# Communication Server 1000M and Meridian 1

71 to CS 1000M MG CP PIV FNF Upgrade

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# Contents

# New in this release

This chapter contains information about Avaya Communication Server 1000 (Avaya CS 1000) Release 7.6 new features.

## Features

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

## Other

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

## Revision history

**December 2013**

Standard 06.02. This document is up-issued to include browser support changes.

**March 2013**

Standard 06.01. This document is up-issued to support Avaya Communication Server 1000 Release 7.6.

**June 2012**

Standard 05.04. This document is up-issued to include updates to QPC441GE5 jumper designation.

**March 2012**

Standard 05.03. This document is up-issued to include changes to the Installing a Signaling Server chapter.

**November 2010**

Standard 05.02. This document is published to support Avaya Communication Server 1000 Release 7.5.

**November 2010**

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

**June 2010**

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

**June 2010**

Standard 04.01. This document is upissued for Communications Server 1000 Release 7.0.

**June 2009**

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

**May 2009**

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

**May 2009**

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

**November 2007**

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

**July 2007**

Standard 01.02. This document is upissued with corrections for invoking the install menu during CP PIV and CP P4 upgrades.

**May 2007**

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

**May 2006**

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

**January 2006**

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

**August 2005**

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

**September 2004**

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

**October 2003**

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

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# System information

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

## Subject

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

This document also contains information about converting Release 3.0 or later software to Avaya Communication Server 1000 (Avaya CS 1000) Release 7.6 on Meridian 1 Options 51C, 61C, 81C, CS 1000M SG and CS 1000M MG systems. For software conversion procedures prior to Release 3.0, see the *Software conversion procedures* (553-2001-320) document for software Release 24.

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### IMPORTANT!

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

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### Note on legacy products and releases

This document contains information about systems, components, and features that are compatible with Avaya CS 1000 software. For more information

about legacy products and releases, click the **Documentation** link under **Support** on the Avaya home page:

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# Applicable systems

This document applies to the following systems:

- Communication Server 1000M Single Group (CS 1000M SG)

- Communication Server 1000M Multi Group (CS 1000M MG)

- Meridian 1 Option 61C

- Meridian 1 PBX 71

- Meridian 1 Option 81C

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

### System migration

When particular Meridian 1 systems are upgraded to run CS 1000 Release 7.6 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 Avaya CS 1000M systems**

| This Meridian 1 system... | Maps to this CS 1000M system |
|---|---|
| Meridian 1 Option 61C | CS 1000M Single Group |
| Meridian 1 PBX 71 | CS 1000M Multi Group |
| Meridian 1 Option 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 7.6:

- CP PM Signaling Server

- Common Processor Dual Core (CP DC)

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

For more information, see "lnstalling a Signaling Server" on .

## Upgrade paths

This document contains information about the following Large System upgrades:

- Meridian 1 Options 71, and CS 1000M MG

- upgrades to FNF

- software upgrades

- network additions

The upgrades documented in this document 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 Single Group (CS 1000M SG)

• Communication Server 1000M Multi Group (CS 1000M MG)

• Meridian 1 Option 51C

• Meridian 1 Option 61C

• Meridian 1 PBX 71

• Meridian 1 Option 81

• Meridian 1 Option 81C

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

# Related information

> **CAUTION — Data Loss**
>
> Only personnel who are familiar with the system and with conversion procedures should perform the conversion.
>
> Read the applicable procedures carefully before beginning any the conversion.

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

> **CAUTION WITH ESDS DEVICES**
>
> To avoid damaging equipment from electrostatic discharge, wear a properly connected antistatic wrist strap when working on system equipment.

Follow pre-conversion and postconversion procedures for every system conversion.

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

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

> **CAUTION — Data Loss**
>
> Read "General software conversion information" in *Avaya CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458) before performing any operations.
>
> It contains information vital to the conversion process.

## Technical Documents

The following technical documents are referenced in this document:

- *Avaya Product Compatibility* (NN43001-256)

- *Avaya Converging the Data Network with VoIP* (NN43001-260)

- *Avaya Circuit Card Reference* (NN43001-311)

- *Avaya Linux Platform Base and Applications Installation and Commissioning*  (NN43001-315)

- *Avaya IP Peer Networking Installation and Commissioning* (NN43001-313)

- *Avaya Features and Services* (NN43001-106)

- *Avaya Software Input/Output: Administration* (NN43001-611)

- *Avaya Element Manager System Reference - Administration* (NN43001-632)

- *Avaya IP Trunk: Description, Installation, and Operation* (NN43001-563)

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125)

- *Avaya ISDN Basic Rate Interface: Features* (NN43001-580)

- *Avaya Software Input/Output: Maintenance* (NN43001-711)

- *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220)

- *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)

- *Avaya Communication Server 1000M and Meridian 1 Large System Maintenance* (NN43021-700)

- *Avaya Communication Server 1000M and Meridian 1 Large System Upgrade NTPs* (NN43021-458 to NN43021-474)

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www.avaya.com

# Preparing and planning for the upgrade

## Contents

This chapter contains the following topics:

# Introduction

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

> **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 | 24 |
| Upgrade Checklists | 28 |
| Preparing | 28 |
| Identifying the proper procedure | 28 |
| Connect a terminal | 29 |
| Printing site data | 29 |
| Performing a template audit | 32 |

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

| Procedure Step | Page |
|---|---|
| Back up the database (data dump and ABKO) | 33 |
| | 47 |

# 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 about adding new network shelves, see *Avaya 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 Avaya Alerts that impact the site.

- Determine if software can be converted on site or must be sent to Avaya.

- Prepare a contingency plan for backing out of the upgrade.

---

**DANGER OF ELECTRIC SHOCK**

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

---

# Avaya Communication Server 1000 task flow

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

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

*   *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)

*   *Avaya Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310)

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

**Figure 1**
**Communication Server 1000M task flow**
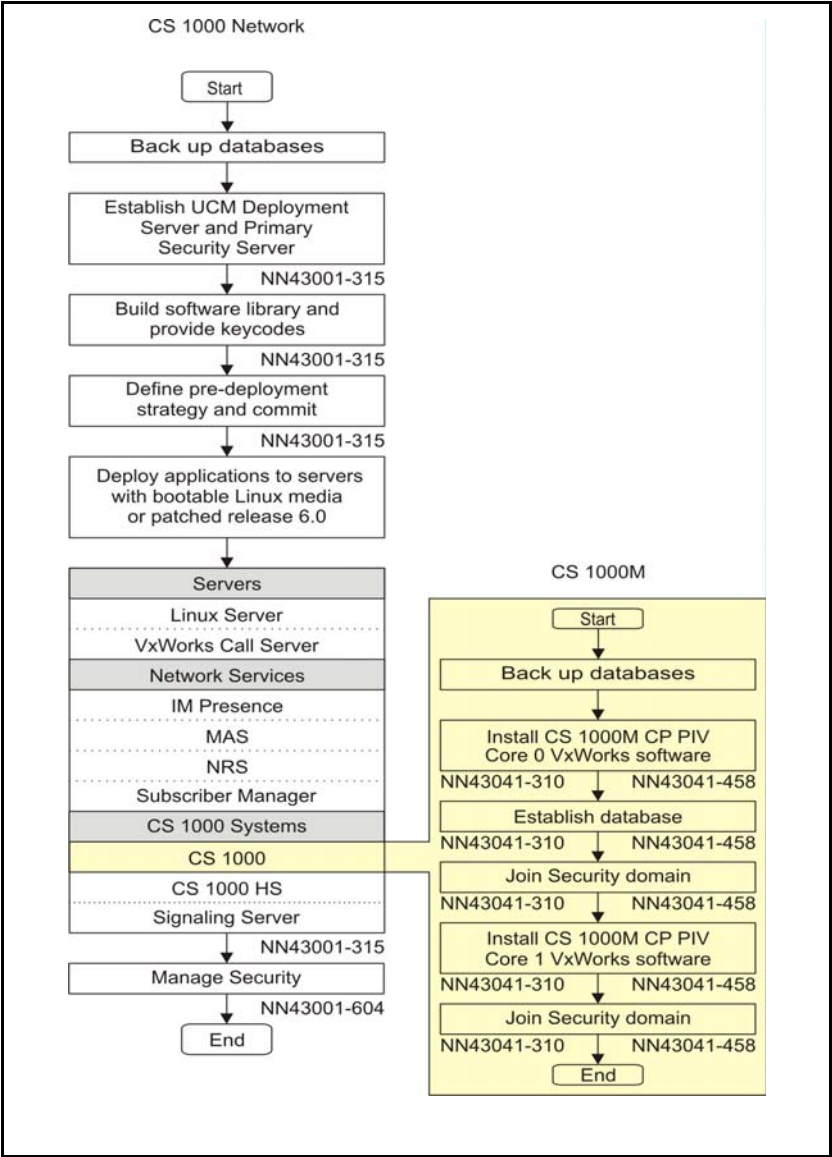
# Upgrade Checklists

Upgrade checklists can be found in "Upgrade checklists" on
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 *Avaya 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 on the target platform for system-patchable components.

• Determine the required patches or DEP lists are installed on applicable applications.

