Nortel Communication Server 1000
Nortel Communication Server 1000 Release 5.0

Communication Server 1000M and Meridian 1

71 to CS 1000M MG CP PIV FNF Upgrade

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Revision history

May 2007

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

May 2006

Standard 5.00. This document is up-issued with corrections from CRs Q01215486 and Q01347637.

January 2006

Standard 4.00. This document is up-issued with corrections from CR Q01231173.

August 2005

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

September 2004

Standard 2.00. This document is up-issued 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).

Contents

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 5.0, click one of the links below.

Latest Software	Takes you directly to the Nortel page for CS 1000 Release 5.0 software.
Latest Documentation	Takes you directly to the Nortel page for CS 1000 Release 5.0 documentation.

How to get help

This section 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 on database transfers, Call Processor card upgrades, and network group upgrades.

This document also contains information on converting Release 19.0x or later software to CS 1000 Release 5.0 or later on Meridian 1 Options 51C, 61C, 81, 81C, CS 1000M SG and CS 1000M MG systems. For software conversion procedures prior to Release 19.xx, refer to 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 5.0 software. For more information on 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 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

  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 5.0 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 51C	CS 1000M Half Group
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 81	CS 1000M Multi 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 5.0:

- CP PM Signaling Server
- Commercial Off the Shelf (COTS) Signaling Server
- Intel ISP1100 Signaling Server

For detailed Signaling Server configuration information see Appendix : "Installing a Signaling Server" on page 179.

Upgrade paths

This document contains information on the following Large System upgrades:

- Meridian 1 Options 51, 61, 71, 51C, 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.

Follow pre-conversion and post-conversion 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)
- *Signaling Server: Installation and Commissioning* (NN43001-312)
- *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)
- *IP Line: Description, Installation, and Operation* (NN43100-500)
- *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 279.

Preparing and planning for the upgrade

Contents

This section contains information on 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.

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).

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 (Part 1 of 2)

Procedure Step	Page
Planning	23
Upgrade Checklists	24
Preparing	24
Identifying the proper procedure	25
Connect a terminal	25
Printing site data	26
Performing a template audit	29

Table 2
Prepare for upgrade steps (Part 2 of 2)

Procedure Step	Page
Back up the database (data dump and ABKO)	30 44

Planning

Planning for an upgrade involves the following tasks:

- Read and understand the current release Product Bulletin.
- Review the current release product bulletin related specifically to the software being upgraded.
- 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.

  Note: For information on adding new network shelves, see *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310).
- 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.

Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on page 267. 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.
- Determine and note current patch or Dep lists installed at the source platform.
- Determine required patch or Dep lists at the target platform for all system-patchable components (Call Server, Voice Gateway Media Cards, Signaling Servers and so on).
- Determine the required patches or DEP lists installed on all applications (CallPilot, Symposium Call Center Server, Meridian Mail, TM 3.1, and so on).
- 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.

Connect 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

Printing site data

Print site data to preserve a record of the system configuration (see Table 3 on page 26). 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 3
Print site data (Part 1 of 4)

Site data	Print command	
Terminal blocks for all TNs	LD 20	
	REQ	PRT
	TYPE	TNB
	CUST	<cr>
Directory Numbers	LD 20	
	REQ	PRT
	TYPE	DNB
	CUST	<cr>
Attendant Console data block for all customers	LD 20	LD 20
	REQ	PRT
	TYPE	ATT, 2250
	CUST	<cr>

Table 3
Print site data (Part 2 of 4)

Site data	Print command	
*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
*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>)

Table 3
Print site data (Part 3 of 4)

Site data	Print command	
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
Print the configured host information	LD 117	PRT HOST (provides system IP addresses)

Table 3
Print site data (Part 4 of 4)

Site data	Print command	
Superloops and XPEs	LD 97	
	REQ TYPE SUPL	CHG SUPL Vxxx V stands for a virtual superloop and xxx is the number of the virtual superloop. xxx = 0-252 in multiples of four for MG 1000E xxx = 96-112 in multiples of four for MG 1000T (See Table 29)
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 2
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 the data dump

CAUTION

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 3
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

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

IMPORTANT!

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

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.

Procedure 4
Converting the 4 MB database media to 2 MB database media

Before the system is upgraded to CP PIV, the database must reside on a 2 MByte floppy disk for conversion to CF. Systems with an IODU/C drive already have 2 MByte floppy drive and can skip this procedure.

If the database is on a 4 MByte floppy (the system has an IOP/CMDU), the 4 MByte customer database must be transferred to a 2 MByte floppy disk.

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/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 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 2 MByte 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 MByte customer database diskette from the floppy drive of the IOP/CMDU. 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 pre-formatted and bootable from Nortel . Consumer CF cards are not bootable by default and must be made bootable as outlined in Procedure 5 on page 34.

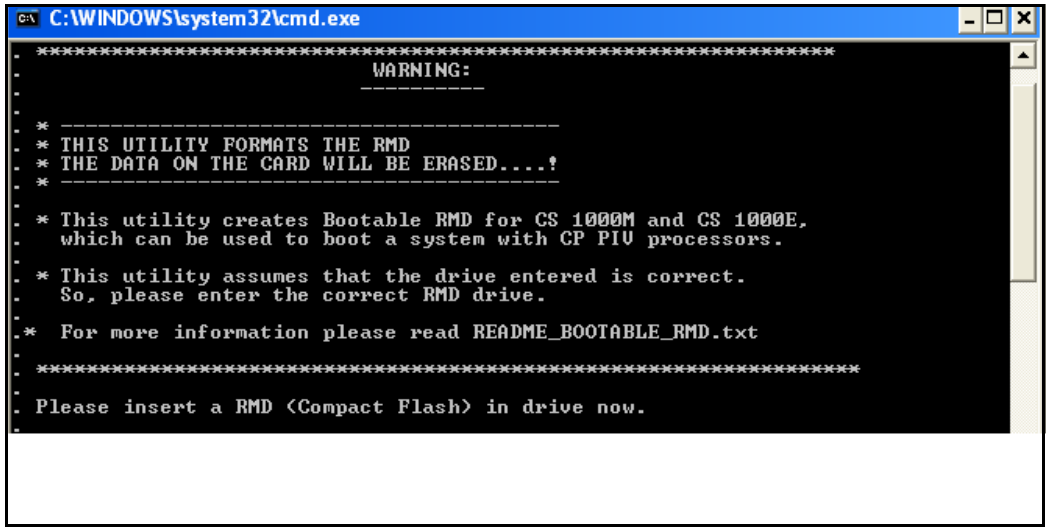
Procedure 5
Making the RMD bootable

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

2 Open the utilities folder.

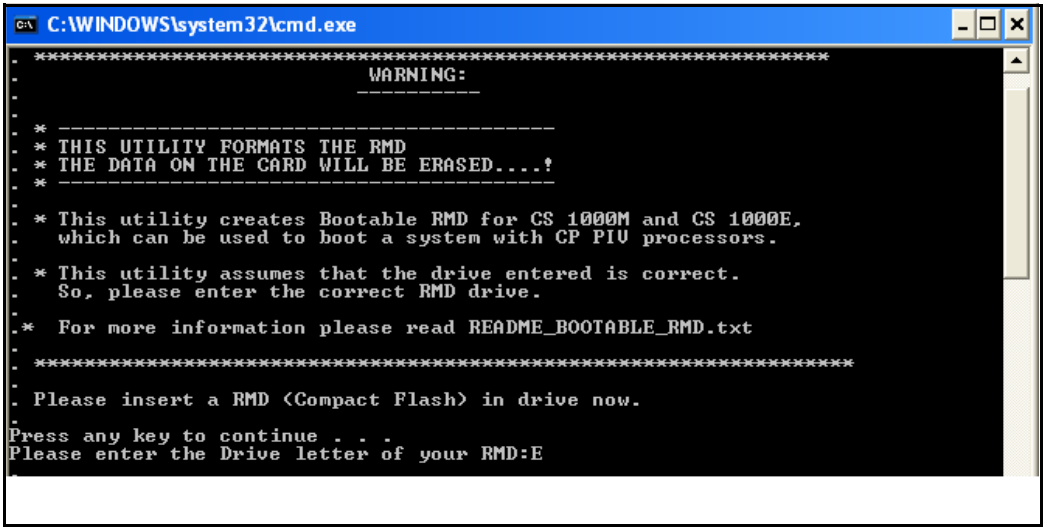
3 Double click the mkbootrmd.bat file. Insert a blank 512 MByte CF card (see Figure 1).

Figure 1
mkbootrmd.bat



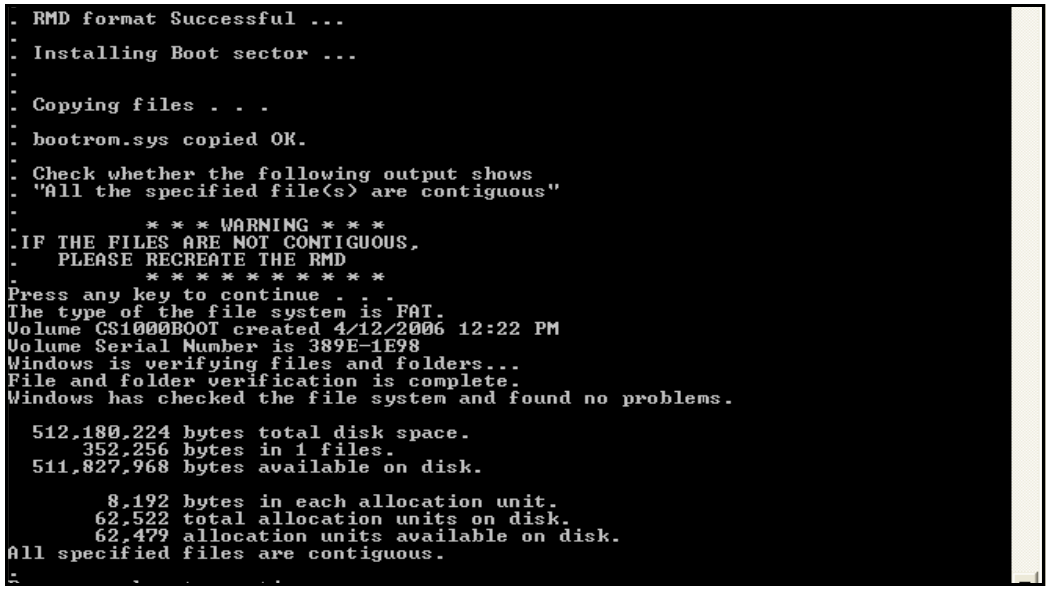
4 Enter the correct drive letter of the RMD (see Figure 2).

Figure 2
mkbootrmd.bat



5 The boot sector files (bootrom.sys and nvram.sys) are successfully copied making the CF card bootable (see Figure 3).

Figure 3
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

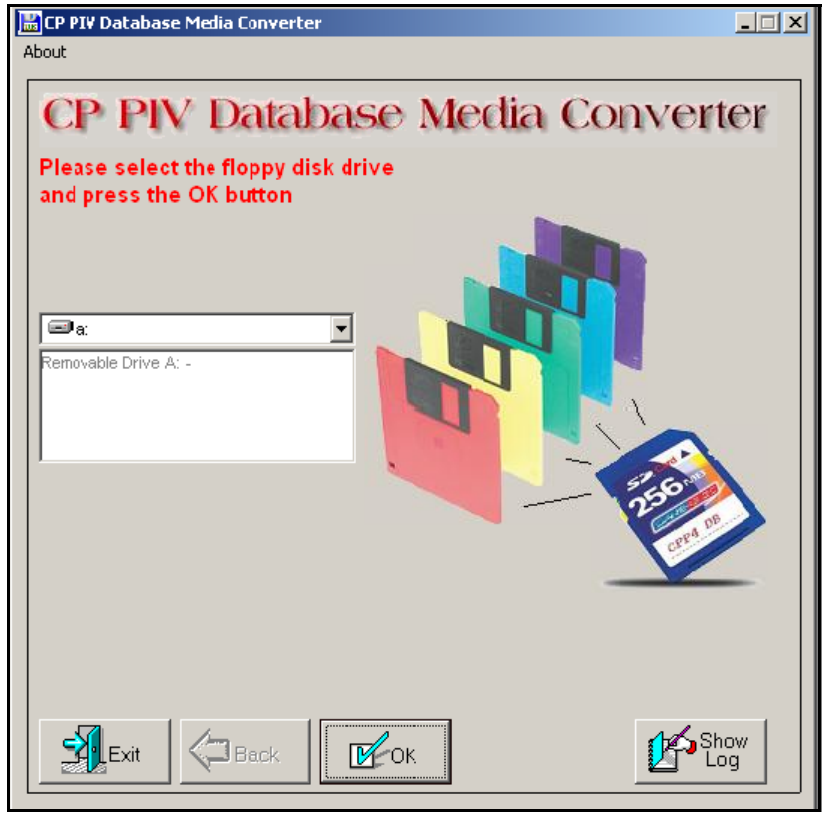
Release 5.0 software upgrade later in this section. Nortel recommends using the extra CF card included with the Software Install Kit.

Procedure 6
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. Insert the floppy disk containing the backed up customer database from Procedure 2 on page 30.
2. Insert a CF card (there is one included in the Software Install Kit) into the CF reader or PCMCIA CF adapter.
3. Start the Database Media Converter utility. The first screen (Figure 4 on page 39) prompts you to select the correct drive letter for the floppy disk drive.

Figure 4
Select the floppy disk drive



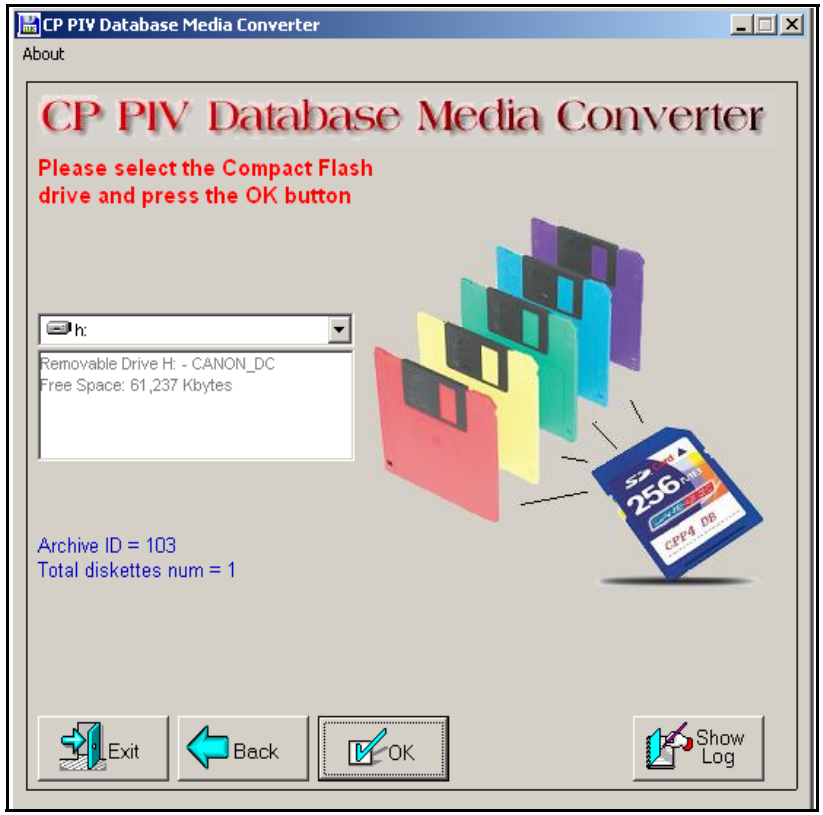
4 The utility then prompts you to insert the floppy disk (diskette 1) and click OK (see Figure 5 on page 40).

Figure 5
Insert diskette 1

5 After verifying the database on the floppy disk, the utility prompts you to select the CF drive (see Figure 6 on page 41).

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

Figure 6
Select the CF drive

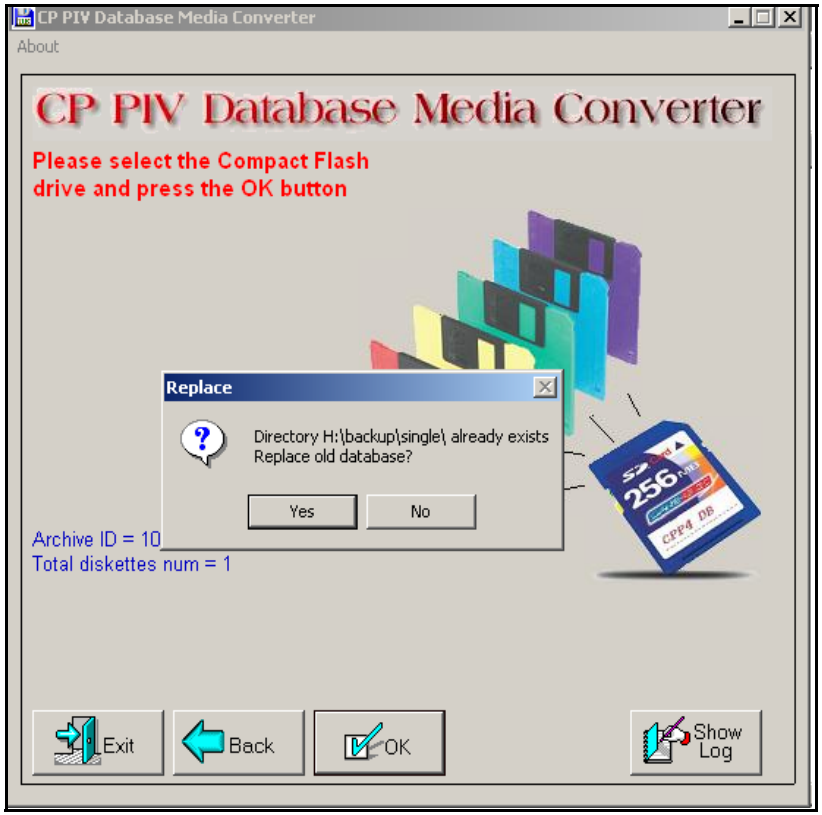


6 At this point, 2 options are available:

a. If the CF card already contains a previously backed-up database, a dialog box appears (see Figure 7 on page 42). Click yes to replace old database.

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

Figure 7
Replace database on CF drive



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

Figure 8
Copy another or exit

End of Procedure

Identify two unique IP addresses

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 systems administrator to identify two unique IP addresses before the upgrade.
- For instructions to configure these IP numbers, see "Configuring IP addresses" on page 103.

Check requirements for CNI to 3PE cables (NTND14)

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 section contains information on the following topics:

Introduction

The target upgrade to CS1000M MG CP PIV FNF must meet the requirements of Product Bulletins P2002-1658-NA, PAA-2003-0199-NA, and 2000-047 rev1. Highlights include:

- PB requires NTRB53AA Clock Controller
- NT5D12AC, AD, and AG (1.54MB) support

- NT5D97AB, AD (2.0MB) support
- Both NTRC46 cables must be the same length

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.

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.

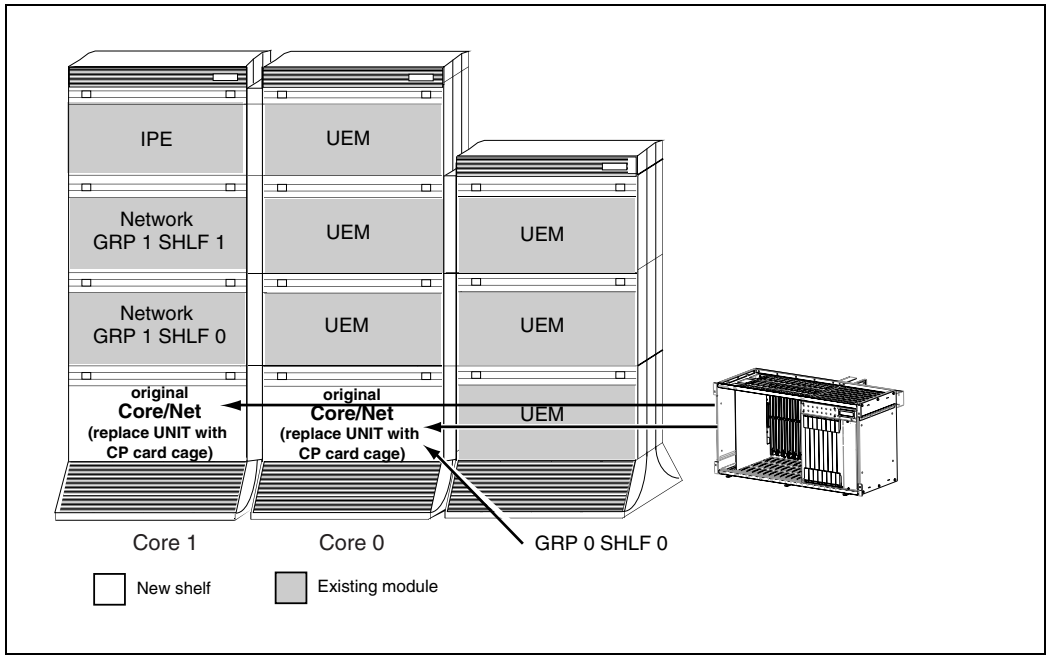
Meridian Mail Cables

Each shelf containing a Meridian Mail node must be assigned to the same network group and have the same length of cables between the ENET cards and the Meridian Mail Node. Failure to comply may result in intermittent static.

Note: CallPilot's architecture does not have this limitation.

Figure 9 shows an upgrade from a Meridian 1 Option 71/IGS to a CS1000M MG CP PIV FNF.

Figure 9
Meridian 1 Option 71 to Meridian 1 Option 81C CP PIV with FNF



This upgrade takes a Meridian 1 Option 71/IGS to a CS1000M MG CP PIV FNF. Additional groups can be added by following the procedures for adding a network group in *CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458).

To upgrade a Meridian 1 Option 71/IGS system to a CS1000M MG CP PIV FNF:

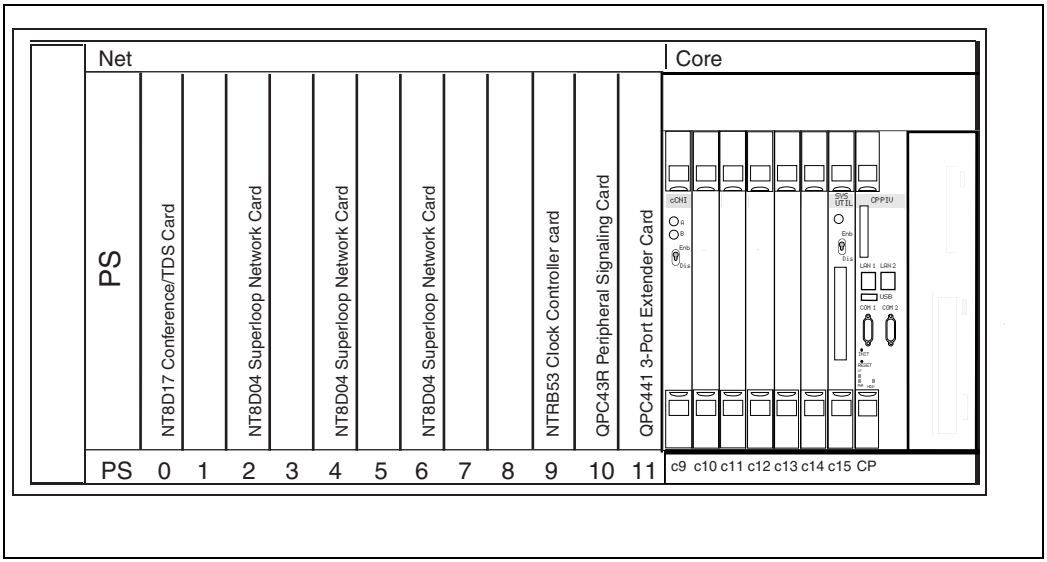
- Two card cages in the existing CPU modules are replaced with two NT4N40 CP card cages.
- New CP PIV cards are located in the Core/Net modules or card cage.

- Existing network cards are relocated to the CP card cages.
- The existing Clock Controllers are moved from the Core/Net to the Network shelves.

  Note: Clock Controller cards must be NTRB53AA.

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

Figure 10
CP PIV Core/Net Module



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 Signaling Server” on page 179.

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

Check equipment received

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

CAUTION — Service Interruption

Service Interruption

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

Check required software

The following software packages are required to upgrade a system to CS1000M MG CP PIV FNF:

- 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 5.0 software
    - Dep. Lists (PEPs)
    - Key code File
  - One blank CF card for database backup
  - One Nortel CS 1000 Release 5.0 Documentation CD

Check vintage requirements for existing hardware

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

- The QPC441 3-Port Extender (3PE) cards must be minimum vintage F.
- The NTRB53AA Clock Controller cards must be minimum vintage A.
- NTRB33 Fiber Junctor Interface (FIJI) Card minimum vintage AC
- NT5D12AC, AD, and AG (1.54MB)
- NT5D97AB, AD (2.0MB)

  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.

If equipment does not meet the requirements, replace it before you begin the upgrade.

CAUTION — Service Interruption

Service Interruption

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

Check required hardware

Table 4 describes the **minimum** equipment required to upgrade a system to CP PIV. Additional equipment for increased Network capacity must be ordered separately.

Table 4
Minimum requirements for Meridian 1 Option 81C CP PIV with FNF systems (Part 1 of 2)

Order number	Description	Quantity per system
NT4N39	CP PIV Call Processor Card (512mb Memory)	2
NT4N40AA	CP Core/Network Card Cage AC/DC	2
NT4N65AB	CP Core Network Interface Card (2 ports)	2
NT4N48	System Utility Card	2
NT4N88AA	CP to I/O Panel DTE Cable (48 in.)	2
NT4N88BA	CP to I/O Panel DCE Cable (48 in.)	2
NT4N90BA	CP to I/O Panel Ethernet Cable (48 in.)	2
*NT8D01BC	Controller - Four Card	1
*NT8D04BA	Superloop Network Card	
*NT8D17FA	Conference/TDS Card	
*NT8D22AC	System Monitor	
*NT8D41BA	Quad SDI Paddle Board	1
*NT8D46AD	System Monitor to SDI Cable (60 in.)	1
*NT8D46AL	System Monitor Serial Link Cable (7 ft.)	1
*NT8D46AS	System Monitor InterCPU Cable (30 in.)	1
*NT8D80BZ	CPU Interface Cable (5 ft.)	
*NT8D84AA	SDI Paddleboard to I/O Cable (18 in.)	
*NT8D90AF	SDI Multi-Port Extension Cable (10 ft.)	

Table 4
Minimum requirements for Meridian 1 Option 81C CP PIV with FNF systems (Part 2 of 2)

Order number	Description	Quantity per system
*NT8D91AD	Network to Controller Cable (6 ft.)	
*NT8D99AD	CPU to Network Cable (6 ft.)	2
NTRB33	Fiber Junctor Interface (FIJI) Card	Determined by system configuration
NTRC17BA	CP Ethernet to Ethernet Cable (8.5 ft.)	2
NTRC46BB	Clock - FIJI Cable (1.7M - 2.4M (5.5 ft. - 8 ft.))	2
NTRC47AA	FIJI - FIJI Sync Cable	Determined by system configuration
NTRC48XX	FIJI Fiber Ring Cable (2M (6 ft.))	Determined by system configuration
NTRC49AA	Clock - Clock Sync Cable	1
NTRE39AA	Optical Cable Management Card (OCMC)	Determined by system configuration
NTRE40AA	Dual Ethernet Adapter (RJ-45) for I/O Panel	2
*P0745716	Rear I/O Panel	2
P0605337	CP Card Slot Filler Panel	Determined by system configuration
Note: *Customer supplied from existing system.		

The equipment room must provide the appropriate number of 30 Ampere outlets. One 175-264 Vac, 47-63 Hz, 30 Ampere outlet is required for every pedestal or column.

If supporting additional Meridian 1 modules, order additional top cap & pedestal packages (NTWB15BA). One top cap and pedestal package supports up to 4 modules.

To cover all exposed module sides and to connect modules side-to-side, additional NT9D18AA module side covers and NT8D49AA column spacer kits must be ordered separately.

The NTHU44AA and DA packages contain common equipment hardware only, including two CP PIV Pentium call processor cards and two NTRB53 Clock Controller cards.

These packages are designed for computer floor installation, with all cables exiting from the pedestal. If the installation requires overhead cabling, order NT7D0009 top egress panel, one per column.

An NT8D49AA Spacer kit is provided to allow for a side-by-side installation of core/network modules. This arrangement will require an additional top cap and pedestal package and must be ordered separately.

Intelligent peripheral equipment must be ordered separately. Order NTWB15DA for any additional AC IPE Modules required.

Peripheral equipment (PE) or Enhanced peripheral equipment (EPE) is not supported on systems with Pentium Processors.

Check required power equipment

Table 5 lists the equipment required for DC-powered systems. Table 6 on page 54 lists the equipment required for AC-powered systems.

Table 5
DC power requirements for Meridian 1 Option 81C CP PIV with FNF upgrades

Order number	Description	Quantity per system
NT6D41CA	Core/Network Power Supply DC	2

Table 6
AC power requirements for Meridian 1 Option 81C CP PIV with FNF upgrades

Order number	Description	Quantity per system
NT8D29BA	Core/Network Power Supply AC	2

Tools

Table 7 lists the tools required to upgrade a Nortel system. Special tools required in a procedure are listed in that procedure.

Table 7
List of recommended tools

Digital Multimeter (DMM)	Electric drill and drill bits
Pliers, needle-nose	Hammer and sheet metal center punch
Pliers, standard	1/4” socket wrench
Screwdriver, 3/16” flat blade	3/8” socket wrench
Screwdriver, #2 Phillips	1/4” nut driver
Wire cutters	7/16” socket driver
Electrical insulation tape	11/32 Deep Socket
5/16” socket wrench	Flashlight

Check personnel requirements

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

CS 1000 compatibility

Consult *Communication Server 1000M and Meridian 1: Large System Planning and Engineering* (NN43021-220) for CS 1000 Release 5.0 product compatibility.

Upgrading Core 1

Procedure 7
Checking main Core card installation

The main Core cards are installed in the factory as shown in Figure 11 on page 56:

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 8.

