provide information about:

- NTRB53 Clock Controller requirement
- NT5D12AC, AD, and AG (1.54MB) support
- NT5D97AB, AD (2.0MB) support.

Figure 1 on page 22 shows an upgrade from a Meridian 1 Option 61C to Meridian 1 Option 81C with CP PIV and Fiber Network Fabric.

Figure 1
Meridian 1 Option 61C to Meridian 1 Option 81C CP PIV with FNF



Meridian 1 Option 61C can be upgraded to Meridian 1 Option 81C with both CP PIV and Fiber Network Fabric. Upgrades from Meridian 1 Options 61/ 61C to Fiber Network Fabric alone are not supported.

The procedures in this section upgrade a Meridian 1 Option 61C to a two group Meridian 1 PBX 81C CP PIV with Fiber Network Fiber. Additional groups can be added by following the procedures “Adding a Network Group (NT4N46)” and “Adding a Network Group (NT4N40) in this NTP.

To upgrade a Meridian 1 Option 61C system to a Meridian 1 Option 81C CP PIV with Fiber Network Fabric:

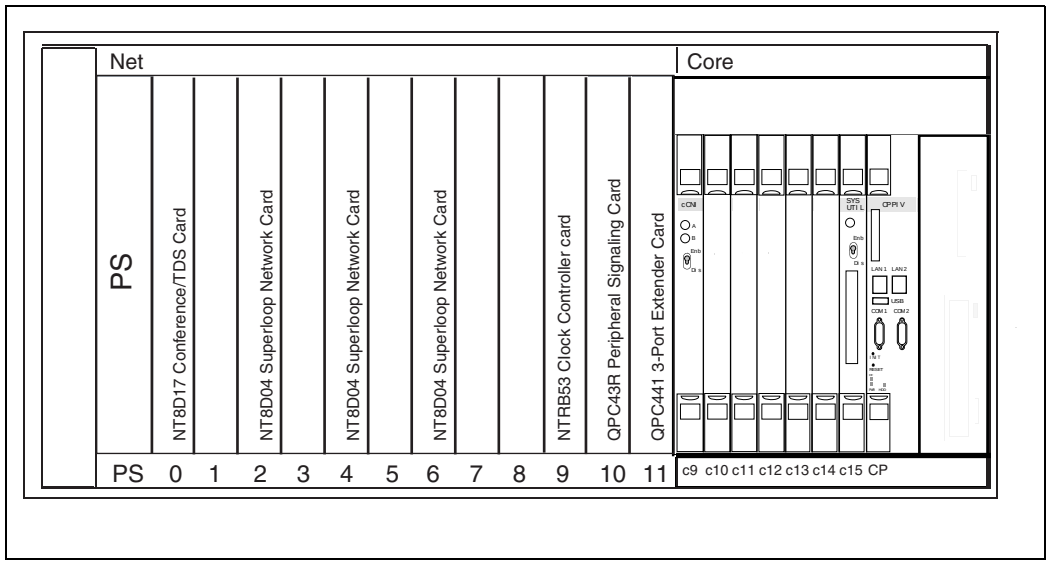
- One card cage in the existing Core/Net module is replaced with an NT4N40 CP card cage. The NT4N41 Core/Net module is also required.

- The CP Core/Net modules are side-by-side directly on top of the pedestals. This ensures power and cooling redundancy as well as proper cooling from the pedestal fans.
- New CP PIV cards are located in the Core/Net modules or card cage.
- Existing network cards are relocated to the CP card cages.
- Two new Group 1 Network modules are installed on top of the new CP Core/Net 1 module. This provides the new system with a minimum of two full Network groups.
- The existing Clock Controllers are moved from the Core/Net to the Network shelves.

  Note: Clock Controller cards must be NTRB53.

- Cards for Fiber Network Fabric are added: NTRB33 Fiber Junctor Interface (FIJI) card and the NTRE39 Optical Cable Management Card (OCMC).
- An IPE module can be installed on top of CP Core/Net 0 module.

Figure 2
CP Core/Net Module



Preparing and planning for the upgrade

Contents

This chapter contains the following topics:

Introduction

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 section features check boxes indicating what state the system should be in at that stage of the upgrade. If the system is not in the proper state 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 2.

Table 2
Prepare for upgrade steps

Planning

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 Nortel Alerts that impact the site.
- Determine if software can be converted on site or must be sent to Nortel.
- 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.

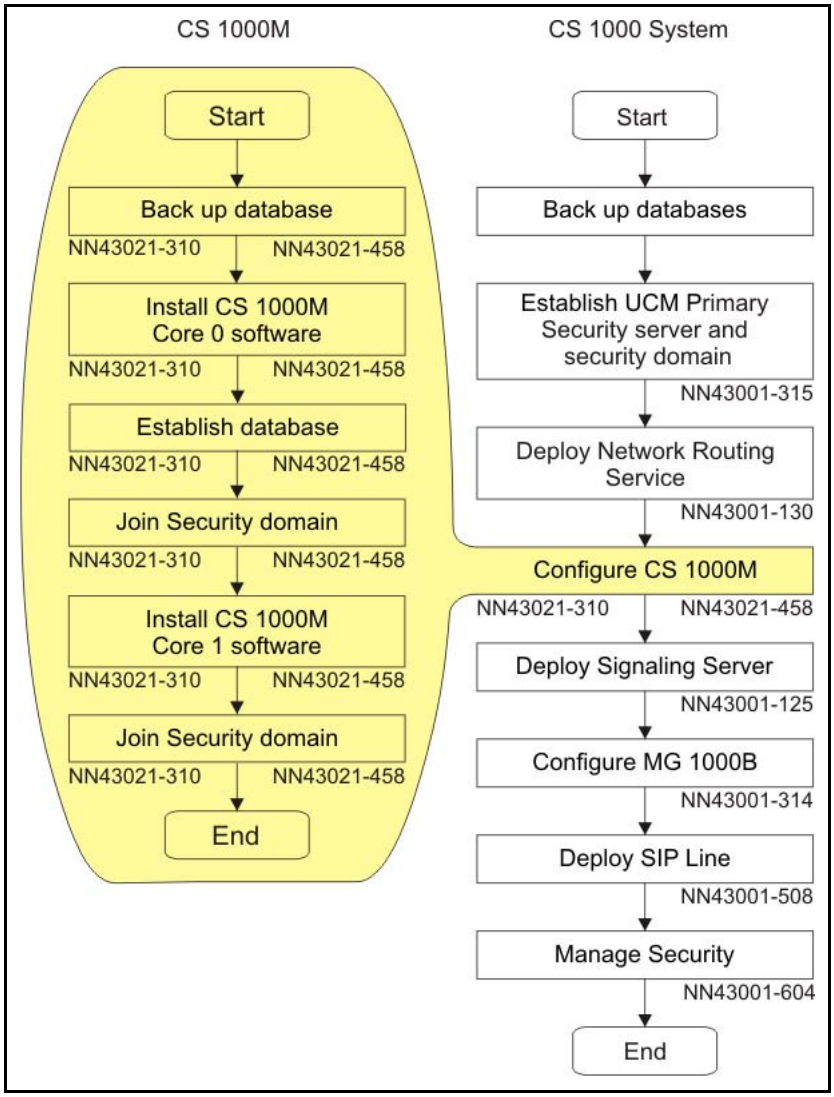
Communication Server 1000 task flow

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

For more information refer to the following NTPs, which are referenced in Figure 3 on page 29:

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

Figure 3
Communication Server 1000M task flow



Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on page 233. Engineers may print this section for reference during the upgrade.

Preparing

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 *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!

Preserve database backup information for a minimum of 5 days.

Connecting a terminal

Procedure 1
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

Checking the Core ID switches

Procedure 2
Checking the Core ID switches

Each CP NT4N40 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

The CP Core/Net card cages MUST be installed in the correct Core 0 or Core 1 module.

1. Pull the System Utility card (NT4N48) far enough out of its slot so you can see the ID switch settings. See Figure 5 on page 34.
2. Check and confirm the switch settings according to Table 3.
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 3
Core module ID switch settings (System Utility card)

	Position 1	Position 2
Core 0	On	On
Core 1	Off	On

Figure 4
Core card placement in the NT4N40 Core/Net card cage (front)

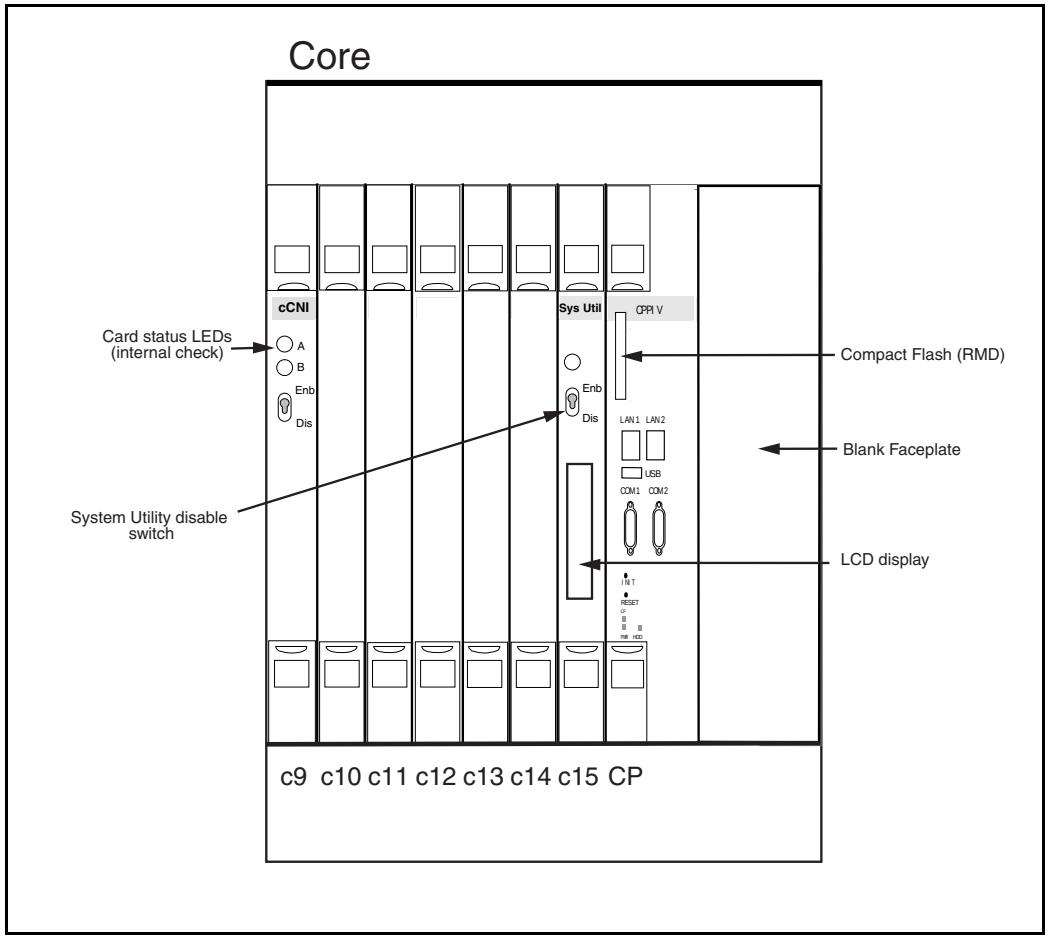


Figure 5
Core Module ID switch

Printing site data

Print site data to preserve a record of the system configuration (see Table 4). 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 4
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	LD 20
	REQ	PRT
	TYPE	ATT, 2250
	CUST	<cr>
*Customer data block for all customers	LD 21	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

Table 4
Print site data (Part 2 of 3)

Site data	Print command	
*Software packages	LD 22	
	REQ	PRT
	TYPE	PKG
*Software issue and tape ID	LD 22	
	REQ	ISS
	REQ	TID
* 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 (peripheral controller, superloop network and controller cards)	LD 32	
		IDC loop
Multi-purpose 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

Table 4
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.		

Performing 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 and ABKO)

To back up system data, complete the following two procedures.

1. Perform a data dump to save all system memory to the hard disk.
2. Perform a ABKO (attended backup) to save the database to a spare set of floppy disks.

Procedure 3
Performing a data dump

1 Log into 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 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 4
Performing an ABKO
(save the database to floppies)

1 Insert floppy diskettes into BOTH floppy disk drives in each Core IODU/C or 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 IODU/C drives will be used. Be sure to insert floppy disks into BOTH IODU/C drives before the ABKO backup is begun.

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 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

Procedure 5
Converting the 4 Mbyte database media to 2 Mbyte database media

IMPORTANT!

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

If the system is equipped with IOP/CMDU cards the database must be converted with the Database Transfer utility.

If the system is equipped with IODUC cards, the database should be data dumped (EDD) to a blank 2 MB floppy.

All systems can be converted by Nortel in the software conversion lab.

Before the system is upgraded to CP PIV, you must convert the database to 2 MB media. Systems with an IODU/C drive already have 2 MB media and can skip this procedure.

If the database is on a 4 MB database media (the system has an IOP/CMDU), the 4 Mbyte customer database must be transferred to 2 MB media.

1 Split the Cores and transfer call processing to Core 0.

2 Install the Database Transfer Utility diskette into the floppy drive on the IOP or CMDU in Core 1.

3 Press the reset button (MAN RST) on the Call Processor card in Core 1 to reboot the system. Start the Database Transfer Utility Tool.

CAUTION — Service Interruption

Select only options:

- <t> Tools Menu from the Install menu, and
- <s> To archive existing database from the Tools menu.

DO NOT select any other options. Other options can result in operating system corruption.

4 From the installation menu select:

<t>	Go to the Tools menu.
<s>	Archive existing database.
<cr> <a>	Continue with archive (insert blank 2MB diskette from the software kit into the floppy drive in Core 1).
<cr> <a>	Diskette is now in floppy drive in Core 1.

5 The message displays “Database backup complete!” and the Tool menu appears again after the backup completes correctly.

6 Remove the 2 MB diskette with the customer database from the floppy drive of the IOP or CMDU. Keep the diskette for use after you convert Core 1 to NT4N40 Core/Net 1. Do not reboot the system at this point.

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 risk formatting the incorrect drive.

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

The installation RMD CF card must come preformatted and bootable from Nortel. Consumer CF cards are not bootable by default and must be made bootable as outlined in Procedure 6 on page 43.

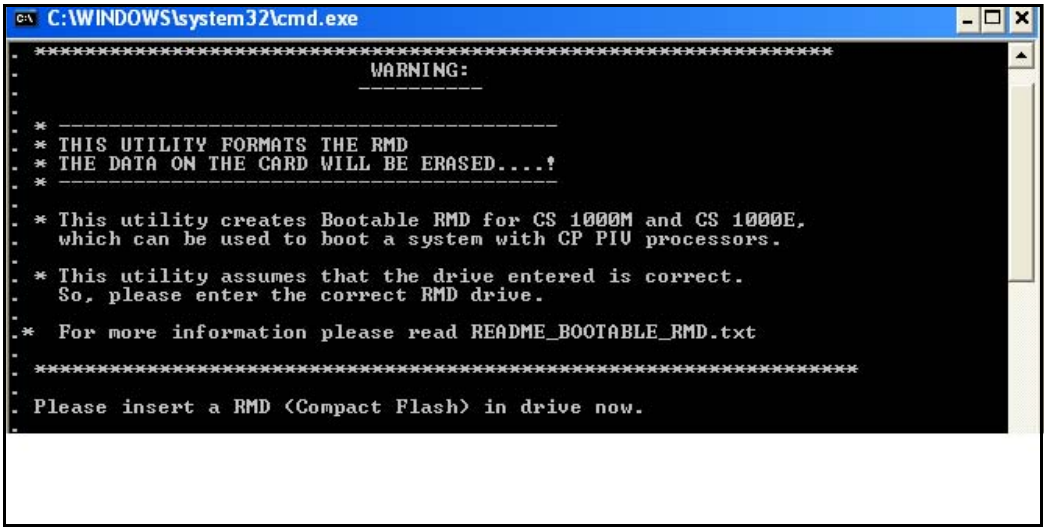
Procedure 6
Making the RMD bootable

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

2 Open the utilities folder.

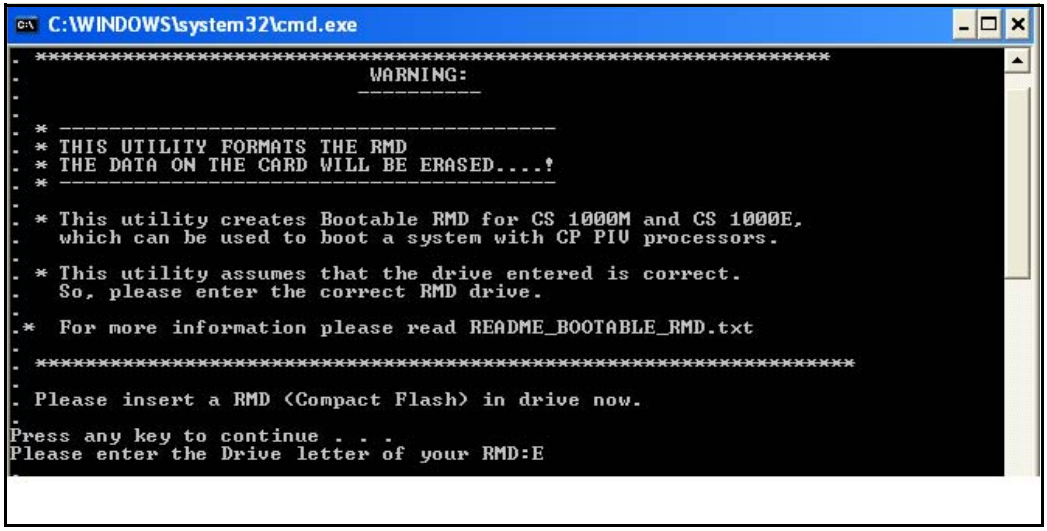
3 Double click the mkbootrmd.bat file. Insert a blank 512 MByte CF card (see Figure 6).

Figure 6
mkbootrmd.bat



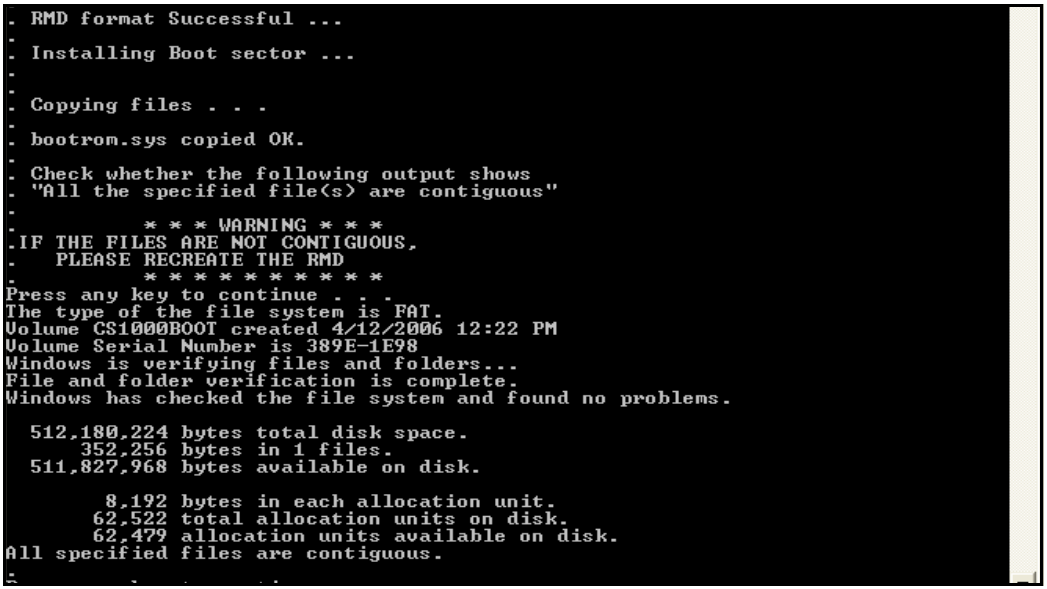
4 Enter the correct drive letter of the RMD (see Figure 7).

Figure 7
mkbootrmd.bat



5 The boot sector files (bootrom.sys and nvram.sys) are successfully copied making the CF card bootable (see Figure 8).

Figure 8
Boot sector successfully installed



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 MByte floppy disk to CF card, which is restored during the CS 1000

Release 6.0 software upgrade later in this section. Nortel recommends using the extra CF card included with the Software Install Kit.

Procedure 7
Transferring the customer 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.
3. Insert the floppy disk containing the backed up customer database from Procedure 3 on page 39.
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 9) prompts you to select the correct drive letter for the floppy disk drive.

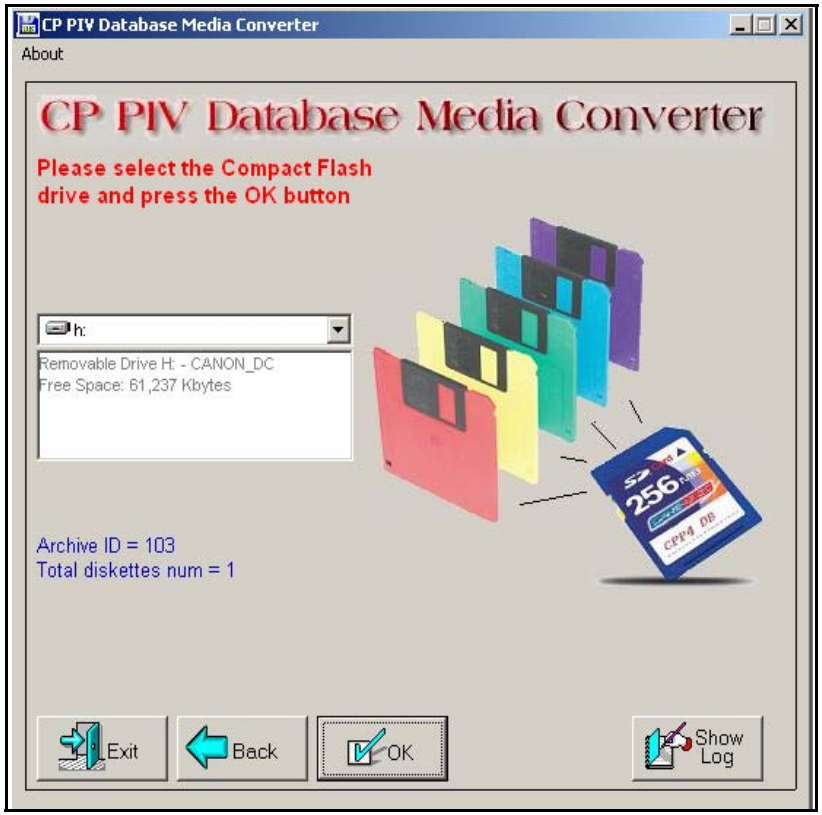
Figure 9
Select the floppy disk drive

6 The utility then prompts you to insert the floppy disk (diskette 1) and click OK (see Figure 10 on page 49).

Figure 10
Insert diskette 1

7 After verifying the database on the floppy disk, the utility prompts you to select the CF drive (see Figure 11 on page 50).

Figure 11
Select the CF drive

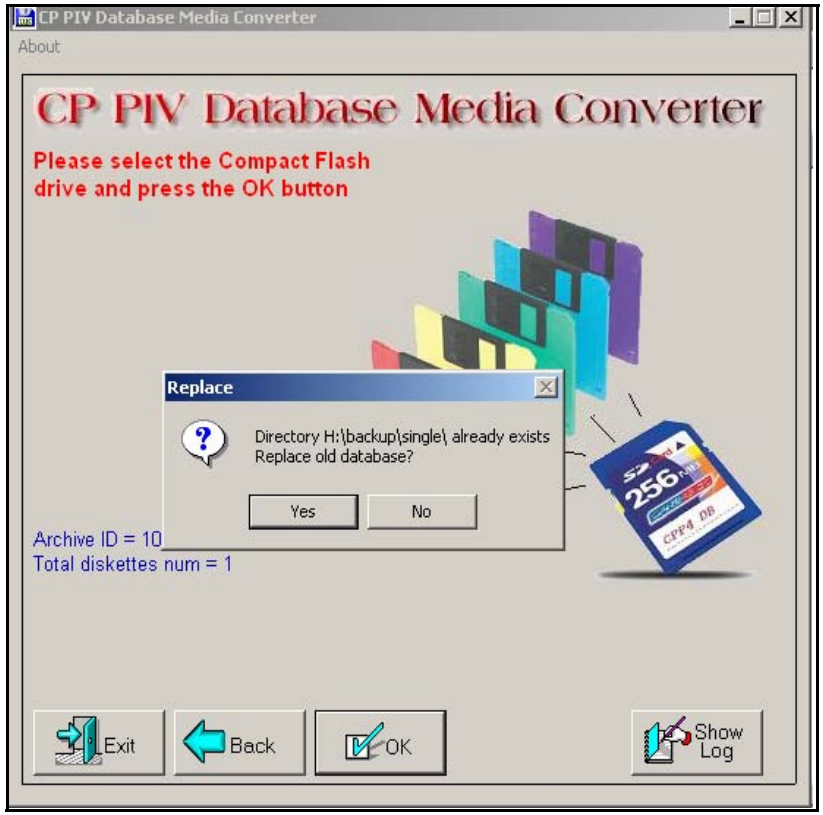


8 At this point, 2 options are available:

a. If the CF card already contains a previously backed-up database, a dialog box appears (see Figure 12 on page 51). Click yes to replace old database.