• 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 ). 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 3)**

| Site data | Print command | |
|---|---|---|
| Terminal blocks for all TNs | LD 20 | |
| | REQ | PRT |
| | TYPE | TNB |
| | CUST | <cr> |
| Directory Numbers | LD 20 | |
| | REQ | PRT |
| | TYPE | DNB |
| | CUST | <cr> |
| Attendant Console data block for all customers | LD 20 | LD 20 |
| | REQ | PRT |
| | TYPE | ATT, 2250 |
| | CUST | <cr> |
| *Customer data block for all customers | LD 21 | LD 21 |
| | REQ | PRT |
| | TYPE | CDB |
| | CUST | <cr> |
| Route data block for all customers | LD 21 | |
| | REQ | PRT |
| | TYPE | RDB |
| | CUST | Customer number |
| | ROUT | <cr> |
| | ACOD | <cr> |
| *Configuration Record | LD 22 | |
| | REQ | PRT |
| | TYPE | CFN |

**Table 3**
**Print site data (Part 2 of 3)**

| Site data | Print command | |
|---|---|---|
| *Software packages | LD 22 | |
| | REQ | PRT |
| | TYPE | PKG |
| *Software issue and tape ID | LD 22 | |
| | REQ | ISS |
| | REQ | TID |
| * Peripheral software versions | LD 22 | |
| | REQ | PRT |
| | TYPE | PSWV |
| ACD data block for all customers | LD 23 | |
| | REQ | PRT |
| | TYPE | ACD |
| | CUST | Customer Number |
| | ACDN | ACD DN (or <CR>) |
| Superloop card IDs and software version (peripheral controller, superloop network and controller cards) | LD 32 | IDC loop |
| Multi-purpose ISDN Signaling Processor (MISP) card | LD 27 | |
| | REQ | PRT |
| | TYPE | MISP |
| | LOOP | loop number (0-158) |
| | APPL | <cr> |
| | PH | <cr> |
| DTI/PRI data block for all customers | LD 73 | |
| | REQ | PRT |
| | TYPE | DDB |

**Table 3**
**Print site data (Part 3 of 3)**

| Site data | Print command | |
|---|---|---|
| Print the configured host information | LD 117 | PRT HOST (provides system IP addresses) |
| Superloops and XPEs | LD 97 | |
| | REQ<br>TYPE<br>SUPL | CHG<br>SUPL<br>Vxxx<br>V stands for a virtual superloop and xxx is the number of the virtual superloop.<br><br>xxx = 0-252 in multiples of four for Avaya CS 1000 MG 1000E (Avaya MG 1000E) |

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

# Performing a template audit

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

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

**CAUTION — Service Interruption**

**Loss of Data**

Do not abort this overlay until the audit is complete. If the overlay is interrupted, data will be corrupted.

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

```
TEMPLATE AUDIT

STARTING PBX TEMPLATE SCAN

TEMPLATE 0001 USER COUNT LOW      CHECKSUM OK

TEMPLATE 0002 USER COUNT HIGH     CHECKSUM OK

TEMPLATE 0003 NO USERS FOUND


STARTING SL1 TEMPLATE SCAN

TEMPLATE 0001 USER COUNT OK       CHECKSUM OK
```

- 

- 

```
TEMPLATE 0120 USER COUNT OK       CHECKSUM OK

TEMPLATE AUDIT COMPLETE
```

# Back up the database (data dump and ABKO)

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

**1**   Perform a data dump to save all system memory to the hard disk.

**2**   Perform a ABKO (attended backup) to save the database to a spare set of floppy disks.

**Procedure 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 Avaya 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

<table>
<tr>
<td></td>
<td>

**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.

</td>
</tr>
</table>
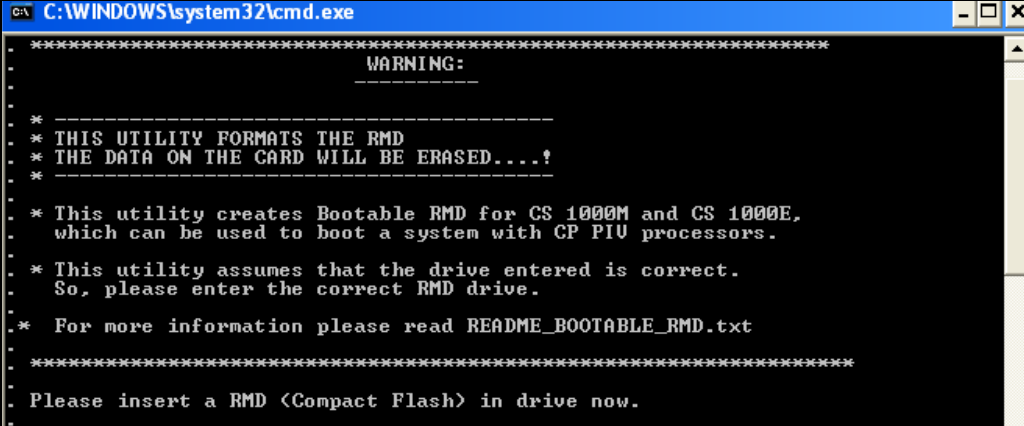
The installation RMD CF card must come preformatted and bootable from Avaya. Consumer CF cards are not bootable by default and must be made bootable as outlined in Procedure 5 on .

**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 2).

**Figure 2**
**mkbootrmd.bat**

**4**     Enter the correct drive letter of the RMD (see Figure 3).

**Figure 3**
**mkbootrmd.bat**

**5**    The boot sector files (bootrom.sys and nvram.sys) are successfully copied making the CF card bootable (see Figure 4).

**Figure 4**
**Boot sector successfully installed**

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

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

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

—————    **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 7.5 software upgrade later in this section. Avaya 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 .

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 5 on ) prompts you to select the correct drive letter for the floppy disk drive.

**Figure 5**
**Select the floppy disk drive**



**4**   The utility then prompts you to insert the floppy disk (diskette 1) and click OK (see Figure 6 on page 43).

**Figure 6**
**Insert diskette 1**



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

*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 7**
**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 8 on ). Click yes to replace old database.

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

**Figure 8**
**Replace database on CF drive**



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

**Figure 9**
**Copy another or exit**

# 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 .

## 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 chapter contains the following topics:

## Introduction

The target upgrade to Avaya Communication Server 1000M 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

<table>
<tr><td>

⚠️

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**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.

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**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.

</td></tr>
</table>

Figure 10 shows an upgrade from a Meridian 1 Option 71/IGS to an Avaya CS 1000M MG CP PIV FNF.

**Figure 10**
**Meridian 1 Option 71 to Meridian 1 Option 81C CP PIV with FNF**
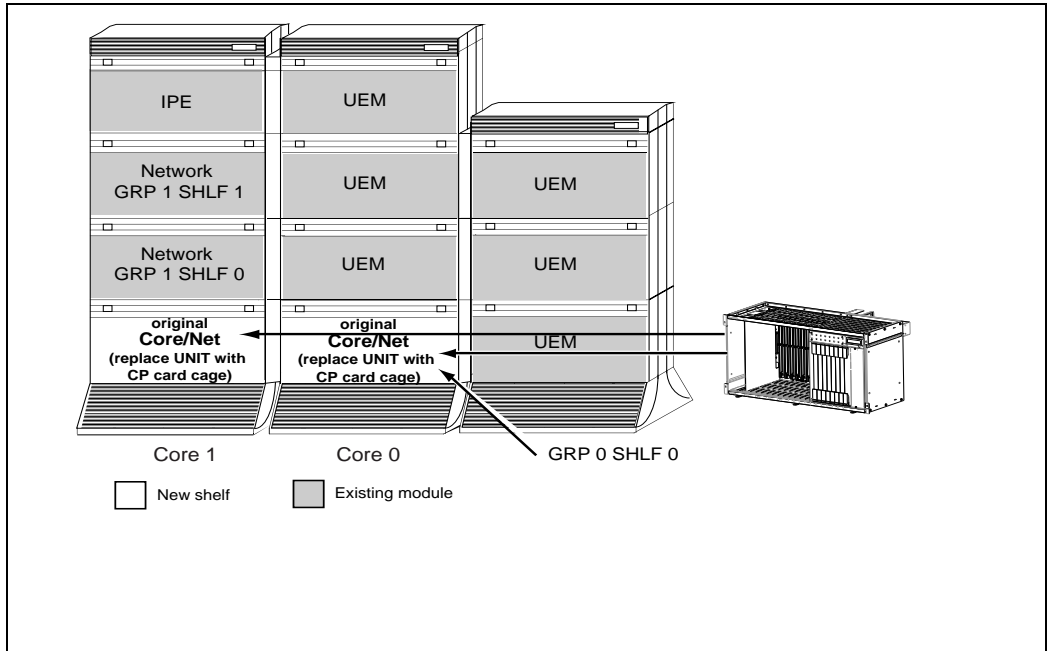


This upgrade takes a Meridian 1 Option 71/IGS to a CS 1000M MG CP PIV FNF. Additional groups can be added by following the procedures for adding a network group in *Avaya CS 1000M and Meridian 1 Large System Upgrades Overview* (NN43021-458).

To upgrade a Meridian 1 Option 71/IGS system to a CS 1000M 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 11**
**CP PIV Core/Net Module**
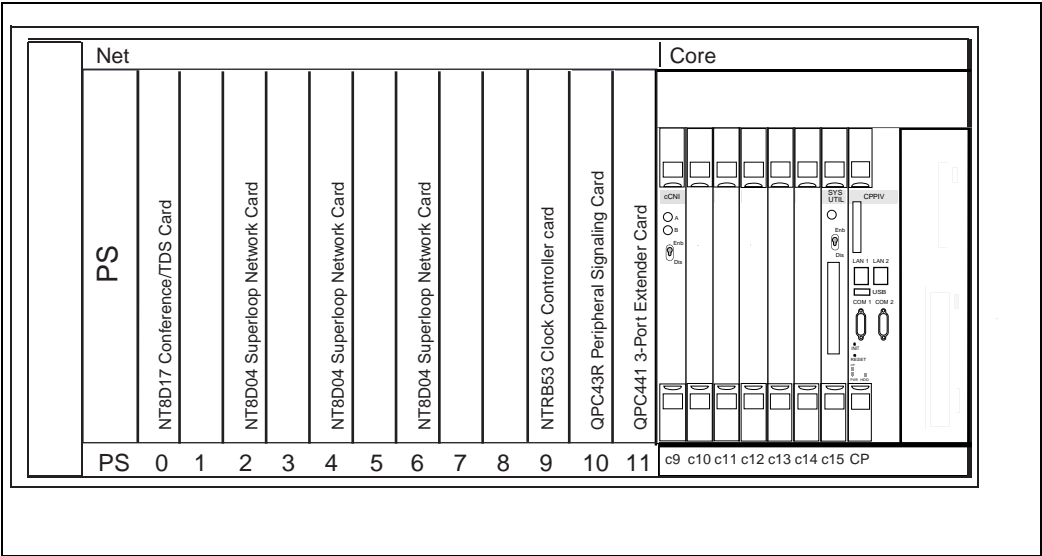


# Reviewing upgrade requirements

## Upgrading to Avaya CS 1000M

The upgrade to Avaya CS 1000M (installing a Signaling Server) occurs after completing the procedures in this section. See "lnstalling a Signaling Server" on .