Table 8
Core module ID switch settings (System Utility card)

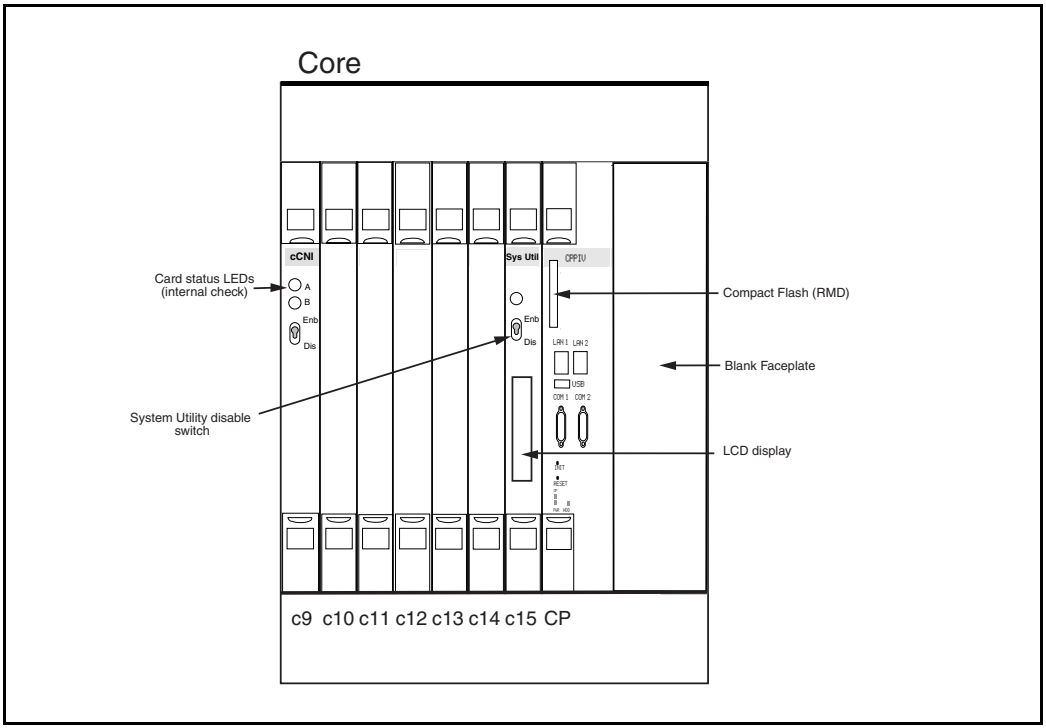
	Position 1	Position 2
Core 0	On	On
Core 1	Off	On

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 11
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 12 on page 57 for cable location.

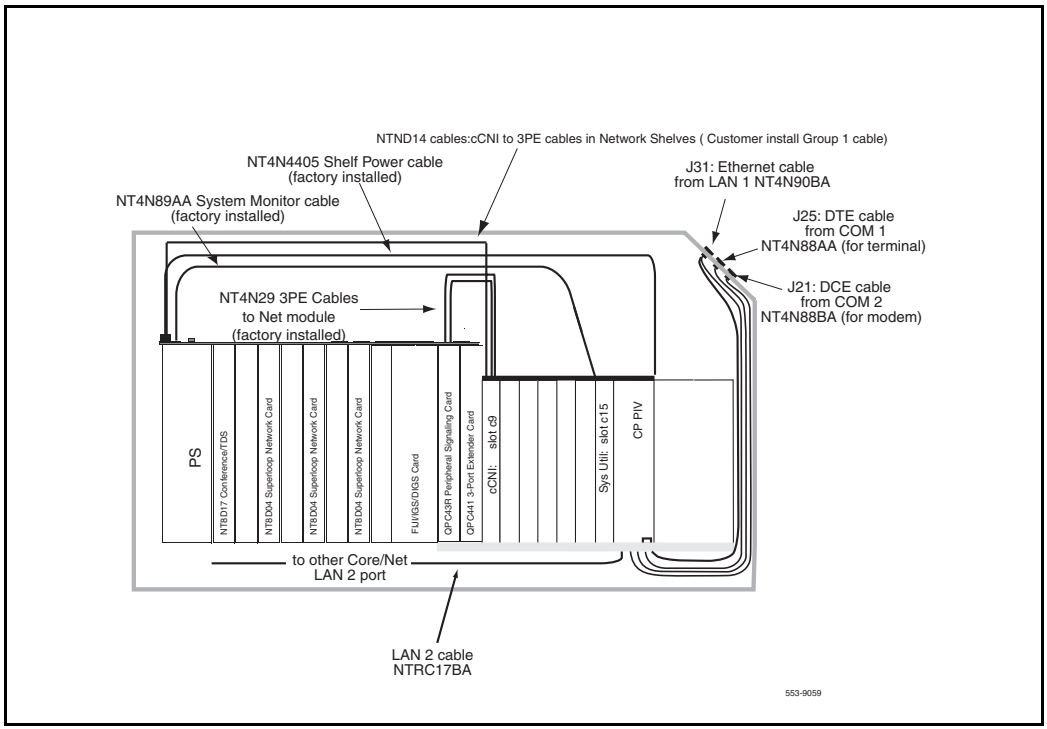
Check factory-installed cables

Table 9 lists factory-installed cables.

Table 9
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 12
Core/Net cable connections (top view)



Check factory-installed cables

Table 10 lists factory-installed cables. See Figure 12 on page 57.

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

Disable Core 1

Procedure 8
Checking that Core 0 is active

1 Print the configuration record:

LD 22	Load program
PRT	Print
CFN	Print the configuration record

2 Check the configuration record to identify all configured I/O ports.

Note: When transferring call processing to a Core/Net module during an upgrade, one I/O address is required for a CPSI port. If there is no address available, an SYS 4532 error is displayed. You must make available one port assignment for a CPSI port.

3 Inspect the Option 71 system to determine the group location of each I/O port. Mark the group number on the configuration record printout next to the device number address of each I/O port. The group number of the I/O port is required upon completion of the software upgrade. All I/O ports default to group 0 and are not enabled until the correct group number is added to the configuration record.

4 If the NTND16 MDU or NTND15 FDU is located in CPU 1, move the unit to CPU 0 or to a network module.

Note: Perform this step only if the MDU is installed in CPU 1.

a. Software disable the QPC584 MSI card, NT9D34 EMSI card, or QPC742 FDI card in the active CPU.

b. Set the ENB/DIS switch on the QPC584 MSI card, NT9D34 EMSI card, or QPC742 FDI card in the active CPU to DIS.

c. Remove the floppy diskettes from the disk drives.

d. Label and disconnect cables from the faceplate of the MDU or FDU.

e. Unhook the lock latches on the MDU or FDU and gently pull the unit forward two or three inches.

Note: **When removing an MDU, wait at least 30 seconds after unplugging the unit from the card slot before you remove it from the card cage.** This allows the hard disk drive to stop spinning, and reduces the risk of damage to the drive.

f. Move the MDU or FDU to the new slot. Seat it and engage the lock latches.

g. Reroute and reconnect cables to the faceplate of the MDU or FDU.

h. Install the floppy disks.

i. Set the ENB/DIS switch on the MSI or EMSI card in the active CPU to ENB.

j. Software enable the MSI card on the active CPU (ENLT).

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

LD 35	Load program
STAT CPU	Get the status of both CPUs
STAT CMA	Get CMA or OCMA status
STAT EXT	Get the extender status
STAT MEM	Get the memory status

6 Test and switch the CPUs:

TCPU	test the CPUs
SCPU	switch the CPUs

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

STAT CPU	Get the status of both CPUs
STAT CMA	Get CMA or OCMA status

STAT EXT	Get the extender status
STAT MEM	Get the memory status

8 If CPU 1 is active, switch CPUs:

STAT CPU	Get the status of both CPUs
SCPU	switch to CPU 0 (if necessary)

9 Place CPU 0 into maintenance by setting the NORM/MAINT faceplate switch on the QPC580 card in CPU 0 to MAINT.

10 List the enabled memories, then disable the memories and the CMA or OCMA card in CPU 1:

LENL	to list enabled memories
DIS 10	to disable CPU 1 memory 10
DIS 11	to disable CPU 1 memory 11 (if equipped)
DIS CMA 1	to disable CMA or OCMA 1
********	to exit the program

11 Set the ENB/DIS switch on each QPC215 SBE card in CPU 1 to DIS.

12 Software disable clock controller 1:

LD 60	to load the program
SSCK 0	to get the status of clock 0
SSCK 1	to get the status of clock 1
SWCK	if necessary, to switch to clock controller 0
DIS CC 1	to disable clock controller 1
********	to exit the program

13 Perform the following steps in exact order:

a. Label and disconnect the cable from connector J12 in the NT8D36 InterGroup module at the junctor board.

b. Then disconnect the cable from faceplate connector J3 on the clock controller card. If primary and secondary clock reference cables are connected to the faceplate of the clock controller card, disconnect them last.

14 Set the ENB/DIS switch on the FDI, MSI, or EMSI card in CPU 1 to DIS.

15 Set the NORM/MAINT switch on the QPC580 Omega I/F card in CPU 1 to MAINT to split the CPUs.

Disable IGS

Procedure 9
Disabling IGS

1 Determine the number of the IGS/DIGS card, refer to Table 11.

Table 11
Shelf 1 IGS/DIGS card locations

Network Group 0	Shelf 1	IGS/DIGS 1 & 3
Network Group 1	Shelf 1	IGS/DIGS 5& 7
Network Group 2	Shelf 1	IGS/DIGS 9 & 11
Network Group 3	Shelf 1	IGS/DIGS 13 & 15
Network Group 4	Shelf 1	IGS/DIGS 17 & 19
Note: The DIGS card should be located in slot 9 of the network shelf.		

2 Disable the IGS/DIGS cards located in each network group shelf 1.

LD 39	Load the program.
DIS IGS X	X = IGS cards located in each network group shelf 1
****	Exit the program.

3 Hardware disable all IGS/DIGS cards in each network group shelf 1.

End of Procedure

Procedure 10
Moving Clock Controller 1

CAUTION — Service Interruption

Clock controller cards must be NTRB53AA 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 64.

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

2 Label and disconnect the clock to clock cable from Clock Controller 1.

3 If primary and secondary clock reference cables are connected to the Clock Controller 1 faceplate, label and disconnect them last.

4 Unseat and remove Clock Controller 1.

5 Set the new NTRB53 Clock Controller 1 switch settings according to Table 12 on page 64.

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 1 in any Network Shelf 1, slot 13. Do NOT seat the Clock Controller 1 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 NTRB53AA

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.						

Relocating any DTI/PRI cards in CPU 1 shelf

At this point, any DTI/PRI cards in CPU shelf 1 will lose power. If needed, these cards should be relocated prior to powering down the shelf.

CAUTION — Service Interruption

Service Interruption

At this point, the upgrade may interrupt service.

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 11
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

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 12
Removing Core 1 cables and card cage

1. Label and disconnect all cables from the front of the module.
2. Tape over the contacts to avoid grounding.
3. Tie all cables to the sides so the working area in front of the card cage is totally clear.
4. Remove the I/O safety panel by turning the screws on each side. Set the I/O safety panel aside.
5. Tag and disconnect all cables from the backplane to the interior of the I/O assembly.
6. Tag and disconnect all plugs, wires, and cables to the backplane.

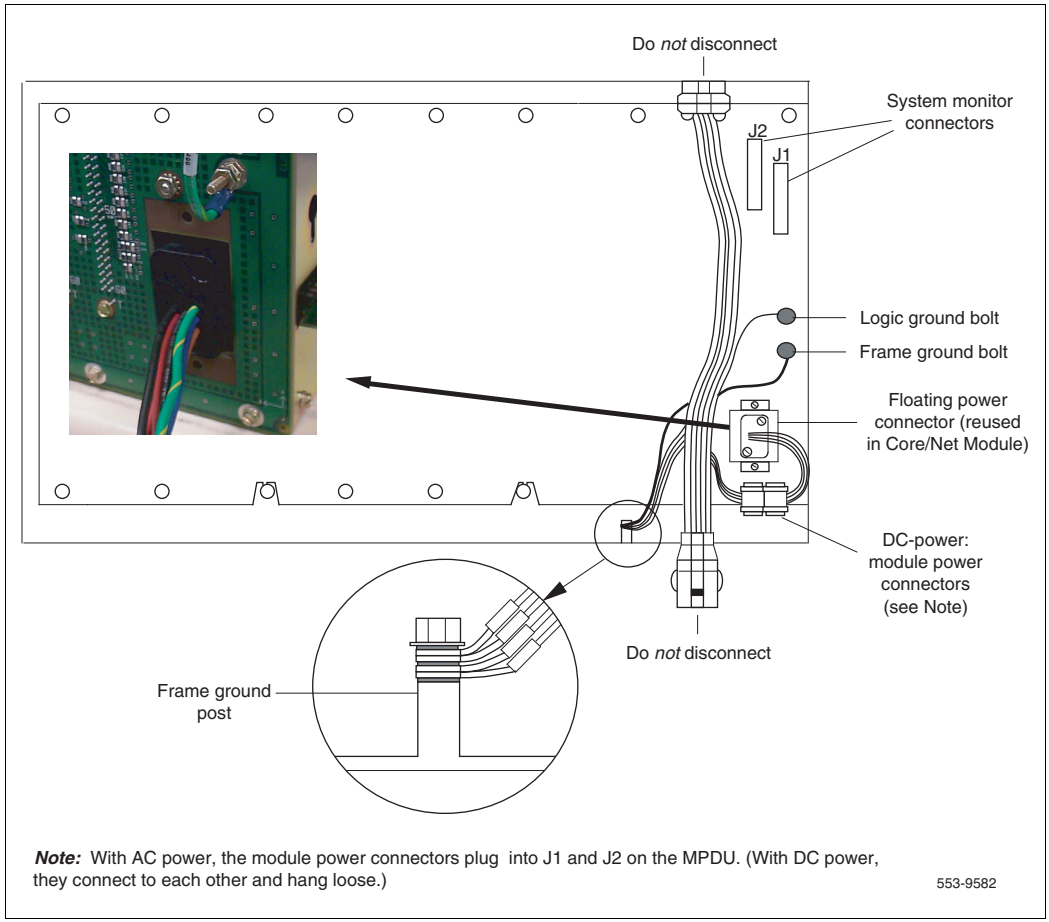
   Note: Two people are needed to remove the Core card cage because of the weight of the card cage with the cards left installed.
7. Use a a 1/4" nut driver to remove the two mounting screws at the bottom rear of the card cage. The screws secure the card cage to the module casting. Keep the screws for use 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 13 on page 67 for DC power connectors. See Figure 14 on page 68 for AC power connectors.
13. Remove the frame ground (FGND) (green) wire from the frame ground bolt on the module.

Figure 13
DC power connectors on the Core module backplane



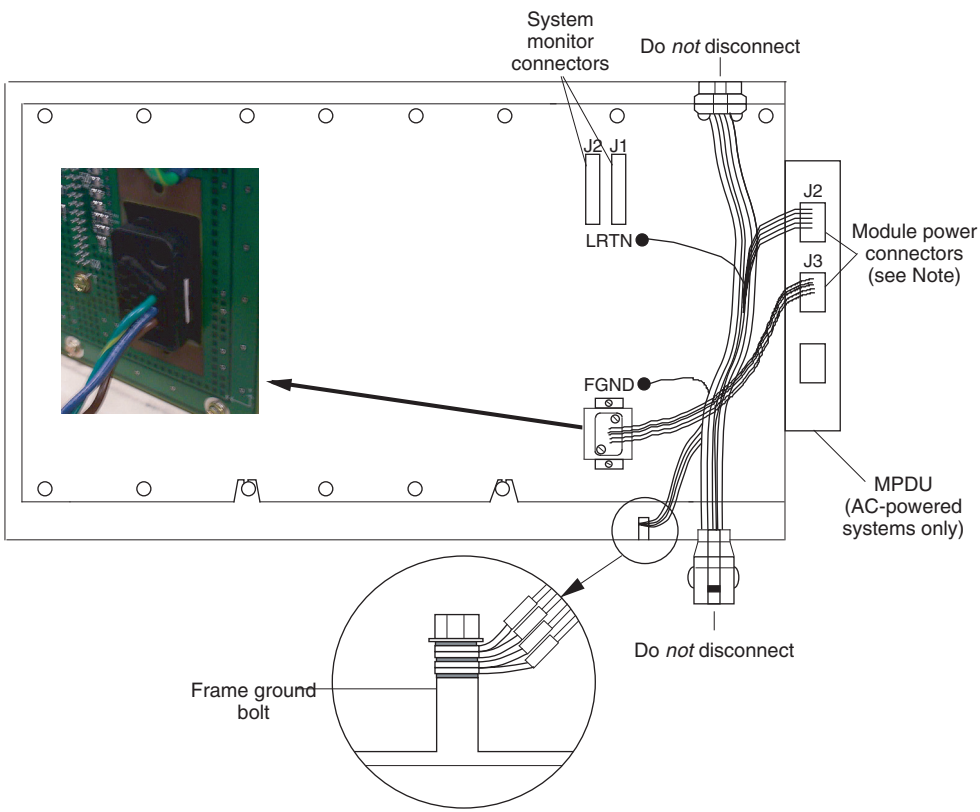
Note: With AC power, the module power connectors plug into J1 and J2 on the MPDU. (With DC power, they connect to each other and hang loose.)

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 14
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.

- 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 will not be able to 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.

End of Procedure

Install the CP card cage in Core 1

Procedure 13
Installing the CP card cage in Core 1

1 Check that the card cage is configured as Core 1. See Table 13 for instructions.

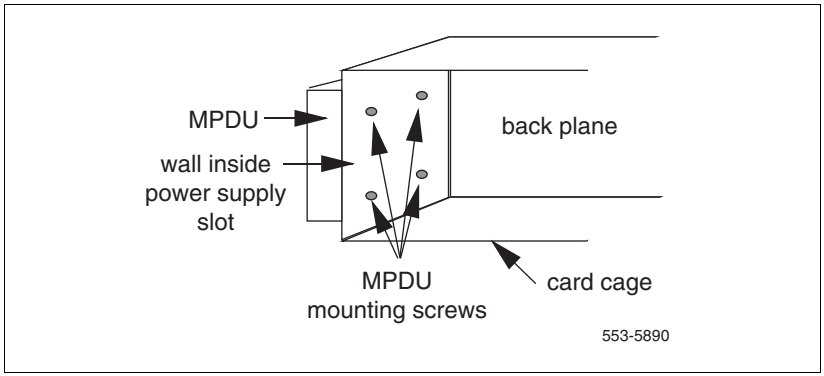
Table 13
Core module ID switch settings (System Utility card)

	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 15.

Note: Pre-thread 2 bottom mounting screws at the back of the Core/Net shelf.

Figure 15
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.

CAUTION — Service Interruption

Damage to Equipment

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

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

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

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

8 Pre-route 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.)

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

10 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 14
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 15
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 14 on page 73.

   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 14 shows the 3PE settings for cards installed in CP Core/Net Modules.

Table 14
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 16
Installing the Security Device

The Security Device fits into the System Utility card (see Figure 16 on page 75.) 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

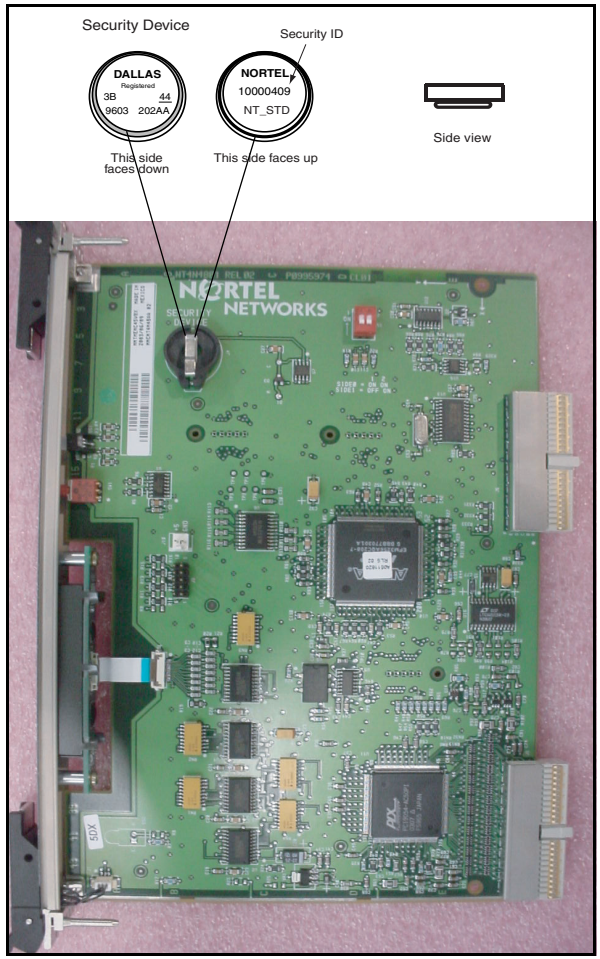
   If the original system did not have an IODU/C, use the Security Device provided with the Software Install Kit.

   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 16
Security Device

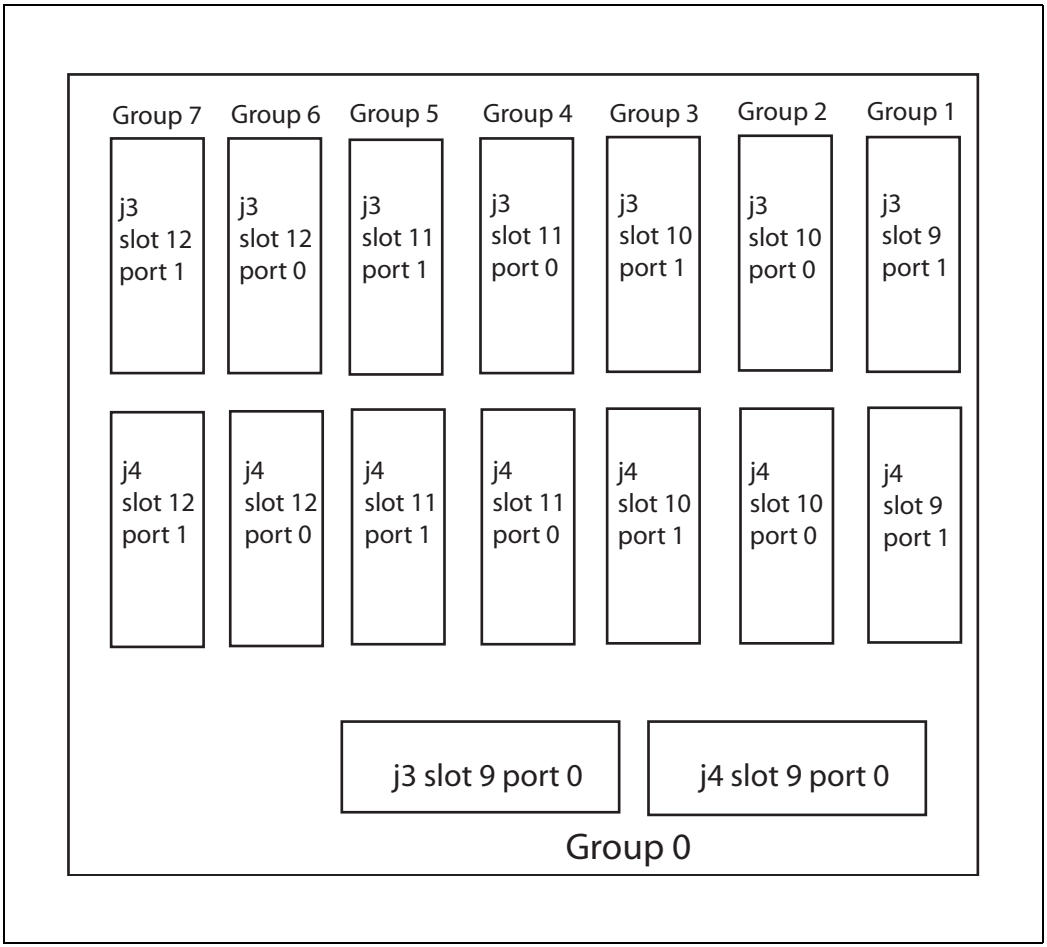


Cable Core 1

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 17
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 18 on page 81 and Table 15 on page 79.

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.

When upgrading to CP PIV, it is important to know whether Network group 0 will be in the Core/Net module or not. In many installations, Group 0 will be established in a standard Network shelf, and should occupy a higher Network group in the Core/Net.

If Network group 0 will be in the Core/Net, the factory configuration of the new Core/Net modules is correct, and no further action is required.

If Network Group 0 will not be in the Core/Net module, some re-configuration of the processor module is required to allow for concurrent or future use of the Network portion of the Core/Net for a higher Network group.

The NT4N40 shelf is factory installed with NT4N29 cables and is configured as group 0. If the network portion of the Core/Net shelf is used as a higher

network group, use the extraction tool to disconnect the NT4N29 cables from the Core backplane. Once the cables are disconnected, connect them to the appropriate group. For correct connector replacement, see Table 15 on page 79.

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 15
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 18 on page 81.

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1. See Figure 18 on page 81.

Add Side 1 FIJI hardware

Procedure 17
Add Side 1 FIJI hardware

1 Tag and disconnect the IGS/DIGS cables.

2 Remove the IGS/DIGs cards from Side 1.

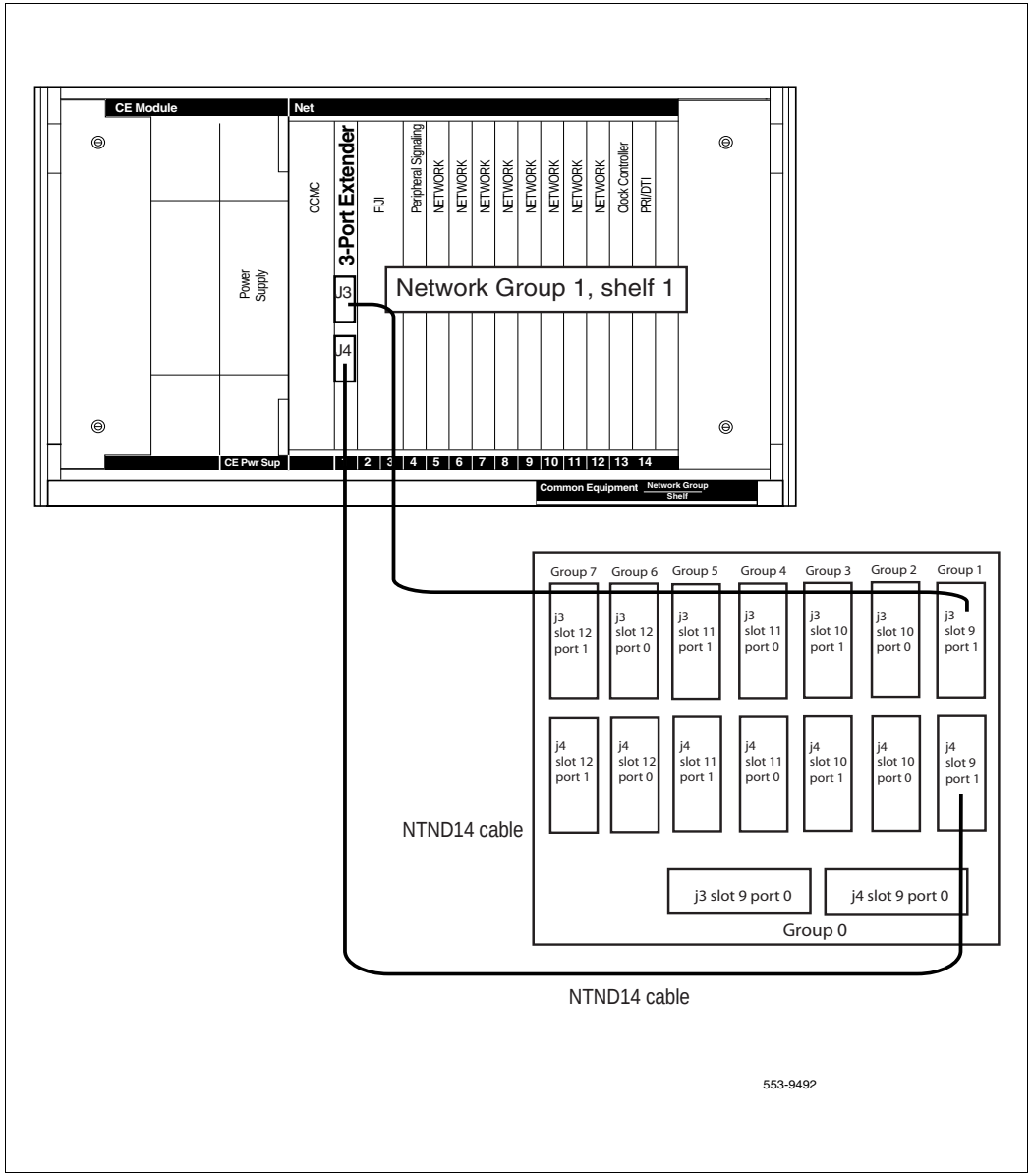
3 Faceplate disable the FIJI cards.

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

Note: FIJI cards are installed in slots 2 and 3 of the Network modules, and slots 8 and 9 of the Core/Net modules.

End of Procedure

Figure 18
3PE Fanout Panel connections



Procedure 18
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.

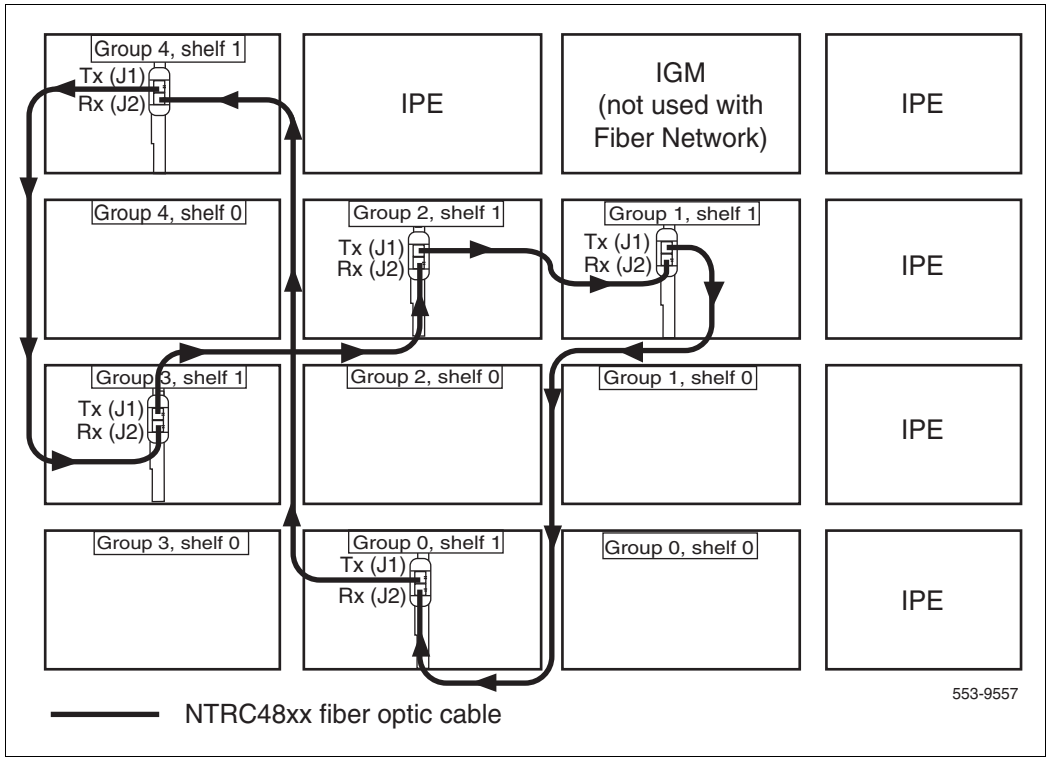
Create Fiber Ring 1. Connect the FIJI cards in all Network shelves 1 in **descending** order, from Tx to Rx (Figure 19 on page 83.)