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

Figure 12
Replace database on CF drive



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

Figure 13
Copy another or exit

End of Procedure

Identifying two unique IP addresses

If not previously configured, each CP PIV 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 System Administrator to identify two unique IP addresses before the upgrade.
- For instructions to configure these IP numbers, see "Configuring IP addresses" on page 117.

Checking 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.

Performing the upgrade

Contents

This chapter contains the following topics:

Reviewing upgrade requirements

Upgrading to CS 1000M

The upgrade to CS 1000M (installing a Signaling Server) occurs after completing the procedures in this section. See Appendix : “Installing a CP PM or COTS server” on page 195.

This section describes the *minimum* hardware and software required for CP PIV. Additional equipment can also be installed during the upgrade. Verify that *all* hardware and software has been received.

Before the upgrade, check that items on the order form are also on the packing slip. Check that all items been received. If any items are missing, contact your supplier for replacements before you begin the upgrade.

WARNING

Service Interruption

DO NOT proceed with the upgrade if any of the required items are missing. All items must be received to complete the upgrade.

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).

Check required software

The following software packages are required to upgrade a system to Meridian 1 Option 81C with CP PIV:

- CORENET Core Network Module Package 299
- CPP_CNI CP Pentium Backplane for Intel Machine Package 368
- FIBN Fiber Network Package 365

- Compact Flash Software Install Kit, containing the following items:
  - One CF (512 MByte) card containing:
    - Install Software files
    - CS 1000 Release 6.0 software
    - Dep. Lists (PEPs)
    - Key code File
  - One blank CF card for database backup
  - One Nortel CS 1000 Release 6.0 Documentation CD

IMPORTANT!

Systems and components delivered to customer sites may include preinstalled software. However, the preinstalled software versions are typically older and are included only for manufacturing and order management purposes. **Do not attempt to operate the system with the preinstalled software.** The latest software must be downloaded from the Nortel Software Downloads web site and installed as part of the upgrade process.

Check vintage requirements for existing hardware

Check the list below to make sure that existing hardware meets the minimum vintage requirements for CP PIV.

If any of the equipment listed does not meet the requirements, replace the equipment before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

Equipment that does not meet the minimum vintage requirements will cause system malfunctions and loss of call processing.

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.

- The NTRB53 Clock Controller cards must be minimum vintage A.
- If the Clock Controllers are moved in Meridian 1 Option 61/61C systems, the new Clock Controller reference cables must be the correct length. Order new NT8D79 or NTCG03 PRI/DTI to Clock Controller cables if necessary.

  Note: QPC720 PRI cards require NT8D79 cables. NT5D12 Dual PRI/DTI cards require NTCG03 cables.

- The QPC43 Peripheral Signaling cards must be minimum vintage R.

Check required hardware

Table 5 on page 59 describes the *minimum* equipment required to upgrade a system to CP PIV. Additional equipment for increased Network capacity is ordered separately.

Table 5
Minimum requirements for Meridian 1 PBX 81C CP PIV system with FNF (Part 1 of 2)

Order Number	Description	Quantity
NT4N40AA	Card Cage, cPCI Core/Network AC or DC	1
NT4N41	Module, cPCI Core/Network AC or DC	1
NT4N48AA	Card, cPCI System Utility	2
NT4N39	Pack, CP PIV Processor with 512 MBytes Memory	2
NT4N65AB	Card, cPCI Core Network Interface (2 Ports)	2
NT4N88AA	Cable, CP to I/O Panel DTE, 48 in.	2
NT4N88BA	Cable, CP to I/O Panel DCE, 48 in.	2
NT4N90BA	Cable, CP to I/O Panel Ethernet, 48 in.	2
NT7D00	Top Cap AC or DC	1
NT7D06AA	Blank Faceplate, 2.75 in., dummy panel for NTWK Module	2
NT8D17HB	Pack, Conference, Tone & Digit Switch, (CT)	2
NT8D22AC	Pack, System Monitor (SM)	1
NT8D35	Module, Network (NET) AC or DC	2
NT8D46AL	Cable, System Monitor Serial Link, 7 ft.	1
NT8D46AS	Cable, System Monitor CPU Internal, 30 in.	1
NT8D49AA	Kit, Multi-column Expansion	2
NT8D99AB	Cable, Network to Network, 2 ft.	5
NT8D99AD	Cable, Core Network to Core Network, 6 ft.	2
NTND14BA	Cable, cCNI to 3PE, 6 ft.	2
NTND14BB	Cable, cCNI to 3PE, 10 ft.	2
NTRB33AD/ NTRB33BBE5	Card, fiber Junctor Interface (FIJI)	4
NTRC46BC	Cable, Clock to FIJI, 5.5 ft. – 8 ft.	2

Table 5
Minimum requirements for Meridian 1 PBX 81C CP PIV system with FNF (Part 2 of 2)

Order Number	Description	Quantity
NTRC17BA	Cable, CP Ethernet to Ethernet, 8.5 ft./3 meter	2
NTRC47AA	Cable, FIJI to FIJI Sync, 5 ft.	1
NTRC48AA	Cable, FIJI to FIJI fiber Ring, 6 ft./2 meter	4
NTRC49AA	Cable, Fiber Network Clock-Clock Sync, 6 ft.	1
NTRD25AA/ NT4N57AA	Assembly, Pedestal AC or DC	1
NTRE39AA	Card, Optical Cable Management (OCMC)	2
NTRE40AA	Adapter Assembly, I/O Panel Dual Ethernet, RJ-45	2
	(CP to ELAN subnet network Interface)	
P0712003	Package, Instruction	1
P0605337	Panel, cPCI Card Slot Filler	4
QPC43R	Pack, Peripheral Signaling, (PS)	2
QPC441F	Pack, Three Port Extender, (3PE)	2

Figure 14 on page 61 shows the CP PIV processor card side view. Figure 15 on page 62 shows the CP PIV processor card front view.

Figure 14
CP PIV call processor card (side)

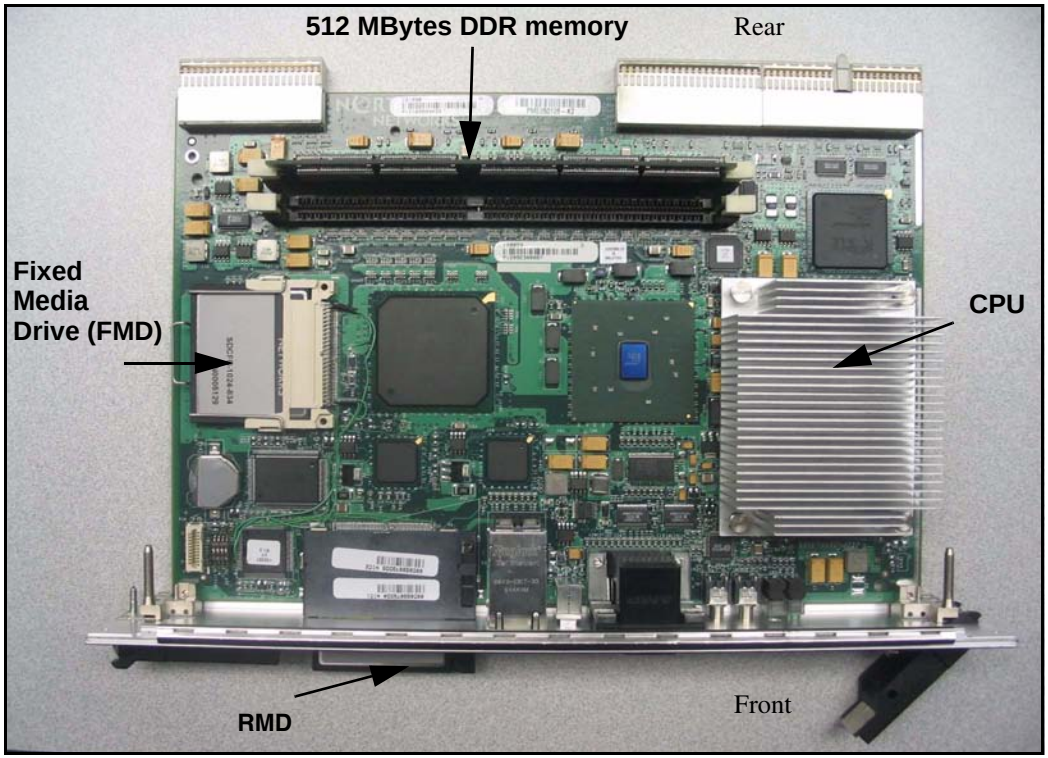
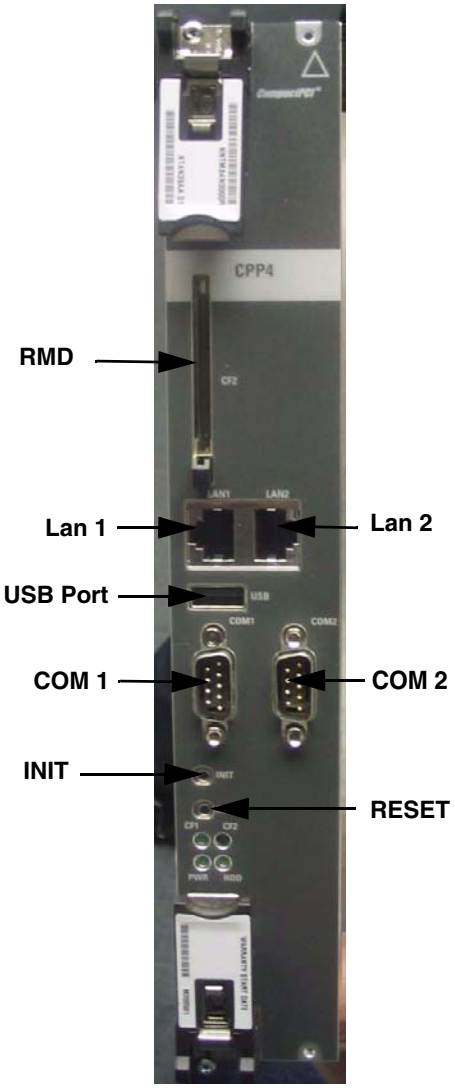


Figure 15
CP PIV call processor card (front)



Check required power equipment

Table 6 lists the equipment required for DC-powered systems.

Table 7 lists the equipment required for AC-powered systems.

Table 6
DC power requirements for Meridian 1 Option 81C upgrades

Order number	Description	Quantity per system
NT6D41CA	Core/Network Power Supply DC	2
NT4N97BA	CP PIV Upgrade Kit DC (Misc. Card Cage Components)	1

Table 7
AC power requirements for Meridian 1 Option 81C upgrades

Order number	Description	Quantity per system
NT8D29BA	Core/Network Power Supply AC	2
NT4N97AA	CP PIV Upgrade Kit AC (Misc. Card Cage Components)	1

Tools

Table 8 lists the tools required to upgrade a Nortel system. Special tools required in a procedure are listed in that procedure.

Table 8
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
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench

Table 8
List of recommended tools (Part 2 of 2)

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

Nortel recommends that a minimum of two people perform the card cage upgrade.

Database requirements

If the system is running prerelease 3.0 software or the source platform is a Meridian 1 Option 21E, 51, 61, 71, STE, NT or XT, the database must be sent to Nortel for conversion.

IMPORTANT!

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

All systems can be converted by Nortel in the software conversion lab.

CS 1000 compatibility

Consult *Communication Server 1000M and Meridian 1: Large System Planning and Engineering* (NN43021-220) for CS 1000 Release 6.0 product compatibility.

Upgrading Core 1

Procedure 8
Checking main Core card installation

The main Core cards are installed in the factory as shown in Figure 16 on page 66:

1 NT4N65AC CP Core Network Interface (cCNI) cards:
Each system contains one NT4N65 cCNI card per Core/Net module. The cCNI cards are located in slot c9. If not already installed, install a P0605337 CP Card Slot Filler Panel to cover slots c10-c12, which do not contain cCNIs.

Note: In the NT4N41 Core/Net module, port 0 on the NT4N65 Core to Network Interface (cCNI) Card in slot c9 must be configured as "group 0." The cCNI and 3PE cards for group 0 communicate through the NT4N29 cable. Only one cCNI card is required for group 0 in a Meridian 1 Option 61C CP PIV.

2 Slots c13 and c14 are left empty. If not already installed, install a P0605337 CP Card Slot Filler Panel in each slot.

3 NT4N48 System Utility (Sys Util) card is located in slot c15. Check side ID switch settings for SU card in Core/Net 1 according to Table 9.

Table 9
Core module ID switch settings (System Utility card)

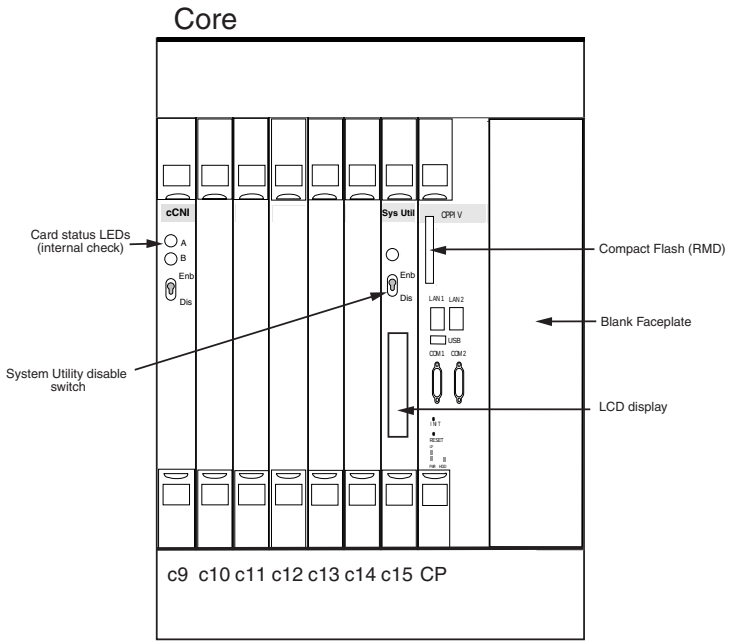
	Position 1	**Position 2**
Core 0	On	On
Core 1	Off	On

4 NT4N39 CP PIV is located in the Call Processor slot.

5 The N0026096 blank faceplate is located in the extreme right-hand slot next to the CP PIV card.

End of Procedure

Figure 16
Core card placement in the NT4N41 Core/Net Module (front)



Check for the shelf power cable

Check that the NT4N4405 Shelf Power Cable is installed in the CP card cage backplane. See Figure 17 on page 67 for cable location.

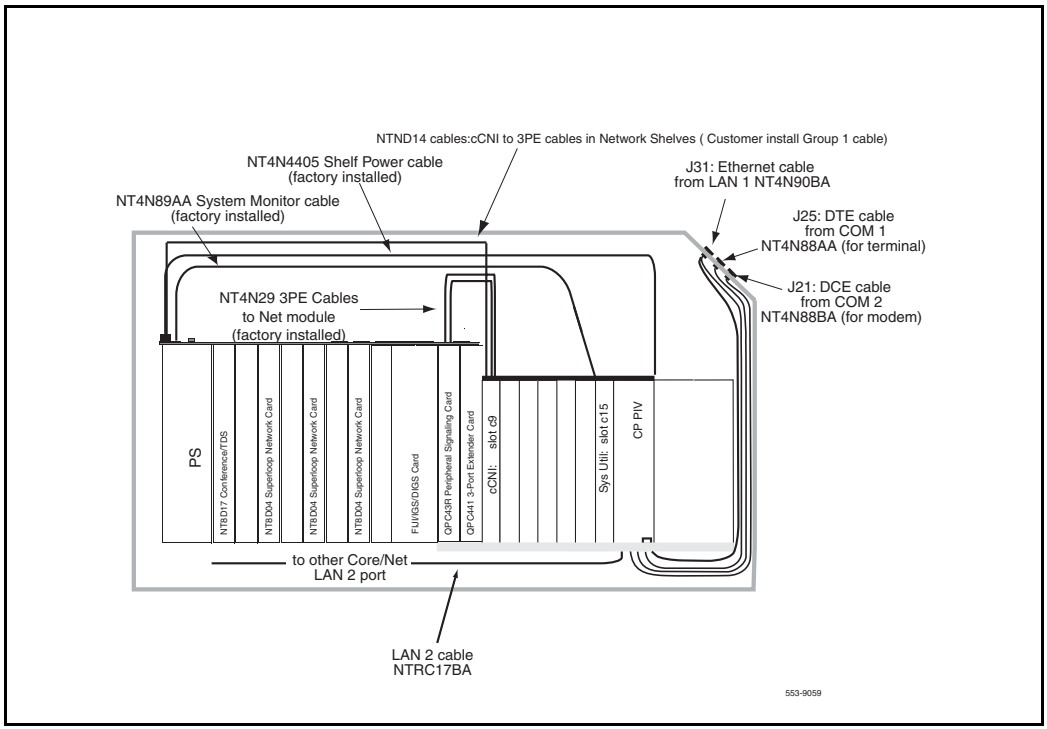
Check factory-installed cables

Table 10 lists factory-installed cables.

Table 10
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

Figure 17
Core/Net cable connections (top view)



Check factory-installed cables

Table 11 lists factory-installed cables. See Figure 17 on page 67.

Table 11
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 Core 1

Procedure 9
Checking that Core 0 is active

Get the status of the CPU, CMA or OCMA, extenders, and memory. Verify that all common equipment is enabled.

1 Verify that Core 0 is active.

LD 35	Load the program.
STAT CPU	Get the status of both CPUs.
STAT MEM	Get the memory status.

2 Test and switch CPUs.

TCPU CPU	Test the CPUs.
SCPU	Switch the CPUs.

3 If Core 1 is active, make Core 0 active:

SCPU	Switch to Core 0.
********	Exit the program.

4 Place CPU 0 into maintenance by setting the NORM/MAINT faceplate switch on the CP card in CPU 0 to MAINT.

5 Faceplate disable CNI card in **Core 1.**

End of Procedure

Procedure 10
Checking that Clock Controller 0 is active

1 Check the status of the Clock Controllers:

LD 60	Load the program.
SSCK 0	Get the status of Clock Controller 0.
SSCK 1	Get the status of Clock Controller 1.

2 If Clock Controller 1 is active, switch to Clock Controller 0 and software disable Clock Controller 1.

SWCK	If necessary, switch to Clock Controller 0.
DIS CC 1	Disable Clock Controller 1.
********	Exit the program.

3 Faceplate disable Clock Controller 1.

4 Verify the status of both CPUs. Verify that CPU 0 is enabled and CPU 1 is in standby.

LD 35	Load the program.
STAT CPU	Get the status of both CPUs.
********	Exit the program.

End of Procedure

Procedure 11
Moving Clock Controller 1

IMPORTANT!

Clock Controller cards must be NTRB53 Clock Controller cards.

CAUTION — Service Interruption

Service Interruption occurs if wrong Clock Controller is removed!

Move only Clock Controller 1 at this point in the upgrade.

Do not move Clock Controller 0 at this time.

If the system has a QPC471 or QPC775 Clock Controller, replace it with NTRB53 Clock Controller and verify settings according to Table 12 on page 72.

1. Move Clock Controller 0 from Slot 14 of the NT8D34 CPU module to network shelf 0, any group, slot 13.
2. Label and disconnect the clock to clock cable from Clock Controller 0.
3. If primary and secondary clock reference cables are connected to the Clock Controller 0 faceplate, label and disconnect them last.
4. Unseat and remove Clock Controller 0.
5. Set the new NTRB53 Clock Controller 0 switch settings according to Table 12 on page 72.

   Note: If the NTRC49AA cable is used, set switches 3 and 4 to 0-14 feet. If the NTRC49BA cable is used, set switches 3 and 4 to 15-20 feet.
6. Place Clock Controller 0 in any Network Shelf 0, slot 13. Do NOT seat the Clock Controller 0 and do not faceplate-enable the card.

7 Re-connect reference cable(s).

Note: If possible, Clock Controllers 1 and 0 should be located in different Network groups in different columns.

End of Procedure

Table 12
Clock Controller switch settings for NTRB53

Multi Group Single group	**Machine Type #1**	**Faceplate Cable Length CC to CC**			**Side Number**	**Machine Type #2**
1	2	3	4		5	6
Multi Group = Off Single group = On	21E = Off 51, 61, 51C, 61C 71, 81, 81C = On	Off	Off	0-14 Ft.	Side 0 = On Side 1 = Off	71,81 = Off 21E, 51, 51C, 61. 61C, 81C = On
		Off	On	4.6–6.1 m (15–20 ft.)		
		On	Off	6.4–10.1 m (21–33 ft.)		
		On	On	10.4–15.2 m (34–50 ft.)		
Note: Switch 7 and 8 are not used.						

Software disable Network cards in Core/Net 1 from Core/Net 0

CAUTION — Service Interruption

Service Interruption

At this point, the upgrade interrupts service.

Procedure 12
Software disabling cards in network slots of Core/Net 1 from Core/Net 0

1 In CPU 1 only, software disable all network and I/O cards such as XNET, TTY, Conf/TDS and ISDN cards.

a. In CPU 1 only, disable XNET.

LD 32	Load the program.
DISL sl	Disable the XNET, where sl = the superloop number of the XNET card.
********	Exit the program.

b. In CPU 1 only, disable ENET.

LD 32	Load the program.
DISL X	Disable the ENET, where X= the loop number of the ENET card.
********	Exit the program.

c. In CPU 1 only, software disable each port on the SDI cards.

LD 37	Load the program.
DIS TTY x	Disable each port, where x = the number of the interface device attached to a port.
********	Exit the program.

d. In CPU 1 only**,** disable DTI cards.

LD 60	Load the program.
DISL x	Disable DTI card, where x = the loop number of the DTI port.
********	Exit the program.

e. In CPU 1 only, disable PRI cards.

LD 60	Load the program.
DISL x	Disable PRI card, where x = the loop number PRI port.
********	Exit the program.

f. In CPU 1 only, disable MSDL cards.

LD 48	Load the program.
DIS MSDL x	Disable MSDL card, where x = the MSDL card number. System will respond with group 0.
********	Exit the program.

g. In CPU 1 only, disable XCT cards.

LD 34	Load the program.
DISX x	Disable XCT card, where x = the superloop number of the XCT card.
********	Exit the program.

2 In CPU 1 only, software disable the QPC43 Peripheral Signaling Card:

LD 32	Load the program.
DSPS x	Disable QPC43 card. Table 13 lists Peripheral Signaling Card numbers.
********	Exit the program.

Table 13
Peripheral Signaling Card numbers

Group/ shelf	Peripheral Signaling Card	Loops disabled/enabled		
0 / 0	0	0	–	15
0 / 1	1	16	–	31
1 / 0	2	32	–	47
1 / 1	3	48	–	63
2 / 0	4	64	–	79
2 / 1	5	80	–	95
3 / 0	6	96	–	111
3 / 1	7	112	–	127
4 / 0	8	128	–	143
4 / 1	9	144	–	159
5 / 0	10	160	–	175
5 / 1	11	176	–	191
6 / 0	12	192	–	207
6 / 1	13	208	–	223
7 / 0	14	224	–	239
7 / 1	15	240	–	255

3 In CPU 1 only, faceplate-disable the following cards in the following order: network cards, Per Sig and 3PE.

End of Procedure

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.

Procedure 13
Removing the system monitors from Core 0 and Core 1

Note: This procedure applies to both AC and DC systems.

1 **In Core 0**, software disable the master system monitor (NT8D22):

LD 37	Load the program.
DIS TTY #	Disable the master system monitor TTY interface.

2 Remove J3 and J4 cables on Core 0 and 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 0 and Core 1.

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.

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.

For AC-powered systems: set the MPDU circuit breaker located at the left end of the module to OFF (down position).

For DC-powered systems: set the breaker for the Core 1 module in the back of the column pedestal to OFF (down position).

Procedure 14
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 rear-access panel by turning the screws on each side. Set the 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: Two people are needed to remove the Core card cage because of the weight of the card cage with the cards left installed.

7 Use a 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 for use with the CP 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 CP card cage.

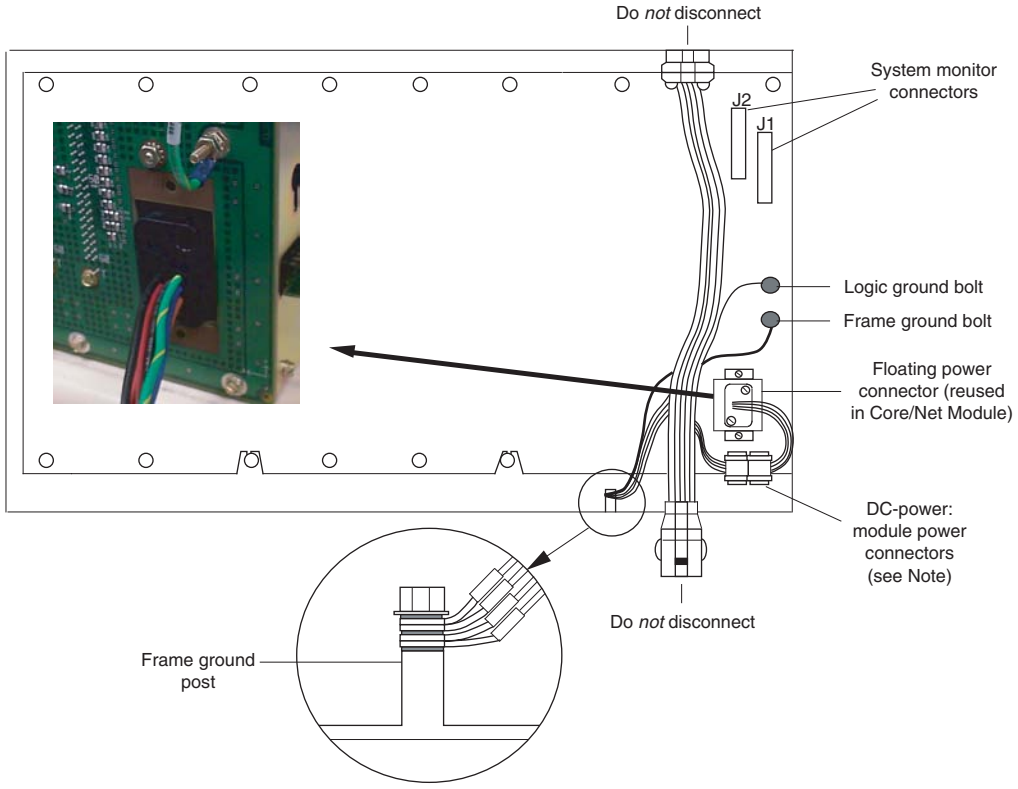
10 Pull the card cage forward until it is halfway out of the module.