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 CS 1000M 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 7.5 software

    – Dep. Lists (PEPs)

    – Key code File

  — One blank CF card for database backup

  — An Avaya CS 1000 Release 7.5 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 3)**

| 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 for North America | |
| *NT8D17GA | Conference/TDS Card for Italy | |
| *NT8D17HA | Conference/TDS Card for Europe | |
| *NT8D17HB | Global 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 |

**Table 4**
**Minimum requirements for Meridian 1 Option 81C CP PIV with FNF systems  (Part 2 of 3)**

| Order number | Description | Quantity per system |
| --- | --- | --- |
| *NT8D80BZ | CPU Interface Cable (5 ft.) | |
| *NT8D84AA | SDI Paddleboard to I/O Cable (18 in.) | |
| *NT8D90AF | SDI Multi-Port Extension Cable (10 ft.) | |
| *NT8D91AD | Network to Controller Cable (6 ft.) | |
| *NT8D99AD | CPU to Network Cable (6 ft.) | 2 |
| *NTRA07AA | Conference/TDS Card for China | |
| NTRB33AD/ NTRB33BBE5 | 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 |

**Table 4**
**Minimum requirements for Meridian 1 Option 81C CP PIV with FNF systems  (Part 3 of 3)**

| Order number | Description | Quantity per system |
|---|---|---|
| P0605337 | CP Card Slot Filler Panel | Determined by system configuration |
| **Note:**  *As specified for the country or 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 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 an Avaya system. Special tools required in a procedure are listed in that procedure.

**Table 7**
**List of recommended tools (Part 1 of 2)**

| | |
|---|---|
| Digital Multimeter (DMM) | Electric drill and drill bits |
| Pliers, needle-nose | Hammer and sheet metal center punch |
| Pliers, standard | 1/4" socket wrench |
| Screwdriver, 3/16" flat blade | 3/8" socket wrench |
| Screwdriver, #2 Phillips | 1/4" nut driver |
| Wire cutters | 7/16" socket driver |

**Table 7**
**List of recommended tools (Part 2 of 2)**

| | |
|---|---|
| Electrical insulation tape | 11/32 Deep Socket |
| 5/16" socket wrench | Flashlight |

## Check personnel requirements

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

## CS 1000 compatibility

Consult *Avaya Communication Server 1000M and Meridian 1 Large System Planning and Engineering* (NN43021-220) for CS 1000 Release 7.5 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 12 on :

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 12**
**Core card placement in the NT4N41 Core/Net Module (front)**
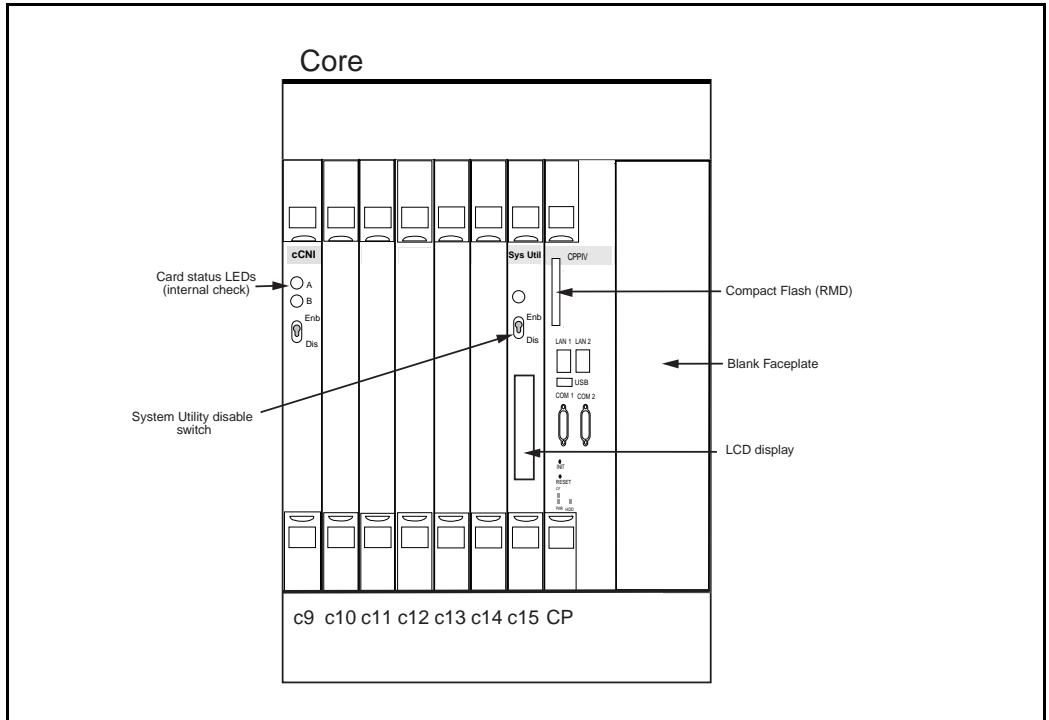


## Check for the shelf power cable

Check that the NT4N4405 Shelf Power Cable is installed in the CP card cage backplane. See Figure 13 on 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 13**
**Core/Net cable connections (top view)**

## Check factory-installed cables

Table 10 lists factory-installed cables. See Figure 13 on page 61.

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

    **LD 35**        Load program

    **STAT CPU**    Obtain the status of both CPUs

    **STAT CMA**    Obtain CMA or OCMA status

    **STAT EXT**    Obtain the extender status

    **STAT MEM**    Obtain the memory status

**6**   Test and switch the CPUs:

    **TCPU**        test the CPUs

    **SCPU**        switch the CPUs

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

    **STAT CPU**    Obtain the status of both CPUs

    **STAT CMA**    Obtain CMA or OCMA status

     **STAT EXT**     Obtain the extender status

     **STAT MEM**     Obtain the memory status

**8**    If CPU 1 is active, switch CPUs:

     **STAT CPU**     Obtain 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, see 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 .

**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 .

   *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<br><br>Single group = On | 21E = Off<br><br>51, 61, 51C, 61C 71, 81, 81C = On | Off | Off | 0-14 Ft. | Side 0 = On<br><br>Side 1 = Off | 71,81 = Off<br><br>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 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 14 on page 71 for DC power connectors. See Figure 15 on page 72 for AC power connectors.

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

**Figure 14**
**DC power connectors on the Core module backplane**
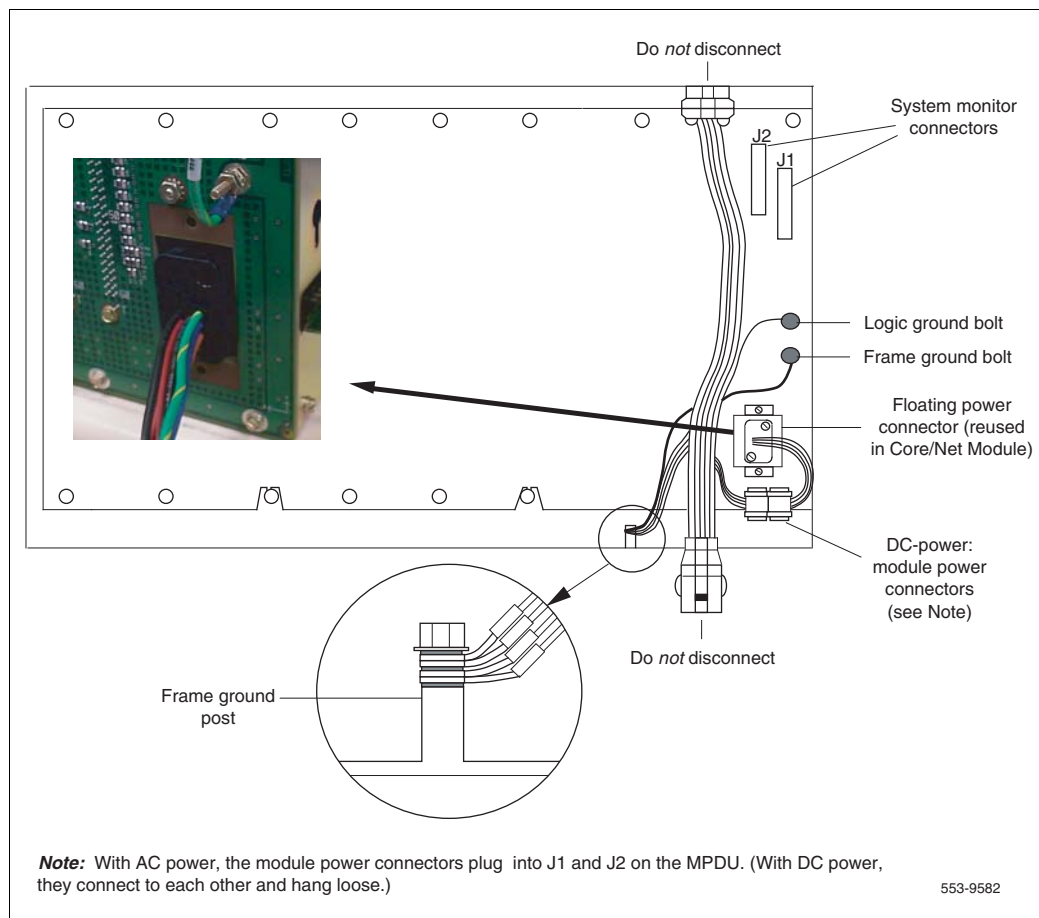


Note: With AC power, the module power connectors plug into J1 and J2 on the MPDU. (With DC power, they connect to each other and hang loose.)