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.

Figure 19
Shelf 1 *descending* fiber-optic Ring (Meridian 1 Option 81C 5 group example)



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

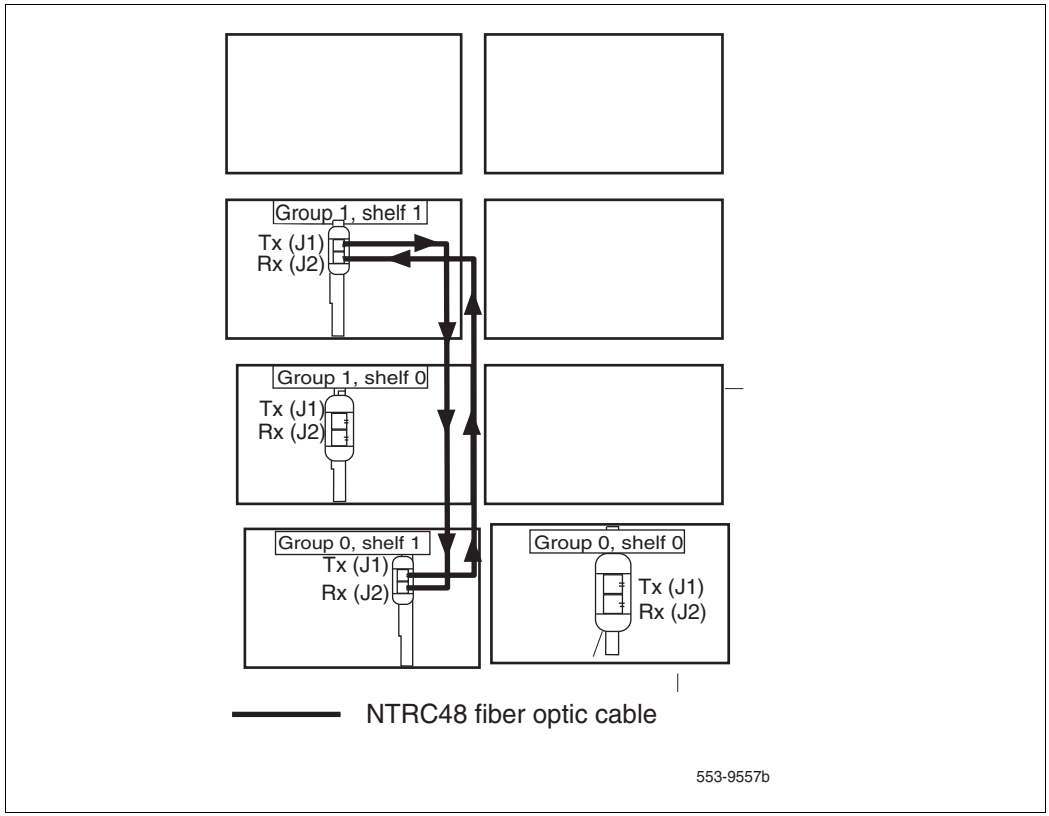
Note: Connect the Side 1 FIJI Ring cables only.

Table 16
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 20
Shelf 1 des*cending* fiber-optic Ring (Meridian 1 Option 81 2 group example)



Procedure 19
Cable the Clock Controller 1 to FIJI hardware

Connect the cables to the Clock Controller 1 as shown in Figure 21 on page 86.

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

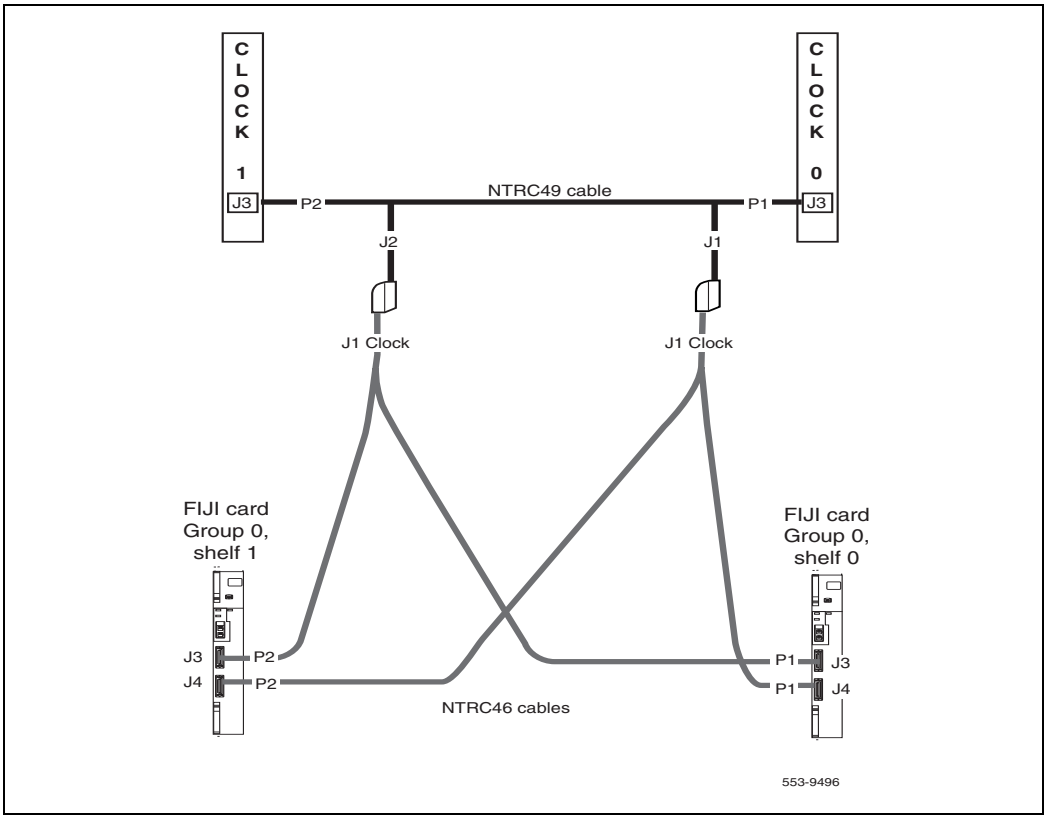
2 Connect P2 of the NTRC49 cable to port J3 of Clock Controller 1.

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.

Figure 21
Clock Controller cable configuration



Power up Core 1

Procedure 20
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 21
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 22
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 5.0 upgrade

Upgrading the software

Procedure 23 outlines the steps involved in installing CS 1000 Release 5.0 for the CP PIV processor.

Procedure 23
Upgrading the software

1. Check that a terminal is now connected to COM 1.
2. Insert the RMD into the CF card slot.

3 Press the manual RESET button on the CP PIV card faceplate.

4 Enter <CR> at the Install Tool Menu.

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

                #####
              #########   ########
             ########``  `##############
            ########       ``     `##############
           #######`          ######```####
           #######       ######``      `###                    NORTEL
          #######    #####``             ####
          ####### #####`                 ####   Communication Server 1000 Software
          `#########`                   ####`
           #######`                    #####           Install Tool version 29
           `#######                  #####`
           ##########              `###`                 Copyright 1992 - 2007
          ##``##########             #
         ##    `#########################
         `#      `#########################
           ############################``
             `````````  ````####````

        Please press <CR> when ready ...

/d/ - Volume is OK

****
```

5 The system attempts to validate and format the FMD partitions. The following format will occur only if the on-board 1 GByte FMD is blank.

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

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

                                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 following keycode files are available on the removable media:

                  Name                      Size       Date         Time
                ----------------------      ------    -----------  -------
 <CR> -> <1> - 491L_PIV.KCD                  1114    Dec-04-2006   16:07
         <q> - Quit

         Enter choice> 1
```

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”.

7 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 (CPP4 processor on xxxx).
```

Note: The software release displayed depends on the keycode file content. The machine type displayed can be one of the following, according to the keycode content.

- 3521 (CP PIV processor on CS 1000M SG) for Meridian 1 Option 61C CP PIV
- 3621 (CP PIV processor on CS 1000M MG) for CS 1000E and Meridian 1 Option 81C CP PIV systems

8 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 "<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>

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

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 The Dependency List menus appear.

```
 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> y

>Processing the install control file ...

>Installing release xxxx
```

14 The Installation Status Summary appears.

```
                ------------------------------------------------
                            INSTALLATION STATUS SUMMARY
                ------------------------------------------------

        +=================+========+========+============================+
        |     Option      | Choice | Status |           Comment          |
        +=================+========+========+============================+
        | SW: RMD to FMD  |  yes   |        | install for rel xxxxx      |
        +-----------------+--------+--------+----------------------------+
        | Dependency Lists|  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
          IPMG Software:  |  yes   |        | install for rel xxxxx      |
        +-----------------+--------+--------+----------------------------+
        | Database        |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
        | CP-BOOTROM      |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+

        Please enter:
<CR> -> <y> - Yes, start installation.
        <n> - No, stop installation. Return to the Main Menu.

        Enter choice>
>Checking system configuration
```

15 Enter <CR> to confirm and continue installation.

Note: After entering yes below, the system copies the software from RMD to FMD (the files copied are listed).

```
        Please enter:
<CR> -> <y> - Yes, start installation.
        <n> - No, stop installation. Return to the Main Menu.

        Enter choice>
>Checking system configuration

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

        You selected to upgrade the system from release: 450W
        to release: 0491L.

        This will erase all old system files.
        Database files will NOT be erased. You may continue installing
        the software or quit now and leave your system unchanged.


        Please enter:
<CR> -> <a> - Continue with upgrade.
        <q> - Quit.

        Enter choice>
```

16 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 ...
```

17 The customer database installation from RMD is employed when upgrading CP PIV systems. Select option “<a> - Install CUSTOMER database.” from the database installation main menu.

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

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

You will now perform the database installation.

Please enter:

        <CR> -> <a> - Install CUSTOMER database.

(The Removable Media Device containing the
customer database must be in the drive.

        <b> - Install DEFAULT database.

(The System S/W media must be in drive.)

        <c> - Transfer the previous system
database.(The floppy disk containing the customer
database must be in the floppy drive of the MMDU
pack.

        <e> - Check the database that exists on
the Fixed Media Device.

        <q> - Quit.

Enter choice> a or <CR>
```

The system verifies which customer databases are available on the RMD under directory ‘backup’ and displays them.

```
The following databases are available on the
removable media:

          <CR> -> <s> - Single database
           created: mon-day-year hour:min

          <q>-Quit

Enter choice> s or <CR>
```

18 Continue with database installation.

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

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

You selected to transfer single database from RMD
to FMD on Core x.

The database will be converted from release xxxx.

If you quit now, the database will be left
unchanged.

Please enter:

          <CR> -> <a> - Continue with database
install.

          <q> - Quit.

Enter choice> a or <CR>
```

The installation summary screen appears. Verify successful installation and enter <CR> when ready.

```
          ------------------------------------------------
                     INSTALLATION STATUS SUMMARY
          ------------------------------------------------

+==================+========+========+============================+
|     Option       | Choice | Status |           Comment          |
+==================+========+========+============================+
| SW: RMD to FMD   |   yes  |   OK   |  install for rel 04xxx     |
+------------------+--------+--------+----------------------------+
| Dependency Lists|   yes  |   OK   |                            |
+------------------+--------+--------+----------------------------+
| AUTO-CSU Feature|   no   |        |  AUTO-CSU Disabled         |
+------------------+--------+--------+-------------------+--------+
| IPMG Software:   |   no   |        |                            |
+------------------+--------+--------+----------------------------+
| Database         |   yes  |   OK   | conversion from xxxx       |
+------------------+--------+--------+----------------------------+
| CP-BOOTROM       |   yes  |   OK   |                            |
+------------------+--------+--------+----------------------------+

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

19 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
```

20 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 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 24
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 pre-upgraded 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 pre-upgrade 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

End of Procedure

Configuring IP addresses

Procedure 25
Configuring the IP addresses

Two unique IP address 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 "Checking for Peripheral Software Download to Core 1" on page 104. 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

Checking for Peripheral Software Download to Core 1

Enter LD 22 and print Target peripheral software version. The Source peripheral software version was printed in “Configuring IP addresses” on page 103. 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 26
Deleting CNIs

Software has configured the system for eight groups. 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

Reconfiguring I/O ports and call registers

Procedure 27
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 28
Rebooting Core 1

CAUTION

Service Interruption

The INI may take up to 15 minutes to complete.

CAUTION

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 CPU 0 only, faceplate disable the SBE cards.

2 In CPU 0 only, faceplate disable the MSI card.

3 In CPU 0 only, hardware disable the CPU card.

4 Faceplate disable Clock Controller 0 and unseat the card.

5 Faceplate disable all IGS/DIGS cards in shelf 0 and unseat the card.

6 Seat and faceplate enable Clock Controller 1.

7 Seat and faceplate enable all FIJI cards in shelf 1.

8 Press the 'RESET' button on the CP PIV card faceplate to load and initialize the system.

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

CAUTION

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.

Upgrading Core 0

Note: At this point, the active side Core/Net 1 registers all Network cards in Core/Net 0 as disabled.

Procedure 29
Faceplate disabling cards in core and network slots of Core/Net 0:

1 In Core/Net 0 only, faceplate disable the 3PE, Per Sig and all network cards.

2 Faceplate disable all IGS/DIGS cards in each network shelf 0.

End of Procedure

Table 17
Shelf 0 IGS/DIGS card locations

Network Group 0	Shelf 0	IGS/DIGS 0 & 2
Network Group 1	Shelf 0	IGS/DIGS 4 & 6
Network Group 2	Shelf 0	IGS/DIGS 8 & 10
Network Group 3	Shelf 0	IGS/DIGS 12 & 14
Network Group 4	Shelf 0	IGS/DIGS 18 & 20
Note: The DIGS card should be located in slot 9 of the network shelf.		

Procedure 30
Moving Clock Controller 0

CAUTION

Clock controller cards must be NTRB53 Clock Controller cards.

CAUTION

Service Interruption

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

If the system has a QPC Clock Controller, replace it with an NTRB53 Clock Controller (to be installed in slot 13 of any network shelf other than the Core/Net shelf) and verify settings according to Table 18 on page 112.

If the system has an NTRB53 Clock Controller, skip this procedure.

1. Label and disconnect the Clock Controller 1.
2. Disconnect the cable from the Clock Controller 1 faceplate card.
3. If primary and secondary clock reference cables are connected to the Clock Controller 1 faceplate, disconnect them last.
4. Remove QPC Clock Controller 1 from the Network Module.
5. Set the Clock Controller 1 switch settings according to and Table 18 on page 112.
6. Place the NTRB53 Clock Controller in the Network Shelf and slot. DO NOT seat the Clock Controller 1 and DO NOT faceplate enable the card.

7 Re-connect all reference cables.

Note: The Clock Controllers (0 and 1) must be located in Group 1 (in a 2 group system only). If in the future the Meridian 1 Option 81C CP PIV is upgraded to more than two Network groups, Nortel recommends that Clock Controller 0 and 1 be located in different Network groups.

Table 18
Clock Controller switch settings for NTRB53

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

End of Procedure

Power down Core/Net 0

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 0 module in the back of the column pedestal to OFF (down position).

Procedure 31
Removing Core 0 cables and card cage

1. Label and disconnect all cables to the front of the module.
2. Tape over the contacts to avoid grounding.
3. Tie all cables to the sides so the working area in front of the card cage is totally clear.
4. Remove the I/O safety panel by turning the screws on each side. Set the I/O safety panel aside.
5. Tag and disconnect all cables from the backplane to the interior of the I/O assembly.
6. Tag and disconnect all plugs, wires, and cables to the backplane.

   Note 1: Leave the network cards in the card cage. You will relocate them to the CP card cage later in the upgrade procedure.

   Note 2: Two people are needed to remove the Core card cage because of the weight of the card cage with the cards left installed.

7 Use a 1/4” nut driver to remove the two mounting screws at the bottom rear of the card cage that secure the card cage to the module casting. Keep the screws for use with the CP card cage.

CAUTION

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. Save 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 not to drop the nut or lock washer into the pedestal. See Figure 22 on page 115 for DC power connectors. See Figure 23 on page 116 for AC power connectors.

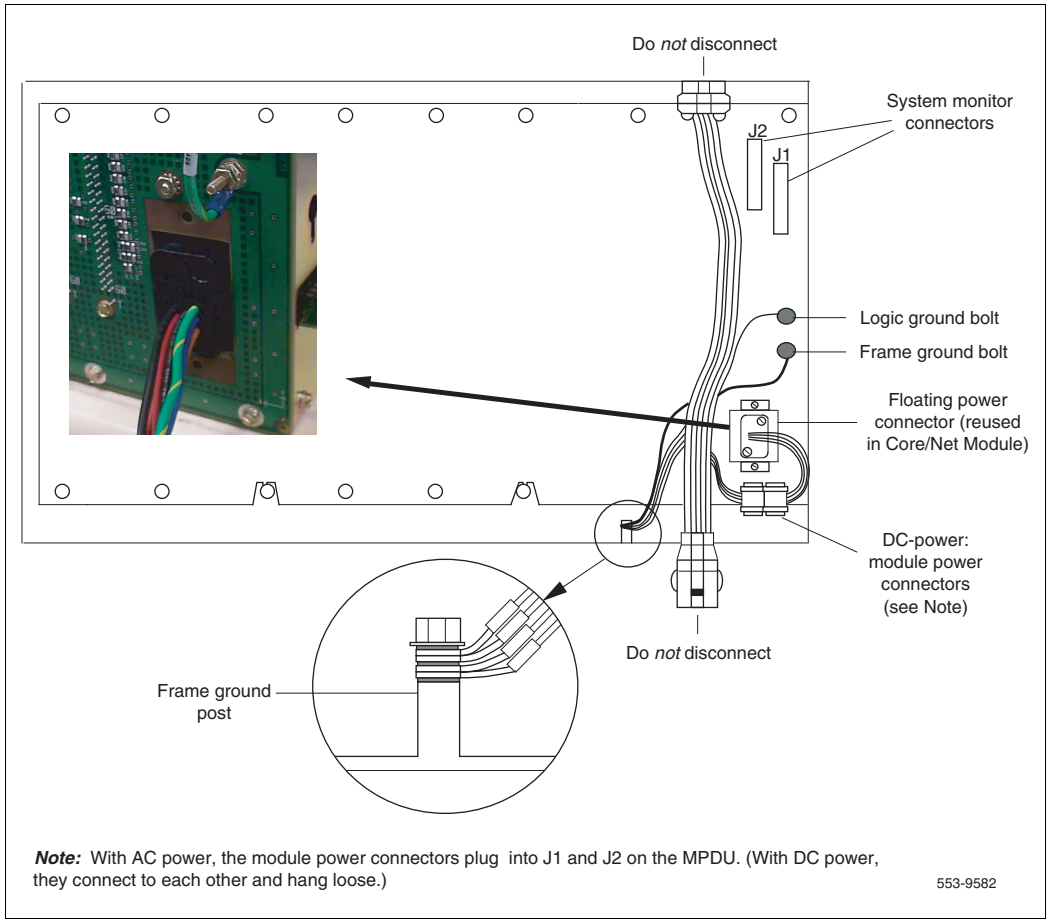
13 Remove the frame ground (FGND) (green) wire from the frame ground bolt on the module.

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.

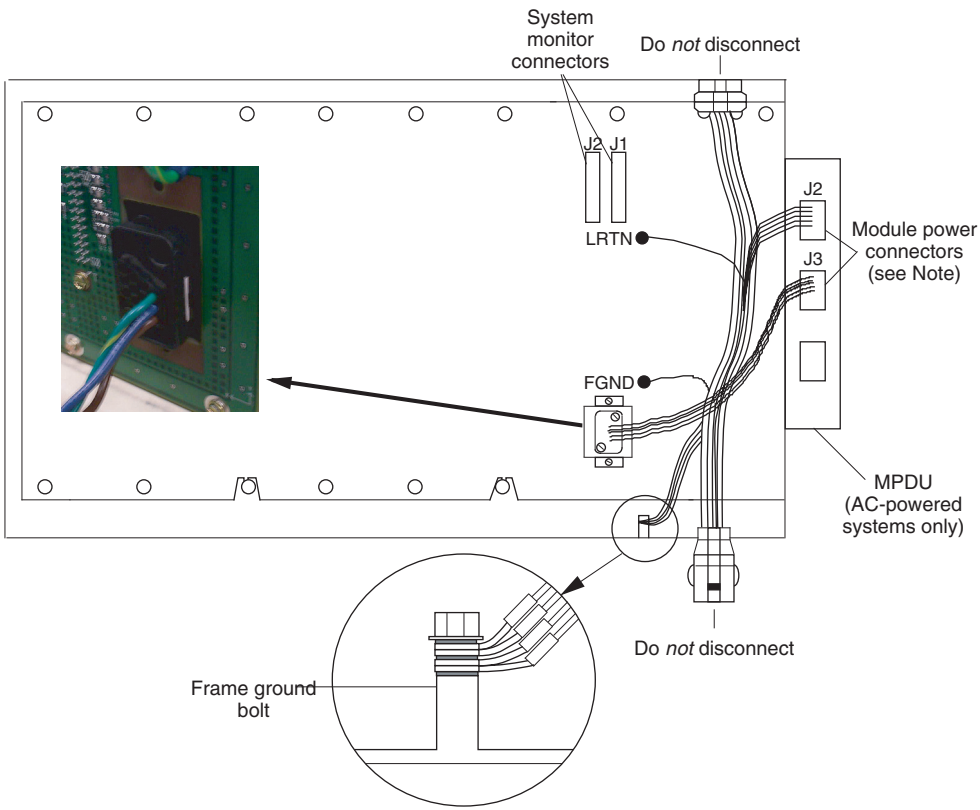
16 Remove the Core card cage from the module.

Figure 22
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.)

Figure 23
AC power connectors on the Core module backplane



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

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17 Remove the power harness and reserve it for reinstallation as part of installing 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.

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

WARNING

Be sure to perform the following step. If you do not tape the EMI shield in position, you cannot install the card cage in the module correctly.

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.

CAUTION

Damage to Equipment

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

End of Procedure

Upgrade Core 0 hardware

Check that the main Core cards (front side) are installed

Procedure 32
Checking main Core card installation

The main Core cards are installed in the factory as shown in Figure 24 on page 119.

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 24
Core card placement in the NT4N41 Core/Net Module (front)

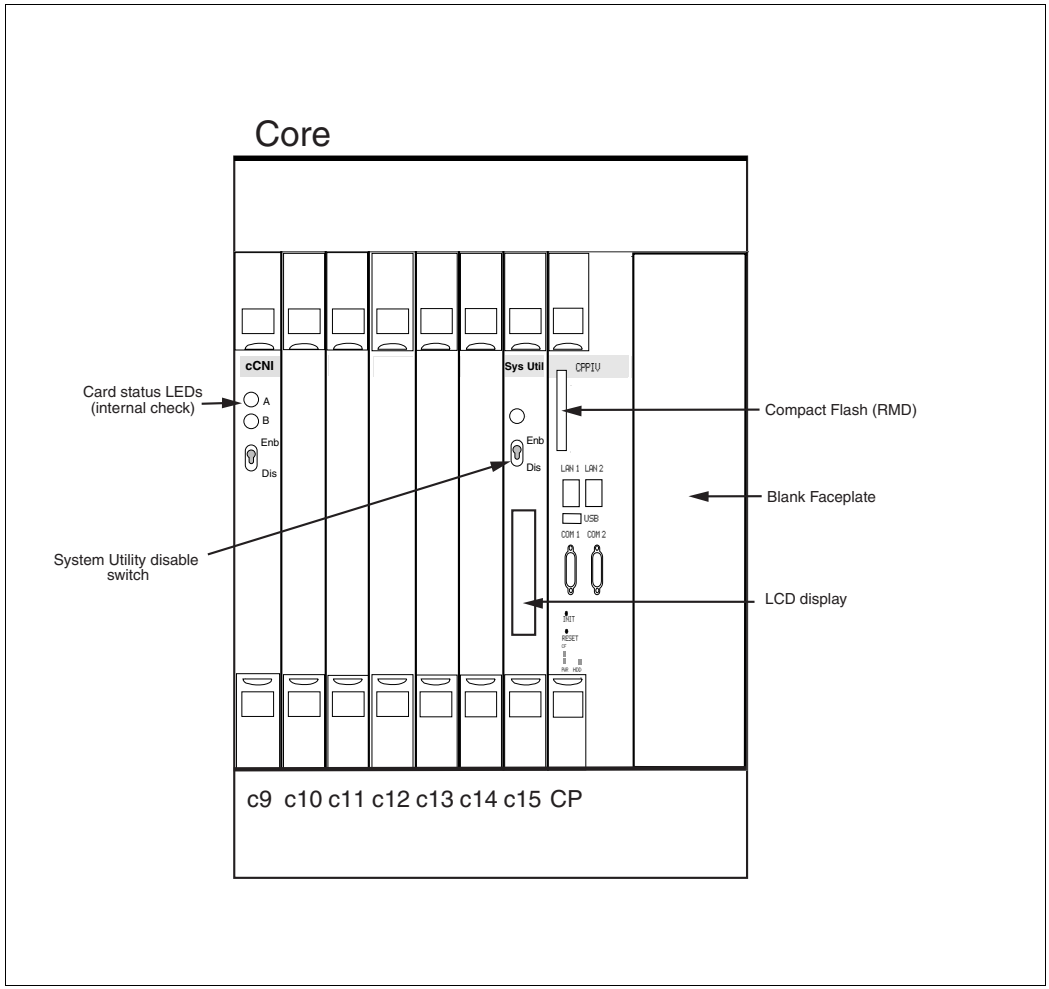

Check factory-installed cables

Table 20 lists factory-installed cables. See Figure 25.

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 25
Core/Net cable connections

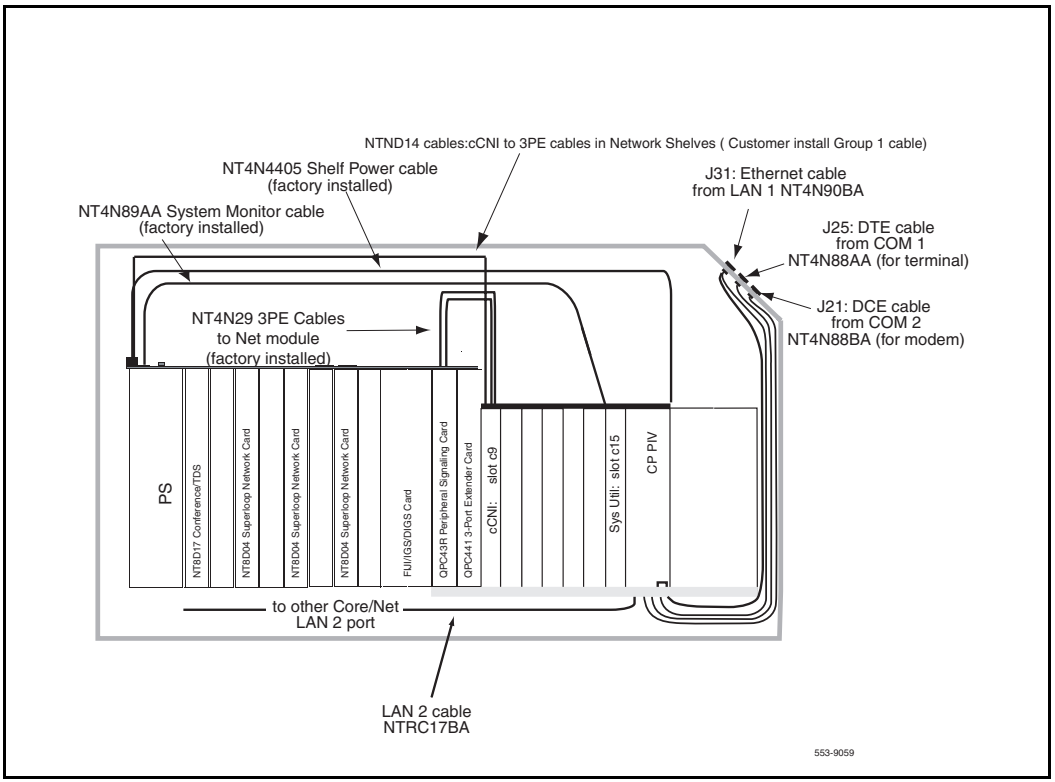

Install the Security Device

Procedure 33
Installing the Security Device

The Security Device fits into the System Utility card (see Figure 26 on page 122).

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.
2. Check that the Security Device is securely in place.

Figure 26
Security Device

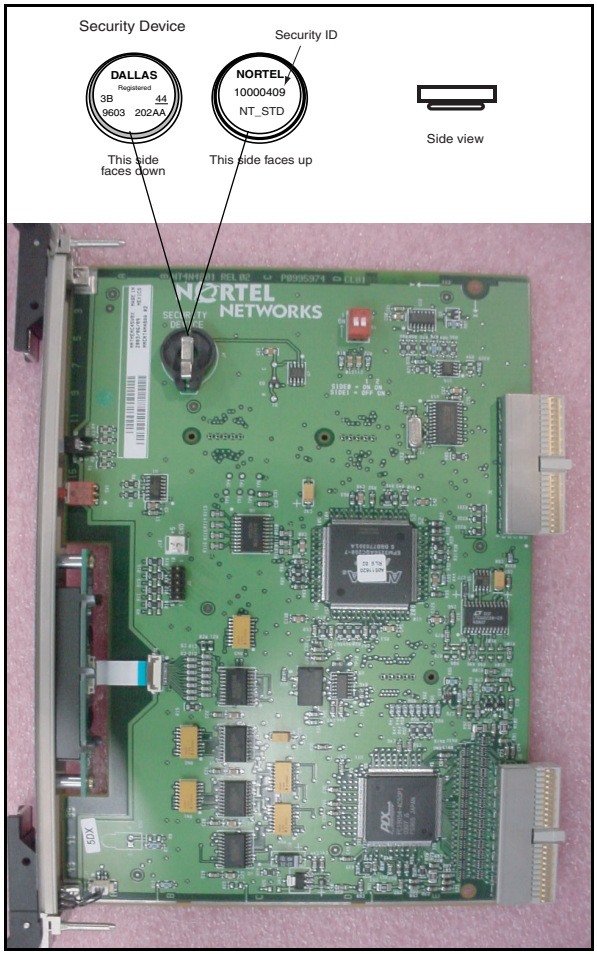

Install the CP card cage in Core 0

Procedure 34
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 27 on page 124.