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 18 on page 78 for DC power connectors. See Figure 19 on page 79 for AC power connectors.

13 Remove the frame ground (FGND) (green) wire from the frame ground bolt on the module.

Figure 18
DC power connectors on the Core module backplane



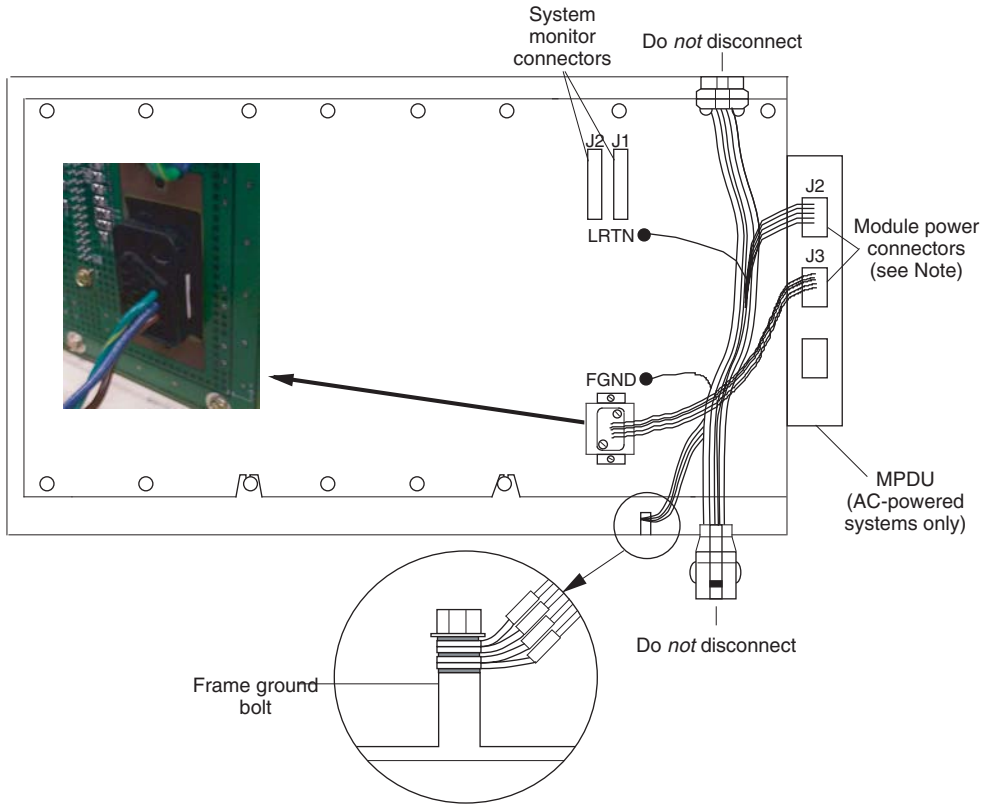
Note: With AC power, the module power connectors plug into J1 and J2 on the MPDU. (With DC power, they connect to each other and hang loose.)

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 19
AC power connectors on the Core module backplane



Note: AC-powered system shown. With DC power, module power connectors connect to each other.

553-9583

17 Remove the power harness and reserve it for reinstallation when you install the new NT4N40 card cage. The power harness is located at the right rear lower corner and plugs into the rear of the power supply. See Figure 18 on page 78.

- For AC systems, relocate power harness NT8D40.
- 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 in the module correctly.

CAUTION — Service Interruption

Damage to Equipment

Check for and remove any debris (such as screws) that fell into the base of the UEM module.

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 (attached to the side of the card cage).

End of Procedure

Install the CP card cage in Core 1

Procedure 15
Installing the CP card cage in Core 1

1 Check that the card cage is configured as Core 1. See Table 14 for instructions.

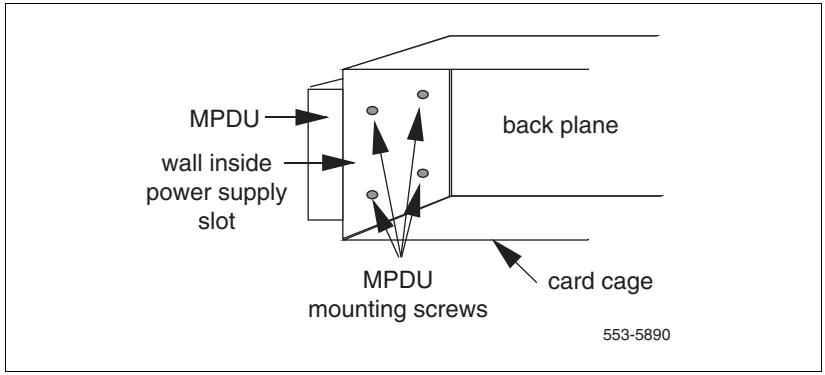
Table 14
Core module ID switch settings (System Utility card)

	Position 1	Position 2
Core 0	On	On
Core 1	Off	On

2 For AC-powered systems only, attach the MPDU, part of the CP PIV Upgrade kit, to the side on the NT4N40 card cage. The screws that secure the MPDU are accessible from the power supply slot. See Figure 20.

Note: Prethread 2 bottom mounting screws at the back of the Core/Net shelf.

Figure 20
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 CP card cage.

4 Slide the CP 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.)

b. In DC-powered systems, connect the module power connectors to each other.

c. Attach the system monitor ribbon cables:

i. Connect the ribbon cable that goes down to the column to connector J1 on the backplane.

ii. Connect the ribbon cable that goes up the column to J2 on the backplane.

d. Use a 11/32” socket wrench 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, then tighten down the nut.

Note: For all of the wire terminals to fit on the bolt, remove one of the lock washers. Leave a lock washer at the bottom of the bolt and at the top of the bolt. Leave a third lock washer between the second and third, or the third and fourth, wire terminals.

e. 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 card cage all the way 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 Secure the card cage and EMI shield to the module re-using the existing screws.

9 Preroute cables NT4N88AA, NT4N88BA and NT4N90BA.

a. Route cable NT4N88AA from COM1 on the CP PIV faceplate to J25 on the I/O panel. (NT4N88AA is used to connect a terminal.)

b. Route cable NT4N88BA from COM2 on the CP PIV faceplate to J21 on the I/O panel. (NT4N88BA is used to connect a modem.)

10 Route cable NT4N90BA from LAN 1 on the CP PIV faceplate to J31 (top) of the I/O panel.

11 Do not connect the NTRC17BA crossover ethernet cable at this time.

End of Procedure

Unpack and install NT6D41CA (DC) or NT8D29BA (AC) Power Supply

Procedure 16
Installing the power supply

1 Unpack the power supply.

2 Faceplate-disable the power supply.

3 Insert power supply into Core/Net module power supply slot.

End of Procedure

Procedure 17
Relocating Network cards to CP PIV Core/Net 0

1 Move any existing cards from slots 0-11 of the old Core/Net 0 card cage to the same slots (0-11) in the new NT4N40 Core/Net 0 card cage.

2 Connect the tagged cables to the relocated cards.

3 When you move the 3PE card, check the switch settings and jumpers. See Table 15 on page 84.

a. All 3PE cards must be vintage F or later.

b. Check that the RN27 Jumper is set to “A”.

c. The settings for 3PE cards in Core/Net shelves are different from those in all other shelves. Table 22 shows the 3PE settings for cards installed in CP Core/Net Modules.

Table 15
QPC441 3PE Card installed in the NT4N40 Module

Jumper settings. Set Jumper RN27 at E35 to “A”.									
Switch Settings									
Module		D20 switch position							
NT4N40 (Option 81C CP PIV)		**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 the Security Device

Procedure 18
Installing the Security Device

The Security Device fits into the System Utility card (see Figure 21 on page 86.) To install the Security Device, do the following.

1 If the original system had an IODU/C, remove the Security Device from the IODU/C for reuse.

   a. Unlock the latches and remove the IODU/C card.

   b. Remove the round 1/2" diameter IODU/C Security Device from the round black Security Device holder on the top right corner of the IODU/C card.

   Or

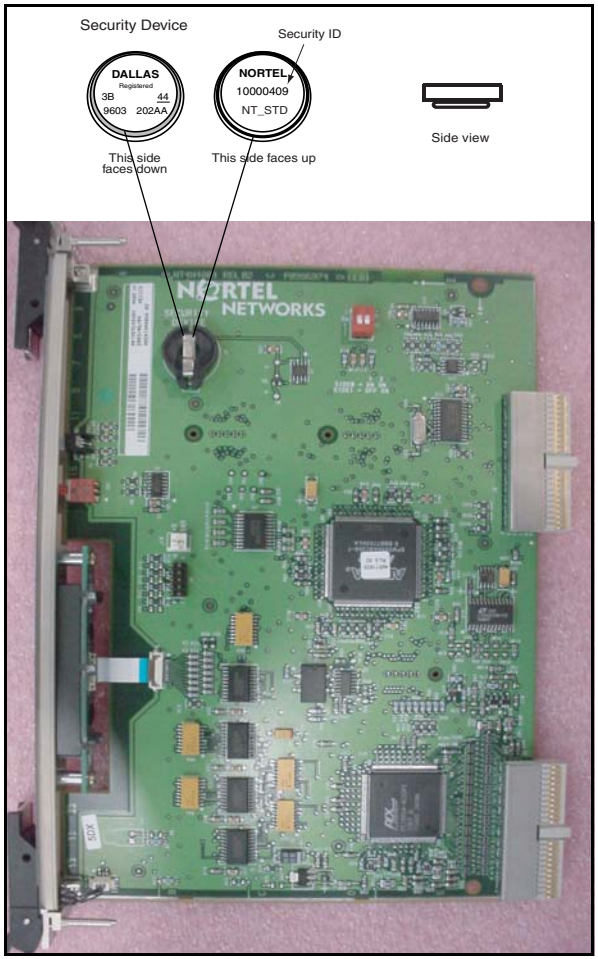
   If the original system did not have an IODU/C, use the Security Device provided with the Software Install Kit.

   Insert the Security Device into the Security Device holder on the System Utility card with the "Nortel" side facing up. Do not bend the clip more than necessary.

2 Check that the Security Device is securely in place.

End of Procedure

Figure 21
Security Device

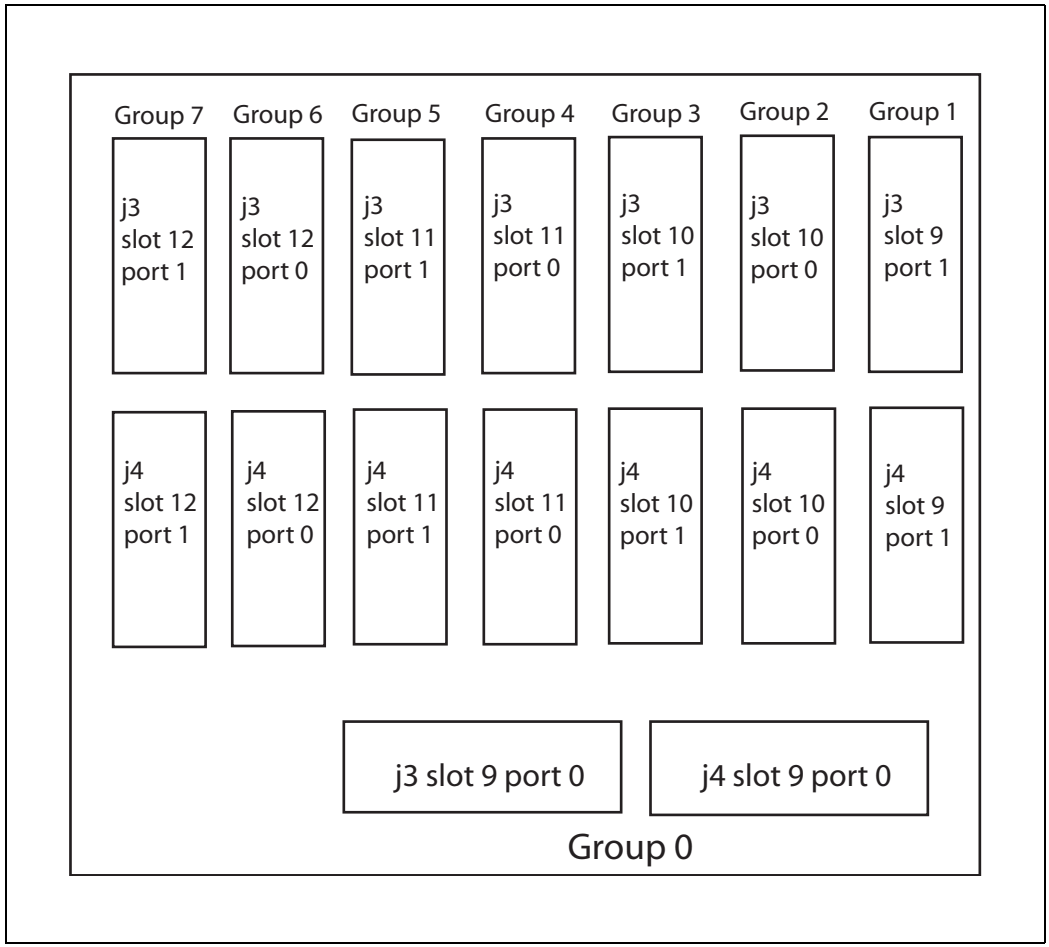


Cable Core 1

In Core 1, inspect factory installed cables

The NT4N29AA cables should be installed for the existing network group in Core/Net 1. If the system has XSDI cards, reinstall the cards and attach the cables. Inspect the system monitor cables (NT4N89).

Figure 22
Connectors for CNI-3PE cables to the Fanout panel



In Core 1, route and connect the CNI to 3PE (NTND14) cables

The existing NTND14 cables may be reused if they meet the requirements of the Important box below. If it is determined that existing NTND14 cables must be replaced on side 1, remove the existing cables and replace with the correct length cables. Connect the NTND14 cables to the Fanout panel in Core/Net 1 and the 3PE cards in each equipped network shelf 1. See Figure 23 on page 90 and Table 16 on page 89.

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.

WARNING

Damage to Equipment

Do not pry the 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.

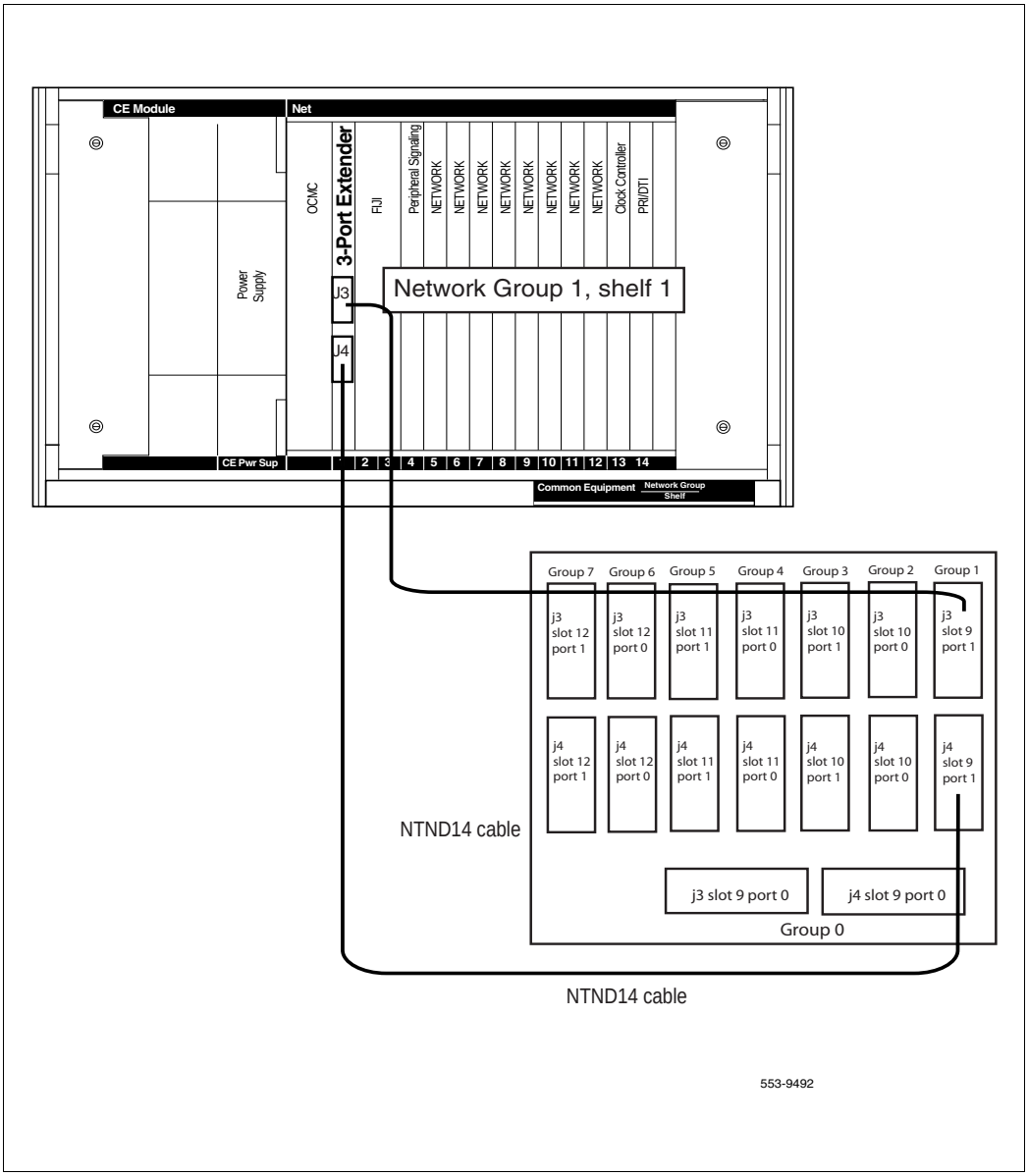
Table 16
Fanout Panel to 3PE card connectors

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 23 on page 90.

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1. See Figure 23 on page 90.

Figure 23
3PE Fanout Panel connections



Add Side 1 FIJI hardware

Procedure 19
Add Side 1 FIJI hardware

1 Faceplate-disable the FIJI cards.

2 Insert the FIJI cards in Side 1. **DO NOT seat the FIJI cards.**

Note: Double slot FIJI cards install in slots 2 and 3 of the Network modules, and slots 8 and 9 of the Core/Net modules. Single slot FIJI cards (with vintages later than NTRB33BBE5) install in slot 2 of the Network modules, and slot 9 of the Core/Net modules.

End of Procedure

Procedure 20
Connecting the shelf 1 FIJI Ring cables (descending)

IMPORTANT!

The shortest Fiber Cable must always be used.

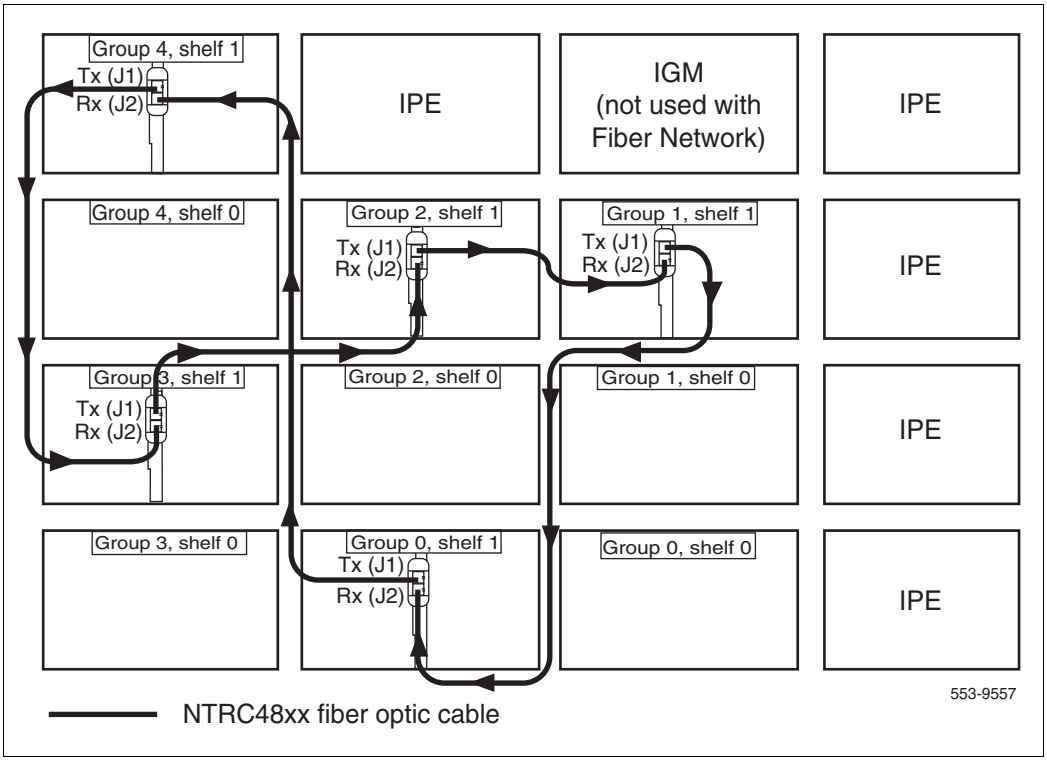
The cables from group 0 to group 1 must always be the same length as the cables from the last group back to group 0

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.

Create Fiber Ring 1. Connect the FIJI cards in all Network shelves 1 in **descending** order, from Tx to Rx (Figure 24 on page 92.)

Figure 24
Shelf 1 *descending* fiber-optic Ring (Meridian 1 Option 81C 5 group example)



Remove the black cap from the end of each cable before it is connected.

Note: Each end of the NTRC48xx cable is labeled “Tx” or Rx” in the factory.

1. Start with Network group 0, shelf 1.
2. Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 0, shelf 1** to the Rx (J2) port of the FIJI card in the **highest Network group, shelf 1**.
3. Connect a NTRC48xx cable from the Tx (J1) port of the FIJI card from the Tx (J1) port in the **highest Network group, shelf 1** to the Rx (J2) port in the **second highest Network group, shelf 1**.

4 Continue to connect NTRC48xx FIJI Fiber Ring cables of the appropriate length from the Tx (J1) port to the Rx (J2) port in shelf 1 of each Network group. Connect these cables in **descending** order of Network groups.

5 To complete the Ring, connect a final cable from Tx in **Group 1, shelf 1** to Rx in Group 0, shelf 1.

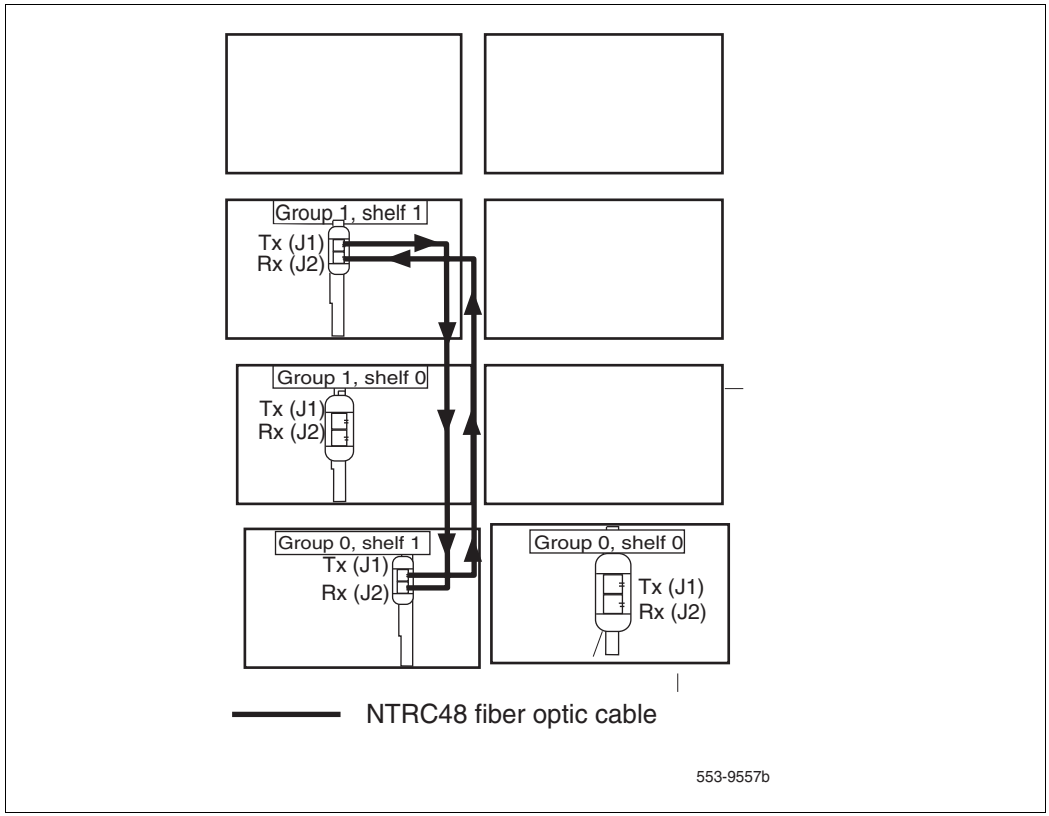
Note: Connect the Side 1 FIJI Ring cables only.