553-9582

**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 15**
**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
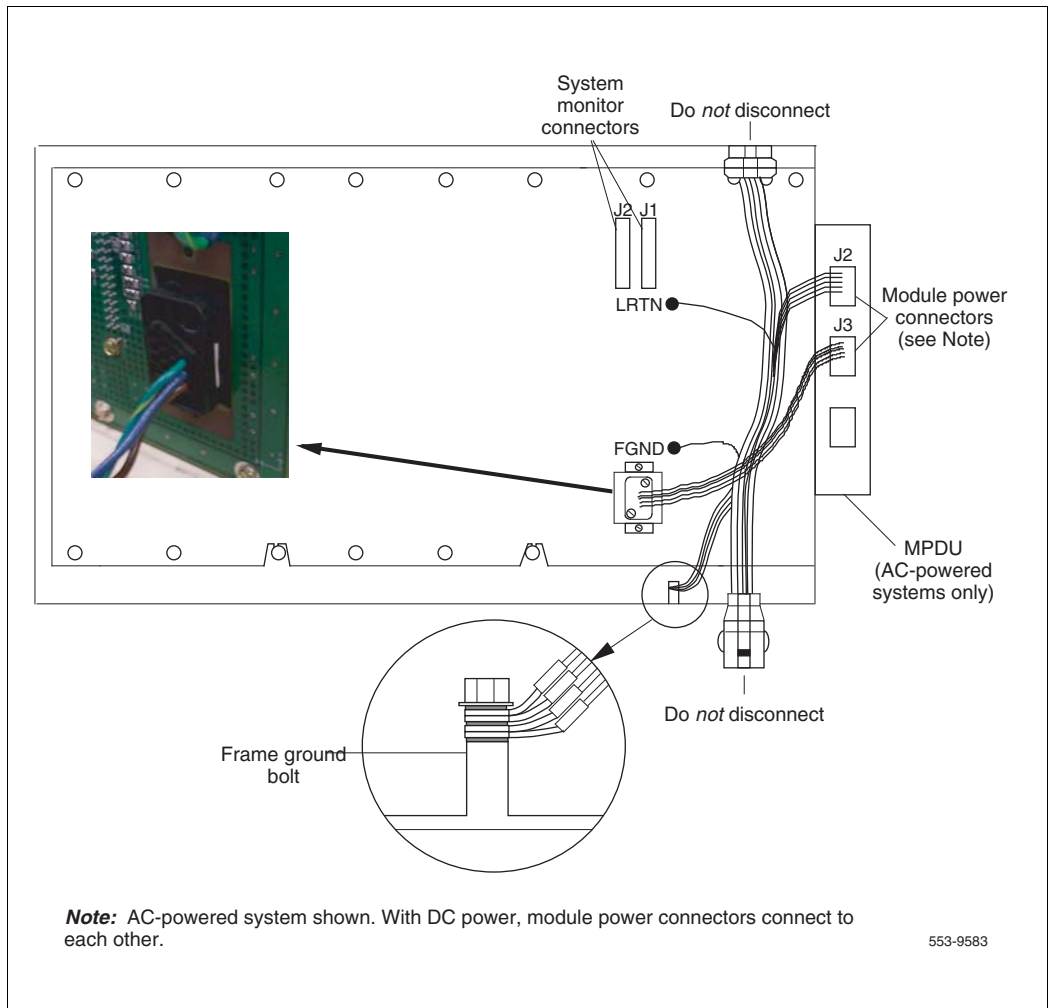
**17** Remove the power harness and reserve it for reinstallation when you install the new NT4N40 card cage. The power harness is located at the right rear lower corner and plugs into the rear of the power supply.

- 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 16.

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

**Figure 16**
**Location of the screws for the MPDU**
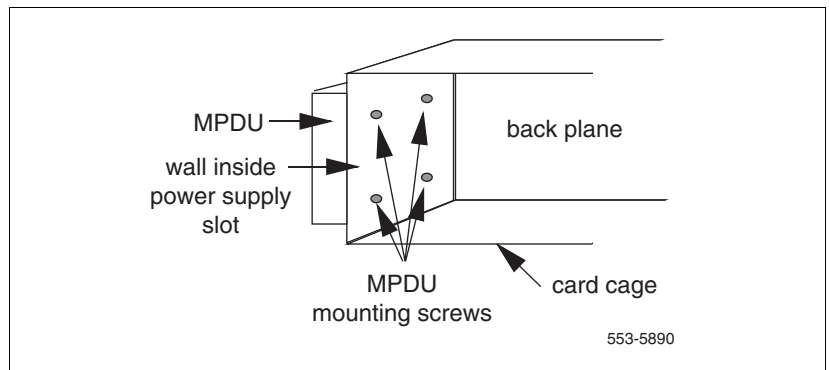


3   Check that the power harness at the right rear corner of the card cage has been transferred from the old card cage to the CP card cage.

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    Preroute cables NT4N88AA, NT4N88BA and NT4N90BA.

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

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

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 .

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

b.  Check that the RN27 Jumper is set to "A" (F/FE5 vintage) or J5 jumper shorts pins 1(dot) & 2 (GE5 vintage).

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** For F/FE5 vintage set Jumper RN27 to "A"; for GE5 vintage set Jumper J5 to short pins 1(dot) & 2. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 17 on page 79.) 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 "Avaya" 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 17**
**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 18**
**Connectors for CNI-3PE cables to the Fanout panel**
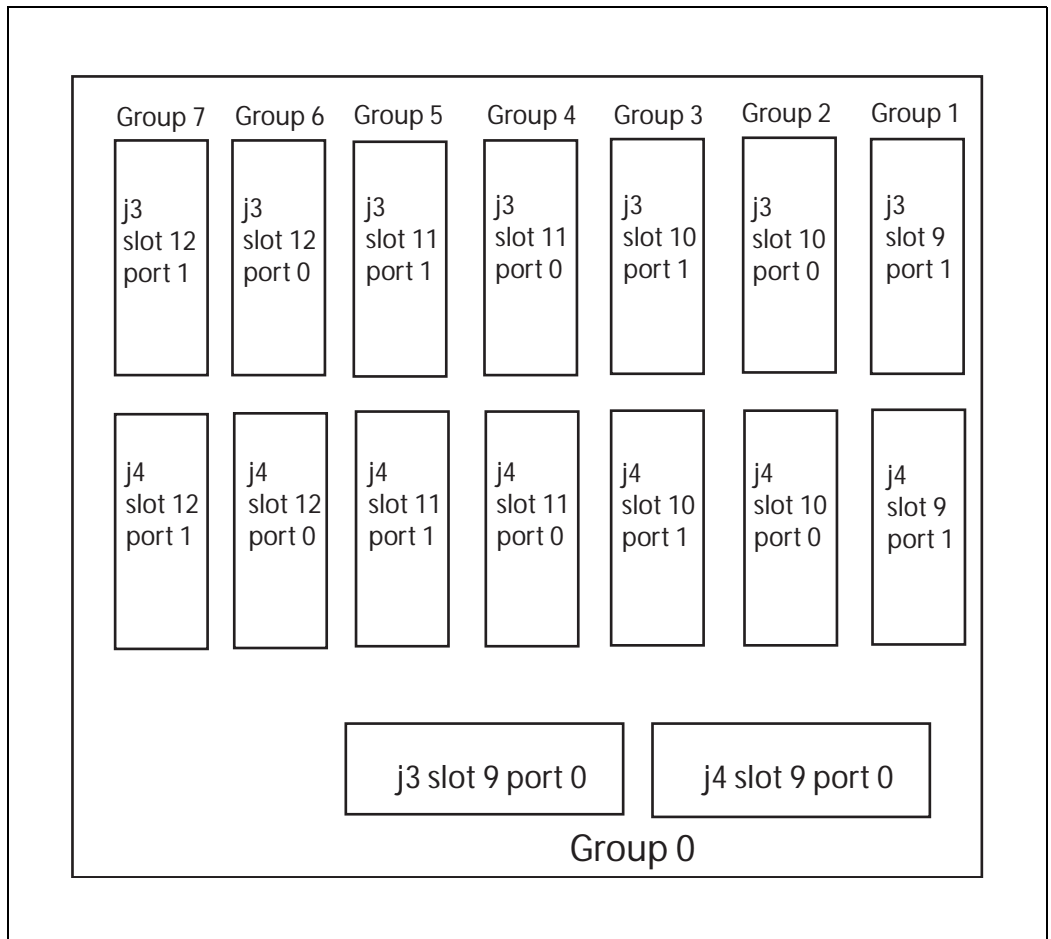
### In Core 1, route and connect the CNI to 3PE (NTND14) cables

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 19 on and Table 15 on .

---

**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 .

**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 19 on page 85.

*Note 2:* Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1. See Figure 19 on page 85.

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

———————————————— **End of Procedure** ————————————————

**Figure 19**
**3PE Fanout Panel connections**



CE Module

Net

Power Supply

OCMC

**3-Port Extender**

FIJI

Peripheral Signaling

NETWORK

NETWORK

NETWORK

NETWORK

NETWORK

NETWORK

NETWORK

NETWORK

Clock Controller

PRI/DTI

J3

Network Group 1, shelf 1

J4

CE Pwr Sup    1  2  3  4  5  6  7  8  9  10  11  12  13  14

Common Equipment    Network Group Shelf

| Group 7 | Group 6 | Group 5 | Group 4 | Group 3 | Group 2 | Group 1 |
|---|---|---|---|---|---|---|
| j3 slot 12 port 1 | j3 slot 12 port 0 | j3 slot 11 port 1 | j3 slot 11 port 0 | j3 slot 10 port 1 | j3 slot 10 port 0 | j3 slot 9 port 1 |
| j4 slot 12 port 1 | j4 slot 12 port 0 | j4 slot 11 port 1 | j4 slot 11 port 0 | j4 slot 10 port 1 | j4 slot 10 port 0 | j4 slot 9 port 1 |

NTND14 cable

j3 slot 9 port 0          j4 slot 9 port 0

Group 0

NTND14 cable

553-9492

**Procedure 18**
**Connecting the shelf 1 FIJI Ring cables (descending)**

<table>
<tr>
<td>⚠️</td>
<td>

**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.

</td>
</tr>
</table>

Create Fiber Ring 1. Connect the FIJI cards in all Network shelves 1 in **descending** order, from Tx to Rx (Figure 20 on page 87.)