Note: Pre-thread 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 PII card cage.

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

Figure 27
Location of the screws for the MPDU

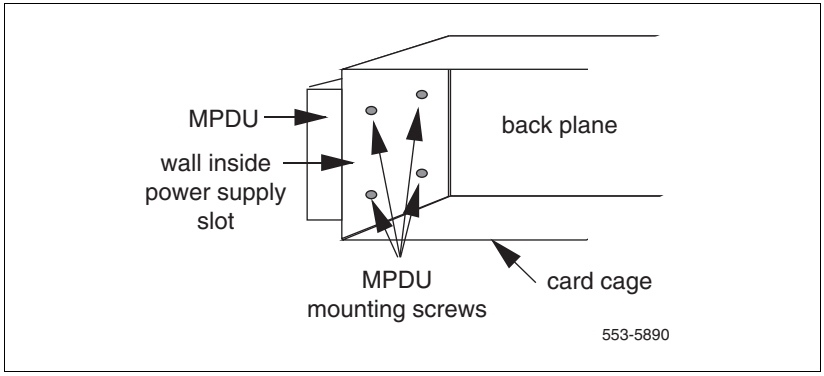

5 Hold the card cage firmly and make the following connections at the rear of the module.

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

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 Pre-route 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

Figure 28
CP PIV call processor card (front)

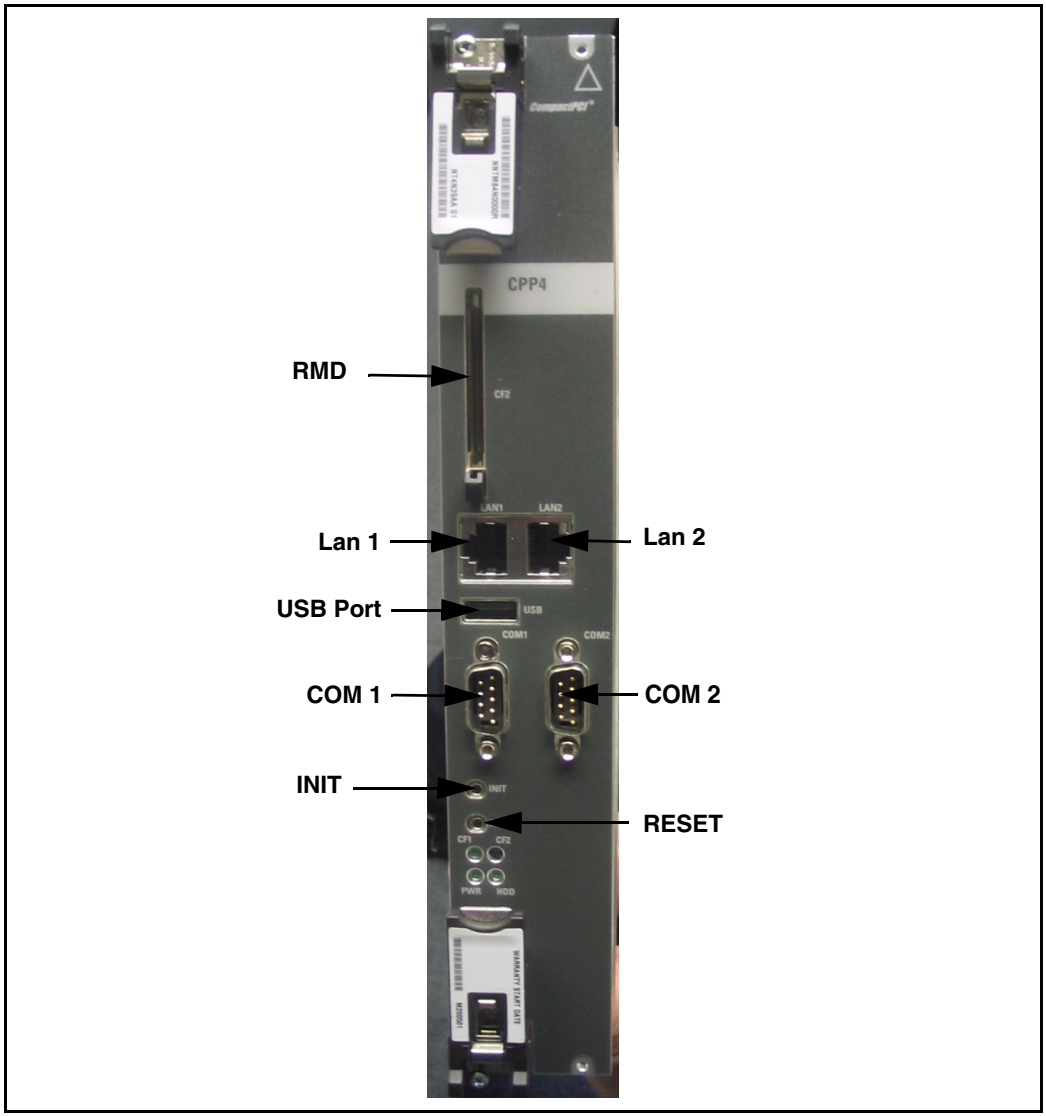

Unpack and install NT6D41CA (DC) or NT8D29BA (AC) Power Supply

Procedure 35
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 36
Relocating Network cards to CP Core/Net 0

1 Remove all remaining network cards from the Meridian 1 Option 81C Core/Net 0 **except for the IGS/DIGS cards**.

2 When you move the 3PE card, check the switch settings and jumpers. See Table 22 on page 129.

   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 on page 129 shows the 3PE settings for cards installed in CP Core/Net Modules.

3 Reinstall each removed card in the same network slot in the CP Core/Net 0.

4 Connect the tagged cables to the relocated cards.

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

Cabling 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 and LAN 2

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 29 on page 131.

Procedure 37
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.

5 Connect the NTRC17BA cable from the Core 0 CP PIV card faceplate LAN 2 ethernet connection to the Core 1 CP PIV card faceplate LAN 2 ethernet connection.

End of Procedure

Figure 29
Options for LAN 1 connection

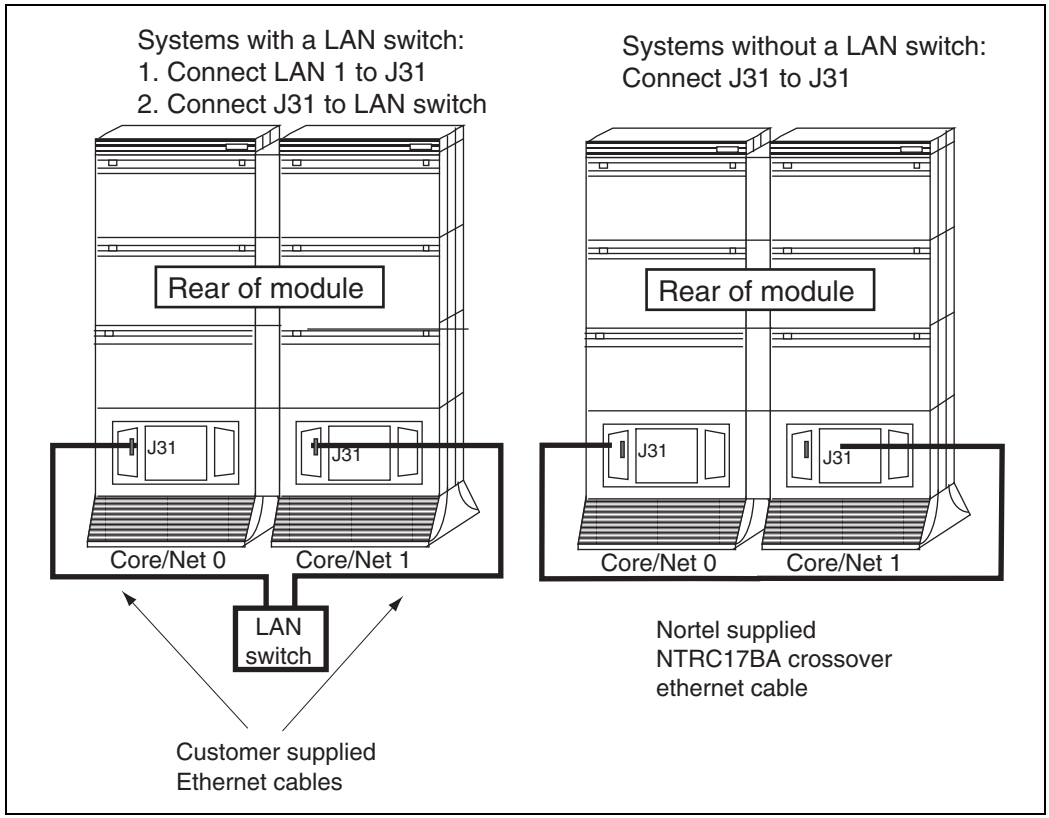

Figure 30
3PE card connections

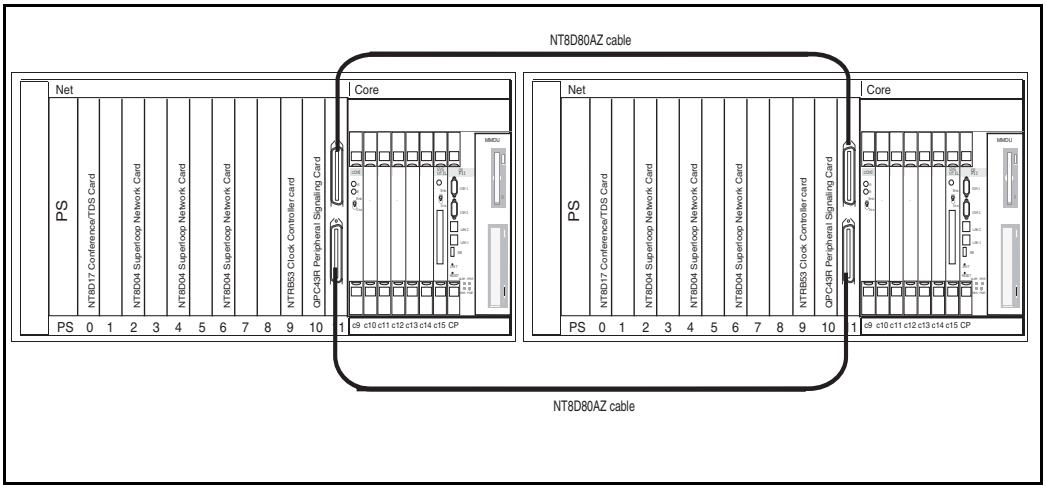

In Core 0, inspect factory-installed cables

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 38
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 31 on page 133).

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 32 on page 134).

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

End of Procedure

Figure 31
Fanout Panel connections on the CP Core/Net backplane

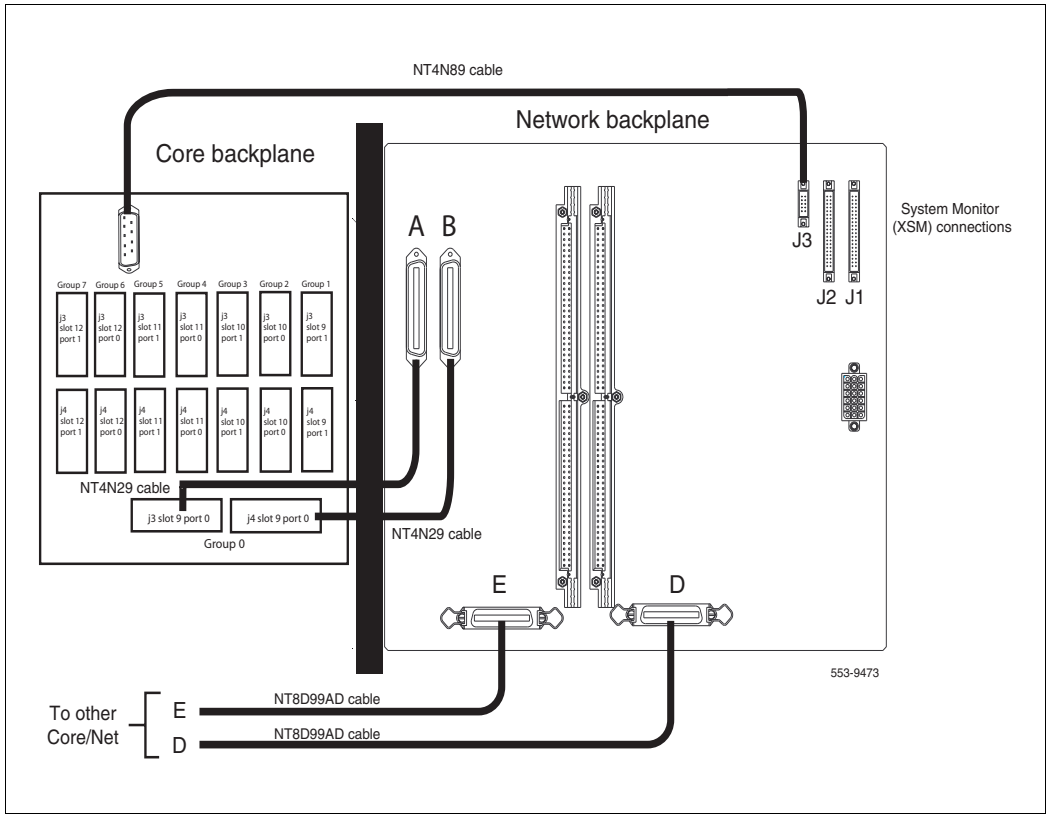

Figure 32
Fanout panel connectors

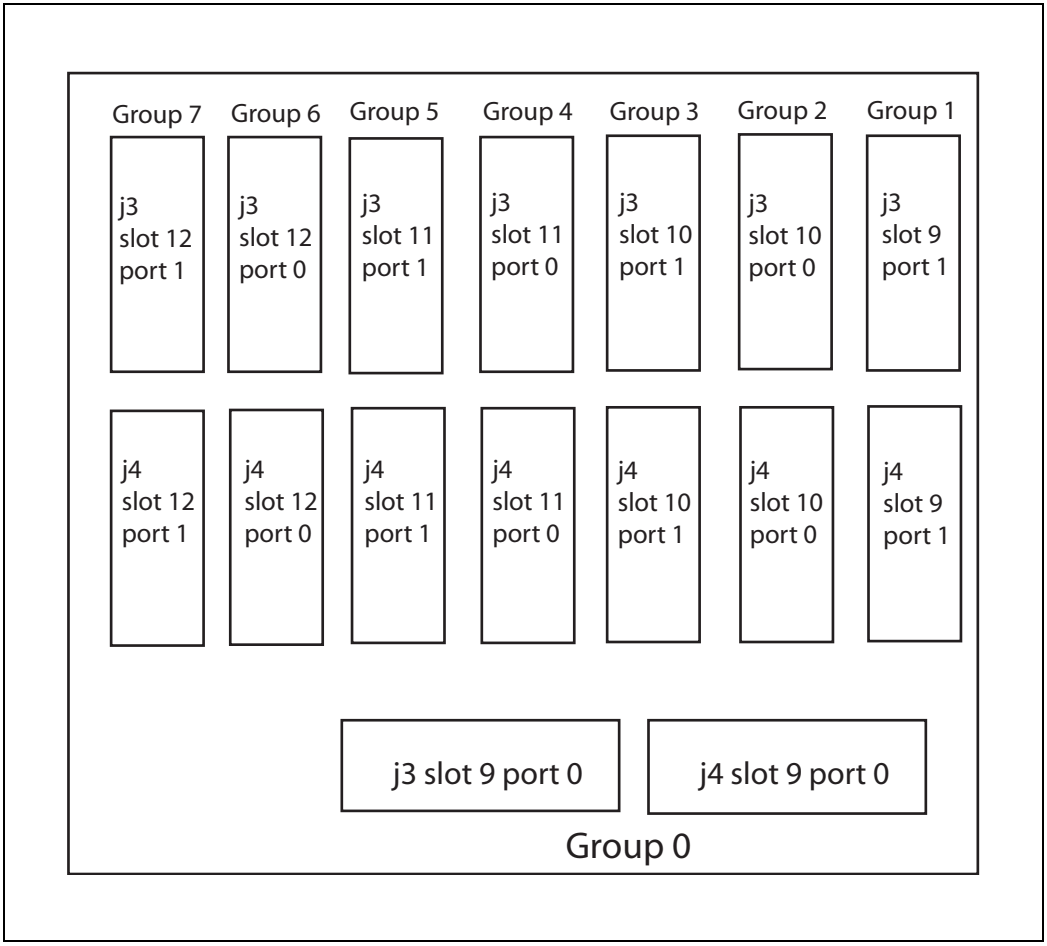

In Core 0, route and connect the cCNI to 3PE (NTND14) cables

The existing NTND14 cables can be reused for Network groups 1-7. Connect the NTND14 cables to the Fanout Panel in Core/Net 0. See Figure 33 on page 137 and Table 23 on page 136.

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.
- Check existing NTND14 cables. Replace any cables that do not meet the above requirement.

Note: The NTND14 BX 50' cables are manufacture discontinued.

When upgrading to CP PIV, it is important to know whether Network group 0 will be in the Core/Net module or not. In many installations, Group 0 will be established in a standard Network shelf, and should occupy a higher Network group in the Core/Net.

If Network group 0 will be in the Core/Net, the factory configuration of the new Core/Net modules is correct, and no further action is required.

If Network Group 0 will not be in the Core/Net module, some re-configuration of the processor module is required to allow for concurrent or future use of the Network portion of the Core/Net for a higher Network group.

The NT4N40 shelf is factory-installed with NT4N29 cables and is configured as group 0. If the network portion of the Core/Net shelf is used as a higher network group, use the extraction tool to disconnect the NT4N29 cables from the Core backplane. Once the cables are disconnected, connect them to the appropriate group. For correct connector replacement, see Figure 33 on page 137.

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 33 on page 137).

Note 2: Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 33 on page 137)

Figure 33
3PE Fanout Panel connections

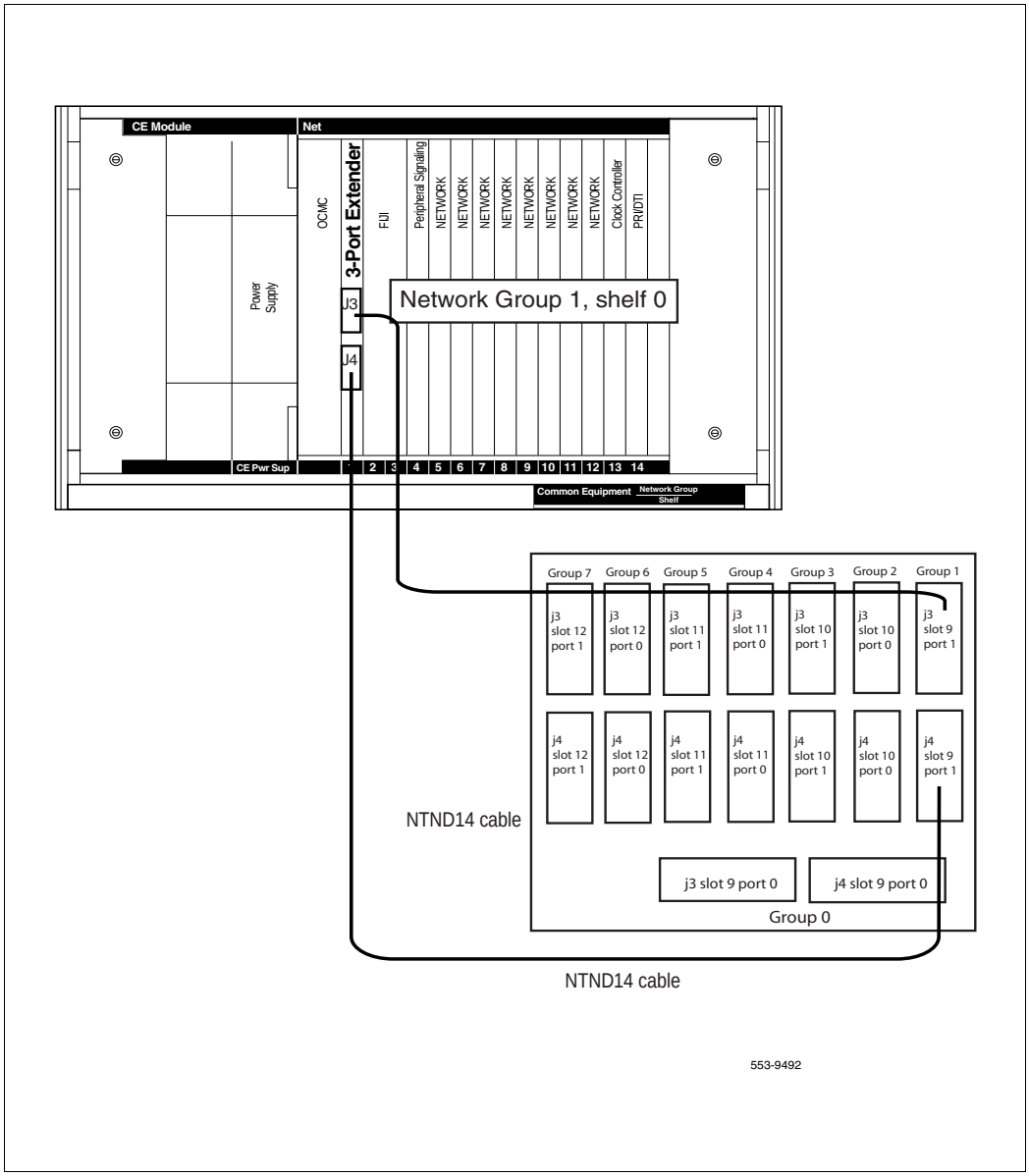

Adding Side 0 FIJI hardware

Procedure 39
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.

End of Procedure

Procedure 40
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

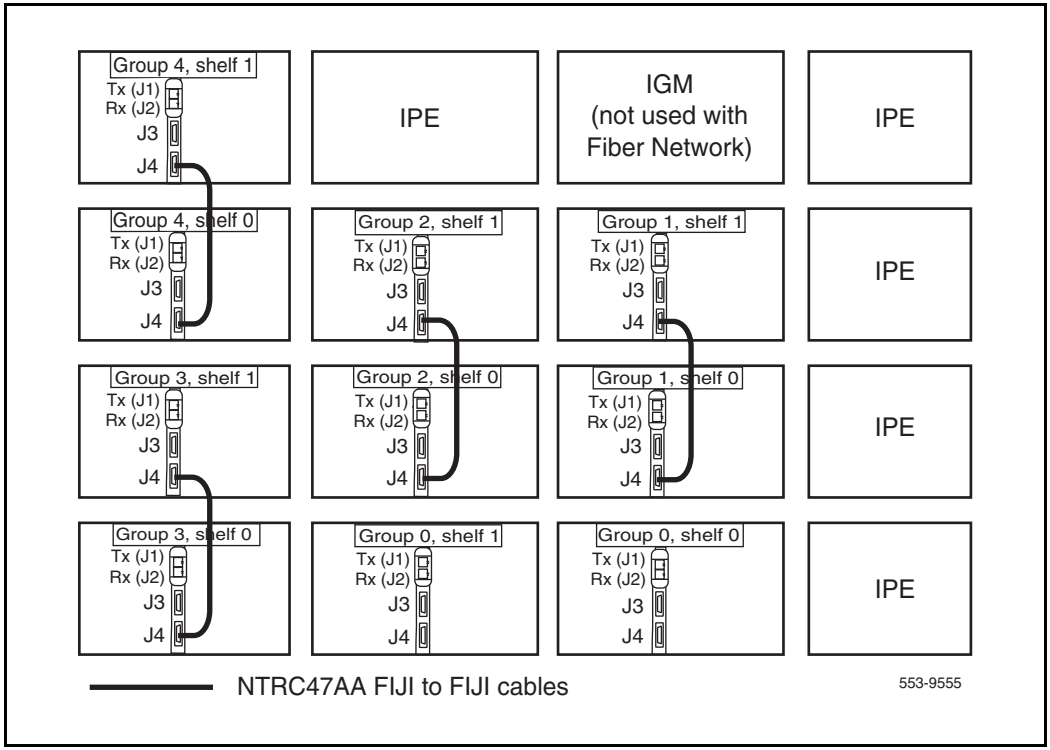

Procedure 41
Connecting the shelf 0 FIJI Ring cables (ascending)

Create Fiber Ring 0. Connect the FIJI cards in all Network shelves 0 in **ascending** order, from Tx to Rx ports (see Figure 34 on page 141 and Figure 35 on page 143).

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 34
Shelf 0 as*cending* fiber optic Ring (Meridian 1 Option 81C 2 group example)

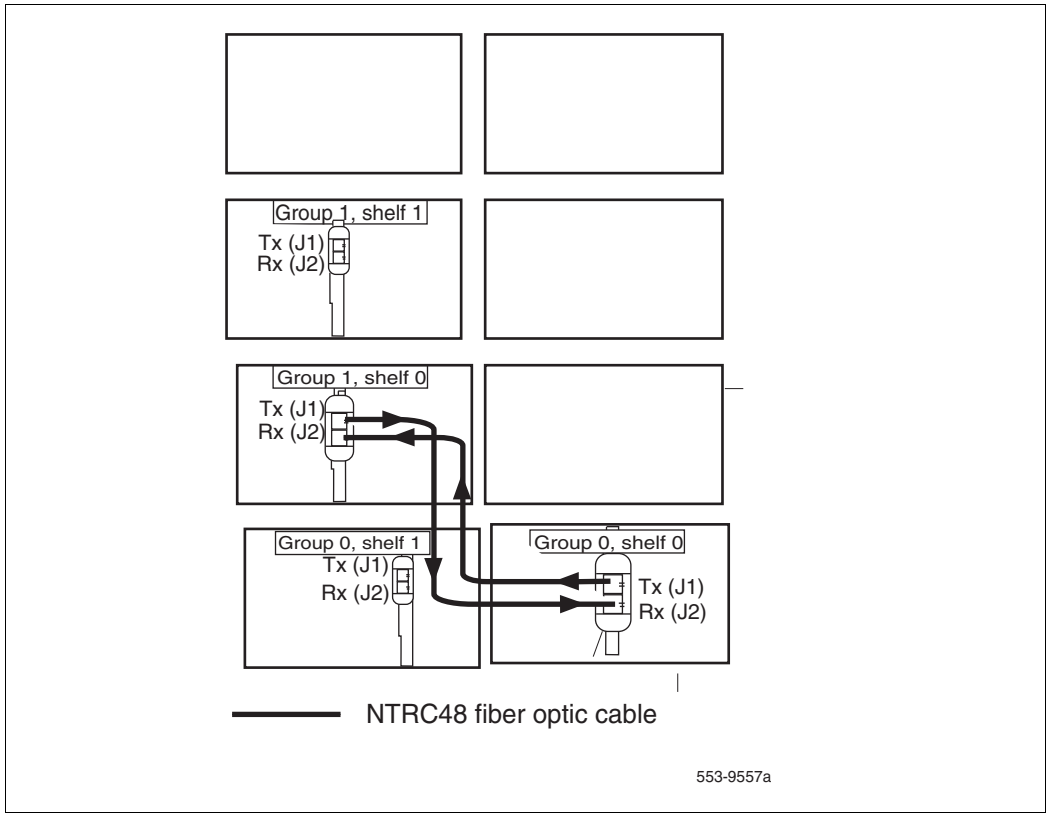

5 To complete the Ring, connect a final cable from the Tx (J1) port in the **highest number group** back to the Rx (J2) port in **Group 0, shelf 0.**

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 35
Shelf 0 *ascending* fiber optic Ring (Meridian 1 Option 81C 5 group example)

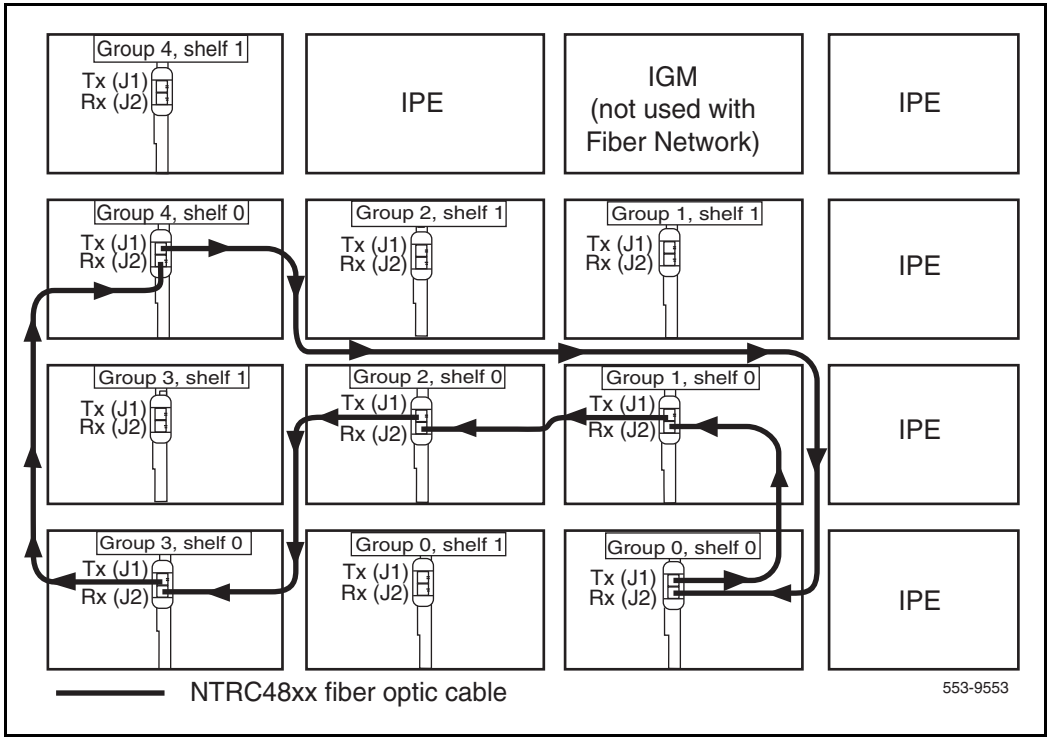

Procedure 42
Cabling the Clock Controllers

Note: 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.