Table 17
FIJI Ring 1 connections

Groups 0 - X are cabled in descending order		
Group/Shelf	**FIJI Connector**	**Tx/Rx**
0/1	P1	Tx
7/1	P2	Rx
7/1	P1	Tx
6/1	P2	Rx
6/1	P1	Tx
5/1	P2	Rx
5/1	P1	Tx
4/1	P2	Rx
4/1	P1	Tx
3/1	P2	Rx
3/1	P1	Tx
2/1	P2	Rx
2/1	P1	Tx
1/1	P2	Rx
1/1	P1	Tx
0/1	P2	Rx

End of Procedure

Figure 25
Shelf 1 des*cending* fiber-optic Ring (Meridian 1 Option 81 2 group example)



Procedure 21
Cable the Clock Controller 1 to FIJI hardware

Connect the cables to the Clock Controller 1 as shown in Figure 26 on page 97.

1 Connect J2 of the NTRC49 cable to J1 of the NTRC46 cable.

2 Connect P2 of the NTRC49 cable to port J3 of Clock Controller 1.

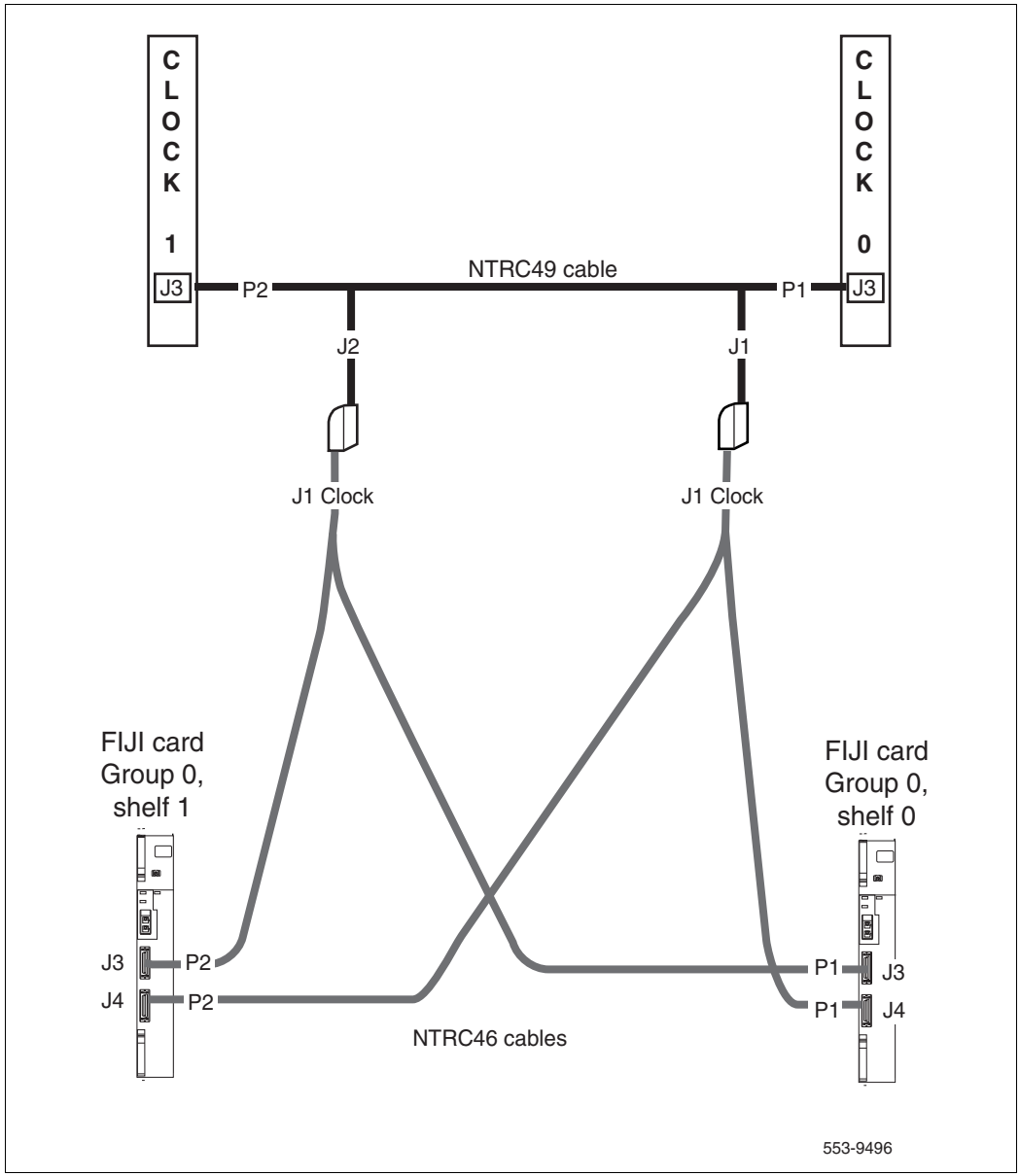
3 Connect P2 of the NTRC46 cable from Clock 1 to J3 of the FIJI card in group 0, shelf 1.

IMPORTANT!

Both NTRC46 cables must be the same length.

End of Procedure

Figure 26
Clock Controller cable configuration



Power up Core 1

Procedure 22
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.

2. Connect a terminal to the J25 port on the I/0 panel in the *inactive* Core.

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, the terminal will have to 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 all core and network cards.

5. Faceplate-enable the power supply.

End of Procedure

Power up Core cards

Procedure 23
Powering up core cards

1 For AC-powered systems: set the MPDU circuit breaker located at the left end of the module to ON (top position).

2 For DC-powered systems: set the breaker for the Core 1 module in the back of the column pedestal to ON (top position).

End of Procedure

Restore power

Procedure 24
Restoring power

1 Restore power to Core/Net 1.

2 Check that the Network and I/O cards have working power.

System is in split mode, CP 0 is active, Clock 0 is active.

CS 1000 Release 6.0 upgrade

Upgrading the software

Procedure 25 outlines the steps involved in installing CS 1000 Release 6.0 for the CP PIV processor.

Procedure 25
Upgrading the software

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: 8

d. Parity: none

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...
```

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>
```

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 keycode to be used on the system.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 If the keycode matches, enter <CR> 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 14 on page 110.

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 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
M3900 series sets.

**********************************************
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 upgrade.

       <n> - No, stop upgrade. 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.

This will  create  all  necessary  directories and
pre-allocate files on the hard disk.

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.

End of Procedure

Verifying the upgraded database

Procedure 26
Verifying the upgraded database

1 Print ISSP (system software issue and patches)

LD 22	Load program
REQ	ISSP
****	Exit program

2 Print the system configuration record in LD 22 and compare the output with the preupgraded configuration record.

LD 22	Load program
REQ	PRT
TYPE	CFN
****	Exit program

3 Print the SLT in LD 22. This output provides used and unused ISM parameters. Compare with preupgrade SLT output.

LD 22	Load program
REQ	SLT
****	Exit program

4 Print the customer data block(s) in LD 21.

LD 21	Load program
REQ	PRT
TYPE	CDB
CUST	xx
********	Exit program

Configuring IP addresses

Procedure 27
Configuring IP addresses

If unique IP addresses were not configured prior to the upgrade, two unique IP addresses are required for the CP PIV system to communicate with the LAN. One IP address is defined for the *active* Core. The second IP address is defined for the *inactive* Core.

1 Use the following to check the status of the system's IP address:

LD 117	Load program
PRT HOST	Print the configured host information

If the system returns with host names "active" and "inactive", go to "Check for Peripheral Software Download to Core 1" on page 118. If the system returns no host names, complete the steps below.

2 Contact your System Administrator to identify IP address and subnet mask information.

3 Configure the primary (*active*) and secondary (*inactive*) IP addresses:

LD 117	Load program
NEW HOST *NAME 1 IP ADDRESS*	Define the first IP address: "name 1" is an alias for the IP address such as "primary" (The IP address is the IP number)

CHG ELNK ACTIVE *NAME 1*	Assign the “name 1” address to the *active* Core
NEW HOST ‘NAME 2’ ‘IP ADDRESS’	Define the second IP address: “name 2” is an alias for the IP address such as “secondary” (The IP address is the IP number)
CHG ELNK INACTIVE *NAME 2*	Assign the “name 2” address to the *inactive* Core.
CHG MASK *XXX.XXX.XXX.XXX*	Set the sub-net per local site (This number allows external sub-nets to connect to the system)

4 Enable the new Ethernet interface.

LD 137	Load program
update dbs	Update the ELINK database
dis elnk	*Disable* the old IP interface values
enl elnk	*Enable* the new IP interface values

End of Procedure

Check for Peripheral Software Download to Core 1

Enter LD 22 and print Target peripheral software version. The Source peripheral software version was printed in “Printing site data” on page 34. 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.
- The system drops established calls on IPE.

Load LD 22 and print Target peripheral software version.

LD 22	
REQ	PRT
TYPE	PSWV
********	Exit program

For systems with fewer than eight groups, delete CNIs

Procedure 28
Deleting CNIs

If the system has eight groups, skip this procedure. If the system has fewer than eight groups, you must software remove the CNIs not used in the system configuration:

1 In Core/Net 1, disable all cCNI cards using LD 135:

LD 135	Load program
STAT CNI	Get status of all cCNI cards
DIS CNIP x s p	Disable cCNI ports where: x = Core number (0 or 1) s = card slot (9-12) p = port (0 or 1)
DIS CNI x s	Disable cCNI cards where: x = Core number (0 or 1) s = card slot (9-12)
STAT CNI	Confirm that cCNI cards are disabled
********	Exit program

2 Use LD 17 to remove the extra cCNI cards.

LD 17	Load program
CHG	CFN

TYPE	CEQU
CEQU	
carriage return to EXTO	
EXTO 3PE	Core/Net 0 extended to 3PE
CNI s p x	Out the cCNI card, where: s = card slot (9-12) p = port (0 or 1) x = out network group
EXTI 3PE	Core/Net 1 extended to 3PE
CNI s p x	Out the cCNI card, where: s = card slot (9-12) p = port (0 or 1) x= out network group
carriage return to end of program	
********	Exit program

3 Use LD 135 to re-enable cCNI cards:

LD 135	Load program
STAT CNI	Get status of all cCNI cards
ENL CNI x s	Enable cCNI cards where: x= Core number (0,1) s = card slot (9-12)
ENL CNIP x s p	Enable cCNI ports where: x= Core number (0,1) s = card slot (9-12) p = port (0 or 1)
STAT CNI	Confirm that cCNI cards are enabled (see note below)
********	Exit program

Note: At this point, cCNI cards in Core 1 are controlled by the active call processor in Core 0. Therefore, it remains disabled.

End of Procedure

Reconfigure I/O ports and call registers

Procedure 29
Reconfiguring I/O ports and call registers

1 Remap all I/O ports (except CPSI ports) to the proper groups. The group number of these ports is determined by the physical location of the card. The configuration information must match the CNI configuration

LD 17	Load program
CHG	CFN
TYPE	ADAN CHG AAA X G
carriage return to end of program	
********	Exit program

2 Evaluate the number of call registers and 500 telephone buffers that are configured for the system (suggested minimum values are 20,000 and 1000 respectively). If changes are required, reconfigure the values in LD 17:

LD 17	Load program
CHG	
CFN	
PARM YES	
500B 1000	Use 1000 as a minimum value
NCR 20000	Use 20000 as a minimum value
********	Exit program

End of Procedure

Procedure 30
Rebooting Core 1

CAUTION — Service Interruption

Service Interruption

The INI may take up to 15 minutes to complete.

CAUTION — Service Interruption

Service Interruption

Call processing is interrupted for approximately 60 minutes while the procedures are completed.

At this stage, Core 0 is still the active call processor with Clock Controller 0 active. The following procedure will transfer call processing from Core 0 to Core 1, switching Clock Controller from 0 to 1 and switching from IGS/DIGS to FIJI.

1 In Core/Net 0 only, faceplate-disable the CNI cards.

2 In Core/Net 0 only, faceplate-disable the IODU/C card.

3 In Core/Net 0 only, unseat the Core Processor card.

4 Faceplate-disable Clock Controller 0 and unseat the card.

5 Press the 'INIT' button on the CP PIV card faceplate in Core/Net 1 to initialize the system.

6 Wait for “DONE” and then “INI” messages to display before you continue.

CAUTION — Service Interruption

Service Interruption

Allow the system to recover from all downloads after the INI completes.

During INI, FIJI error messages (from Shelf 0) appear on the screen. FIJI card on shelf 1 resets. Upon INI completion, RING 1 is full, FIJI Ring 0 (in Core/Net 0) is disabled, AUTO recovery is on and Clock Controller 1 is active.

End of Procedure

Core 1 is now active with ring 1 drives full. Clock Controller 1 is active. Call processing should be active on Core/Net 1.

Performing the customer's test plan

Ensure that all network resources in Core/Net shelf 1 are now functional.

Upgrading Core 0

Faceplate-disable cards in Core/Net 0

CAUTION — Service Interruption

Service Interruption

Call processing is interrupted for approximately 60 minutes while the procedures are completed.

Procedure 31
Faceplate disabling cards in core and network slots of Core/Net 0:

1. Faceplate-disable all core and network cards in Core/Net 0.
2. Set the ENB/DIS switch on the 3PE card to DIS.

End of Procedure

Procedure 32
Moving Clock Controller 0

IMPORTANT!

Clock Controller cards must be NTRB53 Clock Controller cards.

CAUTION — Service Interruption

Service Interruption occurs if wrong Clock Controller is removed!

Move only Clock Controller 0 at this point in the upgrade.

Do not move Clock Controller 1 at this time.

If the system has a QPC471 or QPC775 Clock Controller, replace it with NTRB53 Clock Controller and verify settings according to Table 18 on page 126.

1 Move Clock Controller 0 from Slot 14 of the NT8D34 CPU module to network shelf 0, any group, slot 13.

2 Label and disconnect the clock to clock cable from Clock Controller 0.

3 If primary and secondary clock reference cables are connected to the Clock Controller 0 faceplate, label and disconnect them last.

4 Unseat and remove Clock Controller 0.

5 Set the new NTRB53 Clock Controller 0 switch settings according to Table 12 on page 72.

Note: If the NTRC49AA cable is used, set switches 3 and 4 to 0-14 feet. If the NTRC49BA cable is used, set switches 3 and 4 to 15-20 feet.

6 Place Clock Controller 0 in any Network Shelf 0, slot 13. Do NOT seat the Clock Controller 0 and do not faceplate-enable the card.

7 Re-connect reference cable(s).

Note: If possible, Clock Controllers 1 and 0 should be located in different Network groups in different columns.

End of Procedure

Table 18
Clock Controller switch settings for NTRB53

Multi Group Single group	**Machine Type #1**	**Faceplate Cable Length CC to CC**			**Side Number**	**Machine Type #2**
1	2	3	4		5	6
Multi Group = Off Single group = On	21E = Off 51, 61, 51C, 61C 71, 81, 81C = On	Off	Off	0-14 Ft.	Side 0 = On Side 1 = Off	71,81 = Off 21E, 51, 51C, 61. 61C, 81C = On
		Off	On	4.6–6.1 m (15–20 ft.)		
		On	Off	6.4–10.1 m (21–33 ft.)		
		On	On	10.4–15.2 m (34–50 ft.)		
Note: Switch 7 and 8 are not used.						

Procedure 33
Cabling the Clock Controllers

Earlier in the upgrade, you checked that Clock Controller 1 is installed in Network 1 shelf 1, slot 13; and Clock Controller 0 has been moved to Network group 1 shelf 0, slot 13.

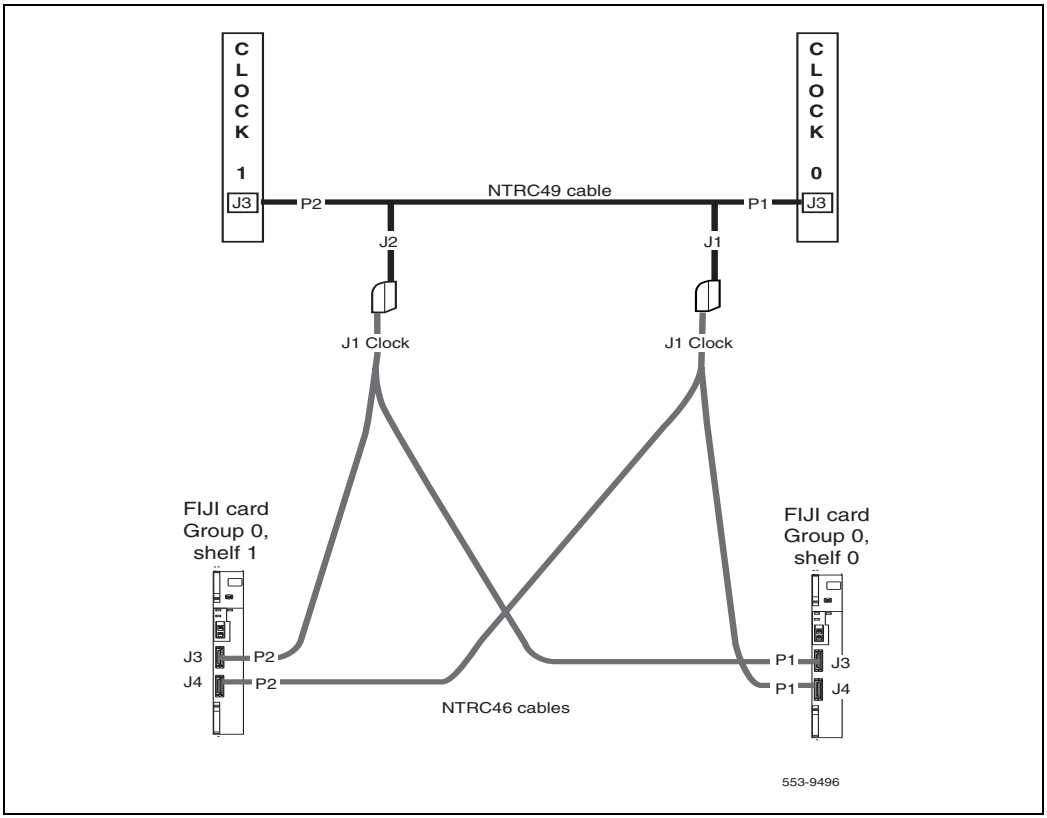
Connect the cables to the Clock Controllers as shown in Figure 27 on page 128:

1. Connect J1 of the NTRC49 cable to J1 of the second NTRC46 cable.
2. Connect P1 of the NTRC49 cable to port J3 of Clock Controller 0.
3. Connect P2 of the NTR46 cable from Clock 0 to J4 of the FIJI card in group 0, shelf 1.

IMPORTANT!

Both NTRC46 cables must be the same length.

Figure 27
Clock Controller cable configuration



Procedure 34
Removing Core 0 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 rear-access panel by turning the screws on each side. Set the 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: Two people are needed to remove the Core card cage because of the weight of the card cage with the cards left installed.

7 Use a 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 for use with the CP 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 CP 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 18 on page 78 for DC power connectors. See Figure 19 on page 79 for AC power connectors.

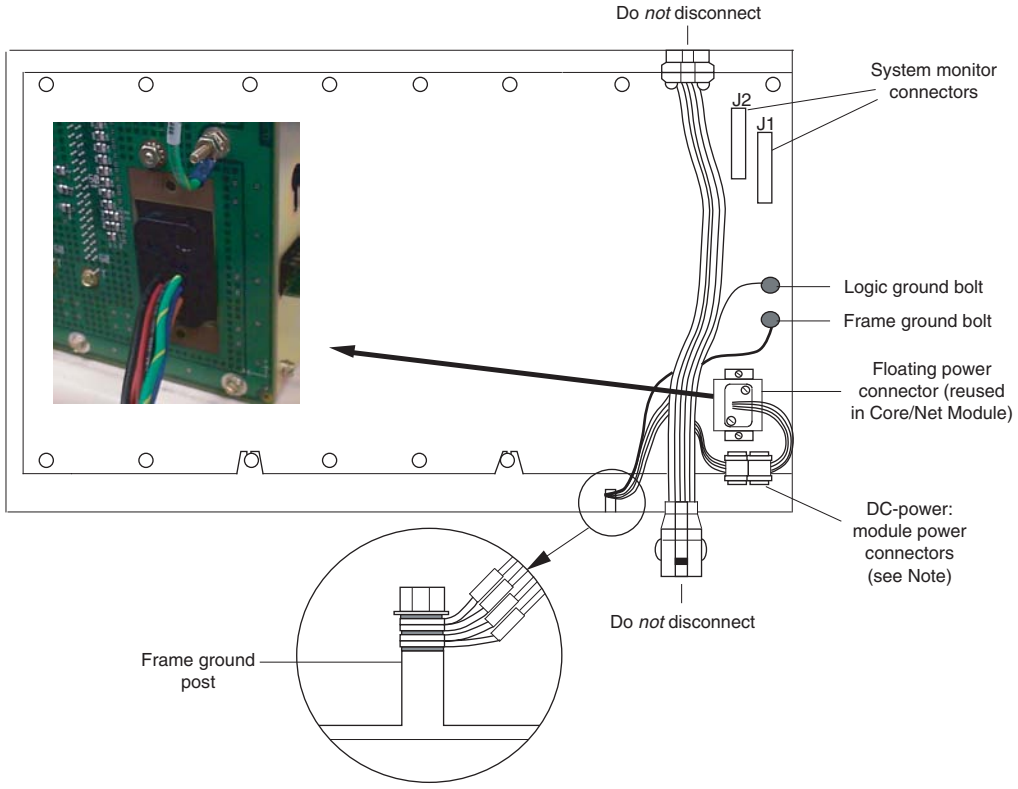
13 Remove the frame ground (FGND) (green) wire from the frame ground bolt on the module.

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 28
DC power connectors on the Core module backplane



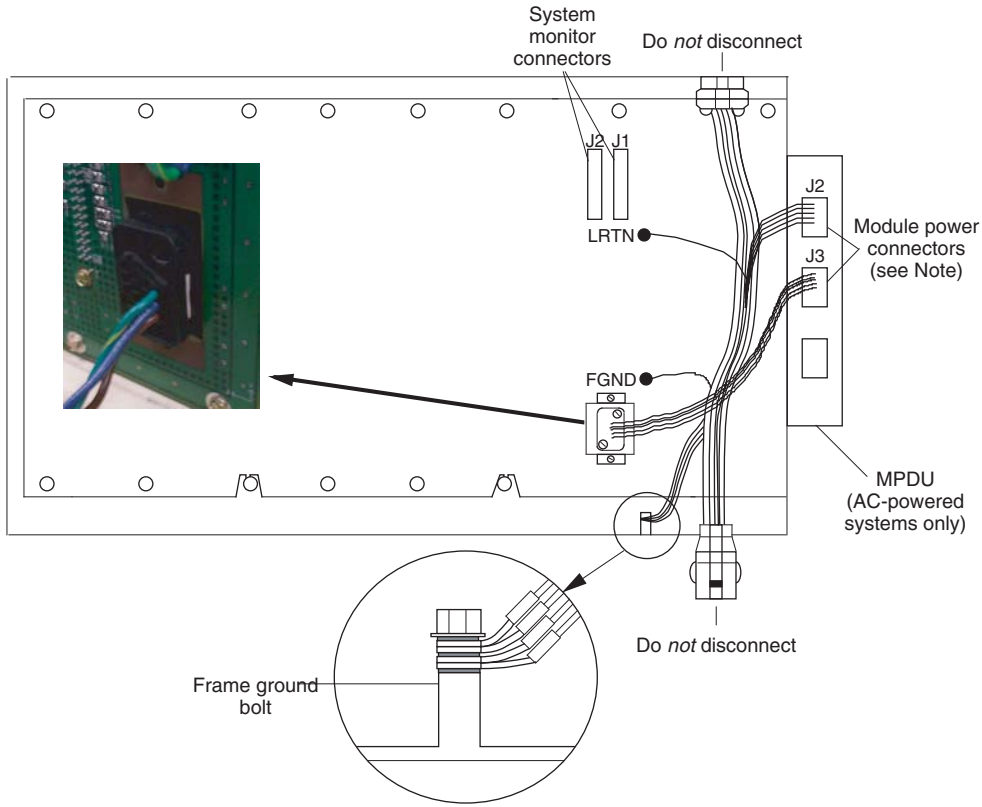
Note: With AC power, the module power connectors plug into J1 and J2 on the MPDU. (With DC power, they connect to each other and hang loose.)

553-9582

17 Remove the power harness and reserve it for reinstallation when you install the new NT4N40 card cage. The power harness is located at the right rear lower corner and plugs into the rear of the power supply. See Figure 18 on page 78.

- For AC systems, relocate power harness NT8D40.
- For DC systems, relocate power harness NT7D11.

Figure 29
AC power connectors on the Core module backplane



Note: AC-powered system shown. With DC power, module power connectors connect to each other.

553-9583

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 in the module correctly.

CAUTION — Service Interruption

Damage to Equipment

Check for and remove any debris (such as screws) that fell into the base of the UEM module.

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 (attached to the side of the card cage).

End of Procedure

Checking main Core card installation

Procedure 35
Checking main Core card installation

The main Core cards are installed in the factory as shown in Figure 30 on page 134.