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 20**
**Shelf 1 *descending* fiber-optic Ring (Meridian 1 Option 81C 5 group example)**



NTRC48xx fiber optic cable

553-9557
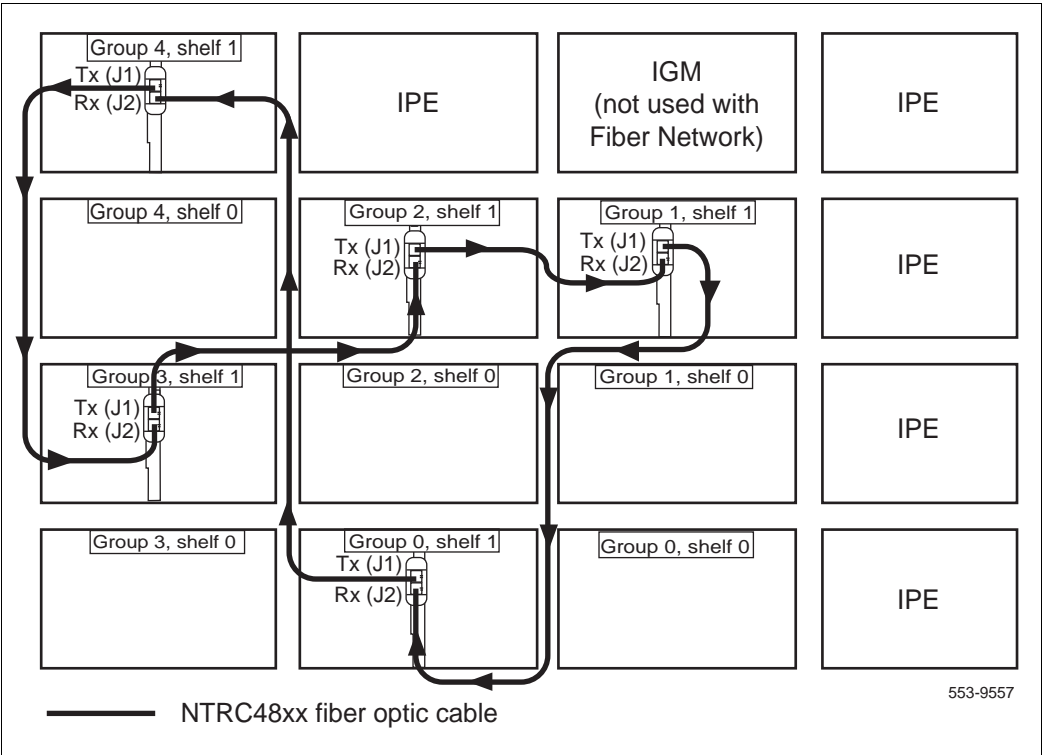
**5**    To complete the Ring, connect a final cable from Tx in **Group 1, shelf 1** to Rx in Group 0, shelf 1.

*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 21**
**Shelf 1 des*cending* fiber-optic Ring (Meridian 1 Option 81 2 group example)**



| | |
|---|---|
| Group 1, shelf 1 | |
| Tx (J1) | |
| Rx (J2) | |

Group 1, shelf 0
Tx (J1)
Rx (J2)

Group 0, shelf 1
Tx (J1)
Rx (J2)

Group 0, shelf 0
Tx (J1)
Rx (J2)

───── NTRC48 fiber optic cable

553-9557b
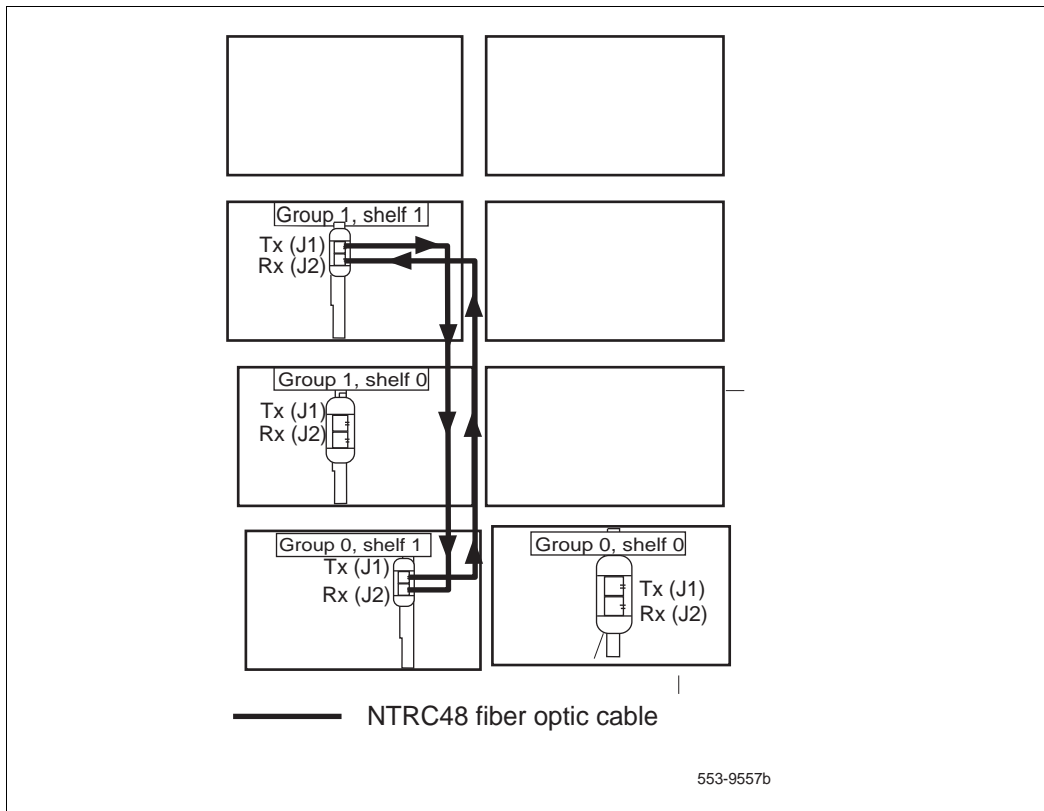
**Procedure 19**
**Cable the Clock Controller 1 to FIJI hardware**

Connect the cables to the Clock Controller 1 as shown in Figure 22 on .

**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 22**
**Clock Controller cable configuration**
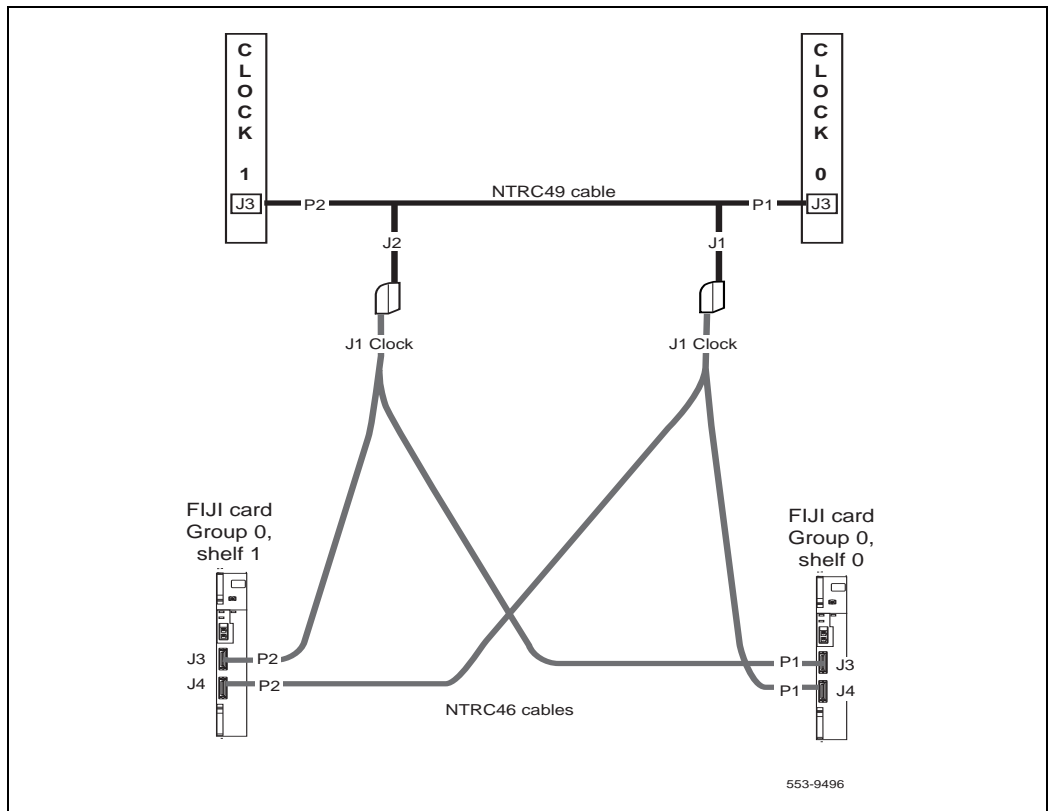
## Power up Core 1

**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 7.5 upgrade

### Upgrading the software

Procedure 23 outlines the steps involved in installing CS 1000 Release 7.5 for the CP PIV processor.

### Procedure 23
### Upgrading the software

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

    **a.** Terminal type: VT100

    **b.** 9600 Baud

    **c.**   Data bits: 8

    **d.**   Parity: none

    **e.**   Stop bits: 1

    **f.**   Flow control: none

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

**3**   Perform a KDIF in LD 143.

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

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

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

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

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

**6**   Enter <CR> at the Install Tool Menu.

*Note:*  Blank CF prompts begin here.

```
Mounting /cf2
Found /cf2/nvram.sys
Mounting /boot|
Found /boot/nvram.sys

                    Selecting nvram file from 2
sources
Read boot parameters from:
F: Faceplate compact flash
H: Hard Drive

 10 [F]

Press <CR> when ready

Reading boot parameters from /boot/nvram.sys

Press any key to stop auto-boot...

```

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




                              Avaya
              Communication Server 1000 Software

                    Install Tool version 29

                      Copyright 1992 - 2007



              Please press <CR> when ready ...

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

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

 Proceed with the upgrade? (Y/N) y

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

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

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

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

```
        M A I N   M E N U

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

Please enter:

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

        <t> - To Tools menu.

        <q> - Quit.

        Enter Choice> <u>
```

The system searches for available keycode files in the "keycode" directory
on the RMD. If no keycode file is found, the system displays the following
menu:

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

No keycode files are available on the removable
media.

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

Please enter:

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

        <q> - Quit.

        Enter choice>
```

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

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

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

You selected to quit. Please confirm.

Please enter:

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

        <n> - No, DON'T quit.

        Enter choice>
```

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

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

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

Name                      Size    Date       Time

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

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

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

<q> - Quit

Enter choice> 2
```

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

**8**   Select the keycode to be used on the system.The system validates the selected keycode and displays the software release and machine type authorized.

```
Validating keycode ...

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

Copy OK: 1114 bytes copied

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

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

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

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

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

Please enter:

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

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

Enter choice>
```

**9**    If the keycode matches, enter <CR> to continue the installation. The system displays the Install Menu. Select option "`<a>`.

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

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
===============================================
I N S T A L L     M E N U

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

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

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

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

             For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> <a>
```

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

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

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

Please enter:

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

        <q> - Quit.