Note: Connect the cables to the Clock Controllers as shown in Figure 36 on page 144:

1 Connect the Clock to Clock cable:

a. Connect J1 of the NTRC49 cable to port J3 of Clock Controller 0.

b. Connect J2 of the NTRC49 cable to port J3 of Clock Controller 1.

2 Connect a Clock 0 to FIJI cable:

a. Connect J2 of the NTRC46 cable from Clock 0 to J4 of the FIJI card in Group 0, shelf 1.

End of Procedure

Figure 36
Clock Controller cable configuration

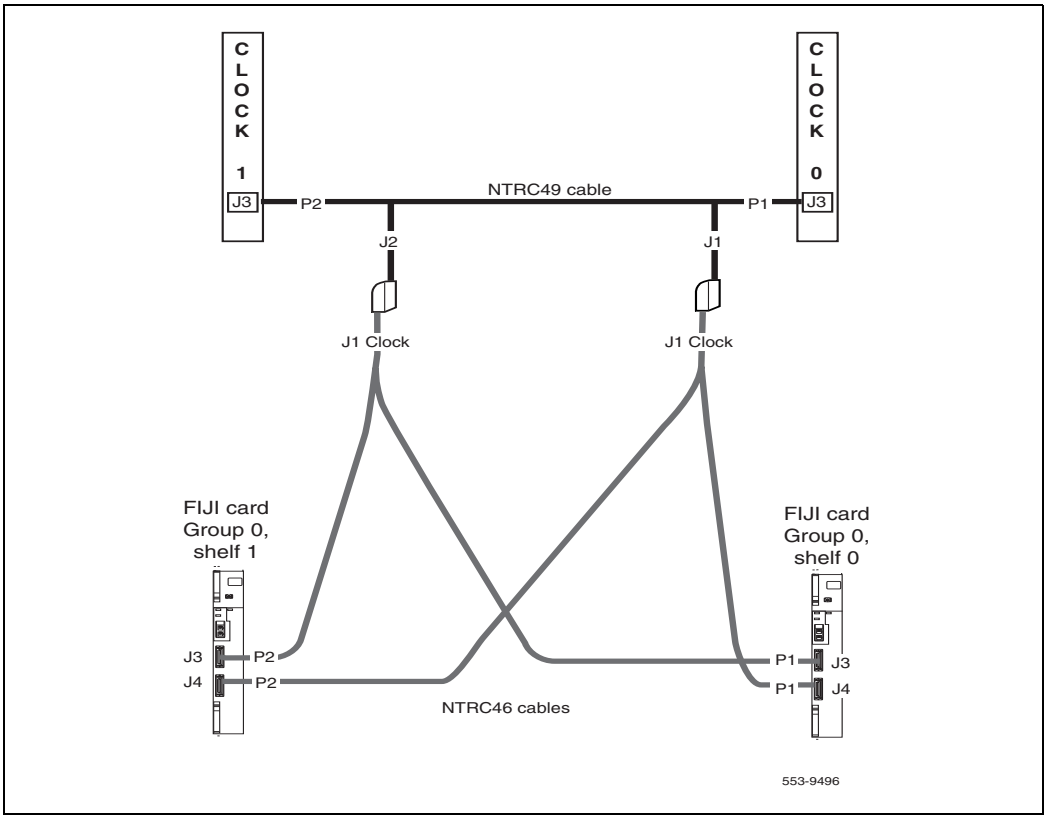

Power up Core 0

Procedure 43
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 44
Powering up core cards

1 Disconnect NTRC17BA crossover ethernet cable from the faceplate of CPU 0.

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).

4 10 seconds after power up of Core/Net 0, press the INI button on Core/Net 1.

5 Wait for the system to load and initialize.

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

End of Procedure

Procedure 45
Testing Core/Net 1

1 Check dial-tone.

2 Test the Fiber Rings

See the *Software Input/Output: Maintenance* (NN43001-711) for more information on 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 (CallPilot, Symposium, Meridian Mail, and so on.)

End of Procedure

CS 1000 Release 5.0 upgrade

Upgrading the software

Procedure 46 outlines the steps involved in installing CS 1000 Release 5.0 for the CP PIV processor.

Procedure 46
Upgrading the software

1. Check that a terminal is now connected to COM 1.
2. Insert the RMD into the CF card slot.

3 Press the manual RESET button on the CP PIV card faceplate.

4 Enter <CR> at the Install Tool Menu.

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

                #####
              #########   ########
             ########``  `##############
            ########      ``     `##############
           #######`          ######```####
           #######      ######``      `###                   NORTEL
          #######    #####``            ####
          ####### #####`                ####   Communication Server 1000 Software
          `#########`                  ####`
           #######`                   #####          Install Tool version 29
           `#######                  #####`
           ##########               `###`               Copyright 1992 - 2007
          ##``##########             #
         ##    `#########################
         `#      `########################
           ############################``
            `````````  ````####````

        Please press <CR> when ready ...

/d/ - Volume is OK

****
```

**5** The system attempts to validate and format the FMD partitions. The following format will occur only if the on-board 1 GByte FMD is blank.

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

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

                                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 following keycode files are available on the removable media:

                  Name                    Size       Date         Time
                ----------------------    ------    -----------  -------
 <CR> -> <1> - 491L_PIV.KCD                1114    Dec-04-2006   16:07
         <q> - Quit

         Enter choice> 1
```

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”.

7 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 (CPP4 processor on xxxx).
```

Note: The software release displayed depends on the keycode file content. The machine type displayed can be one of the following, according to the keycode content.

- 3521 (CP PIV processor on CS 1000M SG) for Meridian 1 Option 61C CP PIV
- 3621 (CP PIV processor on CS 1000M MG) for CS 1000E and Meridian 1 Option 81C CP PIV systems

8 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 “<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>

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

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 The Dependency List menus appear.

```
 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> y

>Processing the install control file ...

>Installing release xxxx
```

14 The Installation Status Summary appears.

```
                ------------------------------------------------
                            INSTALLATION STATUS SUMMARY
                ------------------------------------------------

        +=================+========+========+============================+
        |      Option     | Choice | Status |           Comment          |
        +=================+========+========+============================+
        | SW: RMD to FMD  |  yes   |        | install for rel xxxxx      |
        +-----------------+--------+--------+----------------------------+
        | Dependency Lists|  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
          IPMG Software:  |  yes   |        | install for rel xxxxx      |
        +-----------------+--------+--------+----------------------------+
        | Database        |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+
        | CP-BOOTROM      |  yes   |        |                            |
        +-----------------+--------+--------+----------------------------+

        Please enter:
<CR> -> <y> - Yes, start installation.
        <n> - No, stop installation. Return to the Main Menu.

        Enter choice>
>Checking system configuration
```

15 Enter <CR> to confirm and continue installation.

Note: After entering yes below, the system copies the software from RMD to FMD (the files copied are listed).

```
        Please enter:
<CR> -> <y> - Yes, start installation.
        <n> - No, stop installation. Return to the Main Menu.

        Enter choice>
>Checking system configuration

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

        You selected to upgrade the system from release: 450W
        to release: 0491L.

        This will erase all old system files.
        Database files will NOT be erased. You may continue installing
        the software or quit now and leave your system unchanged.


        Please enter:
<CR> -> <a> - Continue with upgrade.
        <q> - Quit.

        Enter choice>
```

16 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 ...
```

17 The customer database installation from RMD is employed when upgrading CP PIV systems. Select option "<a> - Install CUSTOMER database." from the database installation main menu.

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

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

You will now perform the database installation.

Please enter:

        <CR> -> <a> - Install CUSTOMER database.

(The Removable Media Device containing the
customer database must be in the drive.

        <b> - Install DEFAULT database.

(The System S/W media must be in drive.)

        <c> - Transfer the previous system
database.(The floppy disk containing the customer
database must be in the floppy drive of the MMDU
pack.

        <e> - Check the database that exists on
the Fixed Media Device.

        <q> - Quit.

Enter choice> a or <CR>
```

The system verifies which customer databases are available on the RMD under directory 'backup' and displays them.

```
The following databases are available on the
removable media:

          <CR> -> <s> - Single database
           created: mon-day-year hour:min

          <q>-Quit

Enter choice> s or <CR>
```

18 Continue with database installation.

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

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

You selected to transfer single database from RMD
to FMD on Core x.

The database will be converted from release xxxx.

If you quit now, the database will be left
unchanged.

Please enter:

          <CR> -> <a> - Continue with database
install.

          <q> - Quit.

Enter choice> a or <CR>
```

The installation summary screen appears. Verify successful installation and enter <CR> when ready.

```
          ------------------------------------------------
                    INSTALLATION STATUS SUMMARY
          ------------------------------------------------

+=================+========+========+============================+
|     Option      | Choice | Status |           Comment          |
+=================+========+========+============================+
| SW: RMD to FMD  |   yes  |   OK   |  install for rel 04xxx     |
+-----------------+--------+--------+----------------------------+
| Dependency Lists|   yes  |   OK   |                            |
+-----------------+--------+--------+----------------------------+
| AUTO-CSU Feature|   no   |        |  AUTO-CSU Disabled         |
+-----------------+--------+--------+--------------------+-------+
| IPMG Software:  |   no   |        |                            |
+-----------------+--------+--------+----------------------------+
| Database        |   yes  |   OK   | conversion from xxxx       |
+-----------------+--------+--------+----------------------------+
| CP-BOOTROM      |   yes  |   OK   |                            |
+-----------------+--------+--------+----------------------------+

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

19 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
```

20 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 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 47
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

Checking for Peripheral Software Download to Core 0

Enter LD 22 and print Target peripheral software version. The Source peripheral software version was printed in "Printing site data" on page 26.

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.

LD 22	
REQ	PRT
TYPE	PSWV
ISSP	Print System, DepList, and Patch information
SLT	Print System Limits
TID	Print the Tape ID
********	Exit program