1 NT4N65AC CP PIV Core Network Interface (cCNI) cards:
Each system contains 1-4 NT4N65AC cCNI card per Core/Net module. The cCNI cards are located in slot c9-c12. If not already installed, install a P0605337 CP Card Slot Filler Panel to cover slots which do not contain cCNIs.

Note: In the NT4N40 Core/Net card cage, port 0 on the NT4N65AC Core to Network Interface (cCNI) Card in slot c9 must be configured as “group 0.” Port 1 on this card must be configured as group 1. The cCNI and 3PE cards for group 0 communicate through the NT4N29 cables. The cCNi to 3PE cables for groups 1 to 7 communicate through the NTND14 cables.

2 Slots c13 and c14 are left empty. If not already installed, install a P0605337 CP Card Slot Filler Panel in each slot.

3 NT4N48 System Utility (Sys Util) card is located in slot c15.

a. Check side ID switch settings for SU card in Core/Net 0 according to Table 19.

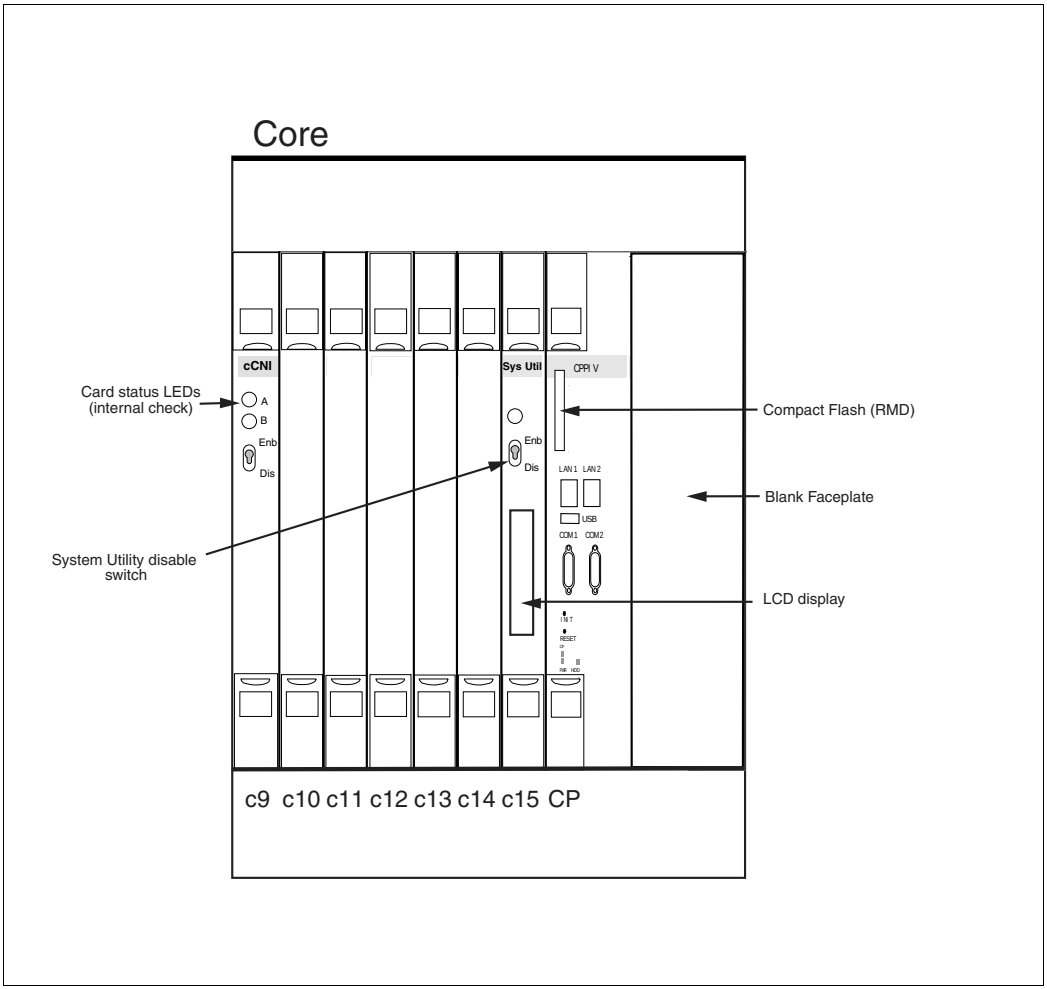
Table 19
Core module ID switch settings (System Utility card)

	Position 1	**Position 2**
Core/Net 0	On	On
Core/Net 1	Off	On

4 NT4N39 CP PIV is located in the Call Processor slot.

End of Procedure

Figure 30
Core card placement in the NT4N41 Core/Net Module (front)



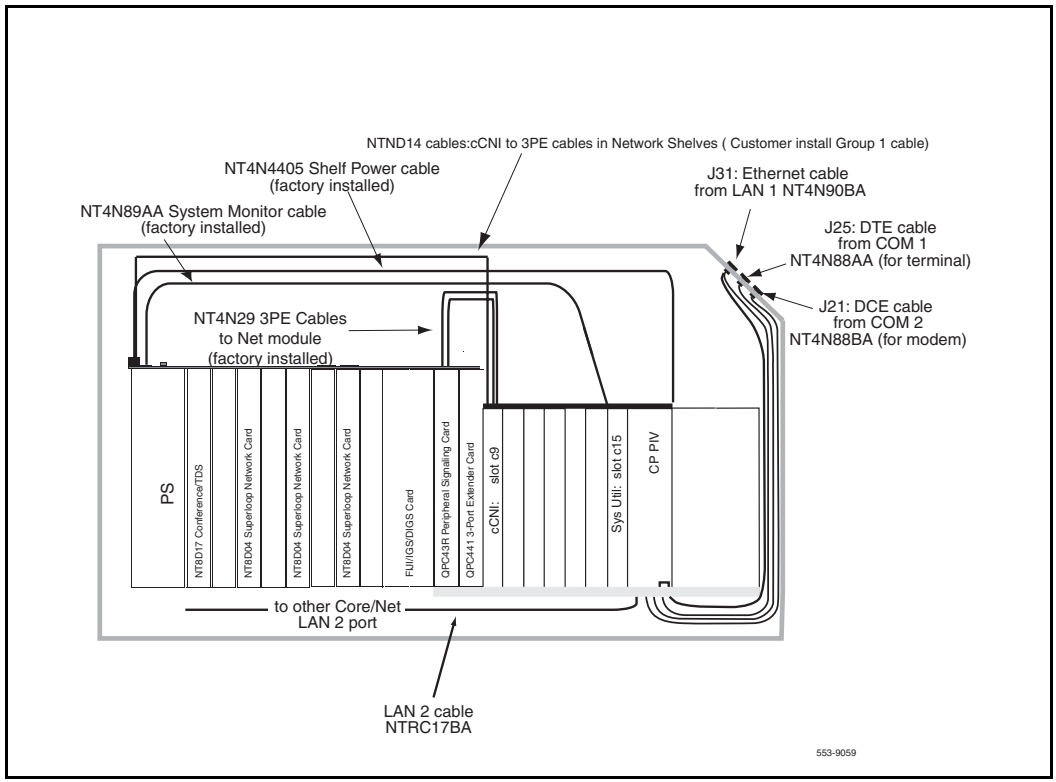
Check factory-installed cables

Table 20 lists factory-installed cables. See Figure 31.

Table 20
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

Figure 31
Core/Net cable connections



Install the Security Device

Procedure 36
Installing the Security Device

The Security Device fits into the System Utility card (see Figure 32 on page 137).

To install the Security Device:

1 If the original system had an IODU/C, remove the Security Device from the IODU/C for reuse.

   a. Unlock the latches and remove the IODU/C card.

   b. Remove the round 1/2” diameter IODU/C Security Device from the round black Security Device holder on the top right corner of the IODU/C card.

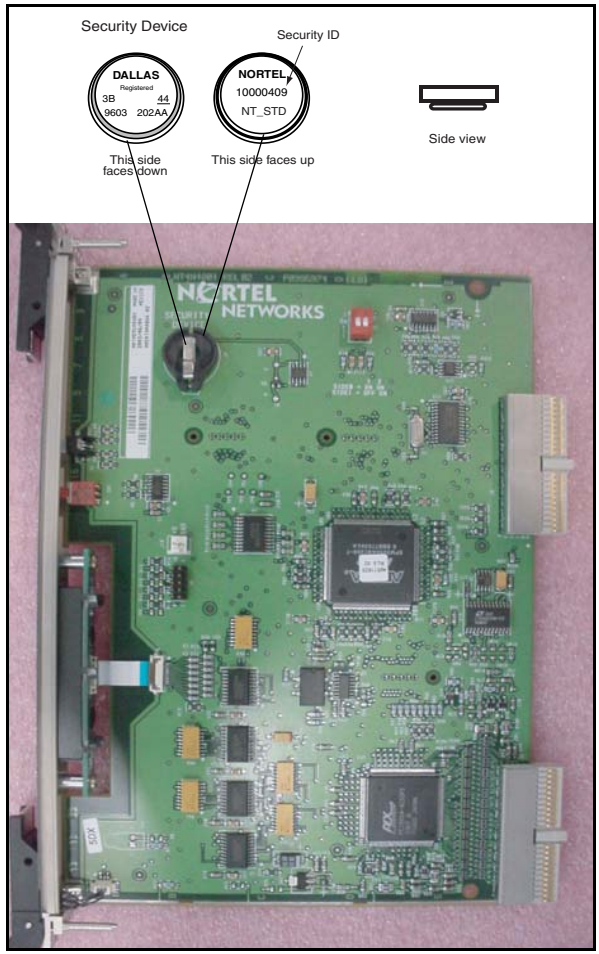
   OR

   If the original system did not have an IODU/C, use the Security Device provided with the CP PIV Software kit.

   Insert the Security Device into the Security Device holder on the System Utility card with the “Nortel” side facing up. Do not bend the clip more than necessary.

Check that the Security Device is securely in place.

Figure 32
Security Device



Install the CP card cage in Core 0

Procedure 37
Installing the CP card cage in Core 0

1 Check that the card cage is configured as Core 0. See Table 21 for instructions.

Table 21
Core module ID switch settings (System Utility card)

	Position 1	Position 2
Core/Net 0	On	On
Core/Net 1	Off	On

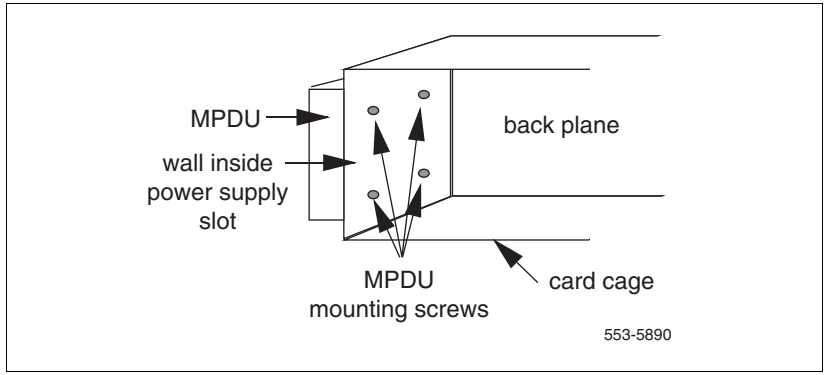
2 For AC-powered systems only, install the new MPDU (part of the CP PIV Upgrade kit) to the side on the NT4N40 card cage. The screws that secure the MPDU are accessible from the power supply slot. See Figure 33 on page 139.

Note: Prethread 2 bottom mounting screws at the back of the Core/Net shelf.

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 CP PIV card cage.

4 Slide the CP PIV card cage halfway into the module.

Figure 33
Location of the screws for the MPDU



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 fell into the base of the UEM module.

b. In DC-powered systems, connect the module power connectors to each other.

c. Attach the system monitor ribbon cables:

i. Connect the ribbon cable that goes down to the pedestal to connector J1 on the backplane.

ii. Connect the ribbon cable that goes up the column to J2 on the backplane.

d. Attach the green ground wire to the frame ground bolt on the module. (an 11/32” socket wrench is used to attach the wire.) 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, then tighten down the nut.

Note: For all of the wire terminals to fit on the bolt, remove one of the lock washers. Leave a lock washer at the bottom of the bolt and at the top of the bolt. Leave a third lock washer between the second and third, or the third and fourth, wire terminals.

e. 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” or 2/8” socket wrench.)

6 Slide the card cage all the way into the module.

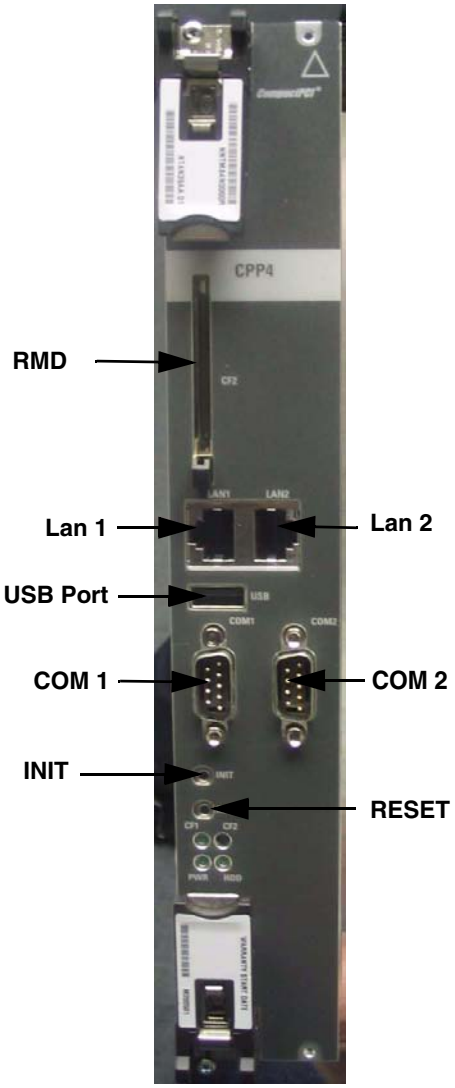
7 Check the position of the EMI shield. If the EMI shield has shifted, reposition it. Remove the tape holding the EMI shield.

8 Secure the card cage and EMI shield to the module re-using the existing screws.

9 Preroute cables NT4N88AA, NT4N88BA and NT4N90BA.

10 Connect the NTRC17BA cross over ethernet cable from LAN 2 on Core/Net 0 faceplate to LAN 2 on Core/Net 1 faceplate.

Figure 34
CP PIV call processor card (front)



End of Procedure

Unpack and install NT6D41CA (DC) or NT8D29BA (AC) Power Supply

Procedure 38
Installing the power supply

1. Unpack the power supply.
2. Faceplate-disable the power supply.
3. Insert power supply into Core/Net module power supply slot.

End of Procedure

Procedure 39
Relocating Network cards to CP PIV Core/Net 0

1. Move any existing cards from slots 0-11 of the old Core/Net 0 card cage to the same slots (0-11) in the new NT4N40 Core/Net 0 card cage.
2. Connect the tagged cables to the relocated cards.
3. When you move the 3PE card, check the switch settings and jumpers. See Table 15 on page 84.
   a. All 3PE cards must be vintage F or later.
   b. Check that the RN27 Jumper is set to “A”.

c. The settings for 3PE cards in Core/Net shelves are different from those in all other shelves. Table 22 shows the 3PE settings for cards installed in CP Core/Net Modules.

Table 22
QPC441 3PE Card installed in the NT4N40 Module

Jumper settings. Set Jumper RN27 at E35 to “A”.									
Switch Settings									
Module		D20 switch position							
NT4N40 (Option 81C CP PIV)		**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

Cable Core 0

Cable COM 1 and COM 2 to the I/O panel

1 Connect COM1 on the CP PIV faceplate to J25 on the I/O panel with cable NT4N88AA.

2 Connect COM2 on the CP PIV faceplate to J21 on the back of the I/O panel with cable NT4N88BA.

Connect a terminal and modem to the I/O panel

1 Connect J25 to a terminal for use during the upgrade. Use a separate terminal for each Core if available. J25 can also be connected to an A/B box to share a terminal between both Cores.

2 Connect J21 to the device connected in the original system (such as a modem or A/B box).

Connect LAN 1

The LAN 1 port is used to enable redundancy features between the two Core/Net modules. LAN 1 can also be connected to a local area network (LAN) for use with LAN based administration tools such as TM. The options for the LAN 1 connections are shown in Figure 35 on page 146.

Procedure 40
If the system is connected to a LAN

1 Connect the Dual Ethernet Adapter (RJ-45) for I/O Panel (NTRE40AA) to J31. Secure the adapter to J31 with the two screws included in the shipment. Insert the adapter from the inside of the I/O panel.

2 Connect LAN 1 (Ethernet) on the CP PIV faceplate to J31 (top) of the I/O panel with cable NT4N90BA. This connection can only be made *after* the Dual Ethernet Adapter is installed (see step 1 above).

3 Connect J31 to a LAN switch.

4 If a LAN switch is not available, connect J31 of Core 0 to J31 of Core 1 by NTRC17BA cable.

End of Procedure

Figure 35
Options for LAN 1 connection

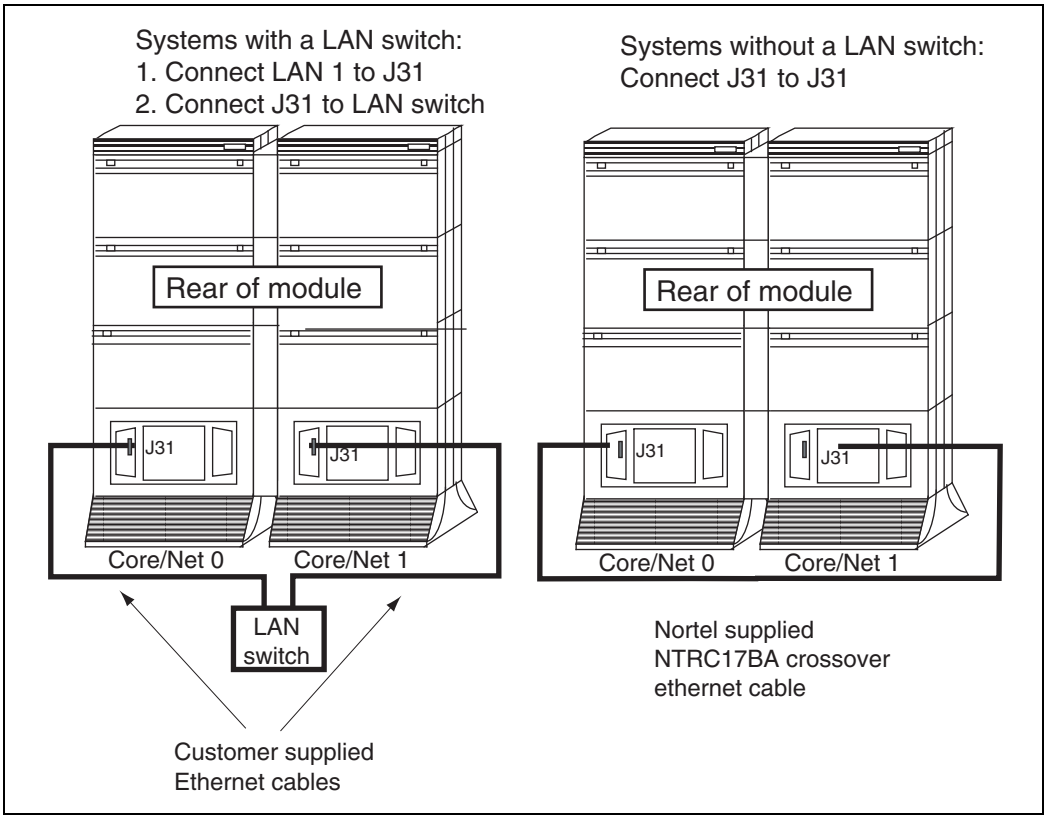
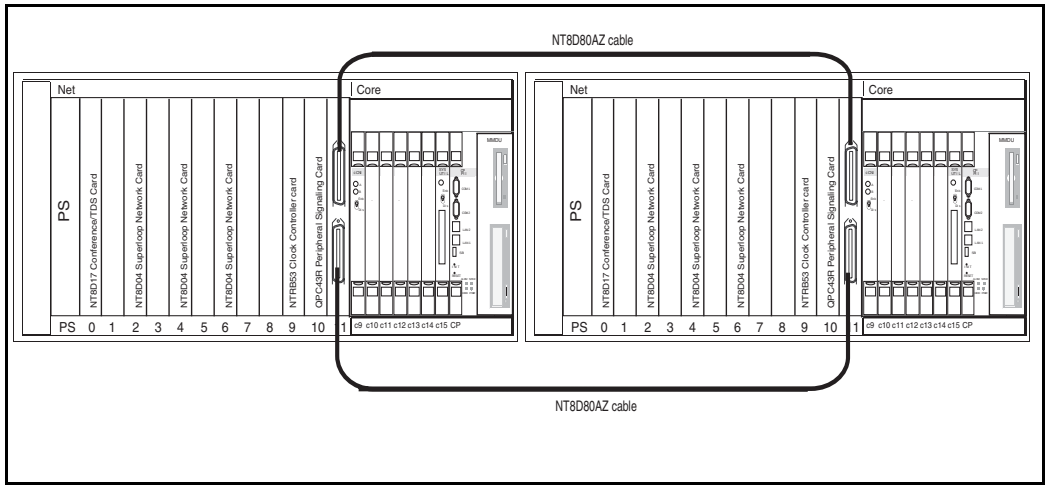


Figure 36
3PE card connections



In Core 0, inspect factory-installed cables

The NT4N29AA cables should be installed for the existing network group in Core/Net 0. If the system has XSDI cards, reinstall the cards and attach the cables. Inspect the system monitor cables (NT4N89).

Installing intermodule cables

Procedure 41
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 37 on page 148).

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 38 on page 149).

4 If the system has XSDI cards, reinstall the cards and attach the cables.

End of Procedure

Figure 37
Fanout Panel connections on the CP Core/Net backplane

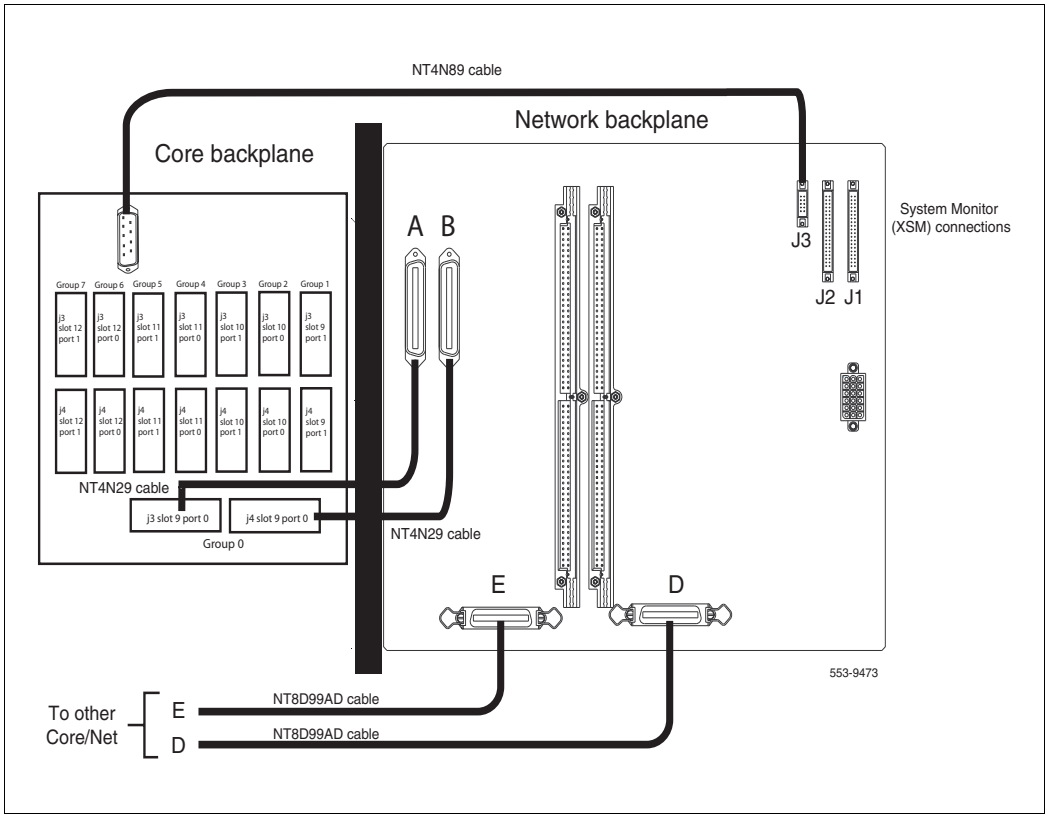
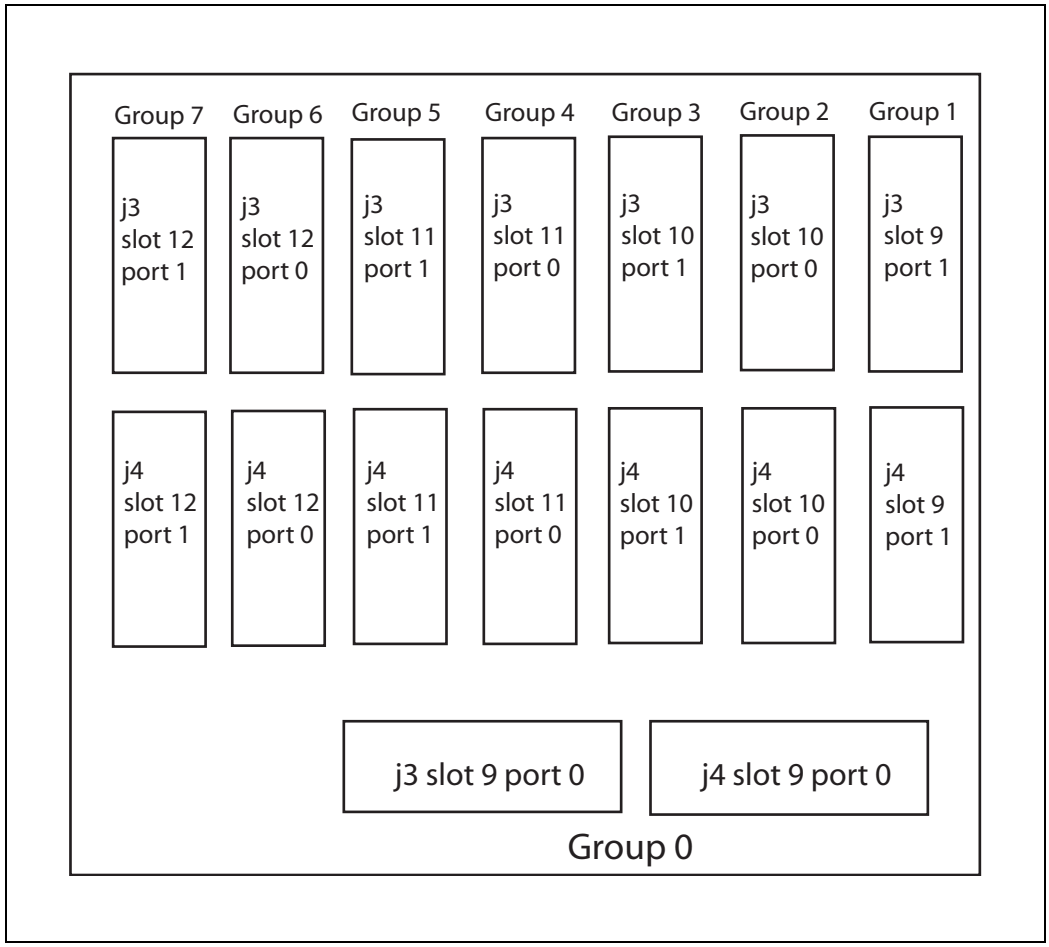


Figure 38
Fanout panel connectors



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.