Enter choice> <CR>
```

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

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

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

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

The RMD contains System S/W version xxxx.

Please enter:

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

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

Enter choice> <CR>
```

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

**13**   Choosing Yes for the Dependency Lists installation.

*Note:*  If Dependency Lists are not installed on media, the following prompts do not appear. Proceed to step 14 on .

---

Do you want to install Dependency Lists?

        Please enter:

<CR> -> <y> - Yes, Do the Dependency Lists installation

       <n> - No, Continue without Dependency Lists installation

       Enter choice>

       The default choice is YES as shown in the prompt.

       If the choice is no, then the following prompt will appear for the confirmation:

       Are you sure?

       Please enter:

<CR> -> <n> - No, Go to the Dependency List menu

       <y> - Yes, Go to the next menu

       Enter choice>

       The default choice is NO which will return the user to deplist menu.

Enable Automatic Centralized Software Upgrade (CSU) Feature?

Please enter:

<CR> -> <y> - Yes

       <n> - No

       Enter choice>

---

**14**  Select to enable/disable CSU option.

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

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

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

```
 Set Automatic Centralized Software Upgrade Mode to:

          Please enter:

 <CR> -> <1> - Sequential

         <2> - Simultaneous

          Enter choice>

 >Processing the install control file ...

 >Installing release 0600x
```

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

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

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

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

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

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

>Copying new PSDL ...
```

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

**17**  Enter <CR> to confirm and continue upgrade.

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

```
 Please enter:

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

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


         Enter choice>

>Checking system configuration

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

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

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

Please enter:

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

        <q> - Quit.

        Enter choice>

```

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

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

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

Software release xxxx was installed successfully
on Core x.

All files were copied from RMD to FMD.


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

**19** Press "Enter" after checking the Installation summary.

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

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

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

        Please enter:

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

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

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

              For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> q
```

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

```
You selected to quit. Please confirm.

    Please enter:

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

        <n> - No, DON'T quit.


        Enter choice> <CR>

You selected to quit the Install Tool.

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



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

        DO NOT REBOOT USING RESET BUTTON!!!


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


        Please enter:

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

        <m> - Return to the Main menu.

        Enter Choice> <CR>

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

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

>Rebooting system ...
```

At this point the system reloads and initializes.

——————— **End of Procedure** ———————

# Verifying the upgraded database

**Procedure 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 preupgraded configuration record.

   **LD 22**          Load program

   **REQ**            PRT

   **TYPE**           CFN

   ****              Exit program

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

   **LD 22**          Load program

   **REQ**            SLT

   ****              Exit program

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

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

─────── **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 . 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 . 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** | Obtain status of all cCNI cards |
| **DIS CNIP x s p** | Disable cCNI ports where:<br>x = Core number (0 or 1)<br>s = card slot (9-12)<br>p = port (0 or 1) |
| **DIS CNI x s** | Disable cCNI cards where:<br>x = Core number (0 or 1)<br>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:<br>s = card slot (9-12)<br>p = port (0 or 1)<br>x = out network group |
| **EXTI 3PE** | Core/Net 1 extended to 3PE |
| **CNI s p x** | Out the cCNI card, where:<br>s = card slot (9-12)<br>p = port (0 or 1)<br>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** | Obtain status of all cCNI cards |
| **ENL CNI x s** | Enable cCNI cards where:<br>x= Core number (0,1)<br>s = card slot (9-12) |
| **ENL CNIP x s p** | Enable cCNI ports where:<br>x= Core number (0,1)<br>s = card slot (9-12)<br>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 .

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 .

**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, Avaya recommends that Clock Controller 0 and 1 be located in different Network groups.

**Table 18**
**Clock Controller switch settings for NTRB53**

| Multi-group Single group | Machine Type #1 | Faceplate Cable Length CC to CC | | | Side Number | Machine Type #2 |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | | 5 | 6 |
| Multi-group = Off<br><br>Single group = On | 21E = Off<br><br>51, 61, 51C, 61C 71, 81, 81C = On | Off | Off | 0-14 Ft. | Side 0 = On<br><br>Side 1 = Off | 71,81 = Off<br><br>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. | | | | | | |

**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 23 on page 122 for DC power connectors. See Figure 24 on page 123 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 23**
**DC power connectors on the Core module backplane**



Do *not* disconnect

System monitor connectors

J2

J1

Logic ground bolt

Frame ground bolt

Floating power connector (reused in Core/Net Module)

DC-power: module power connectors (see Note)

Do *not* disconnect

Frame ground post

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

553-9582
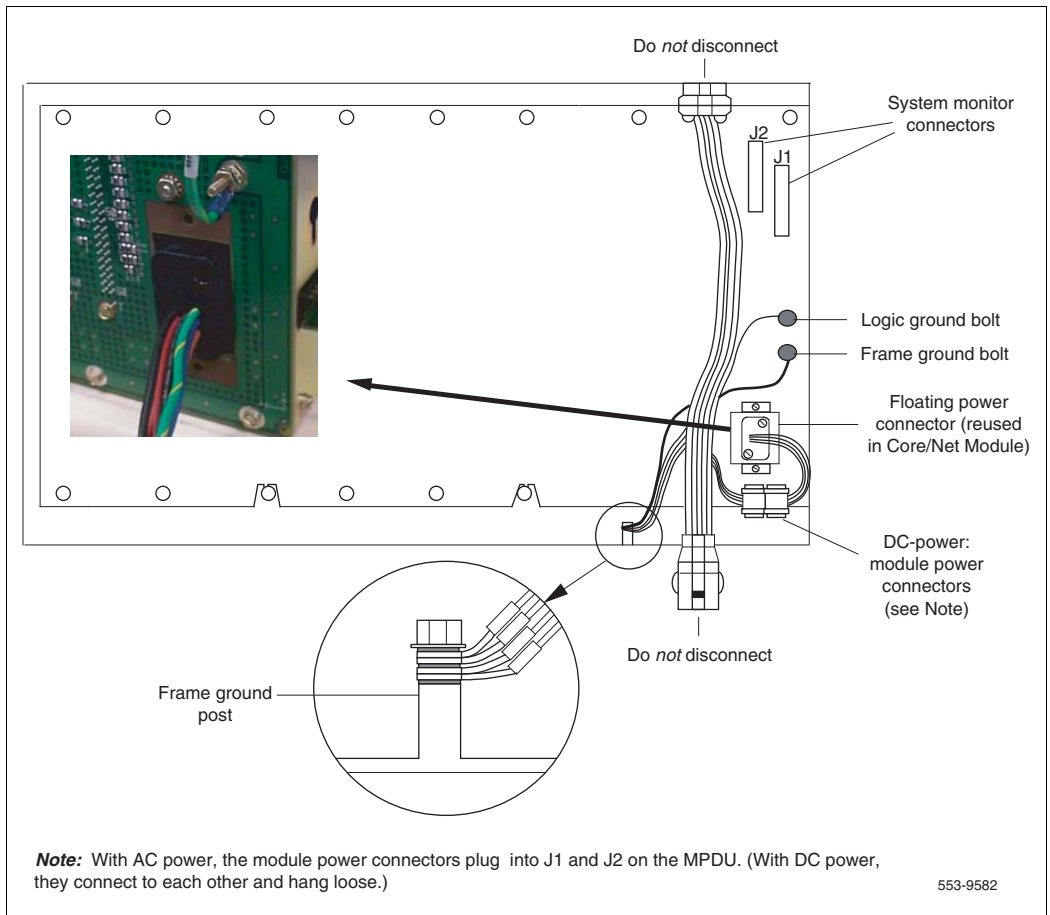
**Figure 24**
**AC power connectors on the Core module backplane**



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

553-9583
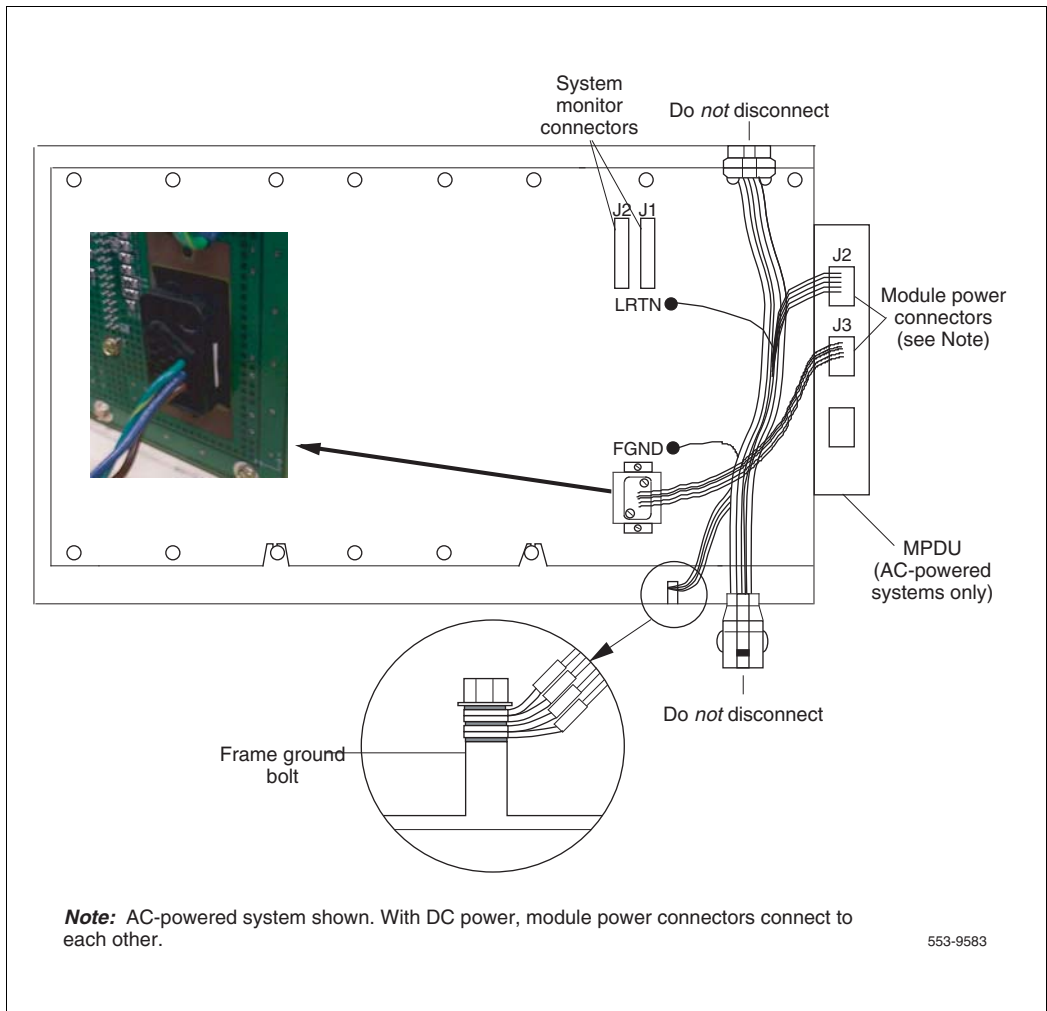
**17** Remove the power harness and reserve it for reinstallation as part of installing the new NT4N40 card cage. The power harness is located at the right rear lower corner and plugs into the rear of the power supply.