Making the system redundant

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

Procedure 48
Making the system redundant

1 Hardware enable all CNI cards in Core 0

2 From Core 1, 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

3 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
```

4 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 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.

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 49
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 on 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 (CallPilot, Symposium, Meridian Mail, and so on.).

10 Check dial tone.

End of Procedure

Switching call processing

Procedure 50
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 51
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 on 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 (CallPilot, Symposium, Meridian Mail, and so on.).

10 Check dial tone.

End of Procedure

Switching call processing

Procedure 52
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.

Performing a customer backup data dump (upgraded release)

Procedure 53
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

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

End of Procedure

The Meridian 1 Option 71 upgrade to CS1000M MG CP PIV FNF is complete.

Installing a Signaling Server

Contents

This section contains information on the following topics:

Introduction

This chapter contains general instructions to install a Nortel CP PM server and detailed instructions to install a legacy Nortel ISP1100 server. This chapter contains no instructions to install an IBM X306m or HP DL320-G4 COTS 1U server. Please see the *IBM xSeries 306m Types 8848 and 8491 User Guide* or the *HP ProLiant DL320 Generation 4 Server User Guide* shipped with the COTS servers for detailed installation instructions. Of particular note, the IBM X306m and HP DL320-G4 servers require four-post

rack mounting, as opposed to two-post rack mounting for the Nortel ISP1100 server.

IMPORTANT!

Instructions to install an IBM X306m or HP DL320-G4 COTS 1U server are not included in this chapter. Detailed installation instructions can be found in the IBM xSeries 306m Types 8848 and 8491 User Guide or the HP ProLiant DL320 Generation 4 Server User Guide shipped with the server.

Readiness checklist

Before installing a Signaling Server in a CS 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 the Signaling Server is installed and used. 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 1000E: Installation and Commissioning* (NN43041-310) or *Communication Server 1000M and Meridian 1 Large System Installation and Configuration* (NN43021-310), as appropriate for your CS 1000 system?	
Received all equipment and peripherals? **For a Nortel ISP1100 (NTDU27AA), IBM X306m (NTDU99AAE5), and HP DL320-G4 (NTDU97AA) Signaling Servers:** • installation accessories for rack-mounting the server • AC-power cord • a DTE-DTE null modem cable (supplied) **For a CS 1000E Nortel CP PM Signaling Server (NTDW61BAE5):** • NTDW6102E5 - CP PM Signaling Server Hard Drive kit • N0118766 - CP PM Signaling Server Hard Drive Installation instructions • NTAK19ECE6 - CP PM Signaling Server 2 port SDI Cable assembly kit • NTDU0606E6 - CP PM Signaling Server 25cm RJ45 Ethernet Cable kit • a DTE-DTE null modem cable (supplied) • for a CS 1000M Nortel CP PM Signaling Server (NTDW66AAE5 model) • NTDW6102E5 - CP PM Signaling Server Hard Drive kit • N0118766 - CP PM Signaling Server Hard Drive Installation instructions • 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.	

Table 25
Readiness checklist (Part 2 of 2)

Have you:	
Made sure the area meets all environmental requirements?	
Checked for all power requirements?	
Checked for correct grounding facilities?	
Obtained the following: • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of multimeter • appropriate cable terminating tools • a computer (maintenance terminal) to connect directly to the Signaling Server, with: — teletype terminal (ANSI-W emulation, serial port, 9600 bps) — a web browser for Element Manager (configure cache settings to check for new web pages — every time the browser is invoked, and to empty the cache when the browser is closed)	
Prepared the network data as suggested in *Converging the Data Network with VoIP* (NN43001-260), *Communication Server 1000E: Planning and Engineering* (NN43041-220) or *Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220), as appropriate for your CS 1000 system?	
Read all safety instructions in *Communication Server 1000E: Installation and Commissioning* (NN43041-310) or *Communication Server 1000M and Meridian 1 Large System Installation and Configuration* (NN43021-310), as appropriate for your CS 1000 system?	

Installing the CP PM Signaling Server hardware

The Nortel CP PM server is a circuit card, and thus is not mounted in a rack. This section contains instructions for installing a Nortel CP PM Signaling Server in a CS 1000E and a CS 1000M system.

This section contains general instructions for installing the CP PM Signaling Server circuit cards in CS 1000E and CS 1000M systems. For more detailed installation instructions, refer to *Circuit Card: Description and Installation* (NN43001-311) and *Signaling Server: Installation and Commissioning* (NN43001-312).

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 set to position 2 to support the internal hard drive used on the CP PM Signaling Server circuit cards only.

Installation in a CS 1000E system

The NTDW61BAE5 model of the Nortel CP PM server is designed for use in a CS 1000E system. The first task that must be performed is to install the hard drive shipped with the server. For instructions, see "Install the hard drive on a Nortel CP PM Signaling Server" in *Signaling Server: Installation and Commissioning* (NN43001-312).

You can insert the NTDW61BAE5 model of the Nortel CP PM server into any slot of a CS 1000E Media Gateway (MG 1000E or MG 1000B) or 11C cabinet or chassis, except slot 0. Slot 0 is reserved for a Small System Controller (SSC) card or a Media Gateway Controller (MGC) card. Keying prevents the NTDW61BAE5 model from being inserted into this slot.

CAUTION — Equipment Damage

Do not insert the NTDW61BAE5 model of the Nortel CP PM server into any slot of a CS 1000M Universal Equipment Module (UEM). Doing so can cause electrical shorts on adjacent circuit cards.

Installation in a CS 1000M system

The NTDW66AAE5 model of the Nortel CP PM server is designed for use in a CS 1000M system. The first task that must be performed is to install the hard drive shipped with the server. For instructions, see "Install the hard drive on a Nortel CP PM Signaling Server" in *Signaling Server: Installation and Commissioning* (NN43001-312).

You can insert the NTDW66AAE5 model into any slot of a CS 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 CS 1000M UEM. These ports are used to connect your Nortel CP PM Signaling Server to the ELAN and TLAN Ethernet subnets of your CS 1000M system.

Use the following procedure to install ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM.

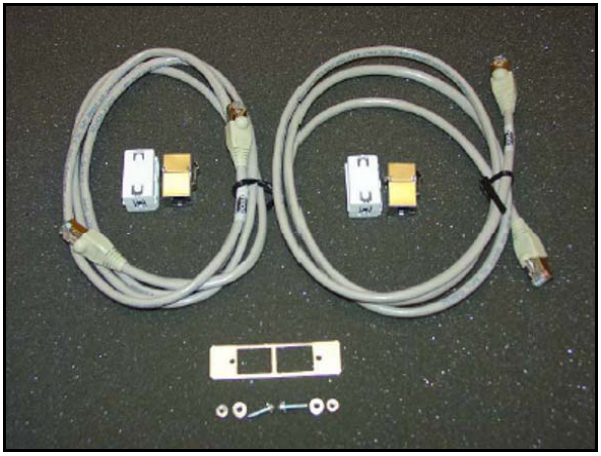
IMPORTANT!

Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M Universal Equipment Module (UEM) is service-disrupting. Power to the shelf must be turned off during this procedure.

Procedure 54
Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM

1 Obtain the special cabling kit (NTDW69AAE5) shipped with the CS 1000M model of the Nortel CP PM Signaling Server (NTDW66AAE5). The NTDW69AAE5 cabling kit should include the items shown in Figure 37.

Figure 37
NTDW69AAE5 Cabling Kit contents

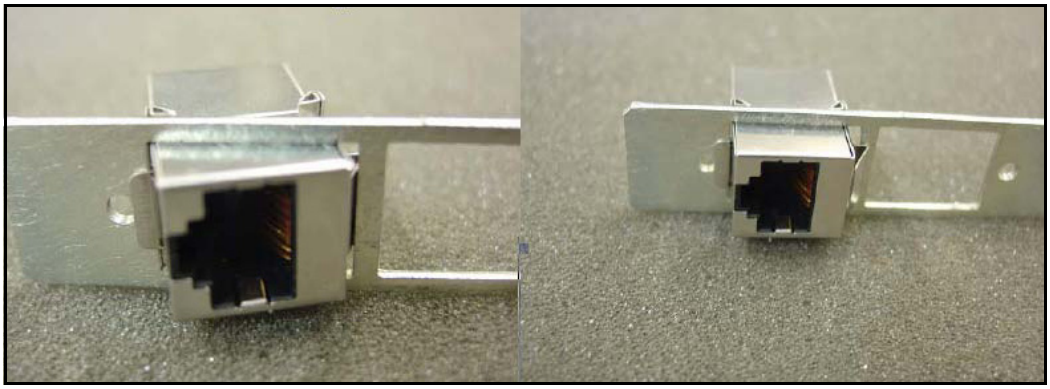


The following is a list of items in the NTDW69AAE5 cabling kit:

- 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

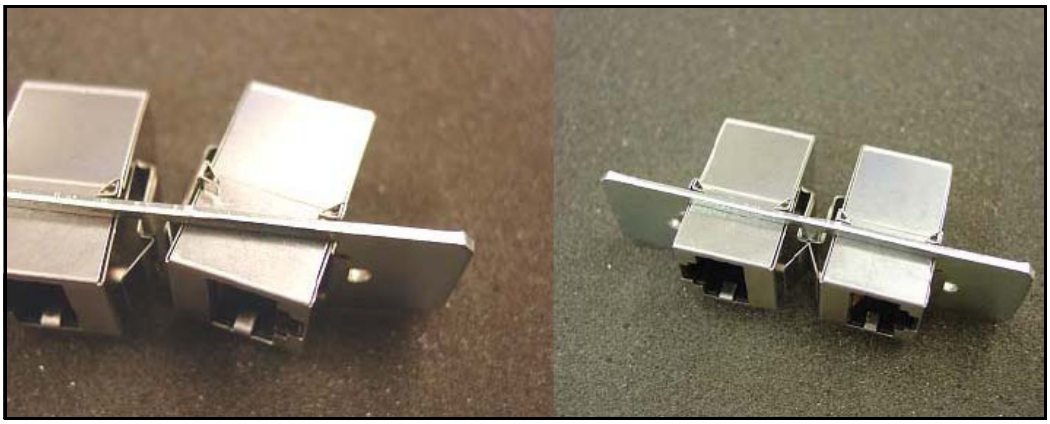
2 Insert an Ethernet port coupler into the adapter plate. See Figure 38.

Figure 38
One Ethernet port coupler in adapter plate



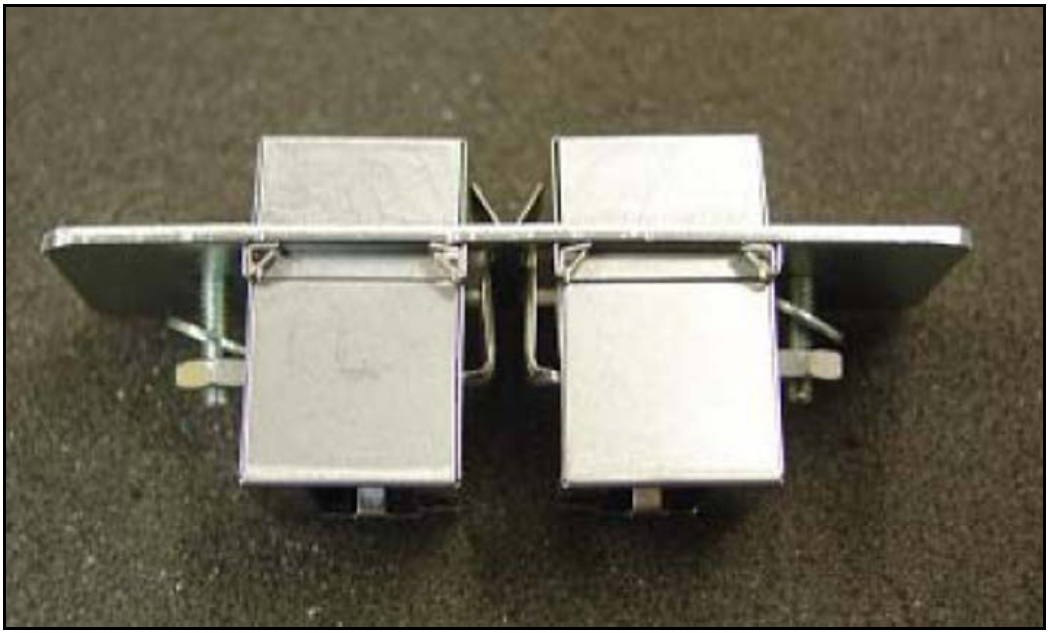
3 Insert the other Ethernet port coupler into the adapter plate. See Figure 39 on page 187.

Figure 39
Two Ethernet port couplers in adapter plate



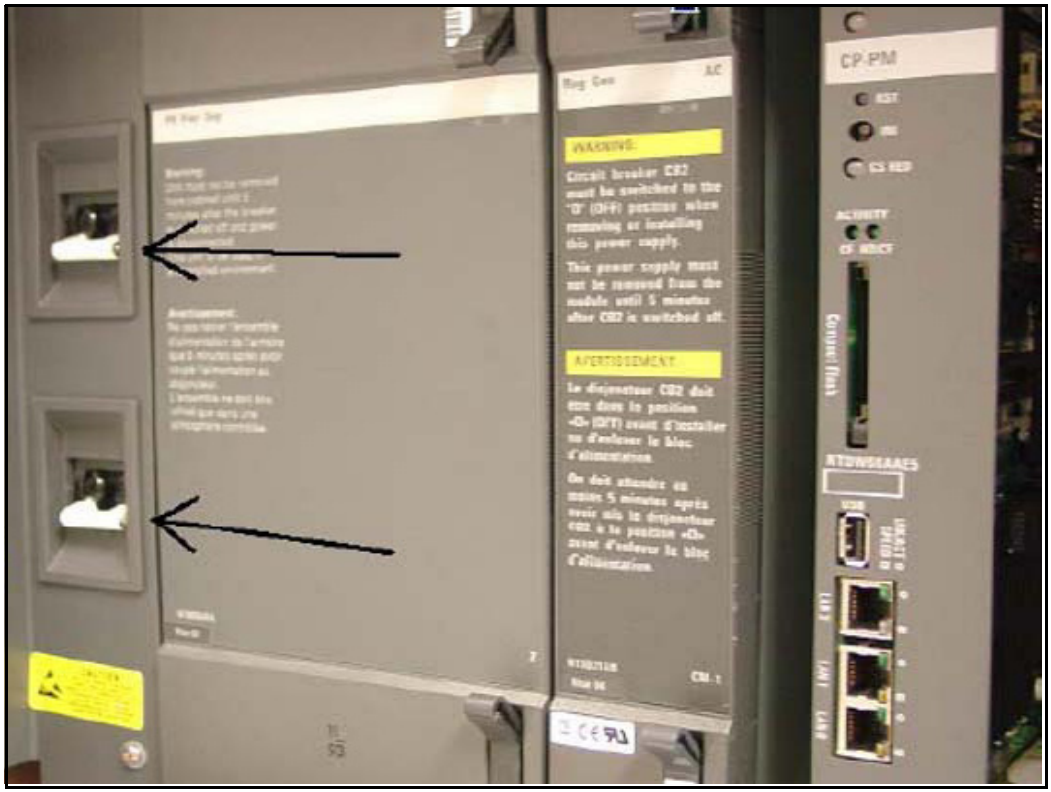
4 Loosely attach screws, washers, and nuts to the Ethernet port adapter plate. See Figure 40.

Figure 40
One Ethernet port coupler in adapter plate



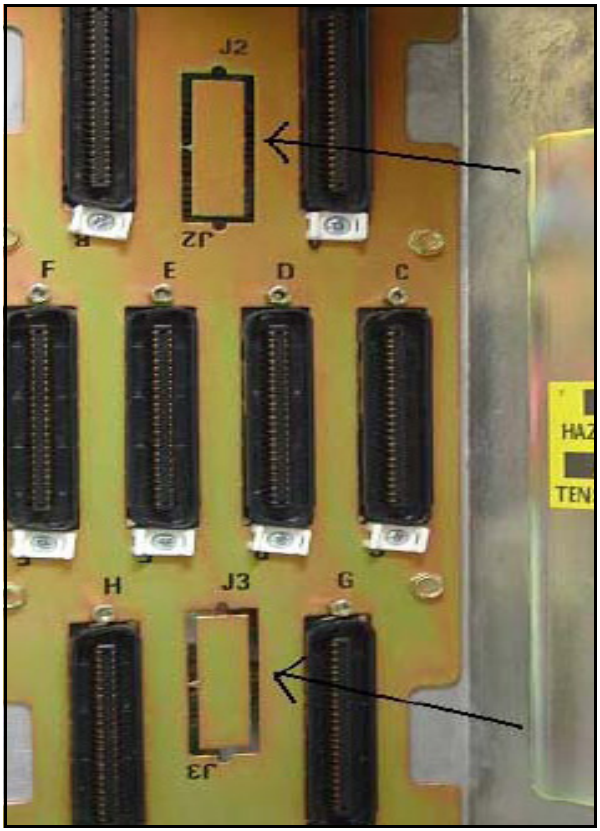
5 Switch off the UEM power supplies. See Figure 41.

Figure 41
Shut down UEM power supplies



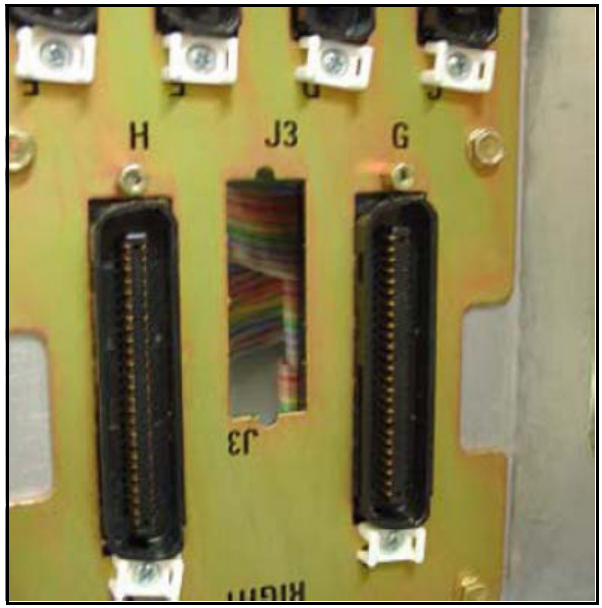
6 Select one of the J2-J5 knock-out plates on the back of the UEM. See Figure 42.

Figure 42
J2-J5 plates on back panel of UEM



7 Knock out the metal plate from selected J2-J5 location. This provides a hole through which the Ethernet patch cables are routed, and to which the Ethernet port adapter plate is attached.See Figure 43.

Figure 43
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 faceplate of the server.

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 44 and Figure 45.

Figure 44
ELAN connection on faceplate

Figure 45
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 faceplate of the server.

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 46 and Figure 47.

Figure 46
TLAN connection on faceplate

Figure 47
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 48.

Figure 48
Installed Ethernet port adapter plate

11 Attach the ferrite beads to the Ethernet patch cables.See Figure 49.

Figure 49
Attached Ethernet patch cable ferrite beads

End of Procedure

Installing a Nortel ISP1100 Signaling Server

Complete Procedure 55 to install the ISP1100 Signaling Server hardware into the 19-inch rack. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312) for additional information.

Note: Save the packaging container and packing materials in the event you need to package the server for shipment.

Accessories pouch

You require specific hardware to install the Nortel ISP1100 server in a 19-inch rack. This hardware is included in the Nortel ISP1100 server accessories pouch. The accessories pouch must contain the following items:

- Two support brackets (A)
- Two rack-mounting brackets (B)
- Six rack-mount bracket screws (ten 25 x 1/4 inch pan-head Phillips)

Refer to Figure 50.

Figure 50
ISP1100 Signaling Server mounting accessories

Procedure 55
Preparing an ISP1100 Signaling Server for rack-mounting

Note: The Front Mount Bracket assembly is not intended for use as a slide rail system. The ISP1100 Signaling Server must be firmly attached to the rack.

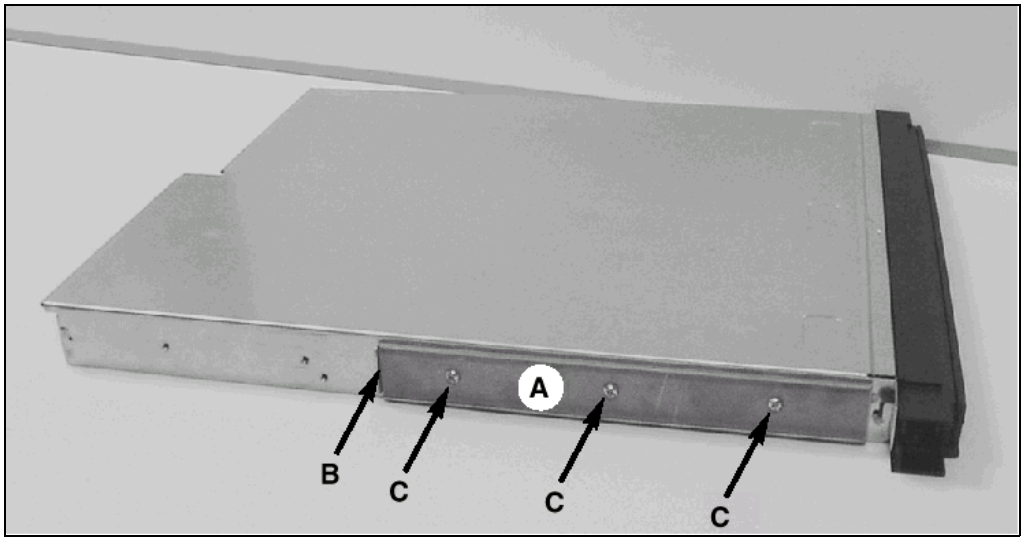
WARNING

The load rating for this mounting kit is 50 pounds. If you exceed this limit, damage or injury can occur.

1 Make sure the Nortel ISP1100 server is not plugged in to an electrical outlet.

2 Align the end of the rail with the flange (B) toward the rear of the ISP1100 Signaling Server. See Figure 51.

Figure 51
Nortel ISP1100 Support bracket



3 Align the screw holes in the rack-mount rail to the mating holes in the side of the ISP1100 Signaling Server chassis. Use three screws (C) on each side.

Note: Hand-tighten the screws to prevent cross-threading, then use a Phillips screwdriver to secure them.

4 Attach the bezel door to the faceplate of the Signaling Server, as shown in Figure 52 and Figure 53 on page 201.

Figure 52
Left hinge mount

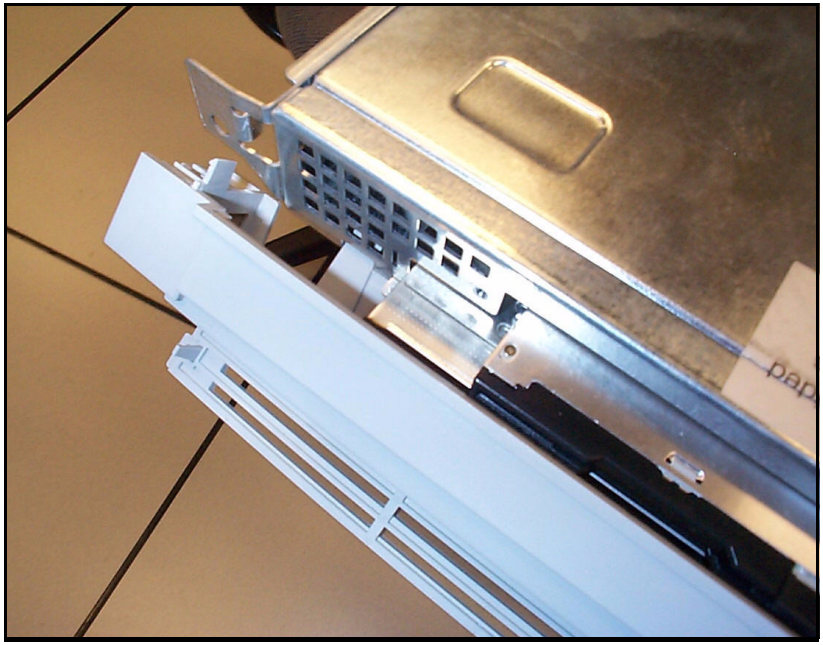
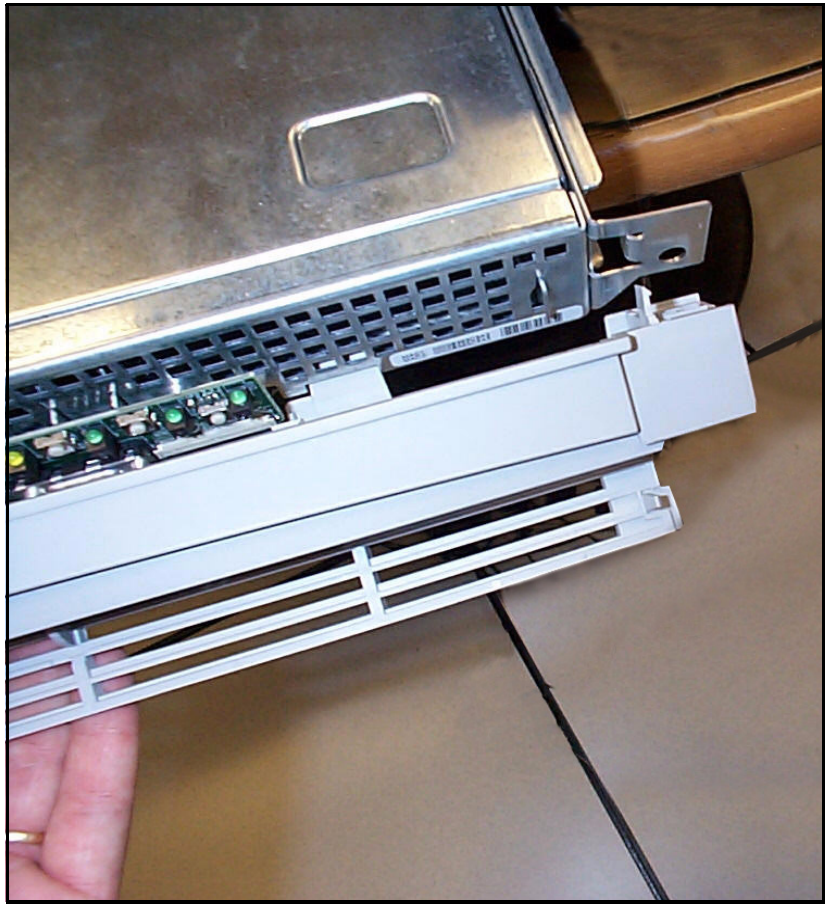
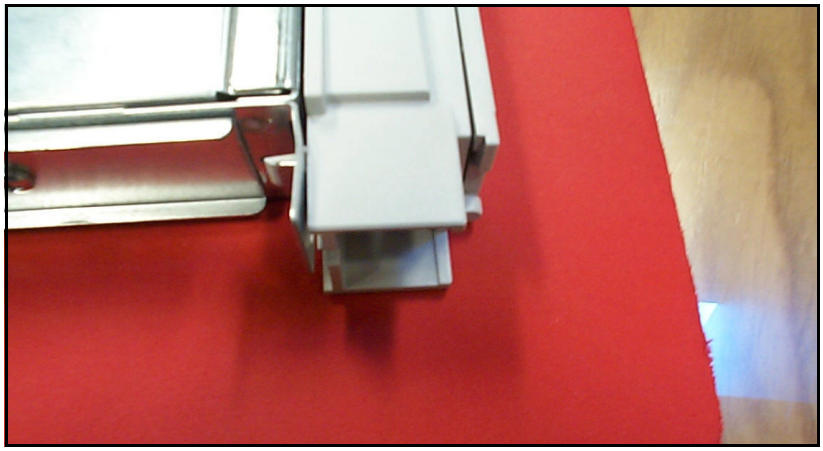


Figure 53
Right hinge mount



When the door is attached to the ISP1100 Signaling Server and rack-mount apparatus, it should appear as shown in Figure 54 on page 202.

Figure 54
Snapped-in bezel door



End of Procedure

Rack-mounting the Nortel ISP1100 server

Procedure 56
Rack-mounting a ISP1100 Signaling Server

This procedure describes how to install the server in a rack.

Read the following warnings carefully before you begin installing the ISP1100 Signaling Server in the rack.

DANGER OF ELECTRIC SHOCK

DISCONNECT AC POWER

The ISP1100 Signaling Server must be completely disconnected from any AC power source before performing this procedure. Pressing the Power button DOES NOT turn off power to this Signaling Server. Some circuitry in the unit can continue to operate even though the front panel Power button is off.

Failure to disconnect the ISP1100 Signaling Server from its AC power source can result in personal injury or equipment damage.

DANGER OF ELECTRIC SHOCK

GROUNDING THE RACK INSTALLATION

To avoid the potential for an electrical shock hazard, include a third wire safety grounding conductor with the rack installation.

If the ISP1100 Signaling Server power cords are plugged into AC outlets that are part of the rack, then provide proper grounding for the rack itself.

If the ISP1100 Signaling Server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding for the ISP1100 Signaling Server only. Provide additional, proper grounding for the rack and other devices installed in it.

WARNING

MAIN AC POWER DISCONNECT

A main AC power disconnect must be installed. The main AC power disconnect must:

- disconnect power to the entire rack unit
- be readily accessible
- be labeled as controlling power to the entire unit, not just to the ISP1100 Signaling Server(s)

WARNING
OVERCURRENT PROTECTION

The Nortel ISP1100 server is designed for an AC line voltage source with up to 20 amperes (A) of over-current protection. If you install the power system for the equipment rack on a branch circuit with more than 20 A of protection, provide supplemental protection for the Nortel ISP1100 server. If you install more than one server in the rack, the power source for each server must be from a separate branch circuit.

1 Attach the rack-mount brackets (“B” as shown in Figure 50 on page 198) to the equipment rack. Install the left and right side at an equal height. Use standard length screws from the accessories pouch, and screw them into the top and bottom drill holes of the bracket (see Figure 55 on page 205).

Figure 55
Installed rack-mount bracket

2 When both brackets are fixed in place:

a. Align the rack-mount brackets on the ISP1100 Signaling Server with the slide rail system on the rack posts.

b. Slide the ISP1100 Signaling Server in place. Refer to Figure 56 on page 206.

Figure 56
Rack-mounting the ISP1100 Signaling Server

3 Tighten the screws through the faceplate of the ISP1100 Signaling Server to the rack-mount bracket.

Note: Do not apply excessive torque while tightening the bolts. The bezel door is plastic and does not require or withstand overtightening.

End of Procedure

Connections

Connection checklist

WARNING

Do not modify or use a supplied AC power cord if it is not the correct type required for the host region.

IMPORTANT!

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 thus require no power cord.

Before connecting a Signaling Server, ensure that you have the following materials on-hand.

Table 26
Connections checklist

Have you:	
Obtained a serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal?	
Obtained the NTAK19EC cable (if you are connecting a Nortel CP PM server)? 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.	
Obtained the 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 for connecting the NTDW61BAE5 and NTDW66AAE5 models of the Nortel CP PM Signaling Server to the ELAN

and TLAN subnets of a CS 1000E and CS 1000M system respectively. It also contains instructions for connecting a maintenance terminal to the Nortel CP PM Signaling Server.

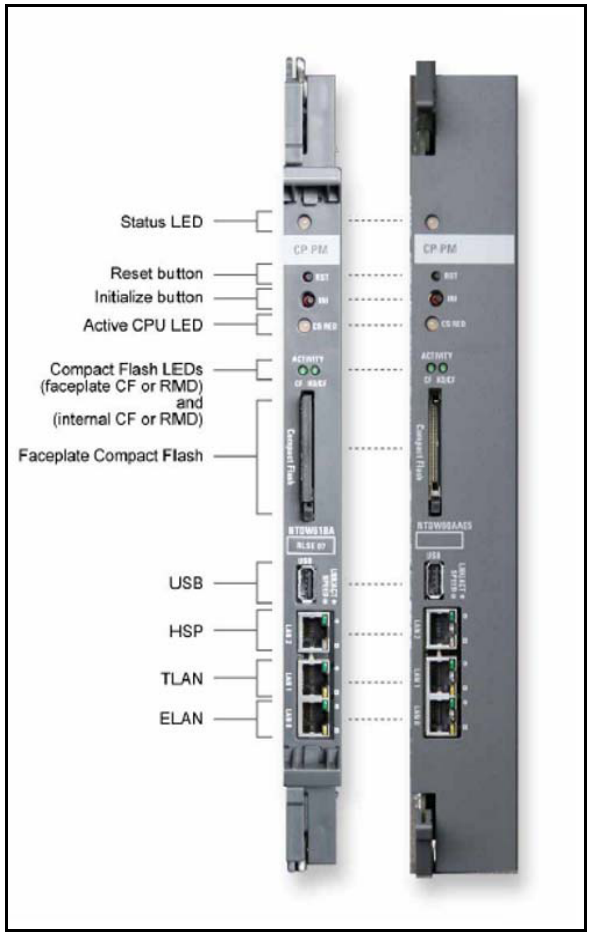
The NTDW61BAE5 model of the Nortel CP PM Signaling Server was designed for use in a CS 1000E system. As such, it is inserted into a slot of the Media Gateway (MG 1000E or MG 1000B). The Media Gateway also hosts the Media Gateway Controller (MGC) that has Ethernet ports for connecting to the ELAN and TLAN subnets of your CS 1000 system.

However, it is common in a CS 1000E system for the Call Server to be connected to the MGC through these ELAN and TLAN Ethernet ports. If the Call Server is not connected to the MGC through these Ethernet ports, the NTDW61BAE5 model of the CP PM Signaling Server uses them to connect to the ELAN and TLAN subnets of the CS 1000E system. If the Call Server is using the MGC ELAN and TLAN Ethernet ports, the Nortel CP PM Signaling Server is connected directly to the ELAN and TLAN Ethernet switches from the faceplate ELAN and TLAN Ethernet ports.

The NTDW66AAE5 model of the Nortel CP PM Signaling Server was designed for use in a CS 1000M system. As such, it is inserted into a slot of a Universal Equipment Module (UEM). UEMs do not have built-in ELAN and TLAN Ethernet ports. These Ethernet ports must be installed on the back of the UEM to enable the Nortel CP PM Signaling Server to connect to the ELAN and TLAN subnets of your CS 1000 system (see Procedure 54: "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on page 186.)

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



Procedure 57
Connecting a Nortel CP PM Signaling Server

Note: Refer to Figure 57 when performing the following procedure.

1. Establish a maintenance terminal connection at the back of the shelf of the IPMG, IPE cube, or 11C chassis. The com (SDI) port of the CP PM circuit card Signaling Server is routed through the backplane of the shelf to the 50 pin MDF connector on the back of the shelf. A special cable is shipped with the CP PM signaling server that adapts the 50 pin MDF connector to a 25 pin DB connector (NTAK19EC). A DTE-DTE null modem serial cable is required to adapt the SDI port to a typical PC serial port.

   a. Connect the NTAK19EC cable (shipped with the CP PM Signaling Server) to the 50 pin MDF connector on the back of the desired shelf of the IPMG, IPE cube or 11C chassis.

   b. Connect a DTE-DTE null modem serial cable to the 25 pin DB connector at the end of the NTAK19EC cable.

   c. Connect the other end of the DTE-DTE null modem serial cable to the serial port on the maintenance terminal.

2. Insert the Signaling Server circuit card into an appropriate slot on the shelf of the IPMG, IPE cube, or 11C chassis. The CP PM Signaling Server is hot-pluggable so it may be inserted without powering off the system. The maintenance terminal now has access to the CP PM Signaling Server through the 50-pin MDF connector connected at the back of the shelf of the IPMG, IPE cube or 11C chassis.

3. Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the LAN1 port (TLAN network interface) on the front of the Signaling Server. The LAN1 port is the middle one of the three network interfaces.

4. Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the LAN0 port (ELAN network interface) on the front of the Signaling Server. The LAN0 port is the bottom one of the three network interfaces.

5 Set the COM port on the maintenance terminal as follows:

- Terminal type: VT100
- Speed: 9 600
- Data bits: 8
- Parity: none
- Stop bits: 1
- Flow control: none

Note: The CP PM Signaling Server is shipped with the Admin Serial port set to 9600 Bit/s. Other available speeds are 19 200, 38 400, and 115 200 Bits. You can change the port speed using the maintenance terminal. To verify or change the baud rate on a Nortel CP PM Signaling Server, see *Signaling Server: Installation and Commissioning* (NN43001-312).

6 Configure the Signaling Server maintenance terminal. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

End of Procedure

Complete Procedure 58 to connect a Nortel CP PM Signaling Server (model NTDW61BAE5) to the ELAN and TLAN subnets of a CS 1000E system.

Procedure 58
Connecting a CP PM Signaling Server to the ELAN and TLAN subnets of a CS 1000E system

1 Connect the Signaling Server to the ELAN subnet.

- if the Call Server is not connected to the Media Gateway Controller (MGC)
  - — Insert the end of one of the 25-cm RJ-45 CAT5 Ethernet cables shipped with the server (NTDU0606E6) into the ELAN network interface port (ELAN port) on the faceplate of the server
  - — insert the other end of the 25-cm RJ-45 CAT5 Ethernet cable into the MGC ELAN Ethernet port
- if the Call Server is connected to the MGC

— Insert the end of a longer RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the faceplate of the server

— Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the ELAN Ethernet switch

2 Connect the Signaling Server to the TLAN subnet.

- if the Call Server is not connected to the Media Gateway Controller (MGC)

  — Insert the end of one of the 25-cm RJ-45 CAT5 Ethernet cables shipped with the server (NTDU0606E6) into the TLAN network interface port (TLAN port) on the faceplate of the server

  — Insert the other end of the 25-cm RJ-45 CAT5 Ethernet cable into the MGC TLAN Ethernet port

- if the Call Server is connected to the MGC

  — Insert the end of a longer RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the faceplate of the server

  — Insert the other end of the RJ-45 CAT5 Ethernet cable into an Ethernet port on the TLAN Ethernet switch

End of Procedure

Note: If the Call Server is connected to the Media Gateway Controller, you can not use the 25-cm CAT5 Ethernet cables shipped with the Signaling Server (NTDU0606E6). You must obtain CAT5 Ethernet cables that are long enough to connect the Signaling Server directly to the ELAN and TLAN Ethernet switches from the faceplate ELAN and TLAN Ethernet ports.

Complete Procedure 59 to connect a Nortel CP PM Signaling Server (model NTDW66AAE5) to the ELAN and TLAN subnets of a CS 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 59
Connecting a CP PM Signaling Server to the ELAN and TLAN subnets of a CS 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 CS 1000M UEM. (You installed this ELAN port at the back of the UEM when you installed the Signaling Server in the UEM. See "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on page 186.)

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 CS 1000M UEM. (You installed this TLAN port at the back of the UEM when you installed the Signaling Server in the UEM (see "Installing ELAN and TLAN Ethernet ports on the back of a CS 1000M UEM" on page 186).

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

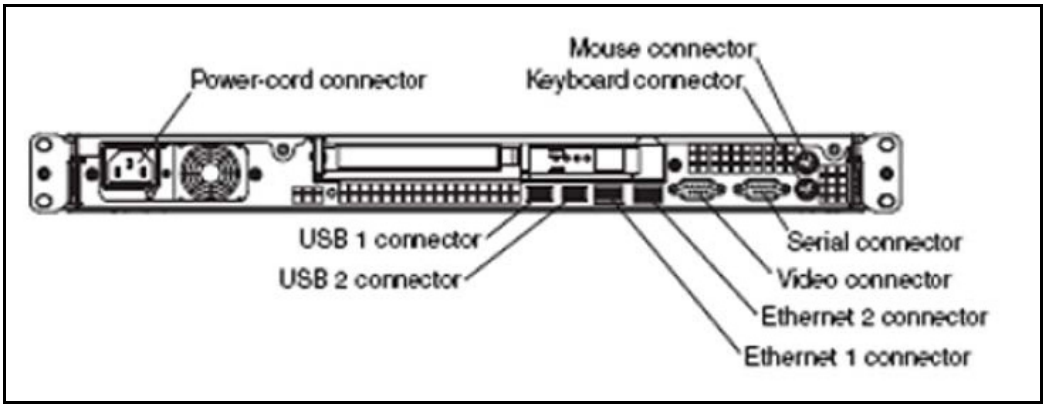
To verify or change the baud rate on a Nortel CP PM Signaling Server, see *Signaling Server: Installation and Commissioning* (NN43001-312).

Connecting an IBM X306m Signaling Server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the IBM X306m Signaling Server into an AC surge suppressor.

Figure 58 shows the rear view of the IBM X306m Signaling Server.

Figure 58
IBM X306m Signaling Server (rear view)



Note: Refer to Figure 58 when performing the following procedure.

Procedure 60
Connecting an IBM X306m Signaling Server

1. Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into Port 1 (TLAN network interface) on the back of the Signaling Server. Port 1 is the right-most of the two network interfaces.
2. Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into PEthernet 2 connector (ELAN network interface) on the back of the Signaling Server. Port 2 is the left-most of the two network interfaces.
3. Connect a DTE–DTE null modem serial cable from the serial port on the back of the Signaling Server to the serial port on a maintenance terminal.
4. Connect the Signaling Server power cord.
   a. Check that the power cord is the type required in the region where the Signaling Server is used. 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 left side of the Signaling Server's 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 Signaling Server to 9 600 b/ps. See *Signaling Server: Installation and Commissioning* (NN43001-312).

Note: The IBM X306m Signaling Server ships with the serial port set to 9600 b/ps.

6 Configure the connected maintenance terminal. See *Signaling Server: Installation and Commissioning* (NN43001-312).

7 Press the Power switch.

Note: Refer to the Signaling Server Product Guide on the CD-ROM shipped with the IBM X306m Signaling Server for additional operating information.

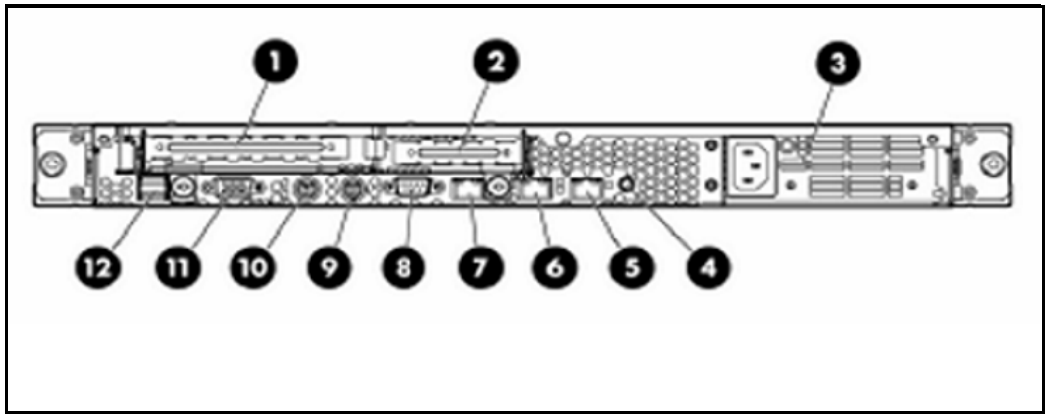
End of Procedure

Connecting an HP DL320-G4 Signaling Server

In geographic regions that are susceptible to electrical storms, Nortel recommends that you plug the HP DL320-G4 Signaling Server into an AC surge suppressor.

Figure 59 shows the rear view of the HP DL320-G4 Signaling Server.

Figure 59
HP DL320-G4 Signaling Server (rear view)



Procedure 61
Connecting an HP DL320-G4 Signaling Server

1. Connect the Signaling Server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable labeled with the number 5 into the port (TLAN network interface) on the back of the Signaling Server.
2. Connect the Signaling Server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable labeled with the number 6 into the port (ELAN network interface) on the back of the Signaling Server.
3. Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the Signaling Server to a maintenance terminal.
4. Connect the Signaling Server power cord.
   a. Check that the power cord is the type required in the region where the Signaling Server is used. 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 Signaling Server's 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. Set the COM 1 baud rate for the serial port on the Signaling Server to 9 600 b/ps. See *Signaling Server: Installation and Commissioning* (NN43001-312).
6. Configure the connected maintenance terminal. See *Signaling Server: Installation and Commissioning* (NN43001-312).
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 *Signaling Server: Installation and Commissioning* (NN43001-312).

Installing the Signaling Server software

IMPORTANT!

The Signaling Server is out-of-service during software upgrade.

Introduction

This section provides installation procedures for CS 1000 Release 5.0 Signaling Server software on an IBM X306m or HP DL320-G4 Signaling Server.

IMPORTANT!

CP PM, IBM X306m and HP DL320-G4 Signaling Servers do not support any Signaling Server software prior to CS 1000 Release 5.0.

IMPORTANT!

CS 1000 Release 5.0 Signaling Server software does not need to be installed on the CP PM Signaling Server. It is delivered with the Signaling Server software, operating system, applications and web files pre-loaded onto the hard drive. Only basic system configuration parameters need to be entered on the first boot of the CP PM Signaling Server.

Before you begin

Before installing the software, you must do the following:

- Connect and power up the Signaling Server. See “Connections” on page 207.
- For CP PM Signaling Servers, ensure that Switch S5 is set to position 2 (to support the internal hard disk drive)
- For IBM X306m and HP DL320-G4 Signaling Servers, you must obtain the CS 1000 Release 5.0 Signaling Server Software Install CD.

Installing the software

To install software and enter basic system configuration parameters on an IBM X306m or HP DL320-G4 Signaling Server, complete Procedure 62.

Procedure 62
Installing Signaling Server software

Upon completion of Step 1, this procedure takes approximately 45 minutes to complete.

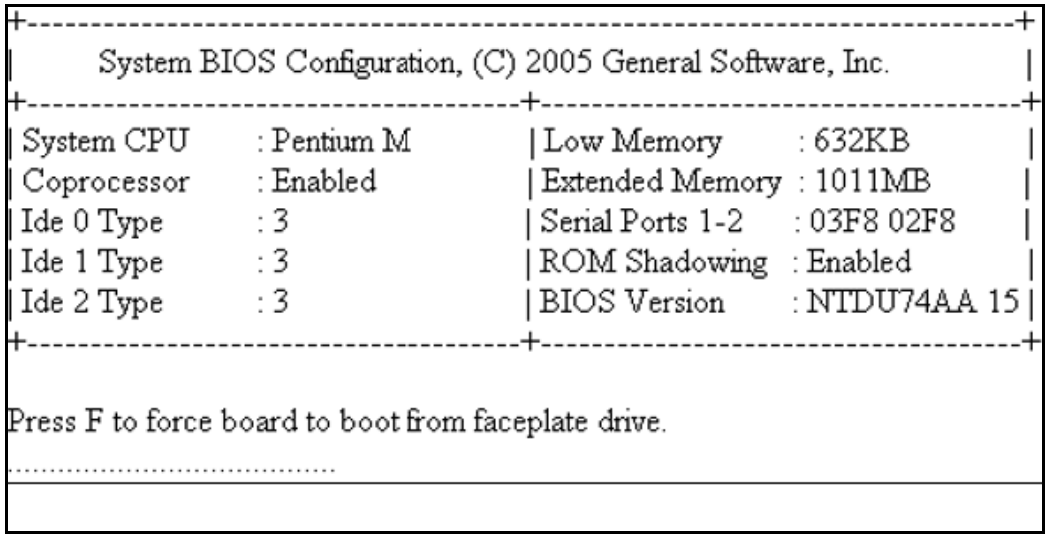
1 From your Planning and Engineering group, obtain the following network and IP Telephony data for this Signaling Server:

- node ID for the IP Telephony node
- node IP address for the IP Telephony node
- hostname for the Signaling Server
- ELAN network interface IP address, Subnet mask, and Gateway
- TLAN network interface IP address, Subnet mask, and Gateway
- ELAN network interface IP address of the Call Server
- Primary and Alternate NRS IP addresses for this networked system. Refer to*IP Peer Networking: Installation and Commissioning* (NN43001-313)
- NRS role, if applicable. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

2 Boot the Signaling Server from the Removable Media Device (RMD):

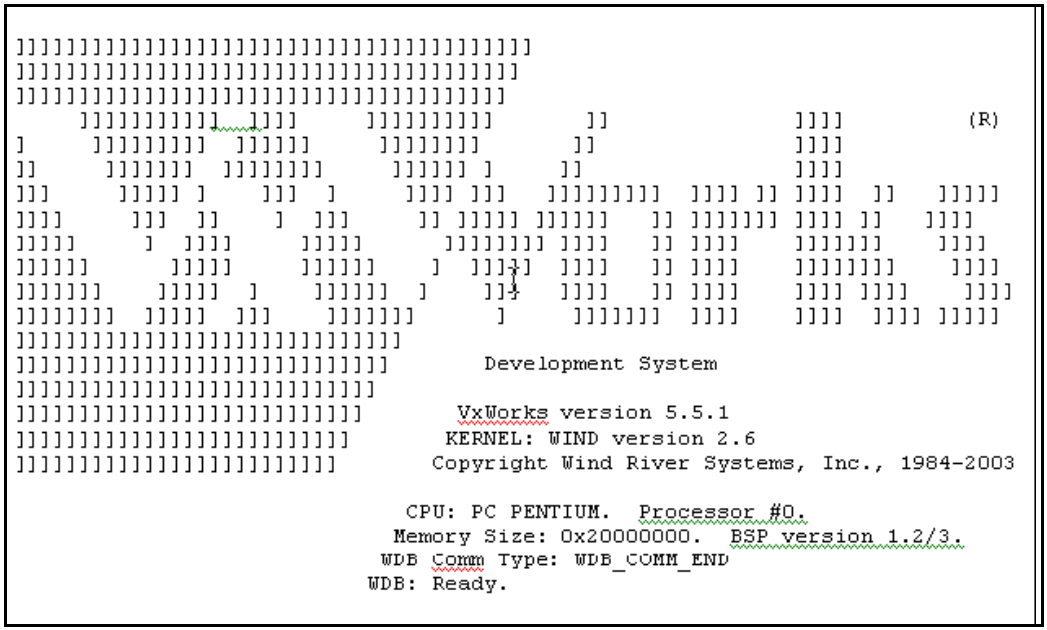
- For IBM X306m, HP DL320-G4, or Nortel ISP1100 Signaling Servers, insert the CS 1000 Release 5.0 Signaling Server Software CD into the CD drive and press the RST button on the front panel of the Signaling Server to trigger a cold boot. This forces the Signaling Server to boot from the CD.
- For a Nortel CP PM Signaling Server, insert the CS 1000 Release 5.0 Signaling Server Software CF card into the faceplate CF drive and press the RST button on the faceplate of the Signaling Server to trigger a cold boot. The CP PM System BIOS Configuration screen appears (see Figure 60) with an instruction to press F to force the Signaling Server to boot from the CF card.

Figure 60
Nortel CP PM system BIOS configuration



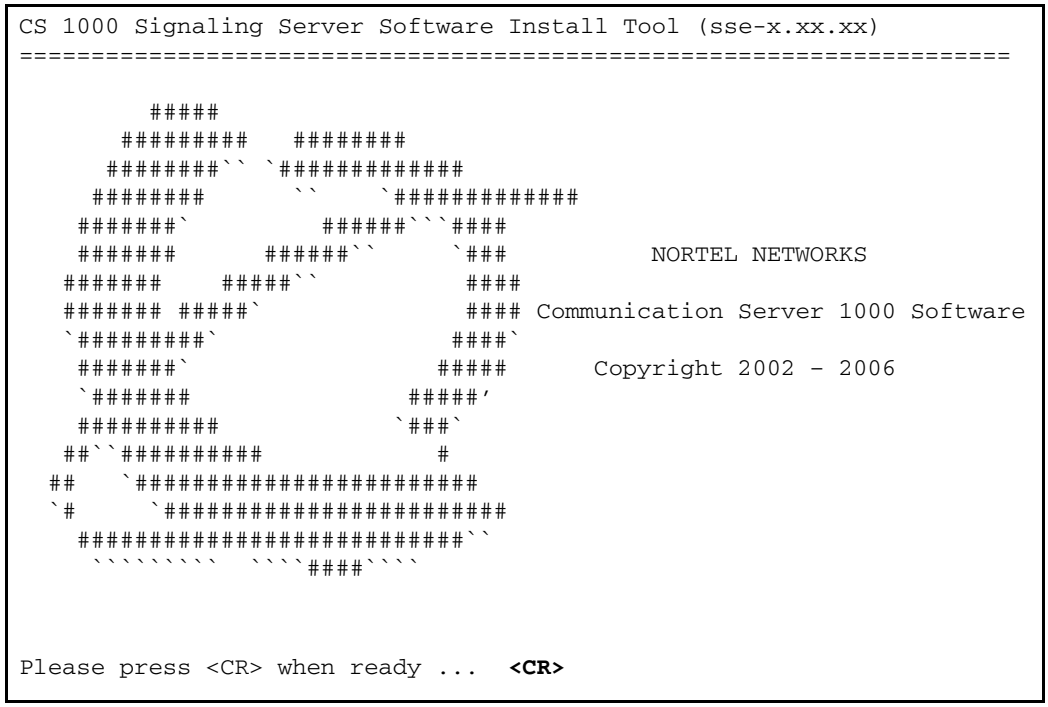
- The VxWorksTM banner screen appears (see Figure 61) followed by system messages indicating that the Signaling Server Software Installation Tool is being loaded from either the Signaling Server Software CD or CF Card.

Figure 61
VxWorks system banner



When the Install Tool banner appears (Figure 62), press <CR> to perform system checks and begin software installation.

Figure 62
Install Tool banner screen



3 Press <CR> to perform system checks. If the system has less than 1 Gbyte of RAM, the following error message appears:

```
WARNING: Your system has less than 1 GB RAM.
In order to run Rls 5.0 software you must
upgrade RAM to 1 GB and repeat install.
Otherwise serious service problems are likely

   Please enter:
<CR> -> <q> - Quit.
        <a> - Accept the possible risks and
continue install.
```

Press <CR> to quit. Upgrade to 1 Gbyte of RAM (see *Signaling Server: Installation and Commissioning* (NN43001-312)) and restart the Signaling Server Install Tool again.

The system verifies the file systems.

- If the hard drive of the Signaling Server is not partitioned, the file systems verification process fails. Upon failure, the menu in Figure 63 appears.

Figure 63
File systems verification failure

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

The filesystems verification failed! (This is normal for a new
system.)

The hard disk must be (re)partitioned and (re)initialized. This will
erase all data on the hard disk. The system will then reboot and
the Install Tool will restart.

        Please enter:
<CR> -> <a> - Partition and initialize the hard disk, then reboot.

        Enter Choice> a
```

a. Enter a to partition and initialize the hard disk, and to reboot the Signaling Server.