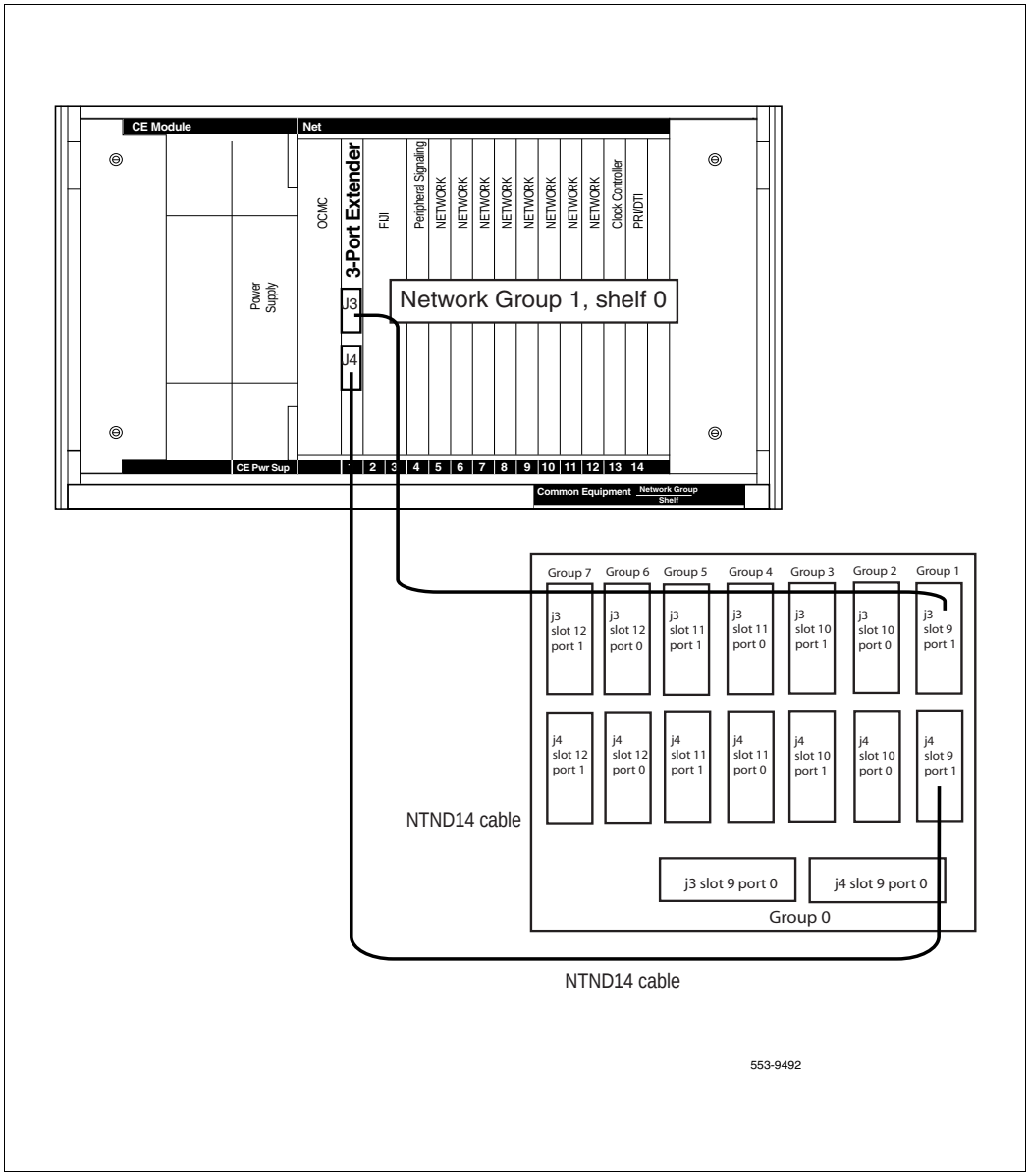
Table 23
Fanout Panel to 3PE card connectors

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 39 on page 151).

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 39 on page 151)

Figure 39
3PE Fanout Panel connections



Add Side 0 FIJI hardware

Procedure 42
Install Side 0 FIJI cards

1. Unpack the FIJI cards (NTRB33).
2. Faceplate-disable the NTRB33 cards.
3. Insert and seat the FIJI cards in all Side 0 shelves.

   Note: Double slot FIJI cards install in slots 2 and 3 of the Network modules, and slots 8 and 9 of the Core/Net modules. Single slot FIJI cards (with vintages later than NTRB33BBE5) install in slots 2 of the Network modules, and slots 9 of the Core/Net modules.

End of Procedure

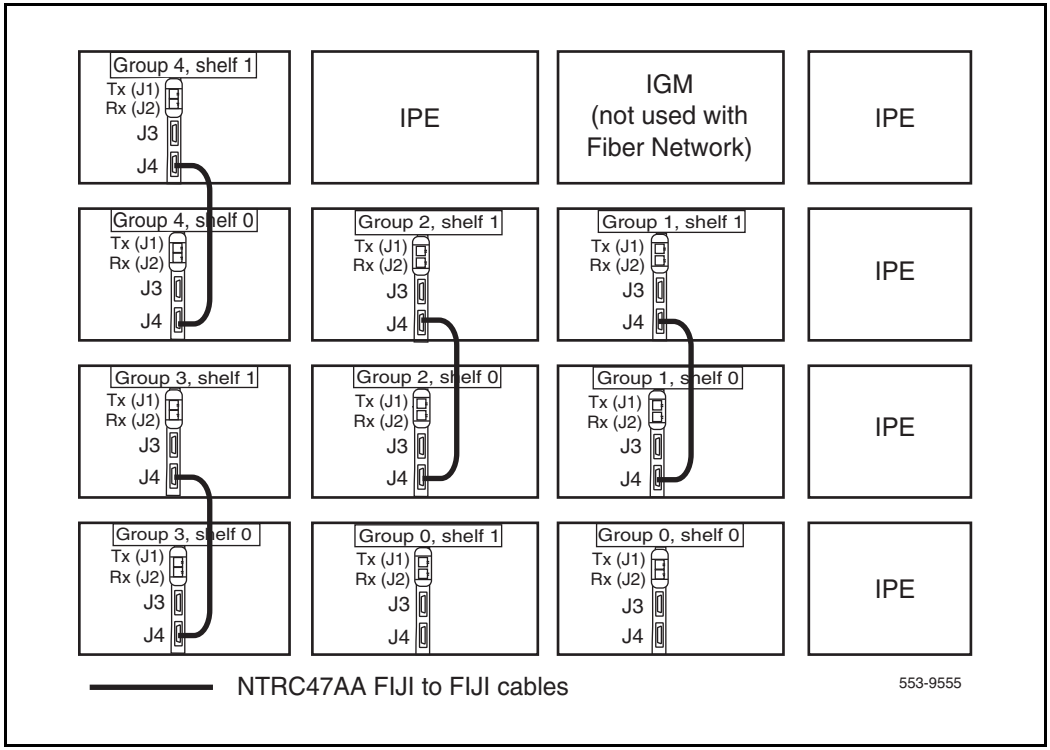
Procedure 43
Connect the FIJI to FIJI cables

1. Connect P1 of a NTRC47 FIJI to FIJI cable to J4 of the FIJI cards in each Network shelf 1, except group 0.
2. Connect P2 of a NTRC47 FIJI to FIJI cable to J4 of the FIJI cards in each Network shelf 0, except group 0.

   Note: The FIJI cards in Group 0 do not receive a FIJI to FIJI cable.

End of Procedure

Figure 3
FIJI shelf 0 to FIJI shelf 1 connections



Procedure 44
Connecting the shelf 0 FIJI Ring cables (ascending)

Create Fiber Ring 0. Connect the FIJI cards in all Network shelves 0 in **ascending** order, from Tx to Rx ports (see Figure 40 on page 155 and Figure 41 on page 157).

IMPORTANT!

The shortest Fiber Cable must always be used.

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.

Remove the black cap from the end of each cable before it is connected.

Note: Each end of the NTRC48xx cable is labeled “Tx” or Rx” in the factory.

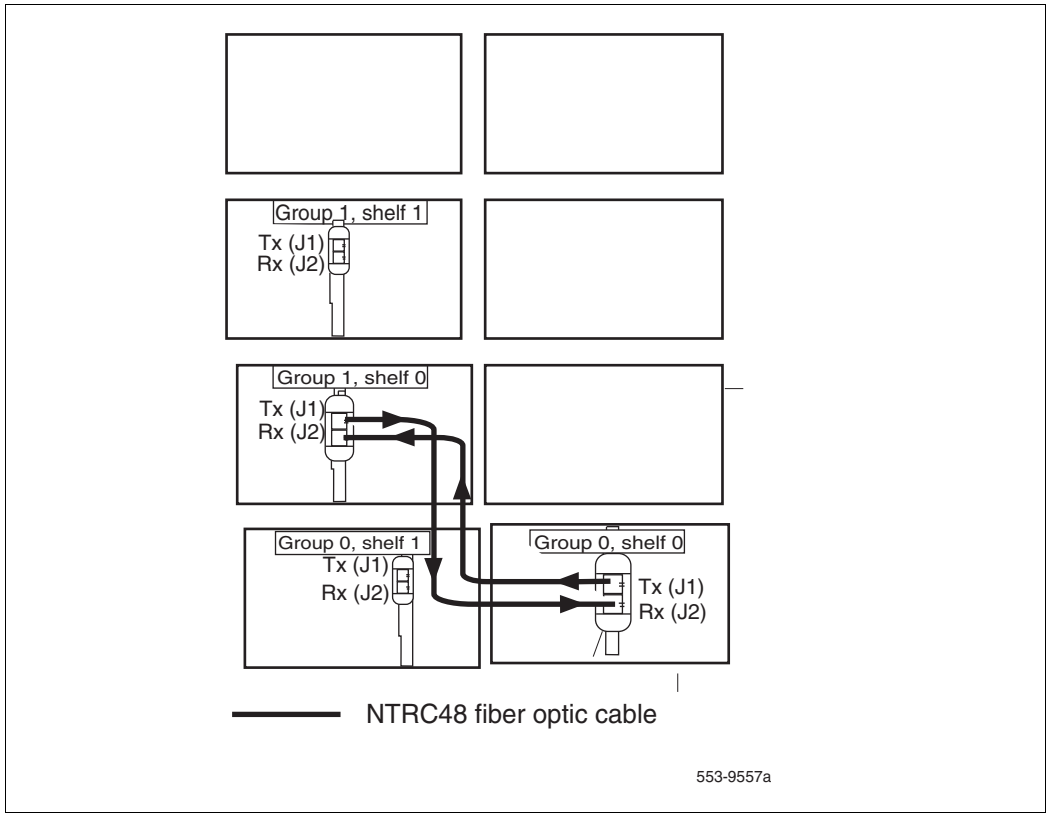
1 Start with group 0, shelf 0.

2 Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 0, shelf 0** to the Rx (J2) port of the FIJI card in **Group 1, shelf 0**.

3 Connect a NTRC48xx FIJI Fiber Ring cable of the appropriate length from the Tx (J1) port of the FIJI card in **Group 1, shelf 0** to the Rx (J2) port of the FIJI card in **Group 2, shelf 0**.

4 Continue to connect NTRC48xx FIJI Fiber Ring cables of the appropriate length from the Tx (J1) port to the Rx (J2) port in shelf 0 of each Network group. Connect these cables in **ascending** order of Network groups.

Figure 40
Shelf 0 as*cending* fiber optic Ring (Meridian 1 Option 81C 2 group example)



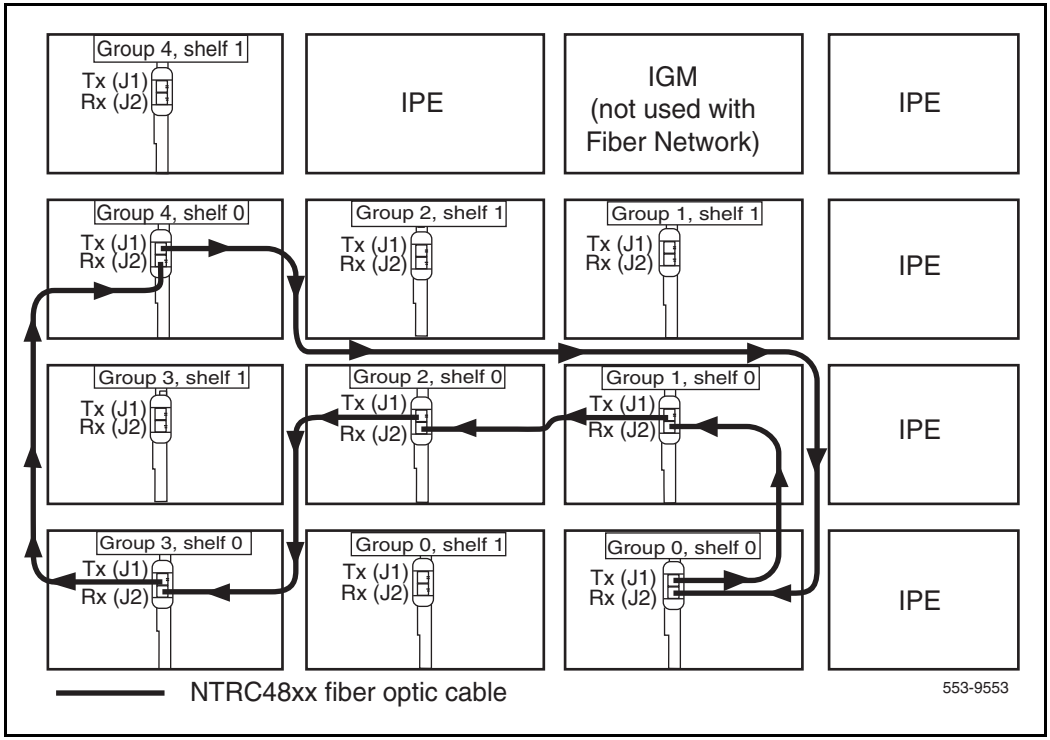
5 To complete the Ring, connect a final cable from the Tx (J1) port in the **highest number group** back to the Rx (J2) port in **Group 0, shelf 0.**

Table 24
FIJI Ring 0 connections

Groups X - 0 are cabled in ascending order		
Group/Shelf	**FIJI Connector**	**Tx/Rx**
0/0	P1	Tx
1/0	P2	Rx
1/0	P1	Tx
2/0	P2	Rx
2/0	P1	Tx
3/0	P2	Rx
3/0	P1	Tx
4/0	P2	Rx
4/0	P1	Tx
5/0	P2	Rx
5/0	P1	Tx
6/0	P2	Rx
6/0	P1	Tx
7/0	P2	Rx
7/0	P1	Tx
0/0	P2	Rx

End of Procedure

Figure 41
Shelf 0 *ascending* fiber optic Ring (Meridian 1 Option 81C 5 group example)



Procedure 45
Cabling the Clock Controllers to FIJI card

Connect the cables to the Clock Controllers as shown in Figure 42 on page 158:

1 Connect the Clock 0 to FIJI cable:

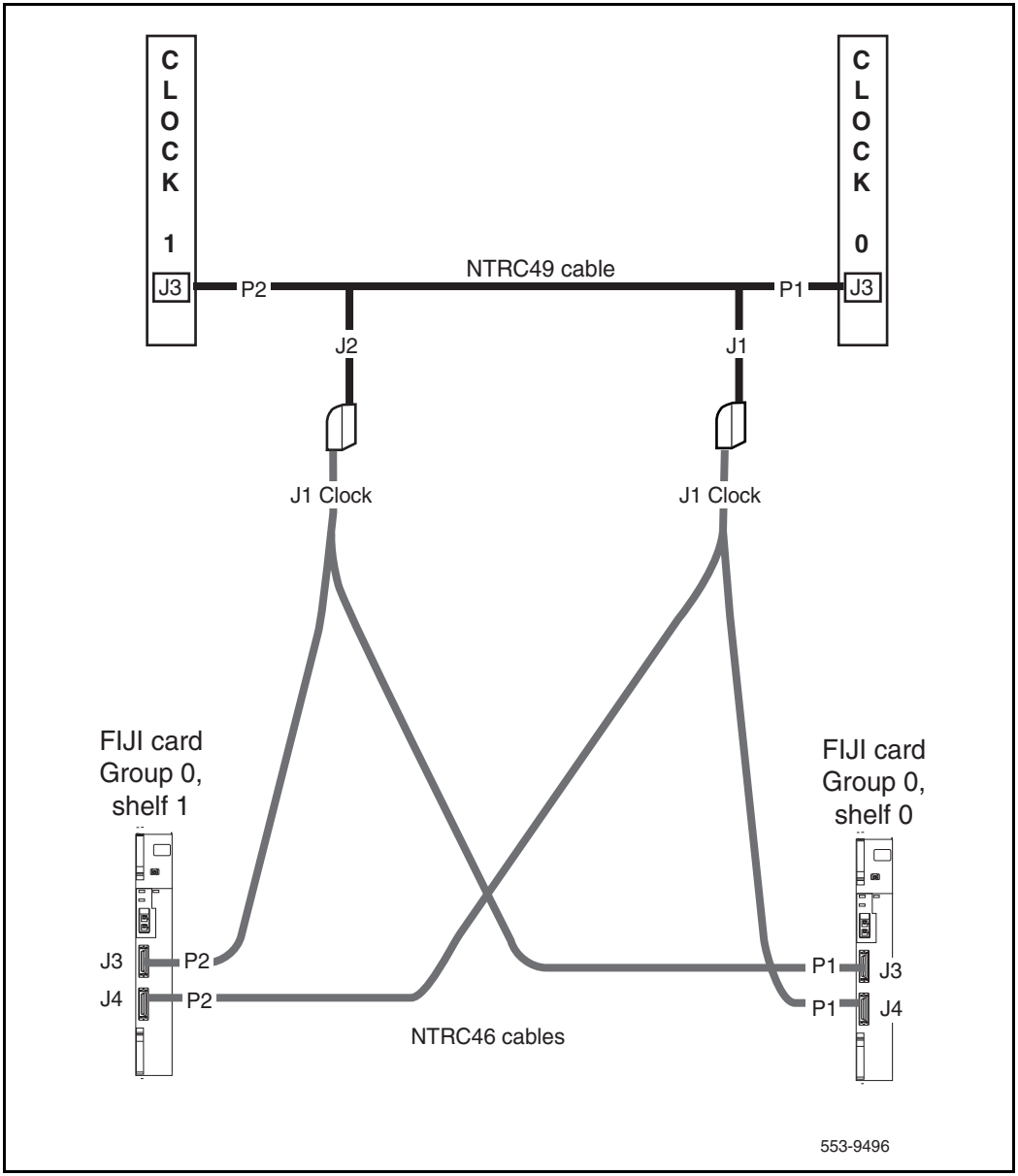
a. Connect P1 of the NTRC46 cable from Clock 0 to **J4** of the FIJI card in group 0, **shelf 0**.

2 Connect the Clock 1 to FIJI cable:

a. Connect P1 of the NTRC46 cable from Clock 1 to **J3** of the FIJI card in group 0, **shelf 0.**

End of Procedure

Figure 42
Clock Controller cable configuration



Power up Core 0

Procedure 46
Preparing for power up

1 Confirm that a terminal is connected to the J25 I/O panel connector on Core/Net 0.

Note: A maintenance terminal is required to access the Core/Net modules during the upgrade.

2 Connect a terminal to the J25 port on the I/0 panel in Core 0.

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, the terminal will have to 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 Seat and Faceplate-enable Clock Controller 0 and ALL FIJI on Shelf 0.

5 Faceplate-enable all core and network cards.

End of Procedure

Power up Core cards

Procedure 47
Powering up core cards

1 Verify that the NTRC17BA crossover ethernet cable is connected from the faceplate of CPU 0 to the faceplate of CPU 1.

2 For AC-powered systems (NT8D29BA): set the MPDU circuit breaker located at the left end of the module to ON (top position).

3 For DC-powered systems: faceplate-enable the NT6D41CA power supply and then set the breaker for the Core 0 module in the back of the column pedestal to ON (top position).

Core/Net 1 is now active. All network cards in Core/Net 0 and Core/Net 1 are enabled.

End of Procedure

Procedure 48
Testing Core/Net 1

1 Check dial-tone.

2 Test the Fiber Rings

See the *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
ENL RING 0	Enable Ring 0
STAT RING 0	Check the status of Ring 0 (HALF/HALF)
STAT RING 1	Check the status of Ring 1 (HALF/HALF)

b. Restore the Rings to Normal State:

RSET	Reset both Rings
RSTR	Restore both Rings to HALF state
ARCV ON	Turn Auto Recovery on

c. Check that the Rings operate correctly:

STAT RING 0	Check status of Ring 0 (HALF/HALF)
STAT RING 1	Check status of Ring 1 (HALF/HALF)
********	Exit program

3 Stat network cards:

LD 32	Load program
STAT x	Stat the network card, where x = loop number
********	Exit program

4 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 Clock (if necessary)
********	Exit program

b. Verify that the clock controllers are switching correctly:

SWCK	Switch Clock
	Note: You must wait a minimum of one minute for clocks to synchronize.
SWCK	Switch Clock again
********	Exit program

5 Stat D-channels:

LD 96	
STAT DCH	Stat all D-channels
****	Exit program

6 Stat all T1 interfaces:

LD 60	
STAT	Stat all DTI and PRI
****	Exit program

7 Stat network cards:

LD 32	
STAT x	x = loop number
****	Exit program

8 Print status of all controllers:

LD 97	
REQ	PRT
TYPE	XPE (returns status of all controller cards)
****	Exit program

9 Make internal, external and network calls.

10 Check attendant console activity.

11 Check DID trunks.

12 Check applications.

End of Procedure

CS 1000 Release 6.0 upgrade

Upgrading the software

Procedure 49 outlines the steps involved in installing CS 1000 Release 6.0 for the CP PIV processor.

Procedure 49
Upgrading the software

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: 8
   - **d.** Parity: none
   - **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...
```

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>
```

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 keycode to be used on the system.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 If the keycode matches, enter <CR> 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 14 on page 173.

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 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
M3900 series sets.

************************************************
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 upgrade.

       <n> - No, stop upgrade. 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.

This will  create  all  necessary  directories and
pre-allocate files on the hard disk.

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.

End of Procedure

Verifying the upgraded database

Procedure 50
Verifying the upgraded database

1 Print ISSP (system software issue and patches)

LD 22	Load program
REQ	ISSP
********	Exit program

Core 1 is now active, clock 1 is active, FIJI 1 is half/half, CNI is disabled in Core 0. The system is in split mode.

End of Procedure

Making the system redundant

At this point, Core/Net 0 is ready to be synchronized with Core/Net 1.

Procedure 51
Making the system redundant

1 On Core 1 (the active Core), enter LD 135 and issue the JOIN command. The high speed pipe (HSP) status is now up. This begins the synchronization of the Call Servers.

LD 135	Load program
JOIN	Join the 2 CPUs together to become redundant

2 Once the synchronization of memories and drives is complete, STAT the CPU and verify that the CPUs are in a true redundant state.