- 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 25 on .

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 25**
**Core card placement in the NT4N41 Core/Net Module (front)**
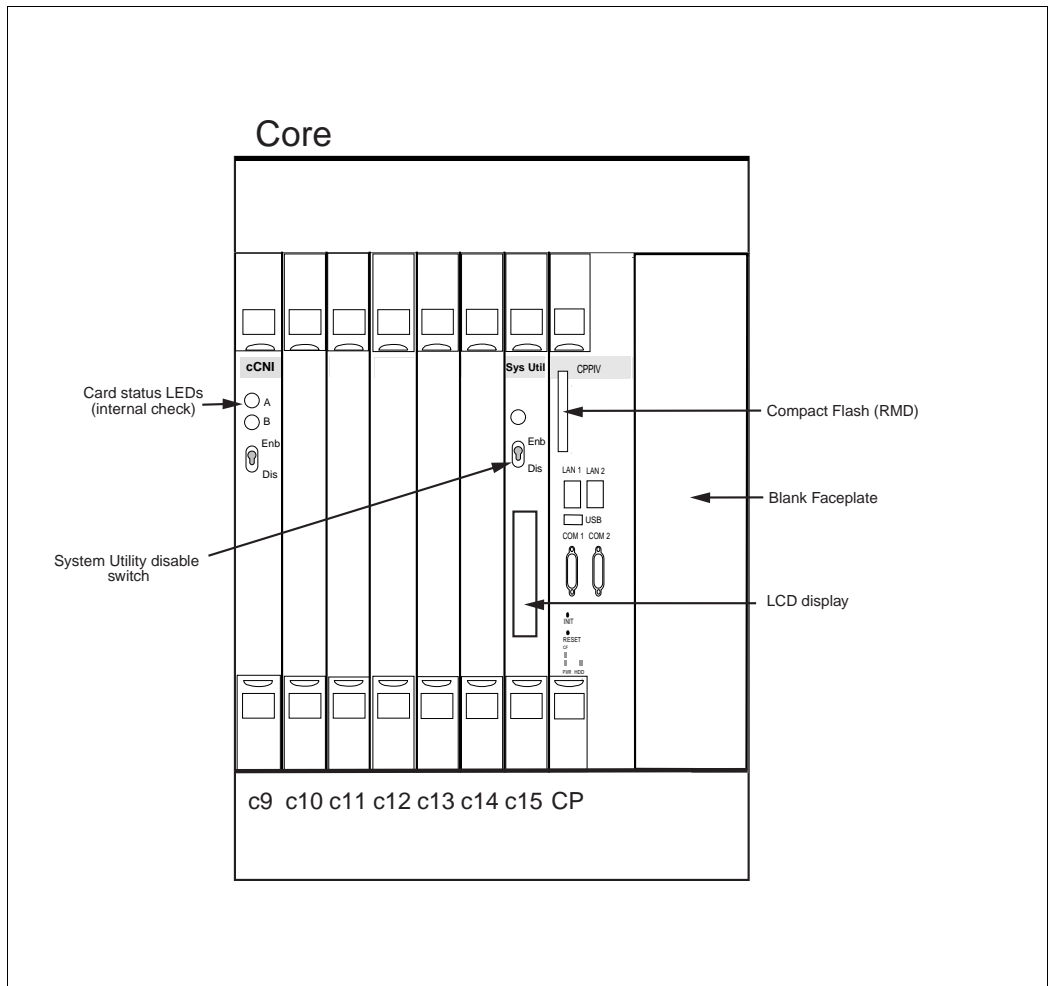
## Check factory-installed cables

Table 20 lists factory-installed cables. See Figure 26.

**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 26**
**Core/Net cable connections**
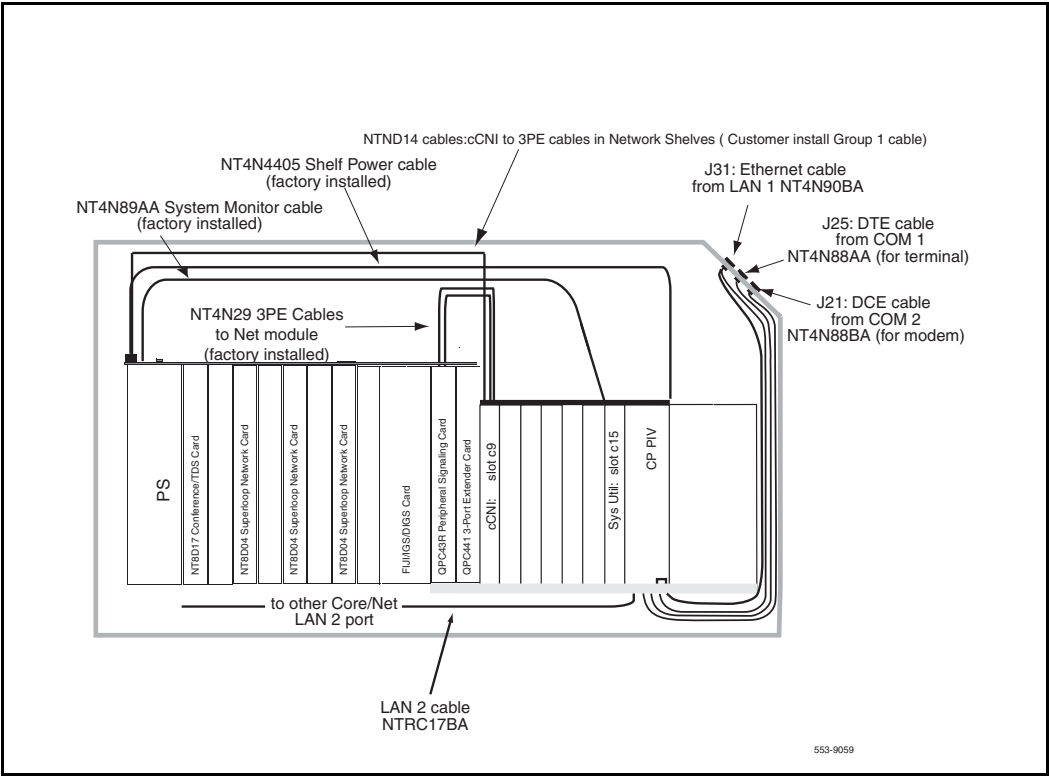
## Install the Security Device

**Procedure 33**
**Installing the Security Device**

The Security Device fits into the System Utility card (see Figure 27 on ).

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 "Avaya" side facing up. Do not bend the clip more than necessary.

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

**Figure 27**
**Security Device**
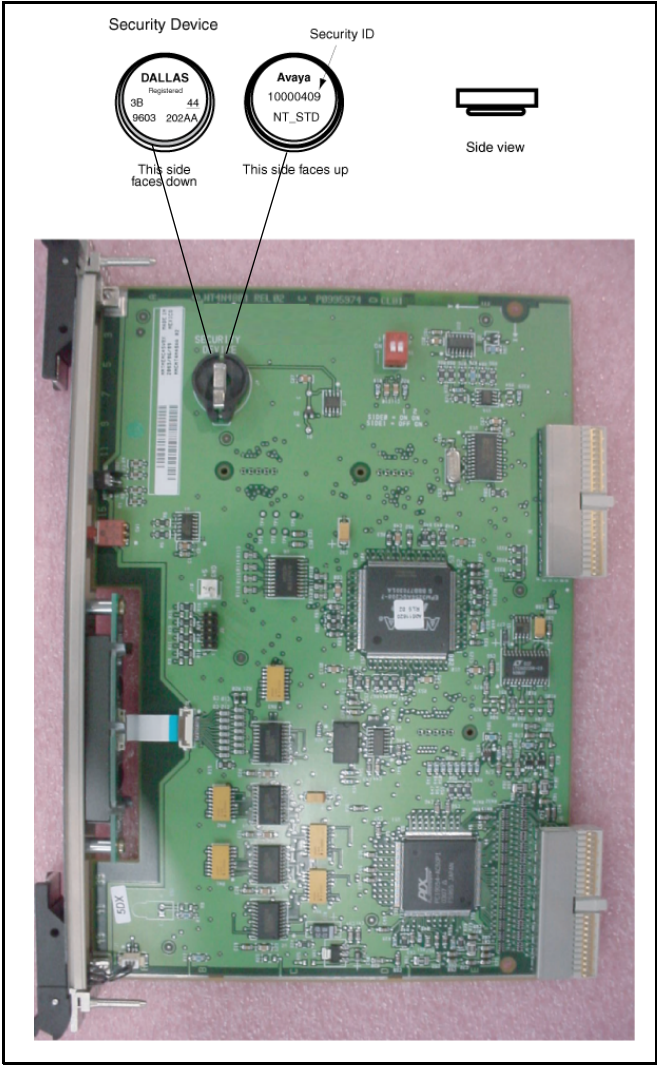
# Install the CP card cage in Core 0

**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 28 on page 131.

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

3    Check that the power harness at the right rear corner of the card cage has been transferred from the old card cage to the CP PII card cage.