The system displays the messages:

```
Partitioning hard disk ...
Hard disk partitioning succeeded.

Creating filesystems ...
Filesystems creation succeeded.

Rebooting system ...
```

b. The Install Tool banner screen (Figure 62 on page 221) reappears. Go back to beginning of Step 2.. If the hard drive of the Signaling Server is partitioned, the following system messages appear.

```
Filesystems verification succeeded.
```

c. Confirm or enter the date and time (Figure 64 on page 223).

Figure 64
Date and time

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

You should ensure the system date and time are correct prior to
installation, since all files copied or created during install will
be time-stamped.

You can press <CR> to accept the current values.

Current date is: FRIDAY 01-04-2006
Enter new date (dd mm yyyy): 04 04 2006
Date is set to: MONDAY 04-04-2006
Current time is: 09:47:18
Enter new time (hh mm ss): 08 38 30
Time is set to: 08:38:30
Current date and time is:
MONDAY 04-04-2005, 08:38:30
```

- When reinstalling the software on an existing system, the system verifies the file systems. The disk check reports:

  ```
  Filesystems verification succeeded.
  ```

  The system summary appears (Figure 65 on page 224). Enter **a** to continue the installation.

  Note: For a new installation, the data fields in the system summary are blank.

Figure 65
System Summary

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
====================================================================

           ----------------------------------------
                       SYSTEM INFORMATION
           ----------------------------------------

+==================================================================+
|  Hostname: SS_Node276_Ldr          S/W Ver: x.xx.xx              |
|                                                                  |
|      Role: Leader                  Set TPS: Disabled             |
|   Node ID:                        Vtrk TPS: Disabled             |
|   Node IP:                      NRS Config: Alternate SIP        |
|  H.323 ID: SS_Node276_Ldr            CS IP:                      |
|                                                                  |
|   ELAN IP: 192.168.10.20           TLAN IP: 192.168.20.20        |
|   ELAN SM: 255.255.255.0           TLAN SM: 255.255.255.0        |
|   ELAN GW: 192.168.10.1            TLAN GW: 192.168.20.1         |
|  ELAN MAC: 00:02:b3:c5:51:c6      TLAN MAC: 00:02:b3:c5:51:c7    |
+==================================================================+

        Please enter:
<CR> -> <a> - Continue with Install Tool.
        <q> - Quit.

        Enter Choice>
```

Figure 66
Install Tool Main Menu

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

                        M A I N    M E N U

The Install Tool will install Signaling Server software and related
files. You will be prompted throughout the installation.

        Please enter:
<CR> -> <a> - To perform a complete installation/upgrade (Signaling
             Server s/w, IP Phone f/w, Voice Gateway Media
             Card l/w, basic Signaling Server configuration).
        <b> - To install/upgrade Signaling Server software only.
        <c> - To copy IP Phone firmware only.
        <d> - To copy Voice Gateway Media Card loadware only.
        <e> - To perform basic Signaling Server configuration only.
        <t> - To go to the Tools Menu.
        <q> - Quit.

        Enter Choice>
```

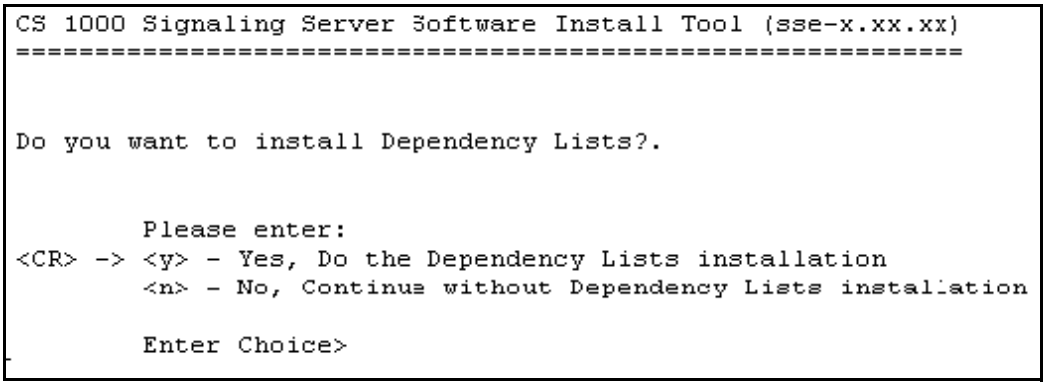
4 At the Main Menu (Figure 66), enter **a** to install Signaling Server software. Option **a** performs options **b**, **c**, **d**, and **e**.

The following sample lines display on the screen:

```
Copying "/cd0/sse37012.p3/disk.sys" to "/u/disk.sys".
Processing the install control file ...
"/cd0/sse37012.p3/install.dat" parsed.
```

The Dependency Lists installation screen appears (Figure 67).

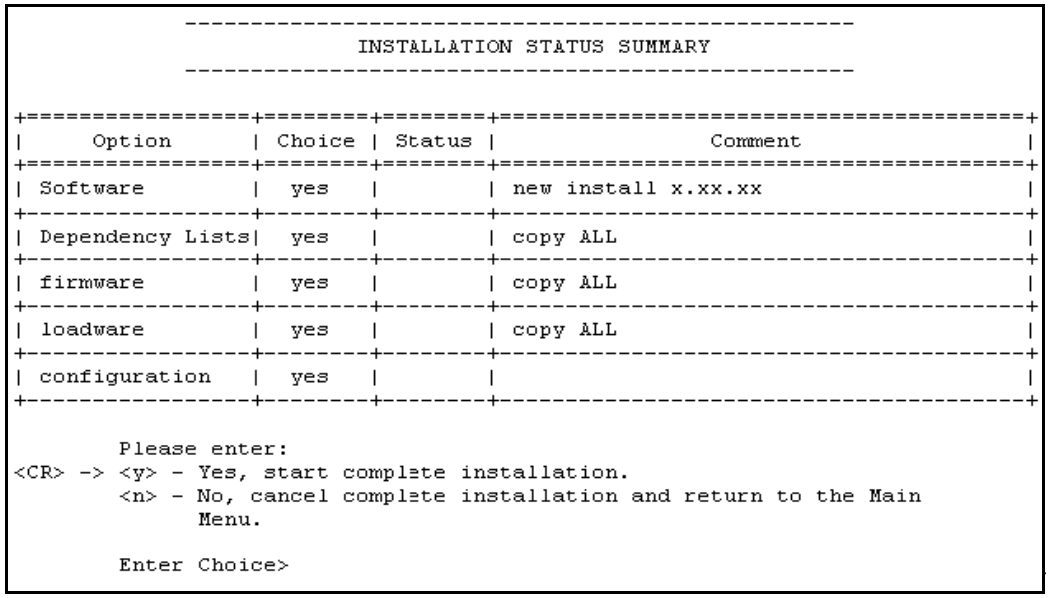
Figure 67
Dependency lists installation



5 Press <CR> or enter y to install the dependency lists. The Installation Status Summary screen appears:

The Installation status screen appears (Figure 68 on page 227).

Figure 68
Installation Status



```
                INSTALLATION STATUS SUMMARY

+==================+========+========+=========================================+
|      Option      | Choice | Status |                Comment                  |
+==================+========+========+=========================================+
| Software         |  yes   |        | new install x.xx.xx                     |
+------------------+--------+--------+-----------------------------------------+
| Dependency Lists|  yes   |        | copy ALL                                |
+------------------+--------+--------+-----------------------------------------+
| firmware         |  yes   |        | copy ALL                                |
+------------------+--------+--------+-----------------------------------------+
| loadware         |  yes   |        | copy ALL                                |
+------------------+--------+--------+-----------------------------------------+
| configuration    |  yes   |        |                                         |
+------------------+--------+--------+-----------------------------------------+

        Please enter:
<CR> -> <y> - Yes, start complete installation.
        <n> - No, cancel complete installation and return to the Main
              Menu.

        Enter Choice>
```

6 Enter **y** to start the installation. The screens shown in Figures 69 to 75, which start on page 228, appear.

Figure 69
Installation output

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

You have selected to install version x.xx.xx on the system. As
this is a new install, all necessary directories and files will
be created on the hard disk.

Starting new install of version x.xx.xx.

Initializing protected partition ...
"/p" initialized.

Creating directory ... (many directories are created here) ...
Copying ... (many files are copied here) ...

Boot ROM "/p/load/bootrom.bin" installed.
```

Figure 70
Software installation success

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Software version x.xx.xx was installed successfully.

All files were copied to the hard disk.
```

Figure 71
IP Phone firmware

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

The installation source contains multiple Internet Telephone firmware
files.

Copying /cd0/0603Bxx.bin" to "/u/fw/0603Bxx.bin".
Copying "/cd0/0602Bxx.bin" to "/u/fw/0602Bxx.bin".
Copying "/cd0/0604Dxx.bin" to "/u/fw/0604Dxx.bin".
```

Figure 72
Voice Gateway Media Card loadware

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

The installation source contains multiple Voice Gateway Media Card
loadware files.

Copying "/cd0/IPL4xxxx.p2" to "/u/fw/IPL4xxxx.p2".
Copying "/cd0/IPL4xxxx.sa" to "/u/fw/IPL4xxxx.sa".
```

7 After the Signaling Server software and system components are installed, the Restore IP configuration screen appears (Figure 73 on page 230).

Figure 73
Restore IP configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
============================================================

Please insert the database diskette in the removable drive
to restore the IP configuration to the hard disk

        Please enter:
<CR> -> <a> - Diskette is now in the removable drive.
               Continue.
        <b> - Continue without restoring the IP configuration
        <q> - Quit.

        Enter Choice> b
```

8 Do one of the following:

- If you are migrating a Leader Signaling Server (see "Signaling Server migration" in *Signaling Server: Installation and Commissioning* (NN43001-312),insert the Removable Media Device (RMD) into the appropriate drive, and press <CR> or enter a to restore the IP configuration data. After the restore is complete, the following system message appears:

  ```
  Done copying IP configuration to disk
  ```

  The IP Telephony parameter confirmation screen appears (Figure 74 on page 231). Go to step 12 on page 256.

Figure 74
IP telephony parameter confirmation

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
------------------------------------------------------------

You have entered the following parameters for this Leader SS :
(Press <a>-<l> to correct, <y> to proceed, <n> to reconfigure all.)

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - Re-enter all of the parameters

        <a> - Node ID              : 9
        <b> - Hostname             : CS1000E_PIV
        <c> - ELAN IP              : 192.167.102.4
        <d> - ELAN subnet mask     : 255.255.255.0
        <e> - ELAN gateway IP      : 192.167.102.1
        <f> - TLAN IP              : 192.167.103.2
        <g> - TLAN subnet mask     : 255.255.255.0
        <h> - TLAN gateway IP      : 192.167.103.1
        <i> - Node IP              : 192.167.103.3
        <j> - Call Server IP       : 192.167.102.3
              NRS configuration    : Primary GK + SIP
        <k> - Primary NRS IP       : 192.167.103.2
        <l> - Alternate NRS IP     :

        Enter Choice>
```

9 If you are installing a new Signaling Server, or you are migrating a Follower or Standalone Signaling Server (see "Signaling Server migration" in *Signaling Server: Installation and Commissioning* (NN43001-312)), select b to bypass the restoration of IP configuration data. The Signaling Server role selection screen appears (Figure 75 on page 232).

Figure 75
Signaling Server role selection

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

 Note: This step will over-write all existing configuration parameters
       on this Signaling Server.

Please select the role of this Signaling Server.

If this Signaling Server will be a Leader then its data networking
and IP Telephony parameters must be entered now. (This will pre-
configure the IP Telephony node files.)

If this Signaling Server will be a Follower then its data networking
and IP Telephony parameters must be configured through Element
Manager later.

         Please enter:
<CR> -> <a> - Set this Signaling Server as a Leader.
         <b> - Set this Signaling Server as a Follower.
         <q> - Quit.

         Enter Choice>
```

10 Configure the Signaling Server as Leader or Follower. See Figure 75 on page 232.

- If there is already a Leader Signaling Server in the IP Telephony node, enter **b** at the prompt to set this Signaling Server as Follower. The Follower Signaling Server configuration screen appears (Figure 76 on page 233). Go to step 10 on page 252.

Figure 76
Follower Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

- If there is not already a Leader Signaling Server in the IP Telephony node, or if the Signaling Server is to be a stand-alone Signaling Server, enter **a** at the prompt to configure this Signaling Server as Leader. The Application configuration screen appears (Figure 77 on page 233).

Figure 77
Application configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
====================================================================

Please select the application configuration for this Signaling Server.

        Please enter:
<CR> -> <a> - Co-resident (LTPS + VTRK + NRS).
        <b> - Stand-alone (NRS only - no Call Server).
        <q> - Quit.

        Enter Choice>
```

11 Configure the application configuration for this Signaling Server. See Figure 77 on page 233.

- If the IP Phone TPS, Virtual Trunk TPS, and optional Network Routing Service (NRS) applications are to be enabled on this Signaling Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server.
- If only the NRS is to be enabled on this Signaling Server:
  - If this Signaling Server is to be associated with a Call Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server. After you have finished installing the Signaling Server software, you can disable the Set TPS and Virtual Trunk TPS in Element Manager (refer to *Element Manager: System Administration* (NN43001-332)).
  - If this Signaling Server is not to be associated with a Call Server, enter **b** at the prompt to set this Signaling Server as a stand-alone Signaling Server.

Depending on the application configuration selected, either the NRS - Coresident Signaling Server screen or the NRS - Standalone Signaling Server screen appears.

Figure 78
Network Routing Service (NRS) — co-resident Signaling Server

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.
        <d> - None.

        Enter Choice>
```

Figure 79
Network Routing Service (NRS) — stand-alone Signaling Server

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.

        Enter Choice>
```

12 Select the Network Routing Service (NRS) to be provided by this Signaling Server. See Figure 78 on page 234 for a co-resident Signaling Server or Figure 79 on page 235 for a stand-alone Signaling Server.

- Enter **d** if this Signaling Server is configured as a Coresident Leader and is not providing an NRS. Go to step 13.
- Press <CR> or enter **a** if this Signaling Server is to provide an H.323 Gatekeeper and a SIP Redirect/Proxy Server.
- Enter **b** if this Signaling Server is to provide only an H.323 Gatekeeper.
- Enter **c** if this Signaling Server is to provide only a SIP Redirect/Proxy Server.Refer to *Network Routing Service Installation and Commissioning* (NN43001-564) for more information on the NRS.

Depending on the application configuration selected, either the NRS type: Coresident Signaling Server screen or the NRS type: Standalone Signaling Server screen appears.

Figure 80
NRS type — co-resident Signaling Server

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.
        <c> - Failsafe.

        Enter Choice>
```

Figure 81
NRS type — stand-alone Signaling Server

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.

        Enter Choice>
```

13 Select the type of NRS to be provided by this Signaling Server. See Figure 80 for a co-resident Signaling Server.

- If this Signaling Server is to be the Primary NRS, enter **a**.
- If this Signaling Server is to be the Alternate NRS, enter **b**.
- If this Signaling Server is not a stand-alone Signaling Server and is to be the Fail-safe NRS, enter **c**.

Refer to *Network Routing Service Installation and Commissioning* (NN43001-564) for more information on the NRS.

Depending on whether the Signaling Server is configured as Leader or Standalone, either the Leader Signaling Server configuration screen (Figure 82) or the Standalone Signaling Server configuration screen (Figure 83) appears.

Figure 82
Leader Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================

Please enter the data networking and IP Telephony parameters for
this Leader Signaling Server.

Node ID          : 276

Hostname         : SS_Node276_Ldr

ELAN IP          : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1

Node IP          : 192.168.10.20

Call Server IP   : 192.168.10.10
```

Figure 83
Stand-alone Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please define the data networking parameters for this Standalone
Signaling Server. Note that the ELAN parameters are necessary for
management access (e.g. SNMP).

Hostname         : SS_SA

ELAN IP          : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP  : 192.168.10.1

TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP  : 192.168.20.1
```

14 Enter the data networking and IP telephony parameters for the Signaling Server, as prompted. The IP information applies to a temporary IP Telephony node, to ensure that the existing node is not affected. The entry of data networking and IP telephony parameters also preconfigures the IP Telephony node files. After the Signaling Server software installation, the node files are imported into Element Manager for further configuration (see "Importing IP Telephony nodes" in *Signaling Server: Installation and Commissioning* (NN43001-312)).

- If this is a Leader Signaling Server, enter the parameters for the Node, ELAN network interface, TLAN network interface, and Call Server as required.
  - — If installing the Signaling Server at an office that is not a branch office, enter the ELAN network interface IP address of the Call Server.
  - — If installing the Signaling Server at a branch office, enter the ELAN network interface IP address of the MG 1000B Core.
- If this is a Follower Signaling Server, enter the Hostname of the Leader Signaling Server. Then go to step 16 on page 241.
- If this is a stand-alone Signaling Server and not associated with a Call Server (that is, **b** was selected in step 11 on page 234), enter the

TLAN subnet parameters as required. The Call Server IP address is automatically set to 0.0.0.0.

Depending on whether the Signaling Server is configured as Primary, Alternate, or Standalone, either the Primary NRS IP address screen, the Alternate NRS IP address screen, or both (in succession) appear. Both screens appear in succession for a Standalone Signaling Server.

Figure 84
Primary NRS IP address

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please enter the Primary NRS IP Address:

Primary NRS IP   :
```

Figure 85
Alternate NRS IP address

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please enter the Alternate NRS IP Address:

Alternate NRS IP :
```

15 Enter the Primary NRS IP address or the Alternate NRS IP address, depending on the option entered in step 12 on page 235 or step 13 on page 236.

- If **a** was entered in step 13, you can enter the address of the Alternate NRS if you know it, but it is not required. See.
- If **b** was entered in step 13, enter the address of the Primary NRS..
- If **c** was entered in step 13:
  - — Enter the address of the Primary NRS..
  - — Enter the address of the Alternate NRS.
- If **d** was entered in step 12:

— Enter the address of the Primary NRS (optional).

— If you did enter the address of the Primary NRS, enter the address of the Alternate NRS (also optional).

The Gatekeeper configuration can be updated later using Element Manager.

The IP Telephony parameter confirmation screen appears (Figure 86).

Figure 86
IP Telephony parameter configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

You have entered the following parameters for this Leader
Signaling Server:

Node ID          : 276
Hostname         : SS_Node276_Ldr
ELAN IP          : 192.168.20.100
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1
TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1
Node IP          : 192.168.20.100
Call Server IP  : 192.168.10.10
NRS configuration: Alternate GK + SIP
Primary NRS IP   : 192.168.20.10
Alternate NRS IP : 192.168.20.24

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - No, these parameters are not correct.

        Enter Choice>
```

16 Enter <CR> or **y** to confirm the parameters.

The example in Figure 86 on page 240 is for a Leader Signaling Server configured with an Alternate H.323 and SIP NRS. The confirmation screens for a Follower and stand-alone Signaling Server are similar, showing the same list of parameters, specifically:

- The configuration screen for the Follower Signaling Server displays only the value for the Hostname parameter; all other values are blank.
- The configuration screen for the stand-alone Signaling Server displays values for the Hostname, ELAN network interface, TLAN network interface, and NRS parameters. The Node ID field is set to 0. The Call Server IP field is set to 0.0.0.0.

After you confirm the IP configuration, the following system messages appear:

```
For future reference, the ELAN MAC address is:
"00:02:b3:c5:5l:c6".

Wrote config file "/u/config/bootp.tab".

Wrote config file "/boot/nvram.sys".

Wrote config file "/u/config/config.ini".

Wrote config file "/u/config/nrsconf.xml".
```

Note: You must configure the ELAN network interface MAC address for the newly installed Signaling Server in the Element Manager node configuration web page.

17 To complete the installation, the Installation Status Summary screen appears as shown in Figure 87 on page 242.

Figure 87
Installation Status Summary

```
                ------------------------------------------------
                          INSTALLATION STATUS SUMMARY
                ------------------------------------------------

+==================+========+========+=======================================+
|      Option      | Choice | Status |                Comment                |
+==================+========+========+=======================================+
| software         |  yes   |   ok   | new install x.xx.xx                   |
+------------------+--------+--------+---------------------------------------+
| Dependency Lists|  yes   | ignore | copy NONE                             |
+------------------+--------+--------+---------------------------------------+
| firmware         |  yes   |   ok   | copy Ixxxx version x.xx               |
| firmware         |  yes   |   ok   | copy Ixxxx version x.xx               |
| firmware         |  yes   |   ok   | copy PhaseX IP Firmware version x.xx  |
| firmware         |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx   |
| firmware         |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx   |
| firmware         |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx   |
| firmware         |  yes   |   ok   | copy Ixxxx IP Firmware version x.xx   |
+------------------+--------+--------+---------------------------------------+
| loadware         |  yes   |   ok   | copy IP Line x.xx.xx for P2           |
| loadware         |  yes   |   ok   | copy IP Line x.xx.xx for SA           |
| loadware         |  yes   |   ok   | copy IP Line x.xx.xx for MC32S        |
+------------------+--------+--------+---------------------------------------+
| configuration    |  yes   |   ok   | set as Leader                         |
+------------------+--------+--------+---------------------------------------+

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

18 Press <CR> to exit to the Main Menu (see Figure 88 on page 243). Enter q at the Main Menu to quit the installation process. Figure 89 on page 243 appears. Enter q again.

Figure 88
Install Tool Main Menu

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

                          M A I N    M E N U

The Install Tool will install Signaling Server software and related
files. You will be prompted throughout the installation.

         Please enter:
<CR> -> <a> - To perform a complete installation/upgrade (Signaling
               Server s/w, IP Phone f/w, Voice Gateway Media
               Card l/w, basic Signaling Server configuration).
         <b> - To install/upgrade Signaling Server software only.
         <c> - To copy IP Phone firmware only.
         <d> - To copy Voice Gateway Media Card loadware only.
         <e> - To perform basic Signaling Server configuration only.
         <t> - To go to the Tools Menu.
         <q> - Quit.

         Enter Choice>
```

Figure 89
Quit

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================
You have selected to quit the Install Tool.

Before quitting and rebooting the system, remove all disks (floppy,
CDROM) from the drives.

         Please enter:
<CR> -> <m> - Return to previous menu.
         <q> - Quit and reboot the system.

         Enter Choice> q
```

19 Remove the Signaling Server Software CD or the Signaling Server Software CF Card (as appropriate) from the RMD drive of the Signaling Server and enter q to close/terminate the Installation Tool and reboot the system. The following system messages appear:

```
Removing temporary file "/u/disk.sys".

Rebooting system ....
```

End of Procedure

First boot of a new Nortel CP PM Signaling Server

Nortel CP PM Signaling Servers have CS 1000 Release 5.0 software, applications, operating system, and web files preloaded on the hard drive when they are shipped. On the first boot of a Nortel CP PM Signaling Server, the Signaling Server Software Installation Tool prompts you to enter basic system configuration parameters.

Before you begin

Before booting the new Nortel CP PM Signaling Server for the first time and entering basic system configuration parameters, you must perform the following tasks:

- Install and connect the Signaling Server (refer to “Installing the CP PM Signaling Server hardware” on page 183).
- Obtain the network and IP Telephony data for the Signaling Server from your Planning and Engineering group:
  - node ID for the IP Telephony node
  - node IP address for the IP Telephony node
  - hostname for the Signaling Server
  - ELAN network interface IP address, Subnet mask, and Gateway
  - TLAN network interface IP address, Subnet mask, and Gateway
  - ELAN network interface IP address of the Call Server

– Primary and Alternate NRS IP addresses for this networked system. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

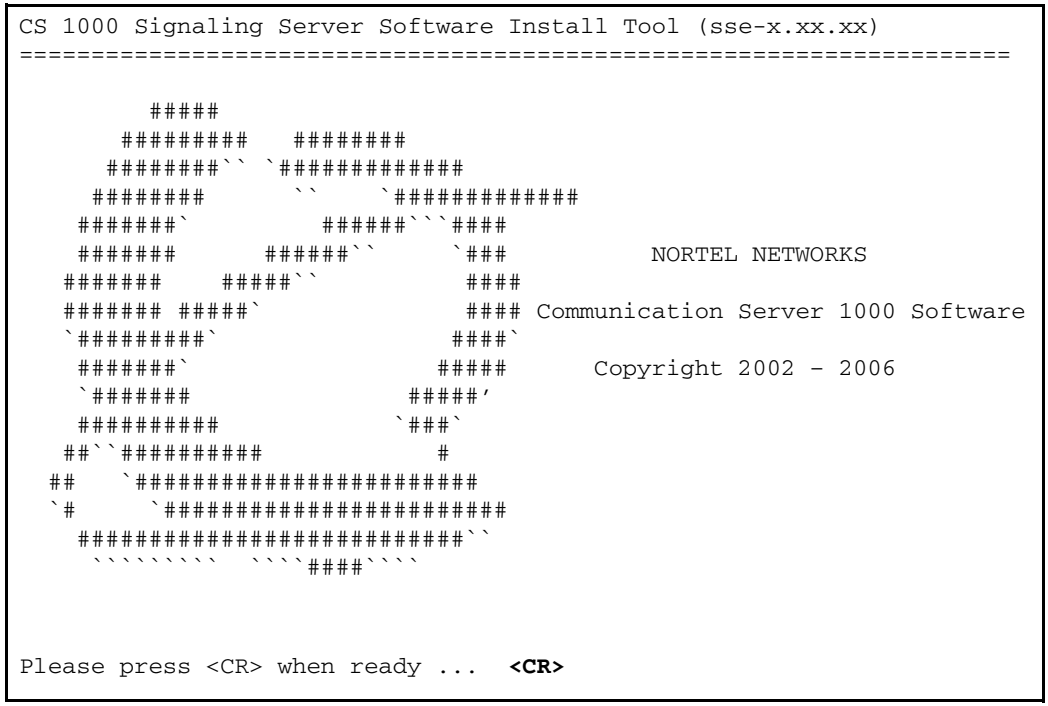
– NRS role, if applicable. Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313)

Entering basic system parameters

Procedure 63
Entering basic system configuration parameters

1 Press the RST button on the faceplate of the CP PM Signaling Server. This cold-reboots the Signaling Server and triggers the Install Tool on the hard drive (see Figure 90)

Figure 90
Install Tool banner screen



2 Press <CR> to continue with the configuration. The Restore IP configuration screen appears (Figure 91).

Figure 91
Restore IP configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

Please insert the database diskette in the removable drive
to restore the IP configuration to the hard disk

        Please enter:
<CR> -> <a> - Diskette is now in the removable drive.
             Continue.
        <b> - Continue without restoring the IP configuration
        <q> - Quit.

        Enter Choice> b
```

3 Enter b at the prompt to bypass the restore of IP configuration data. The CP PM board location screen appears (Figure 92).

Figure 92
CP PM board location

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================

This CS 1000 Signaling Server is currently located in the IPMG
configured as (Loop-Shelf-Card) :

Please enter new IPMG location for this CPPM SS, or press <CR> to skip.

Note: If the IPMG has not been configured yet, the IPMG loop and
      shelf information can be left as the current value. To update
      the loop and the shelf information later, use OAM shell)


New IPMG location (Loop and Shelf only)  [LL SS] :
```

4 Enter the location (loop and shelf) of the IPMG board.

Note: If the IPMG has not been configured yet, the loop and shelf information can be left at the current value. The IPMG board location can be updated using OAM shell commands after the Signaling Server is configured.

5 The Leader/Follower configuration screen appears (Figure 93).

Figure 93
Leader/Follower Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================

Note: This step will over-write all existing configuration parameters
      on this Signaling Server.

Please select the role of this Signaling Server.

If this Signaling Server will be a Leader then its data networking
and IP Telephony parameters must be entered now. (This will pre-
configure the IP Telephony node files.)

If this Signaling Server will be a Follower then its data networking
and IP Telephony parameters must be configured through Element
Manager later.

        Please enter:
<CR> -> <a> - Set this Signaling Server as a Leader.
        <b> - Set this Signaling Server as a Follower.
        <q> - Quit.

        Enter Choice>
```

6 Configure the Signaling Server as a Leader or Follower. If there is already a Leader Signaling Server in the IP Telephony node, enter b at the prompt to configure this Signaling Server as Follower. The Follower Signaling Server configuration screen appears (Figure 94). Go to step 15 on page 239.