LD 135	
STAT CPU	Get status of CPU and memory
********	Exit the program

```
.stat cpu


cp 0 16 PASS -- STDBY


TRUE REDUNDANT
DISK STATE = REDUNDANT
HEALTH  = 20
VERSION = Mar  3 2005, 16:26:40
 Side = 0, DRAM SIZE = 512 MBytes


cp 1 16 PASS -- ENBL


TRUE REDUNDANT
DISK STATE = REDUNDANT
HEALTH = 20
VERSION = Mar  3 2005, 16:26:40
 Side = 1, DRAM SIZE = 512 MBytes
```

3 Tier 1 and Tier 2 health of both Cores must be identical in order to successfully switch service from Core 1 to Core 0 CPUs.

LD 135

STAT HEALTH	Get status of CPU and memory
********	Exit the program

```
.stat health
Local (Side 0, Active, Redundant):
Components without TIER 1 Health contribution:
================================================
     disp 0 15 1:In Service
     sio2 0 15 1:In Service
          cp 0 16:In Service
            ipb 0:In Service
TIER 1 Health Count Breakdown:
====================================
     sio8 0 16 1: 0002
     sio8 0 16 2: 0002
       sutl 0 15: 0002
       strn 0 15: 0002
     xsmp 0 15 1: 0002
     cmdu 0 16 1: 0008
      eth 0 16 0: 0002
Local TIER 1 Health Total: 20
```

```
TIER 2 Health Count Breakdown:

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

ELAN 16 IP : 47.11.138.150 Health = 2

ELAN 17 IP : 47.11.138.153 Health = 2


Local AML over ELAN Total Health:4

Local Total IPL Health = 6


IPL connection history:3 3 3 3 3 3 3 3 3 3 3 3 3
3 3 3 3 3


Local TIER 2 Health Total:10


Remote (Side 1, Inactive, Redundant):

Components without TIER 1 Health contribution:

     disp 1 15 1:In Service

     sio2 1 15 1:In Service

         cp 1 16:In Service

           ipb 1:In Service

TIER 1 Health Count Breakdown:

     sio8 1 16 1: 0002
     sio8 1 16 2: 0002
      sutl 1 15: 0002
      strn 1 15: 0002
      xsmp 1 15 1: 0002
      cmdu 1 16 1: 0008
       eth 1 16 0: 0002

Remote TIER 1 Health Total: 20
```

```
TIER 2 Health Count Breakdown:

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

ELAN 16 IP : 47.11.138.150 Health = 2

ELAN 17 IP : 47.11.138.153 Health = 2


Remote AML over ELAN Total Health:4

Remote Total IPL health = 6


Remote TIER 2 Health Total:10
```

The system is now operating in full redundant mode with Core/Net 1 active.

Note: 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 is not service affecting. Depending on the number of groups installed, this process may take up to 20 minutes per ring.

Note: The single slot FIJI (NTRB33BBE5) packs require a different firmware than the double slot FIJI packs. Double slot and single slot firmware is available on the system hard drive. Each FIJI card downloads the required firmware based on the FIJI card ID information.

End of Procedure

Completing the CP PIV upgrade

LD 137

The CMDU/MMDU commands are not applicable to CP PIV. Instead, the following commands are used in LD 137.

- STAT FMD
  display text: **Status of both Fixed Media Devices (FMD)**
  command parameter: none
- STAT FMD
  display text: **Status of the specified Fixed Media Device**
  command parameter: “core #” with values of 0 or 1
- STAT RMD
  display text: **Status of both Removable Media Devices (RMD)**
  command parameter: none
- STAT RMD
  display text: **Status of the specified Removable Media Device**
  command parameter: “core #” with values of 0 or 1

Testing the Cores

Procedure 52
Testing Core/Net 1

At this point in the upgrade, Core/Net 0 is tested from active Core/Net 1. Upon successful completion of these tests, call processing is switched and the same tests are performed on Core/Net 1 from active Core/Net 0. As a final step, call processing is then switched again to Core/Net 1.

From Core/Net 1, perform these tests:

1 Perform a redundancy sanity test:

LD 135	Load program
STAT CPU	Get status of CPU and memory
TEST CPU	Test CPU

2 Test the System Utility card and the cCNI cards:

LD 135	Load program
STAT SUTL	Get the status of the System Utility card
TEST SUTL	Test the System Utility card
STAT CNI c s	Get status of cCNI cards (core, slot)
TEST CNI c s	Test cCNI (core, slot)

3 Test system redundancy:

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	Test database integrity
STAT FMD	Status of one or both Fixed Media Devices (FMD)
STAT RMD	Status of one or both Removable Media Devices (RMD)

4 Install the two system monitors. Test that the system monitors are working:

LD 37	Load program
ENL TTY x	Enable the XMS, where x= system XMS

STAT XSM	Check the system monitors
********	Exit program

5 Clear the display and minor alarms on both Cores:

LD 135	Load program
CDSP	Clear displays on the cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

6 Test the clocks:

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load program
SSCK *x*	Get 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 Clock
	Note: You must wait a minimum of one minute for clocks to synchronize.
SWCK	Switch Clock again

7 Test the Fiber Rings:

See *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)

8 Check the status of the FIJI alarms:

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups
****	Exit program

9 Check applications.

10 Check dial tone.

End of Procedure

Switching call processing

Procedure 53
Switching call processing

LD 135	Load program
SCPU	Switch call processing from Core/Net 1 to Core/ Net 0

Core/Net 0 is now the active call processor.

Procedure 54
Testing Core/Net 0

From Core/Net 0, perform these tests:

1 Perform a redundancy sanity test:

LD 135	Load program
STAT CPU	Get status of CPU and memory
TEST CPU	Test CPU

2 Test the System Utility card and the cCNI cards:

LD 135	Load program
STAT SUTL	Get the status of the System Utility card
TEST SUTL	Test the System Utility card
STAT CNI c s	Get status of cCNI cards (core, slot)
TEST CNI c s	Test cCNI (core, slot)

3 Test system redundancy:

LD 137	Load program
TEST RDUN	Test redundancy
DATA RDUN	Test database integrity
STAT FMD	Status of one or both Fixed Media Devices (FMD)
STAT RMD	Status of one or both Removable Media Devices (RMD)

4 Install the two system monitors. Test that the system monitors are working:

LD 37	Load program
ENL TTY x	Enable the XMS, where x= system XMS
STAT XSM	Check the system monitors
********	Exit program

5 Clear the display and minor alarms on both Cores:

LD 135	Load program
CDSP	Clear displays on the cores
CMAJ	Clear major alarms
CMIN ALL	Clear minor alarms

6 Test the clocks:

a. Verify that the clock controller is assigned to the *active* Core:

LD 60	Load program
SSCK *x*	Get 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 Clock
	Note: You must wait a minimum of one minute for clocks to synchronize.
SWCK	Switch Clock again

7 Test the Fiber Rings:

See *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)

8 Check the status of the FIJI alarms:

STAT ALRM	Query the alarm condition for all FIJI cards in all Network Groups
****	Exit program

9 Check applications.

10 Check dial tone.

End of Procedure

Switch call processing

Procedure 55
Switching call processing

LD 135	Load program
SCPU	Switch call processing from CoreNet 0 to CoreNet 1

Core/Net 1 is now the active call processor.

Perform a customer backup data dump (upgraded release)

Procedure 56
Performing a data dump to backup the customer database:

1 Log into the system.

2 Insert a CF card into the active Core/Net RMD slot to back up the database.

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

LD 43	Load program.
.	EDD

4 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.

5 When “DATADUMP COMPLETE” and “DATABASE BACKUP COMPLETE” appear on the terminal, enter:

****	Exit program

The Meridian 1 Option 61C upgrade to Meridian 1 Option 81C CP PIV with FNF is complete.

Installing a CP PM or COTS server

Contents

This chapter contains the following topics:

Introduction

This chapter contains general instructions to install and connect the Nortel Common Processor Pentium Mobile (CP PM) circuit card hardware. This chapter also contains only general instructions to connect Commercial off-the-shelf (COTS) servers. Detailed installation instructions for COTS servers are not included in this document. For more information COTS server installs, see the IBM, HP, or Dell server user guide provided by the manufacturer.

A Nortel CP PM or COTS server that you deploy with Signaling Server applications is referred to as a Signaling Server. A Nortel 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.

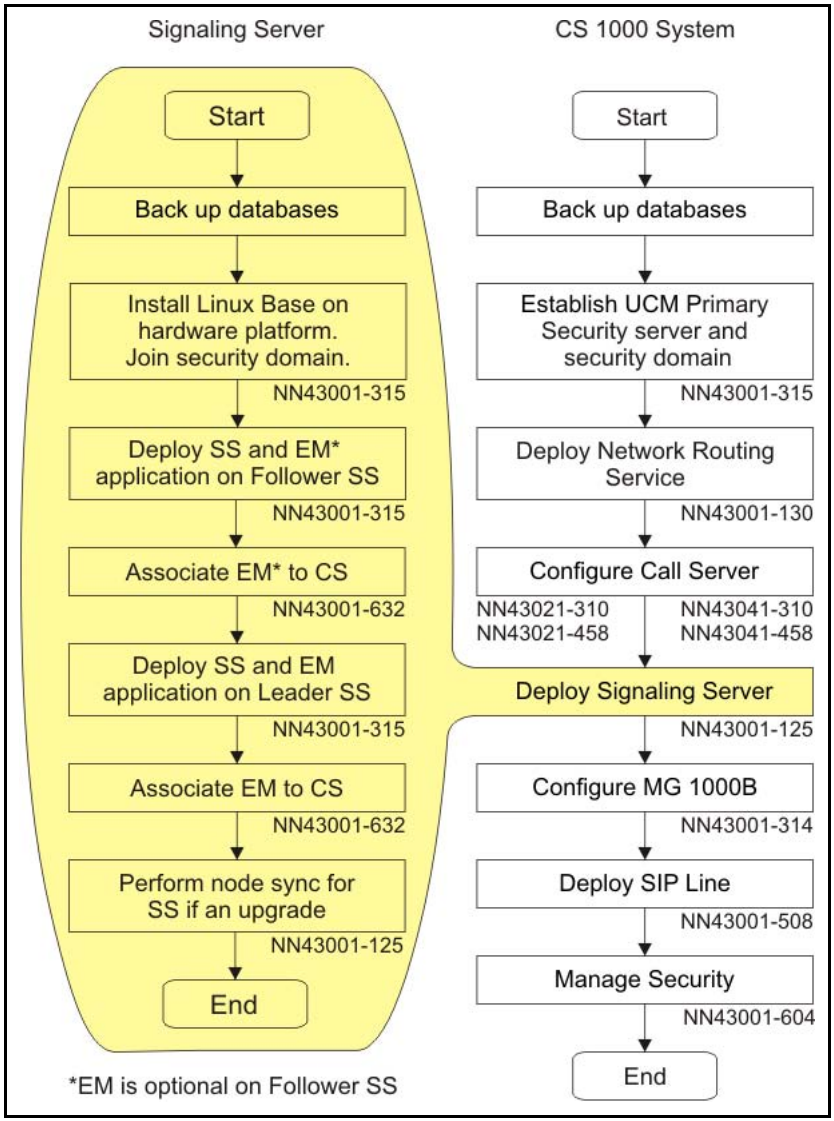
Signaling Server task flow

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

For more information refer to the following NTPs, which are referenced in Figure 43 on page 197:

- *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)
- *Element Manager: System Administration* (NN43001-632)
- *Signaling Server IP Line Applications Fundamentals* (NN3001-125)

Figure 43
Signaling Server task flow



Readiness checklist

Before installing a CP PM or COTS 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 25
Readiness checklist (Part 1 of 2)

Have you:	
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?	
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 a CS 1000M Nortel CP PM (NTDW66AAE5 model)** • NTM427CBE6: CP PM Signaling Server Linux Upgrade kit, which includes — NTDW6102E5: CP PM Signaling Server Hard Drive kit (Linux OS preloaded) — NTM42703: 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF — NTDW6109E6: 1 GB DDR SO-DIMM memory upgrade • NTAK19ECE6: CP PM Signaling Server 2 port SDI Cable assembly kit • NTDW69AAE5: CP PM Signaling Server Large System Cabling kit • N0106745: CP PM Signaling 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.	
Make sure the area meets all environmental requirements?	
Check for all power requirements?	
Verify the CP PM or COTS hardware meets all required specifications (2GB ram, 40GB hard drive, CP PM BIOS version 18 or higher)?	
Check for correct grounding facilities?	

Table 25
Readiness checklist (Part 2 of 2)

Have you:	
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?	

Installing the CP PM hardware

The Nortel CP PM server is a circuit card and is not mounted in a rack. This section contains instructions to install a Nortel CP PM circuit card in a Communication Server 1000M system.

This section contains only general instructions to install the CP PM circuit card in Communication Server 1000M systems. For more detailed installation instructions, see *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

The NTDW66AAE5 model of the Nortel CP PM is for use in a Communication Server 1000M system. The first task that you must perform is to install the hard drive shipped with the server or Linux upgrade kit. For instructions, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

You can insert the NTDW66AAE5 model into any slot of a Communication Server 1000M Universal Equipment Module (UEM) except slot 7. The External Peripheral Equipment Controller (XPEC) is next to slot 7 and prevents the double wide faceplate of the NTDW66AAE5 model 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 Nortel CP PM 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.

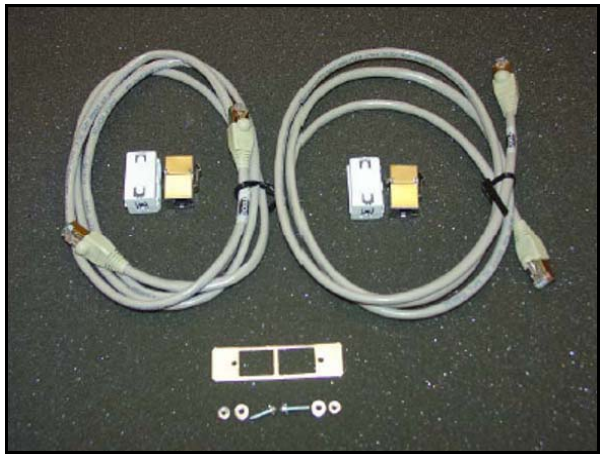
IMPORTANT!

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 57
Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM

1 Obtain the special cabling kit (NTDW69AAE5) shipped with the NTDW66AAE5 model of the Nortel CP PM Signaling Server. The NTDW69AAE5 cabling kit includes the items shown in Figure 44.

Figure 44
NTDW69AAE5 Cabling Kit contents

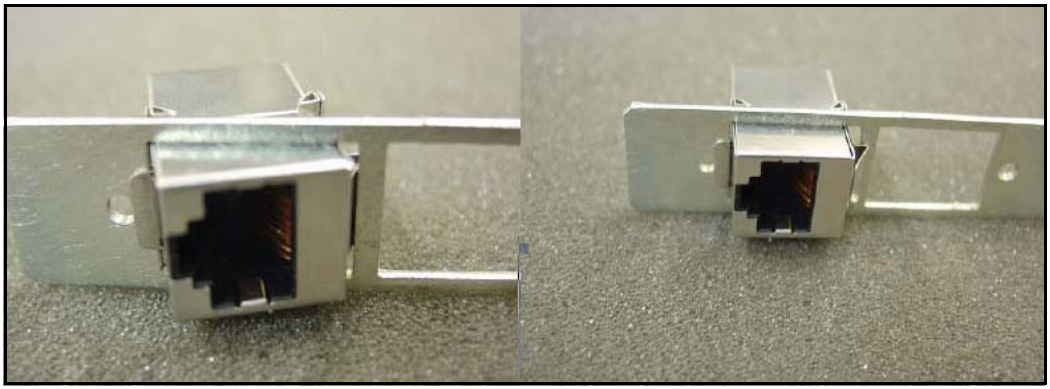


The following is a list of items in the NTDW69AAE5 cabling kit:

- 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

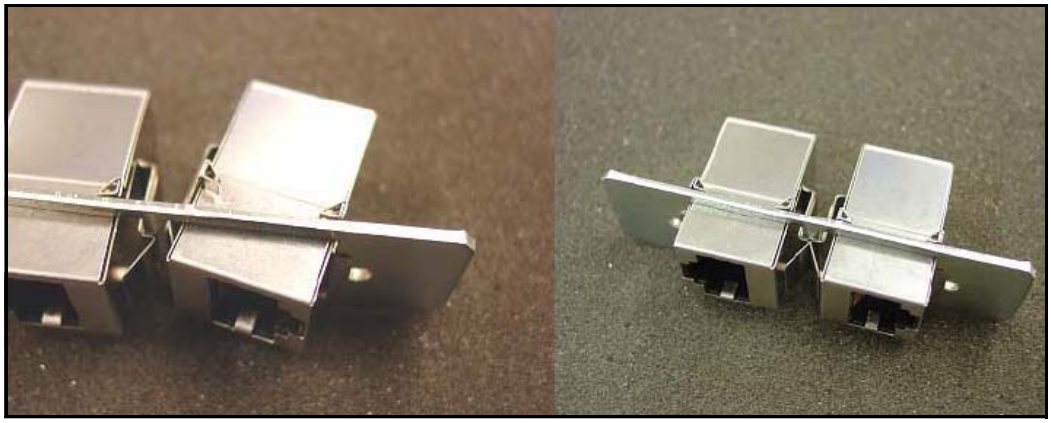
2 Insert an Ethernet port coupler into the adapter plate. See Figure 45.

Figure 45
One Ethernet port coupler in adapter plate



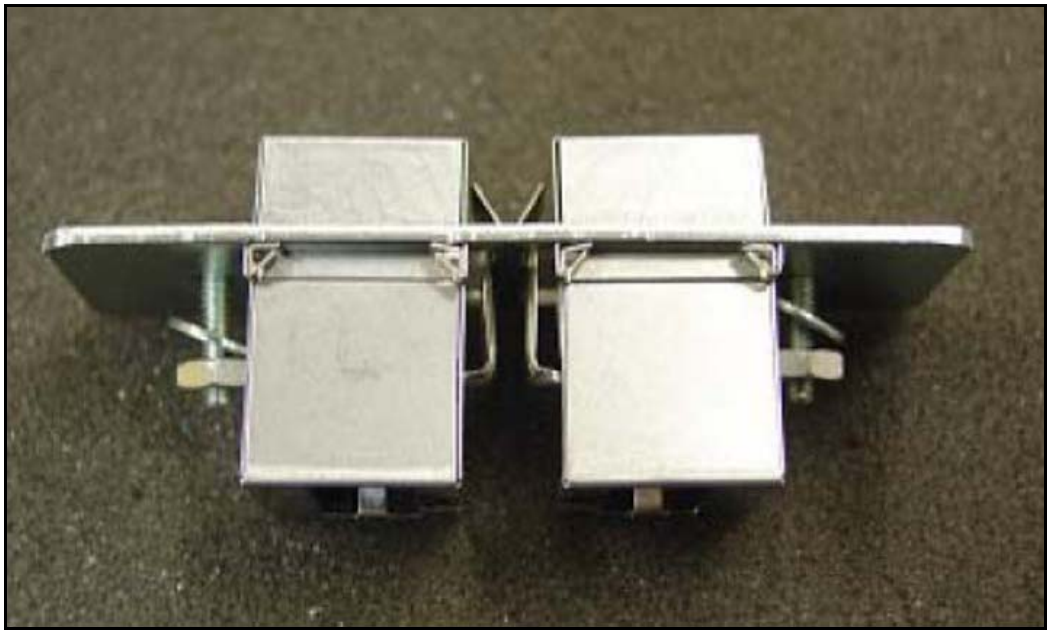
3 Insert the other Ethernet port coupler into the adapter plate. See Figure 46 on page 204.

Figure 46
Two Ethernet port couplers in adapter plate



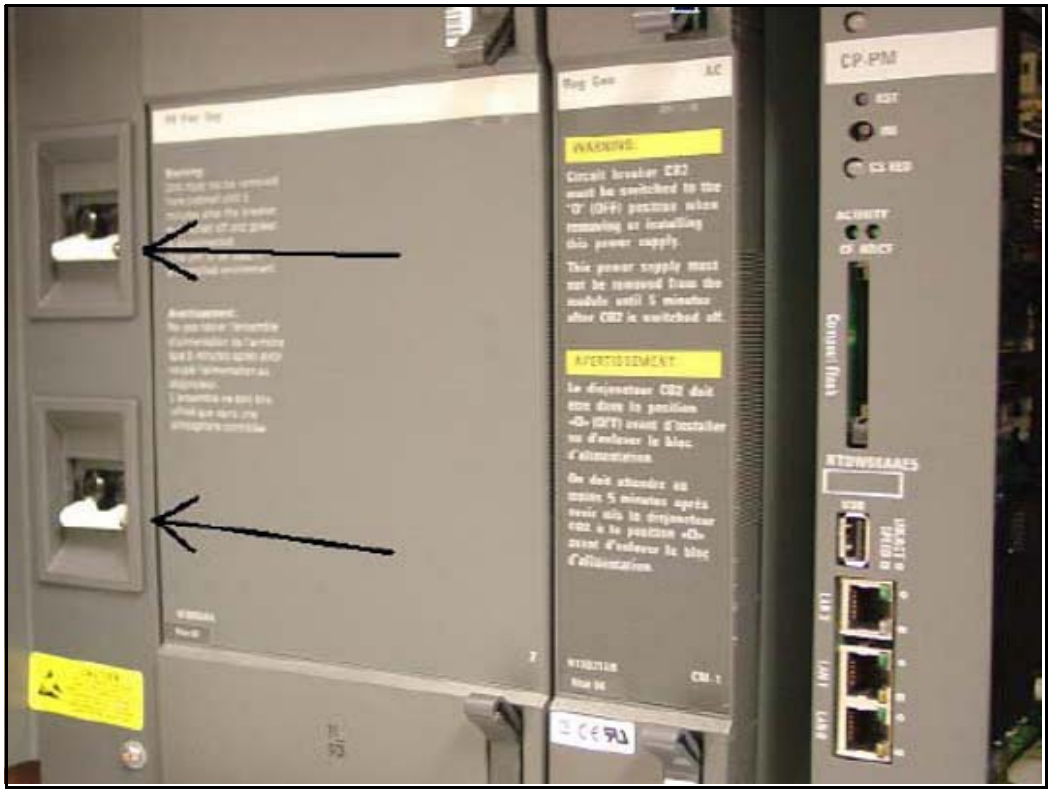
4 Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 47.

Figure 47
One Ethernet port coupler in adapter plate



5 Switch off the UEM power supplies. See Figure 48.

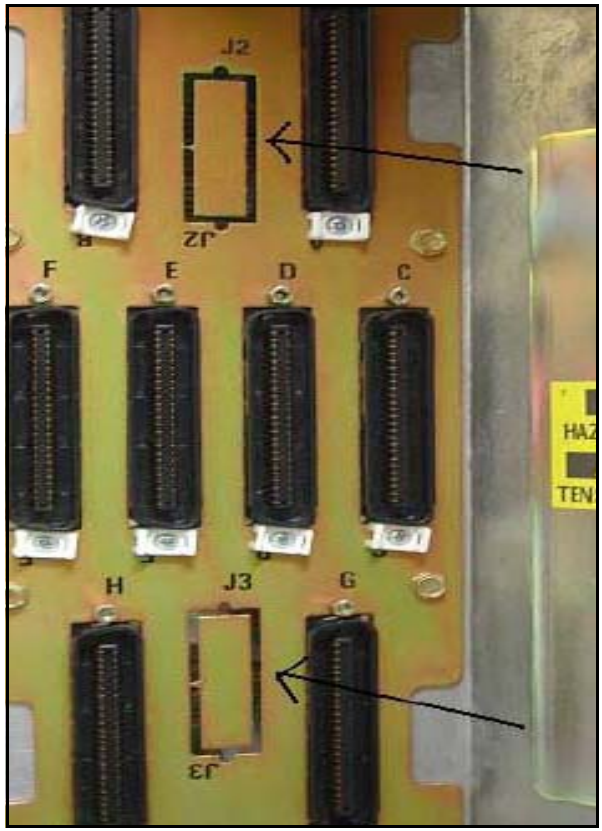
Figure 48
Shut down UEM power supplies



6 Select one of the J2-J5 knock-out plates on the back of the UEM. See Figure 49.

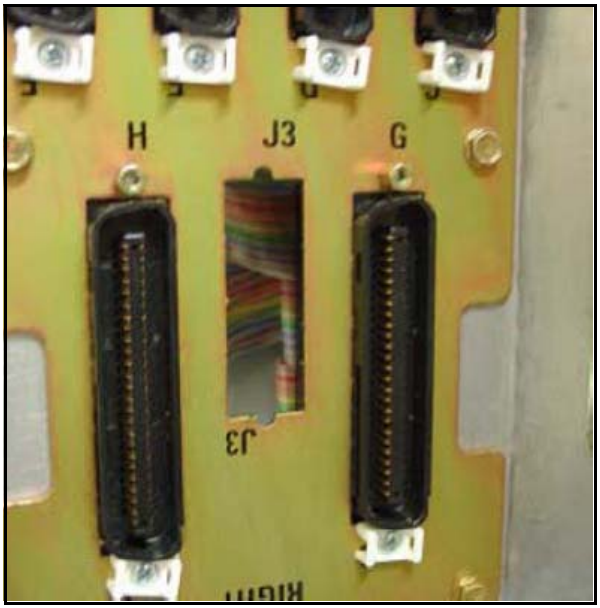
Note: For DC powered systems, turn off the breakers in the pedestal not on the shelf.

Figure 49
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 50.

Figure 50
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 51 and Figure 52.

Figure 51
ELAN connection on faceplate

Figure 52
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 53 and Figure 54.

Figure 53
TLAN connection on faceplate

Figure 54
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 55.