Figure 94
Follower Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

7 If there is not a Leader Signaling Server in the IP Telephony node already, or if the Signaling Server is to be a stand-alone Signaling Server, press <CR> or enter a at the prompt to configure this Signaling Server as Leader.

8 Configure the application configuration for this Signaling Server. See Figure 95.

- If you are planning on enabling the IP Phone TPS, Virtual Trunk TPS, and optional Network Routing Service (NRS) applications on this Signaling Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server.
- If you are planning on enabling only the NRS on this Signaling Server:
  - If this Signaling Server is to be associated with a Call Server, enter **a** at the prompt to configure this Signaling Server as a co-resident Signaling Server. After you finished installing the Signaling Server software, you can disable the IP Phone TPS and Virtual Trunk TPS in Element Manager (refer to *Element Manager: System Administration* (NN43001-332)).
  - If this Signaling Server is not to be associated with a Call Server, enter **b** at the prompt to set this Signaling Server as a Standalone Signaling Server - NRS.

Figure 95
Application configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=============================================================================

Please select the application configuration for this Signaling Server.

        Please enter:
<CR> -> <a> - Co-resident (LTPS + VTRK + NRS).
        <b> - Stand-alone (NRS only - no Call Server).
        <q> - Quit.

        Enter Choice>
```

Depending on the application configuration selected, either the NRS type: co-resident Signaling Server screen (Figure 96 on page 250) or the NRS type: standalone Signaling Server screen (Figure 97 on page 250) appears.

Figure 96
Standalone Signaling Server - NRS

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please select the Network Routing Service (NRS) configuration for this
Signaling Server.

        Please enter:
<CR> -> <a> - H.323 Gatekeeper and SIP Redirect/Proxy Server.
        <b> - H.323 Gatekeeper only.
        <c> - SIP Redirect/Proxy Server only.

        Enter Choice>
```

Figure 97
NRS type — co-resident Signaling Server

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please select the type of Network Routing Service (NRS) for this
Signaling Server.

        Please enter:
<CR> -> <a> - Primary.
        <b> - Alternate.
        <c> - Failsafe.

        Enter Choice>
```

9 Select the type of NRS to be provided by this Signaling Server. See Figure 97 for a co-resident Signaling Server. See Figure 96 for a stand-alone Signaling Server.

- If this Signaling Server is to be the Primary NRS, enter **a**.
- If this Signaling Server is to be the Alternate NRS, enter **b**.
- If this Signaling Server is not a stand-alone Signaling Server and is to be the Fail-safe NRS, enter **c**.

Refer to *IP Peer Networking: Installation and Commissioning* (NN43001-313) for more information on the NRS.

Depending on whether the Signaling Server is configured as Leader, Follower or Stand-alone, the Leader Signaling Server configuration screen (Figure 98), the Follower Signaling Server configuration screen (Figure 99) or the Stand-alone Signaling Server configuration screen (Figure 100) appears.

Figure 98
Leader Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=====================================================================

Please enter the data networking and IP Telephony parameters for
this Leader Signaling Server.

Node ID          : 276

Hostname         : SS_Node276_Ldr

ELAN IP          : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP : 192.168.10.1

TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP : 192.168.20.1

Node IP          : 192.168.10.20

Call Server IP   : 192.168.10.10
```

Figure 99
Follower Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
=====================================================================

This Follower Signaling Server will obtain its data network and IP
telephony configuration from the Leader Signaling Server at boot.

To identify this Signaling Server, please enter a Hostname.

Hostname : SS_Node276_Ldr
```

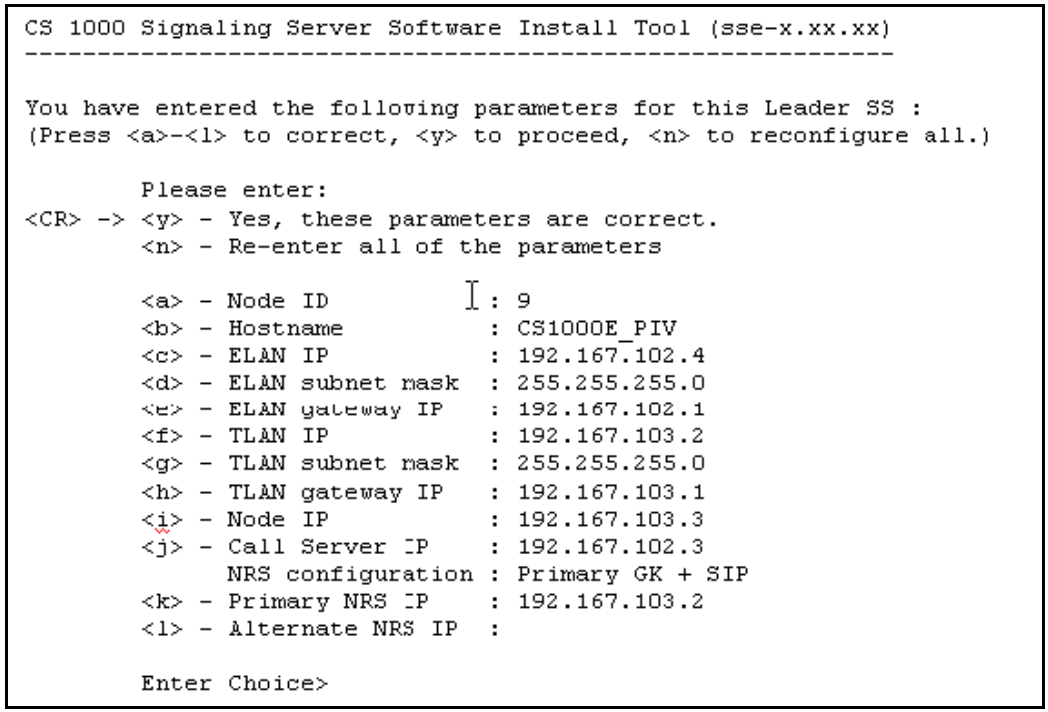
Figure 100
Stand-alone Signaling Server configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please define the data networking parameters for this Standalone
Signaling Server. Note that the ELAN parameters are necessary for
management access (e.g. SNMP).

Hostname         : SS_SA

ELAN IP          : 192.168.10.20
ELAN subnet mask: 255.255.255.0
ELAN gateway IP  : 192.168.10.1

TLAN IP          : 192.168.20.20
TLAN subnet mask: 255.255.255.0
TLAN gateway IP  : 192.168.20.1
```

10 Enter the data networking and IP telephony parameters for the Signaling Server, as prompted.

- If this is a Leader Signaling Server, enter the parameters for the Node, ELAN network interface, TLAN network interface, and Call Server as required. See Figure 82 on page 237. For the Call Server:
  - — If installing the Signaling Server at an office that is not a branch office, enter the ELAN network interface IP address of the Call Server.
  - — If installing the Signaling Server at a branch office, enter the ELAN network interface IP address of the MG 1000B Core.
- If this is a Follower Signaling Server, enter the Hostname of the Leader Signaling Server. The IP telephony parameter configuration screen appears (Figure 101 on page 253).

Figure 101
IP Telephony parameter configuration



- Proceed to step 16 on page 241.
- If this is a stand-alone Signaling Server and not associated with a Call Server (that is, **b** was selected in step 11 on page 234), enter the TLAN subnet parameters as required. The Call Server IP address is automatically set to 0.0.0.0.

The IP information applies to a temporary IP Telephony node. This ensures that the existing node is not impacted. This also preconfigures the IP Telephony node files. In *Signaling Server: Installation and Commissioning* (NN43001-312), the node files are imported to Element Manager for further configuration.

Depending on whether the Signaling Server is configured as Primary, Alternate or Stand-alone, the Primary NRS IP address screen (Figure 102), the Alternate NRS IP address screen (Figure 103), or both in succession (for a Stand-alone Signaling Server) appear.

Figure 102
Primary NRS IP address

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please enter the Primary NRS IP Address:

Primary NRS IP   :
```

Figure 103
Alternate NRS IP address

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
================================================================================

Please enter the Alternate NRS IP Address:

Alternate NRS IP :
```

11 Enter the Primary NRS IP address or the Alternate NRS IP address, depending on the option entered in step 12 on page 235 or step 13 on page 236.

- If **a** was entered in step 13, you can enter the address of the Alternate NRS if you know it, but it is not required. See Figure 85 on page 239.
- If **b** was entered in step 13, enter the address of the Primary NRS. See Figure 84 on page 239.
- If **c** was entered in step 13:
  - — Enter the address of the Primary NRS. See Figure 84.
  - — Enter the address of the Alternate NRS. See Figure 85.
- If **d** was entered in step 12:
  - — Enter the address of the Primary NRS (optional).

— If you did enter the address of the Primary NRS, enter the address of the Alternate NRS (also optional).

The Gatekeeper configuration can be updated later using Element Manager. The IP telephony parameter configuration screen appears (Figure 104).

Figure 104
IP Telephony parameter configuration

```
CS 1000 Signaling Server Software Install Tool (sse-x.xx.xx)
------------------------------------------------------------

You have entered the following parameters for this Leader SS :
(Press <a>-<l> to correct, <y> to proceed, <n> to reconfigure all.)

        Please enter:
<CR> -> <y> - Yes, these parameters are correct.
        <n> - Re-enter all of the parameters

        <a> - Node ID             : 9
        <b> - Hostname            : CS1000E_PIV
        <c> - ELAN IP             : 192.167.102.4
        <d> - ELAN subnet mask    : 255.255.255.0
        <e> - ELAN gateway IP     : 192.167.102.1
        <f> - TLAN IP             : 192.167.103.2
        <g> - TLAN subnet mask    : 255.255.255.0
        <h> - TLAN gateway IP     : 192.167.103.1
        <i> - Node IP             : 192.167.103.3
        <j> - Call Server IP      : 192.167.102.3
              NRS configuration   : Primary GK + SIP
        <k> - Primary NRS IP      : 192.167.103.2
        <l> - Alternate NRS IP    :

        Enter Choice>
```

12 Press <CR> or enter y to confirm all parameters entered, n to re-enter all parameters, or a letter **a** through **l** to change the value of the corresponding system parameter. The configuration screens for a Follower and Standalone Signaling Server - NRS are similar, showing the same list of parameters, specifically:

- The screen for the Follower Signaling Server displays only the value for the Hostname parameter; all other values are blank.
- The screen for the stand-alone Signaling Server displays values for the Hostname, ELAN network interface, TLAN network interface, and NRS parameters. The Node ID field is set to 0. The Call Server IP field is set to 0.0.0.0.

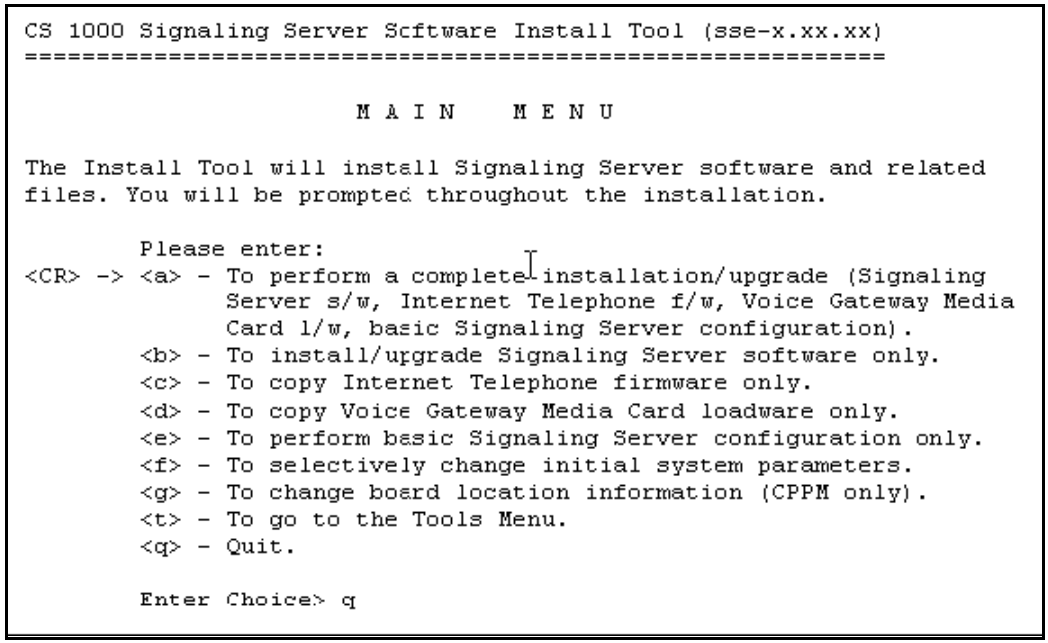
The following message is displayed:

```
For future reference, the ELAN MAC address is:
"00:02:b3:c5:5l:c6".
```

Note: The ELAN network interface MAC address must be configured in the Element Manager node configuration web page.

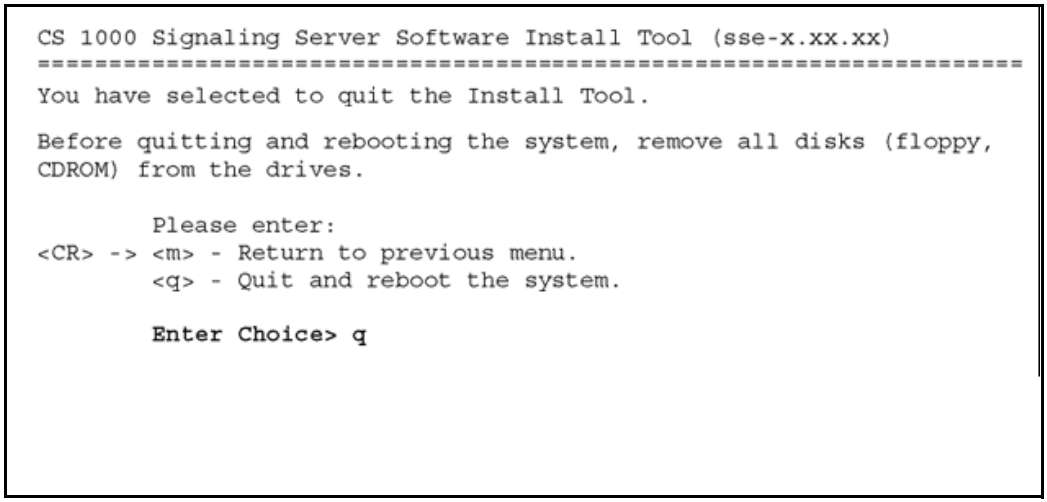
The Install Tool Main Menu screen appears (Figure 105):

Figure 105
Install tool



13 Enter **q** to quit the Install Tool. Confirm to reboot the system. The Installation Tool quit confirmation screen appears (Figure 106).

Figure 106
Installation Tool quit confirmation



14 Enter **q** to close/terminate the Installation Tool and reboot the Signaling Server.

End of Procedure

Adding a follower Signaling Server

After configuration and reboot, a Follower Signaling Server sends out BOOTP requests and waits for a response. Since the Follower Signaling Server is not yet configured in an IP Telephony node, there is no BOOTP response. Do not wait for this response. Complete Procedure 64, “Adding a Follower Signaling Server to an IP Telephony node,” on page 259 .

Procedure 64
Adding a Follower Signaling Server to an IP Telephony node

Note: The first time the Follower Signaling Server is installed, it cannot obtain the system login and password, and does not have the current CONFIG.INI file with the Call Server IP address, therefore the FTP fails. In subsequent Follower installations, FTP succeeds.

1 Open the Web browser.

2 Enter the **Signaling Server Node IP address** in the Address Bar of the browser window and press Enter on the keyboard.

Note: The ELAN network interface IP address can be required, instead of the Node IP address, to access the Element Manager login Web page in secure environments.

3 The Element Manager **Login** Web page opens.

a. Enter a valid **User ID** and **Password** combination.

— A valid User Id and Password combination is one that is defined on the Call Server.

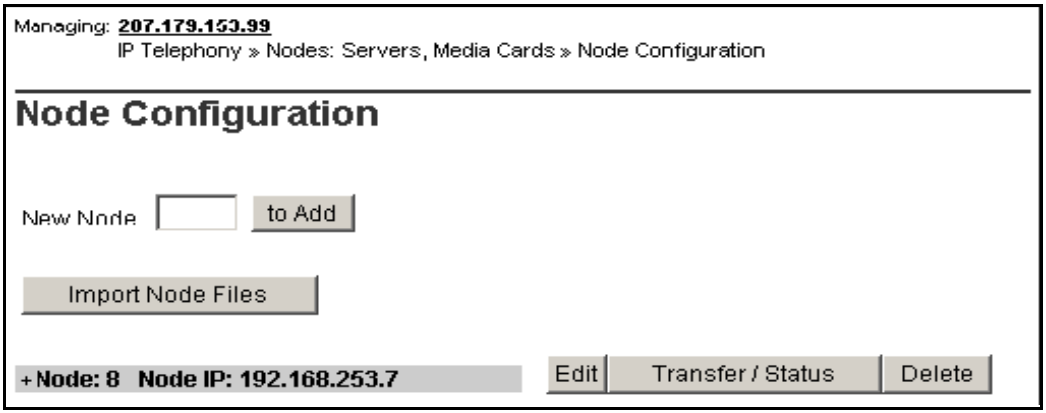
The IP Address of the Call Server appears in the Call Server IP Address field.

b. Click **Login**.

The System Overview Web page appears.

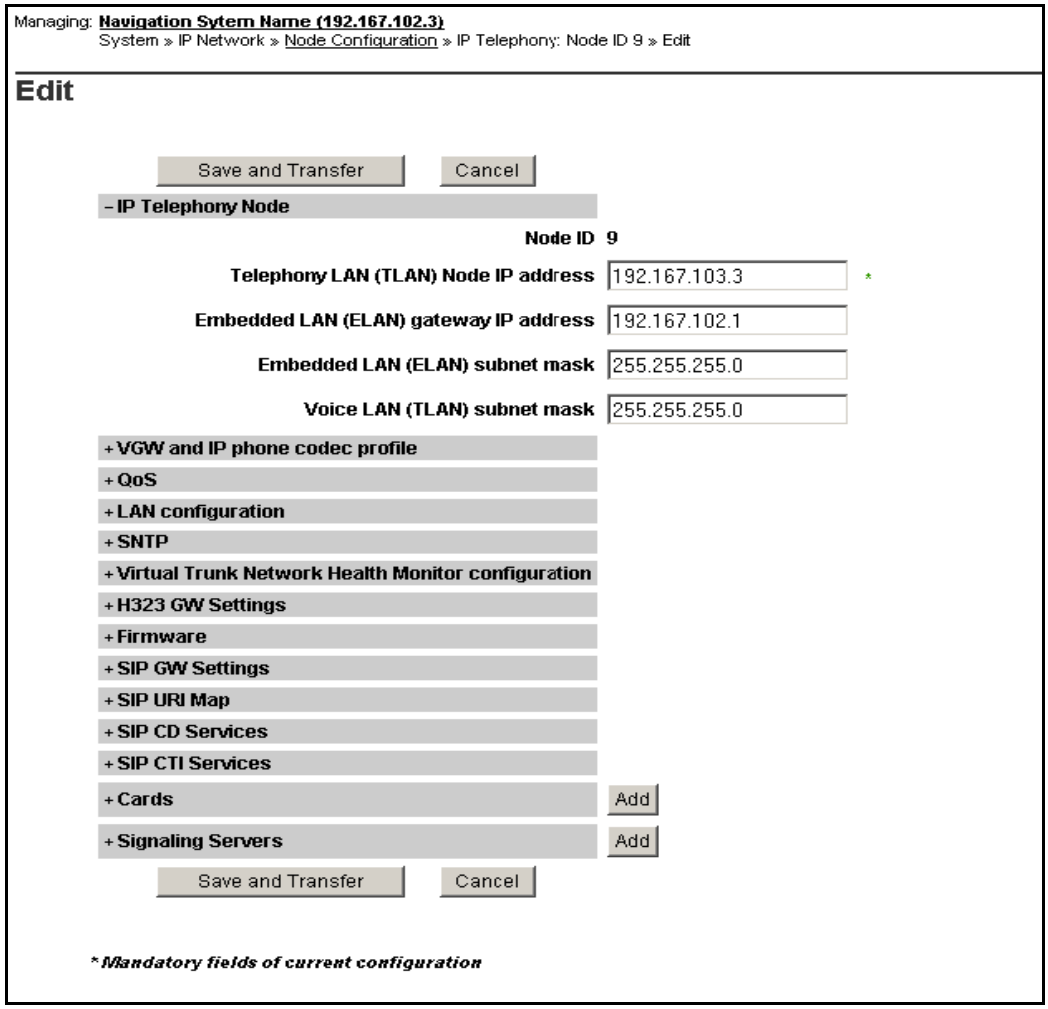
4 Select **IP Network** > **Nodes: Servers**, **Media Cards** from the navigator. The Node Configuration web page opens, as shown in Figure 107.

Figure 107
Node Configuration web page



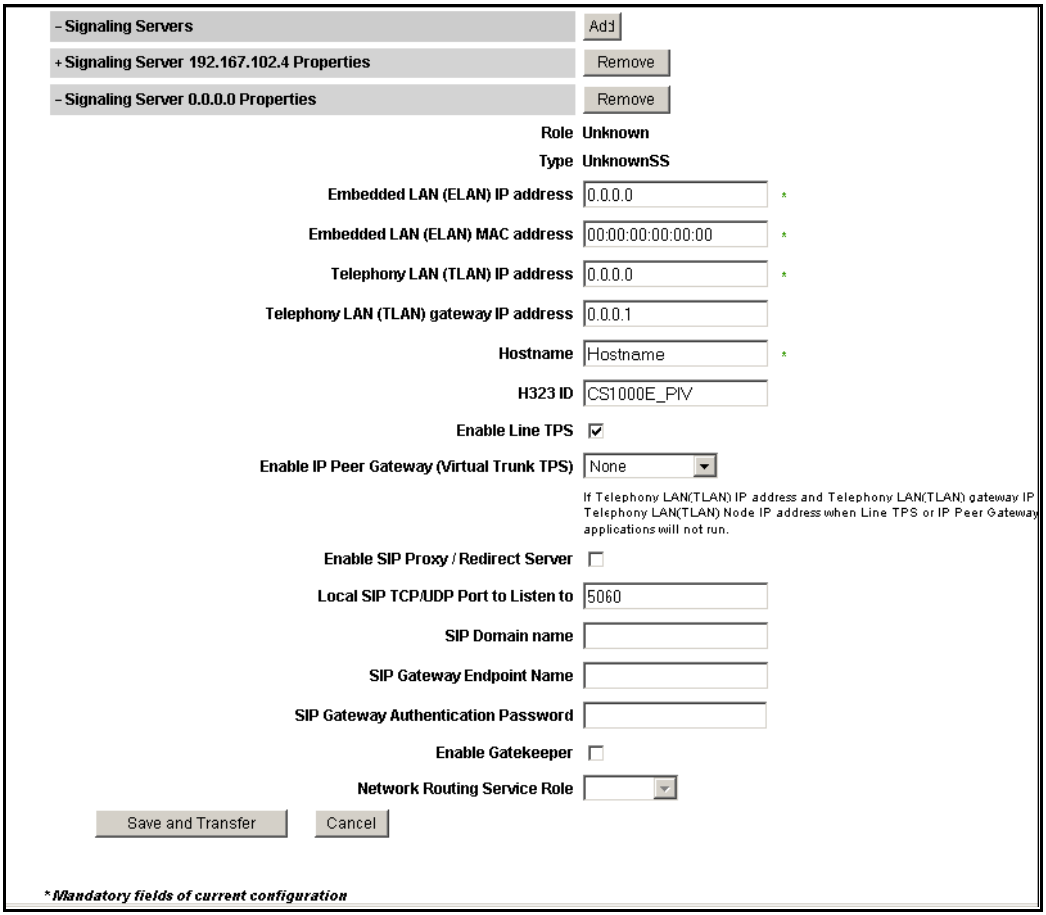
5 Click Edit next to the node to which the Follower Signaling Server is to be added. The Edit web page opens, as shown in Figure 108.

Figure 108
Edit web page



6 Click Add next to Signaling Servers.The section expands to show a list of Signaling Servers and a blank template for entering Signaling Server xxx.xxx.xxx.xxx properties, as shown in Figure 109.

Figure 109
Signaling Server properties template



7 Enter the information corresponding to the Follower Signaling Server. The Role field will automatically revert to Follower once the Follower Signaling Server has been added.

8 Click Save and Transfer to transfer the updated IP Telephony node information to the other elements of the node. Refer to Transferring IP Telephony files, and *IP Line: Description, Installation, and Operation* (NN43001-500) for detailed instructions on transferring IP Telephony node information.

End of Procedure

Unpacking Help files for Virtual Terminal Emulator

Help files for the Virtual Terminal Emulator (VTE) component of Element Manager are copied to the Signaling Server as compressed files during installation of the Signaling Server software.

Unpacking the Help files is optional. However, they can be unpacked at any time after the Signaling Server software is installed. To unpack the files, refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

IMPORTANT!

Unpacking the Help files takes approximately 20 to 30 minutes. Nortel recommends that you unpack the files during a service outage.

Refer to *Element Manager: System Administration* (NN43001-632) for more information on Element Manager and the Virtual Terminal Emulator.

Logging in to the Signaling Server

Use Procedure 65 on page 264 to log in to the vxWorks™ shell to access the Signaling Server from a maintenance terminal.

Procedure 65
Logging in to the Signaling Server

Before you begin, make sure the DTE–DTE null modem cable (supplied with the Signaling Server) runs between the serial port on the back of the Signaling Server and the maintenance terminal.

1 Make sure the Signaling Server is powered up and connected to the maintenance terminal. Refer to *Signaling Server: Installation and Commissioning* (NN43001-312).

The Signaling Server must boot successfully before the user can log in.

2 Press <CR> to invoke the login prompt.

3 Enter the login credentials by doing one of the following:.

- If the Signaling Server has connected to the Call Server (the startup messages indicate if the PBX link is up), use the PWD1 login to access the Signaling Server.
- If the Signaling Server is not connected to the Call Server:

  a. Enter the default Signaling Server Command Line Interface (CLI) login **`admin`**.

  b. Enter the Signaling Server Command Line Interface (CLI) password.

  - If this Signaling Server has just been installed and you are logging in for the first time, enter the default password **`cseadmin`**.

    The system immediately prompts you to change the default password.

  - If this is not the first login to the Signaling Server, enter the appropriate password.

    If you have forgotten the password, reset it from the Tools Menu (see *Signaling Server: Installation and Commissioning* (NN43001-312)).

End of Procedure

To log out of the Signaling Server, enter **`exit`** at the command line.

Verifying a successful configuration

To ensure that the Signaling Server Ethernet connections (for the ELAN and TLAN subnets) are configured correctly, perform a ping test to one or more of the other devices connected to the network, particularly the Call Server.

Procedure 66
Verifying the Signaling Server Ethernet connection

1. Log in to the Signaling Server, using Procedure 65 on page 264.
2. Ping the IP address of the Signaling Server. Enter the command:

   `ping x.x.x.x`

   Where **`x.x.x.x`** is the Signaling Server ELAN network interface IP address.
3. Ping the IP address of the Call Server. Enter the command:

   `ping x.x.x.x,3`

   Where **`x.x.x.x`** is the Call Server ELAN network interface IP address.
4. If desired, repeat step 3 for other devices connected to the network.

End of Procedure

Testing the Leader Signaling Server

Configure two IP Phones to register to the Signaling Server on its temporary node. These IP Phones must be provisioned on the Call Server. Refer to *Communication Server 1000E: Installation and Commissioning* (NN43041-310), *Communication Server 1000M and Meridian 1: Large System Installation and Commissioning* (NN43021-310), or *Communication Server 1000M and Meridian 1: Small System Installation and Configuration* (NN43011-310) for the procedure appropriate to the system. After provisioning, the telephones can call each other.

Appendix A: Upgrade checklists

Contents

This section contains information on 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	

Pre-upgrade 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
Omega	IODUC	Direct cable transfer

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

Omega	MMDU	Nortel Internal
CMDU	IODUC	4M - 2M media transfer
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		

Pre-conversion steps

Table 34
Pre-conversion steps (Part 1 of 2)

Pre Conversion Steps
A capture file should be made of the following information using a PC or Printer.
Perform an overall system check:
LD 135 SCPU (ensure that the system is redundant)
LD 137 STAT/TEST CMDU
LD 96 STAT DCH
LD 48 STAT AML
LD 32 STAT
LD 60 STAT

Table 34
Pre-conversion 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

Post-conversion checks

Table 35
Post-conversion checks

Post Conversion 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
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

Table 37
Switch settings (Part 2 of 2)

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

Software generic by machine type

Table 38
Software generic by machine type

System Type	Generic	System Type	Generic	Processors
ST	1011	Option 61	1111	CP1 - NT6D66 - 68030
STE	1511	Option 61 CP1	1811	CP2 - NT9D19 - 68040
NT	1111	Option 61 CP2	2311	CP3 - NT5D10 - 68060
XT	1211	Option 61 CP3	2511	CP4 - NT5D03 - 68060E
RT	1311	Option 61 CP4	2911	CPP - INTEL PII
Option 11	1411	Option 71	1211	CNI'S
Option 11	1411	Option 81 CP1	1611	Opt 81 - 8,9,10
Option 11C	2111	Option 81 CP2	1911	Opt 81C - 12,13,14
Compact	X27	Option 81 CP3	2611	CPP - c9,c10,c11,c12
Option 21	1011	Option 81 CP4	3011	Key Packages
Option21E	1511	Option 81C CP1	1611	Opt 81 - PKG 298
Option 51	1111	Option 81C CP2	1911	Opt 81C - PKG 299
Option 51 CP1	1711	Option 81C CP3	2611	CPP - PKG 299,368
Option 51 CP2	2211	Option 81C CP4	3011	FIJI - PKG 365
Option 51 CP3	2411	Option CP PII	3311	
Option 51 CP4	2811			

Appendix B: Technical Assistance service

Contents

This section contains information on 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 39 on page 280 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 39
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 39
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 40 and 41 describe the service classifications.

Table 40
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 41
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 42 before you call for service.

Table 42
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 40 and 41)	
Description of assistance required	

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Nortel Communication Server 1000

Communication Server 1000M and Meridian 1

71 to CS 1000M MG CP PIV FNF Upgrade

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