Figure 55
Installed Ethernet port adapter plate

11 Attach the ferrite beads to the Ethernet patch cables.See Figure 56.

Figure 56
Attached Ethernet patch cable ferrite beads

End of Procedure

Connections

This section contains connection information.

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!

Nortel CP PM servers are powered through the backplane of the Media Gateway, Universal Equipment Module, or 11C cabinet into which they are installed and do not require a power cord.

Before connecting a CP PM or COTS server, ensure that you have the following materials on-hand.

Table 26
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.	
NTAK19EC cable (if you are connecting a Nortel CP PM)? 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.	
CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets?	

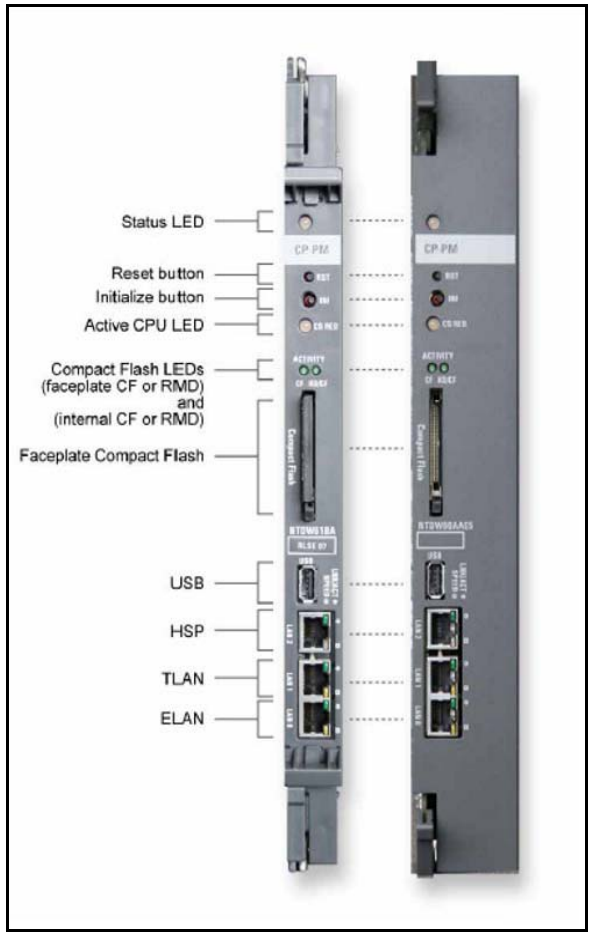
Connecting a Nortel CP PM Signaling Server

This section contains instructions to connect a NTDW66AAE5 Nortel CP PM Signaling Server to the ELAN and TLAN subnet of a CS 1000M system. It also contains instructions to connect a maintenance terminal to the Nortel CP PM Signaling Server.

The NTDW66AAE5 model of the Nortel CP PM Signaling Server is for use in a Communication Server 1000M system. The Nortel CP PM Signaling Server 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 Nortel CP PM Signaling Server to connect to the ELAN and TLAN subnets of your Communication Server 1000 system (see Procedure 57: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 202.)

Figure 57 shows the faceplates of the two models of the Nortel CP PM Signaling Server with labeling for all components (NTDW61BAE5 on the left and NTDW66AAE5 on the right).

Figure 57
Faceplates of the Nortel CP PM server



Perform Procedure 58 to connect a Nortel CP PM Signaling Server (model NTDW66AAE5) to the ELAN and TLAN subnets of a Communication Server 1000M system.

IMPORTANT!

Connecting a Nortel CP PM Signaling Server to the ELAN and TLAN subnets of a CS 1000M system causes a service disruption.

Procedure 58
Connecting a CP PM Signaling Server 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 57: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 202.
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 57: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on page 202.
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 a Nortel CP PM Signaling Server, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Connecting an IBM COTS server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the IBM COTS server into an AC surge suppressor.

Figure 58 shows the rear view of the IBM X306m server.

Figure 58
IBM X306m (rear view)

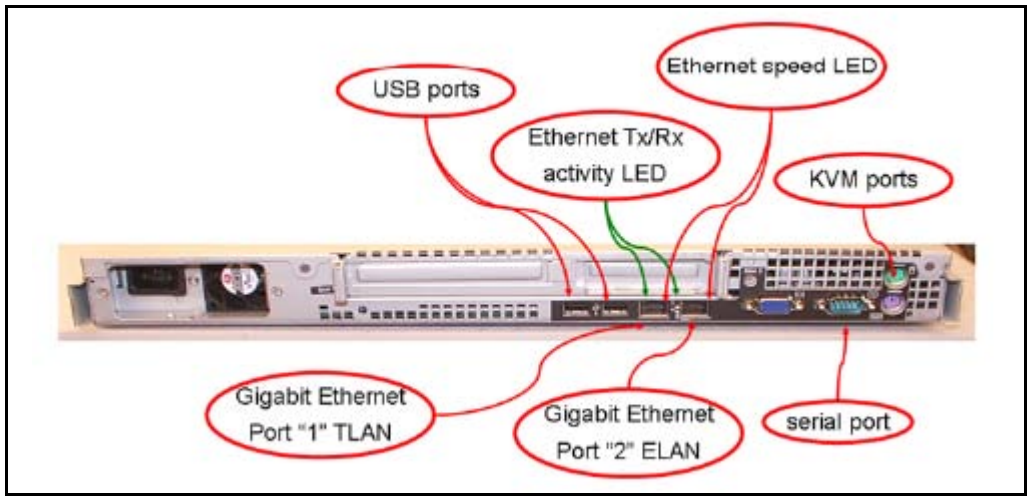
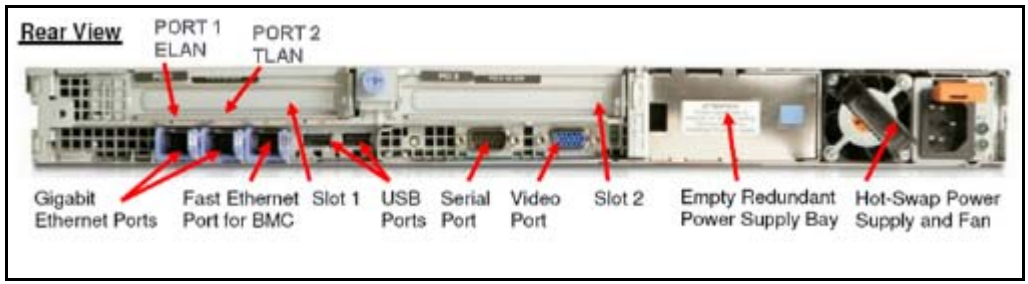


Figure 59 shows the rear view of the IBM x3350 server.

Figure 59
IBM x3350 (rear view)



Note: When you perform Procedure 59, "Connecting an IBM COTS server," on page 220, see Figure 58 or Figure 59.

Procedure 59
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.
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.
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 *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 *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 on the CD-ROM shipped with your IBM server.

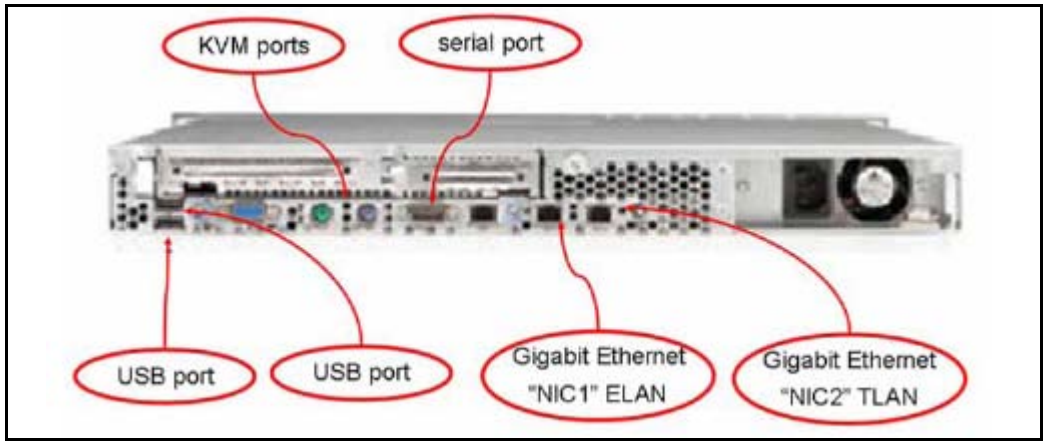
End of Procedure

Connecting an HP COTS server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the HP server into an AC surge suppressor.

Figure 60 shows the rear view of the HP DL320-G4 server.

Figure 60
HP DL320-G4 (rear view)



Note: When you perform Procedure 60, "Connecting an HP COTS server," on page 221, see Figure 60.

Procedure 60
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.
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.
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 *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

7 Press the Power switch.

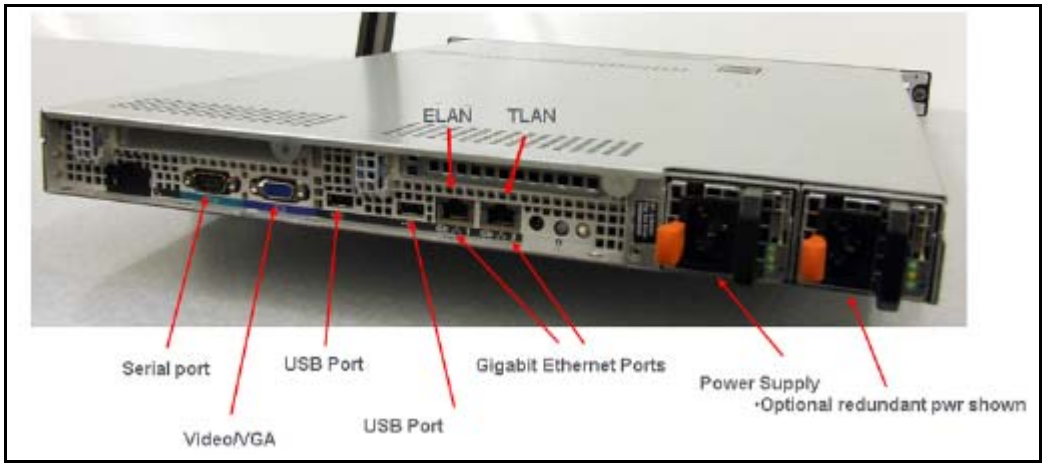
End of Procedure

Connecting a Dell COTS server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the Dell server into an AC surge suppressor.

Figure 61 shows the rear view of the Dell R300 server.

Figure 61
Dell R300 server (rear view)



Note: When you perform Procedure 61, "Connecting a Dell COTS server," on page 223, see Figure 61.

Procedure 61
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.
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.
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 *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

6 Configure the connected maintenance terminal. See *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 *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Installing the software

IMPORTANT!

The CP PM and COTS server are out of service during software installation.

Introduction

This section provides references you can use when you install Communication Server 1000 Release 6.0 Linux Base and application software on CP PM and COTS servers.

IMPORTANT!

CP PM, and COTS servers support no Signaling Server software prior to Communication Server 1000 Release 5.0 and support no SIP Line software prior to Communication Server 1000 Release 6.0.

Communication Server 1000 Release 6.0 Signaling Server and SIP Line software runs only on the Linux Base platform.

Before you begin

Before installing the software, you must perform the following

- Connect and power up the server. See “Connections” on page 215.
- For CP PM Signaling Servers or Coresident CS and SS systems, ensure that Switch S5 is in position 2 (to support the internal hard drive)
- Obtain the CS 1000 Release 6.0 Linux Base installation media.
- Nortel advises that you remove the wire on the CF card clip before you insert the card into the slot. The clip can fall open and cause an electrical short.

Upgrade the CP PM BIOS

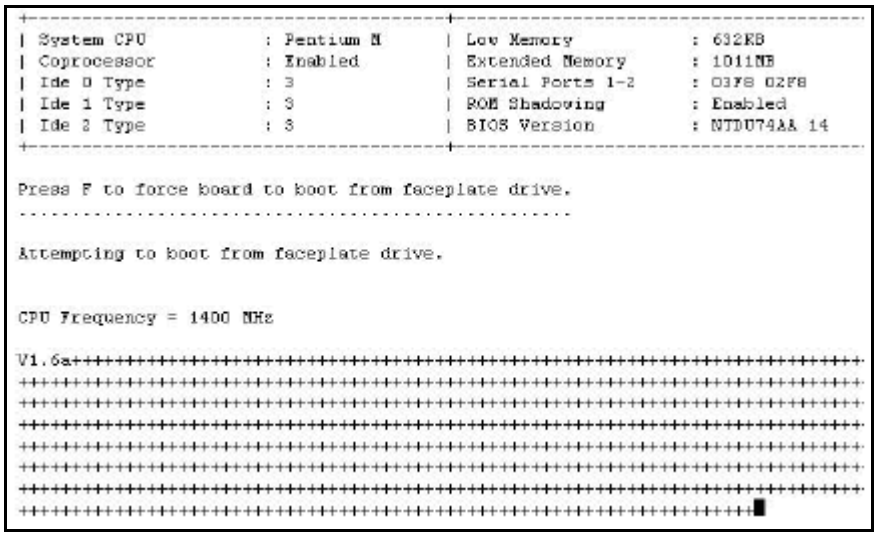
The Communication Server 1000 Release 6.0 Linux Platform Base installer requires CP PM BIOS version 18. If the installer detects a lower version on the CP PM card it automatically loads software for you to upgrade the CP PM BIOS. Perform the steps in Procedure 62 to upgrade the CP PM BIOS to version 18.

For information about manually upgrading the CP PM BIOS with VxWorks software, see *Communications Server 1000E Maintenance* (NN43041-700).

Procedure 62
Upgrading the CP PM BIOS with the Linux Base installer

1. Connect to serial port 1 on the CP PM.
2. Insert the Linux Base installation CF card into the faceplate CF slot.
3. Power on the system.
4. Once the initial boot and memory check completes, Figure 62 appears. Press the **F** key to boot from the Linux Base installation faceplate CF card.

Figure 62
CP PM faceplate drive boot



5 The welcome screen appears. Press **ENTER** to direct the input and output to COM1.

6 Figure 63 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 63
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
```

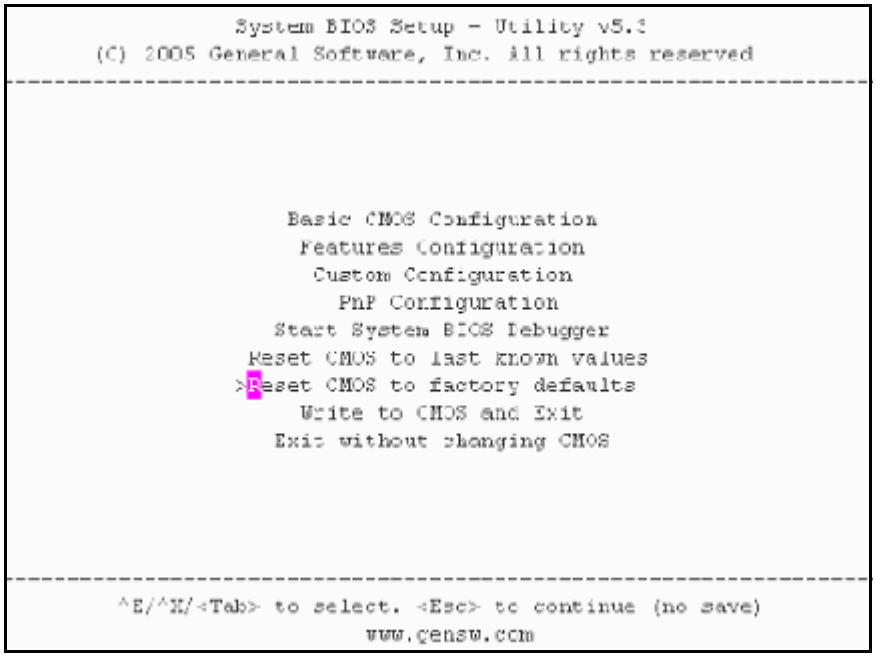
7 Verify that the BIOS upgrade is finished. Press **Enter** to reboot.

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.

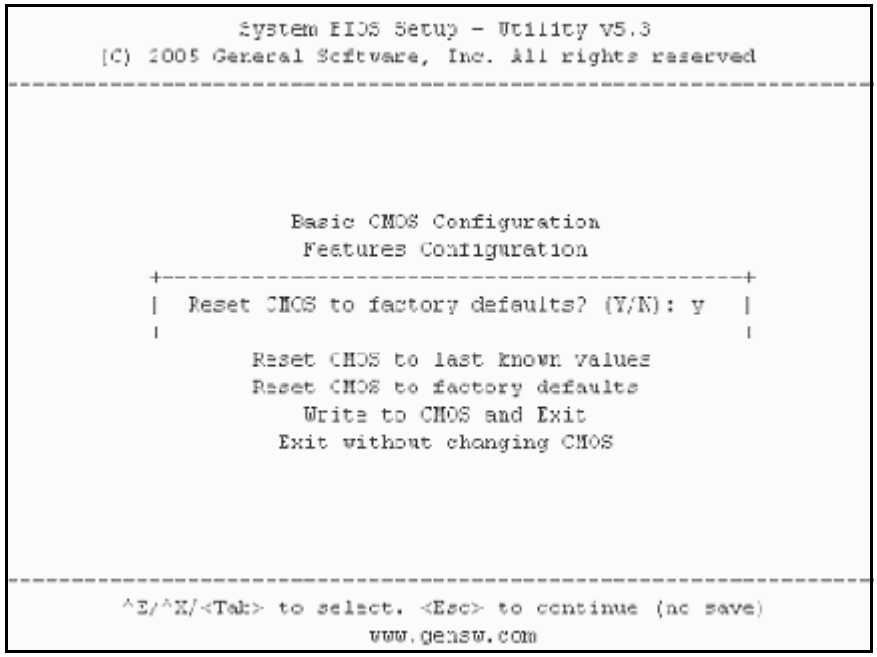
9 Figure 64 appears. Select **Reset CMOS to factory defaults** from the menu.

Figure 64
CP PM BIOS setup



10 Figure 65 appears. Press **y** to reset CMOS to factory defaults.

Figure 65
CP PM BIOS reset



11 The system reboots. After initial boot Figure 62 appears and the new BIOS version is displayed. Verify 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 Linux Base

Perform the Linux Base installation if your Signaling Server does not currently run Linux Base for Release 6.0. The CP PM Linux upgrade kit contains a hard drive with Linux Base preloaded. You can install 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 Linux Base installation. For more information about installing or upgrading Linux Base, see *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Installing Linux applications

Nortel Communication Server 1000 Release 6.0 Signaling Server and SIP line software are Linux applications. Linux applications install on Linux Base and interact with the Linux Base application framework. You can deploy and install Linux applications with the Linux Base Centralized Deployment manager. You can configure a deploy SIP Line with Element Manager (EM).

For information about Linux applications, Centralized Deployment manager, and EM, see *Element Manager: System Administration* (NN43001-632), *Signaling Server IP Line Applications Fundamentals* (NN3001-125), and *Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

Joining the UCM security domain

The UCM Primary Security Server acts as the RADIUS server that Communication Server 1000 devices use to obtain authentication and access control parameters for CLI access. The UCM Primary Security Server sends RADIUS related parameters to Communication Server 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 Communication Server 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 *Security Management* (NN43001-604).

Appendix A: Upgrade checklists

Contents

This chapter contains the following topics:

Introduction

The following section provides Large System upgrade checklists.

Technical Support

Nortel 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. Please refer to current price book for rates.

Note: This service requires that a service request be opened in advance of the upgrade.

Site details

Table 27
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 28
Upgrade details

Current Software - Generic	
Target Software - Generic	
Hardware being added	
Feature Upgrade	
License Upgrade	

Preupgrade checklists

Software Upgrade

Software audit

Table 29
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 30
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 31
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.	

Table 32
Typical Storage Media Changes Between machine Types (Part 1 of 2)

Typical Storage Media Changes Between machine Types		
Source	Target	Procedure Required
CMDU	IODUC	4M - 2M media transfer

Table 32
Typical Storage Media Changes Between machine Types (Part 2 of 2)

IODUC	MMDU	Disk to new Drive both use 2M Floppy Drives
MMDU	MMDU	Disk to new Drive

Hardware Upgrade

Hardware audit

Table 33
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 NTP Procedures completely		

Preconversion steps

Table 34
Preconversion steps (Part 1 of 2)

Preconversion 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 34
Preconversion steps (Part 2 of 2)

LD 30 LDIS (Verify what Is disabled if any)
Get Software Information from LD 22
ISSP - Patches in service - Future Reference if required LD 143 - MDP ISSP -Prints all inservice 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 35
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 36
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 36
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 37
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

Table 37
Switch settings (Part 2 of 2)

5	1	11	176-191	5 1	off on on on off on off off	off on on off off on off off
6	0	12	192-207	6 0	off on on on off off on on	off on on off off off on on
6	1	13	208-233	6 1	off on on on off off on off	off on on off off off on off
7	0	14	224-239	7 0	off on on on off off off on	off on on off off off off on
7	1	15	240-255	7 1	off on on on off off off off	off on on off off off off off

Appendix B: Technical Assistance service

Contents

This chapter contains the following topics:

Nortel Technical Assistance Centers

To help customers obtain maximum benefit, reliability, and satisfaction from their CS 1000E systems, Nortel provides technical assistance in resolving system problems. Table 38 on page 246 lists the centers that provide this service.

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

If you purchased a Nortel service program, contact one of the following Nortel Technical Solutions Centers.

Table 38
Customer Technical Services (Part 1 of 2)

Location	Contact
Nortel Global Enterprise Technical Support (GETS) PO Box 833858 2370 Performance Drive Richardson, TX 75083 USA	North America Telephone: 1 800 4NORTEL
Nortel Corp. P.O. Box 4000 250 Sydney Street Belleville, Ontario K8N 5B7 Canada	North America Telephone: 1 800 4NORTEL
Nortel Service Center - EMEA	EMEA Telephone: 00 800 8008 9009 or +44 (0)870 907 9009 E-mail: emeahelp@nortel.com
Nortel 1500 Concord Terrace Sunrise, Florida 33323 USA	Brazil Telephone: 5519 3705 7600 E-mail: entcts@nortel.com English Caribbean Telephone: 1 800 4NORTEL Spanish Caribbean Telephone: 1 954 858 7777 Latin America Telephone: 5255 5480 2170

Table 38
Customer Technical Services (Part 2 of 2)

Location	Contact
Network Technical Support (NTS)	Asia Pacific Telephone: +61 28 870 8800 Australia Telephone:1800NORTEL (1800 667835) or +61 2 8870 8800 E-mail: asia_support@nortel.com People's Republic of China Telephone: 800 810 5000 E-mail: chinatsc@nortel.com Japan Telephone: 010 6510 7770 E-mail: supportj@nortel.com Hong Kong Telephone: 800 96 4199 E-mail: chinatsc@nortel.com Taiwan Telephone: 0800 810 500 E-mail: chinatsc@nortel.com Indonesia Telephone: 0018 036 1004 Malaysia Telephone: 1 800 805 380 New Zealand Telephone: 0 800 449 716 Philippines Telephone: 1 800 1611 0063 or 632 917 4420 Singapore Telephone: 800 616 2004 South Korea Telephone: 0079 8611 2001 Thailand: Telephone: 001 800 611 3007

Services available

Services available through the Technical Assistance Centers include:

- diagnosing and resolving software problems not covered by support documentation
- diagnosing and resolving hardware problems not covered by support documentation
- assisting in diagnosing and resolving problems caused by local conditions

There are several classes of service available. Emergency requests (Class E1 and E2) receive an immediate response. Service for emergency requests is continuous until normal system operation is restored. Non-emergency

requests (Class S1, S2, and NS) are serviced during normal working hours. Tables 39 and 40 describe the service classifications.

Table 39
Technical service emergency classifications

Class	Degree of failure	Symptoms
E1	Major failure causing system degradation or outage	System out-of-service with complete loss of call-processing capability. Loss of total attendant console capability. Loss of incoming or outgoing call capability. Loss of auxiliary Call Detail Reporting (CDR) in resale application. Call processing degraded for reasons such as trunk group out-of-service: • 10% or more lines out-of-service • frequent initializations (seven per day or more) • inability to recover from initialization or SYSLOAD • consistently slow dial tone (eight seconds or more delay)
E2	Major failure causing potential system degradation or outage	Standby CPU out-of-service. Frequent initializations (one per day or more). Disk drive failure. Two sets of disks inoperative.

Table 40
Technical services non-emergency classifications

Class	Degree of failure	Symptoms
S1	Failure that affects service	Software or hardware trouble directly and continuously affecting user's service or customer's ability to collect revenue. Problem that will seriously affect service at in-service or cut-over date.
S2	Intermittent failure that affects service	Software or hardware faults that only intermittently affect service. System-related documentation errors that directly result in or lead to impaired service.
NS	Failure that does not affect service	Documentation errors. Software inconsistencies that do not affect service. Hardware diagnostic failures (not defined above) that cannot be corrected by resident skills. Test equipment failures for which a backup or manual alternative can be used. Any questions concerning products.

Except as excluded by the provisions of warranty or other agreements with Nortel, a fee for technical assistance may be charged, at rates established by Nortel. Information on rates and conditions for services are available through Nortel sales representatives.

Requesting assistance

Collect the information listed in Table 41 before you call for service.

Table 41
Checklist for service requests

Name of person requesting service	
Company represented	
Telephone number	
System number/identification	
Installed software generic and issue (located on data disk)	
Modem telephone number and password (if applicable)	
Seriousness of request (see Tables 39 and 40)	
Description of assistance required	

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Nortel Communication Server 1000

Communication Server 1000M and Meridian 1

61C to CS 1000M MG CP PIV FNF Upgrade

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