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

**Figure 28**
**Location of the screws for the MPDU**
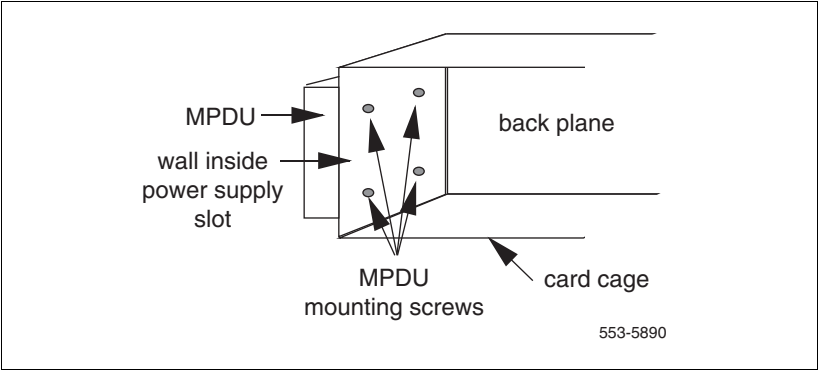
**5** Hold the card cage firmly and make the following connections at the rear of the module.

 **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**    Preroute cables NT4N88AA, NT4N88BA and NT4N90BA.

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

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

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

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

—————————————— **End of Procedure** ——————————————

**Figure 29**
**CP PIV call processor card (front)**
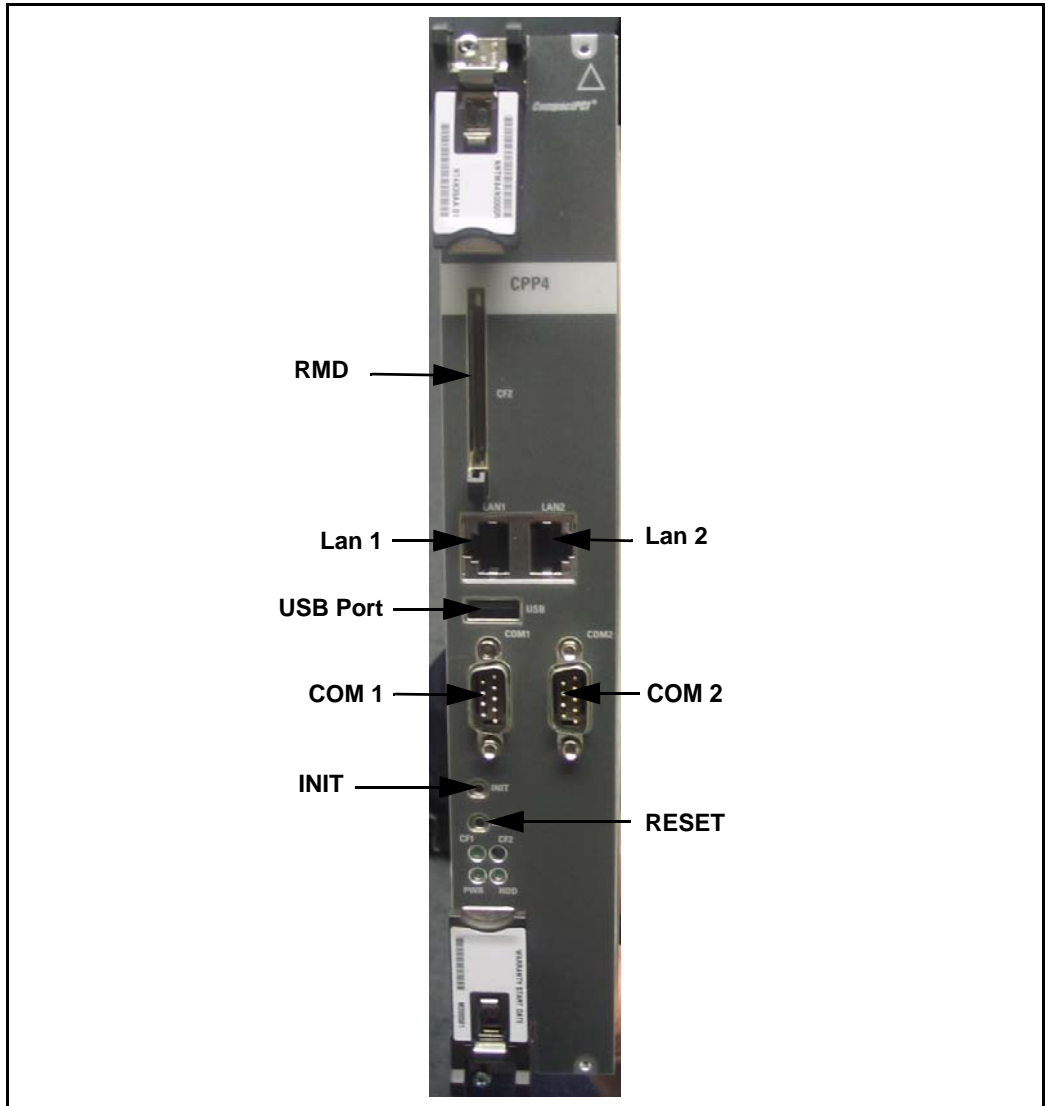
# Unpack and install NT6D41CA (DC) or NT8D29BA (AC) Power Supply

**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 136.

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

   **b.** Check that the RN27 Jumper is set to "A" (F/FE5 vintage) or J5 jumper shorts pins 1(dot) & 2 (GE5 vintage).

   **c.** The settings for 3PE cards in Core/Net shelves are different from those in all other shelves: Table 22 on page 136 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:** For F/FE5 vintage set Jumper RN27 to "A"; for GE5 vintage set Jumper J5 to short pins 1(dot) & 2. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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. The options for the LAN 1 connections are shown in Figure 30 on .

**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 30**
**Options for LAN 1 connection**
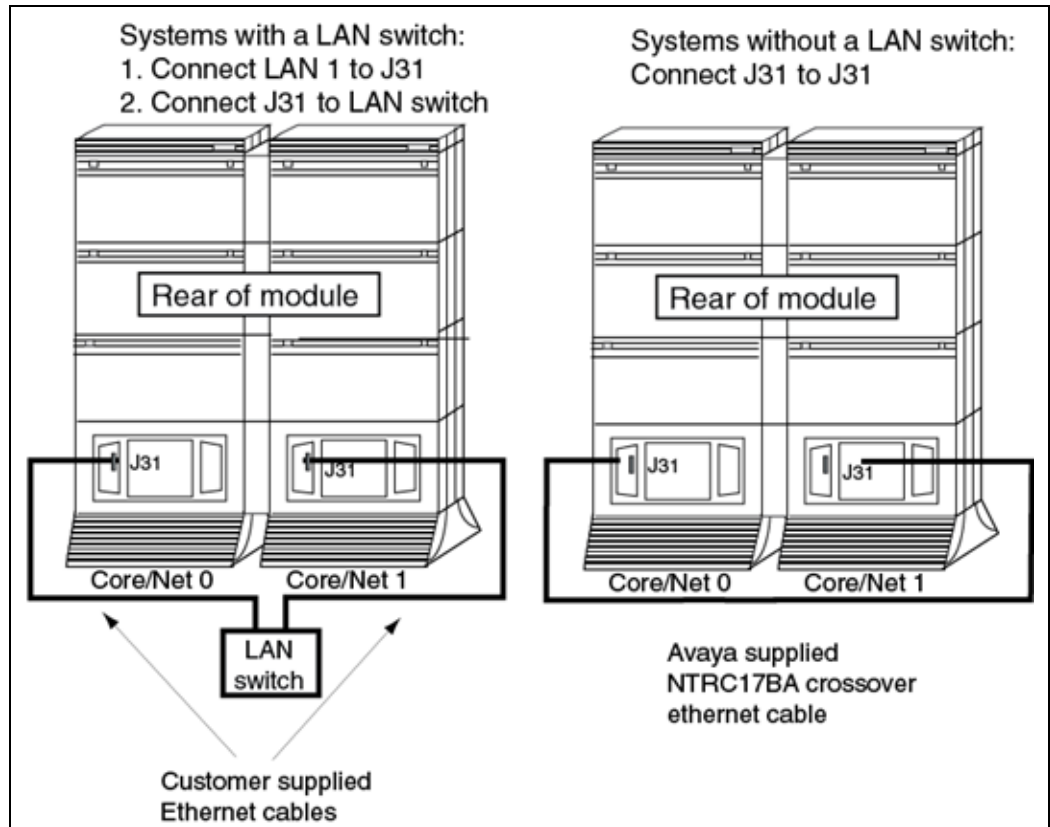
**Figure 31**
**3PE card connections**
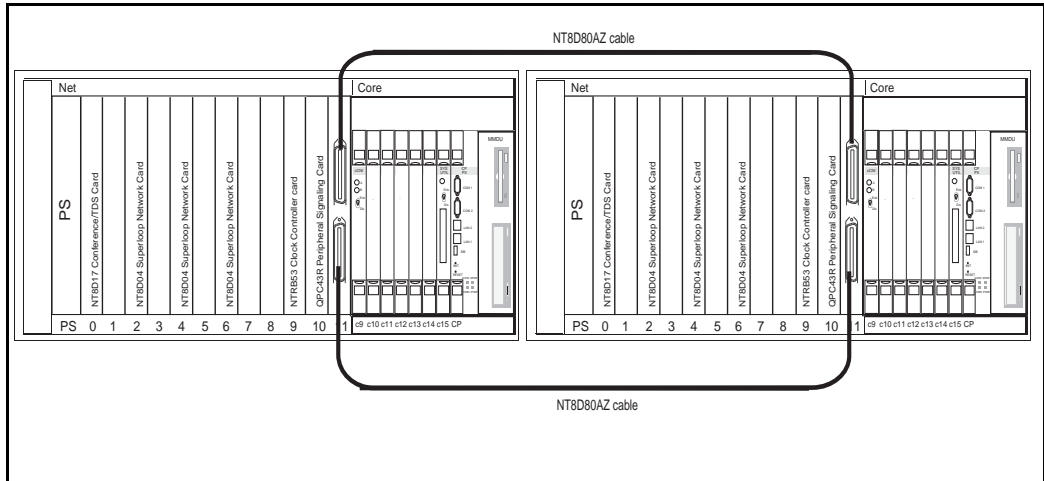


## In Core 0, inspect factory-installed cables

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 32 on ).

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 33 on ).

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

———— **End of Procedure** ————

**Figure 32**
**Fanout Panel connections on the CP Core/Net backplane**
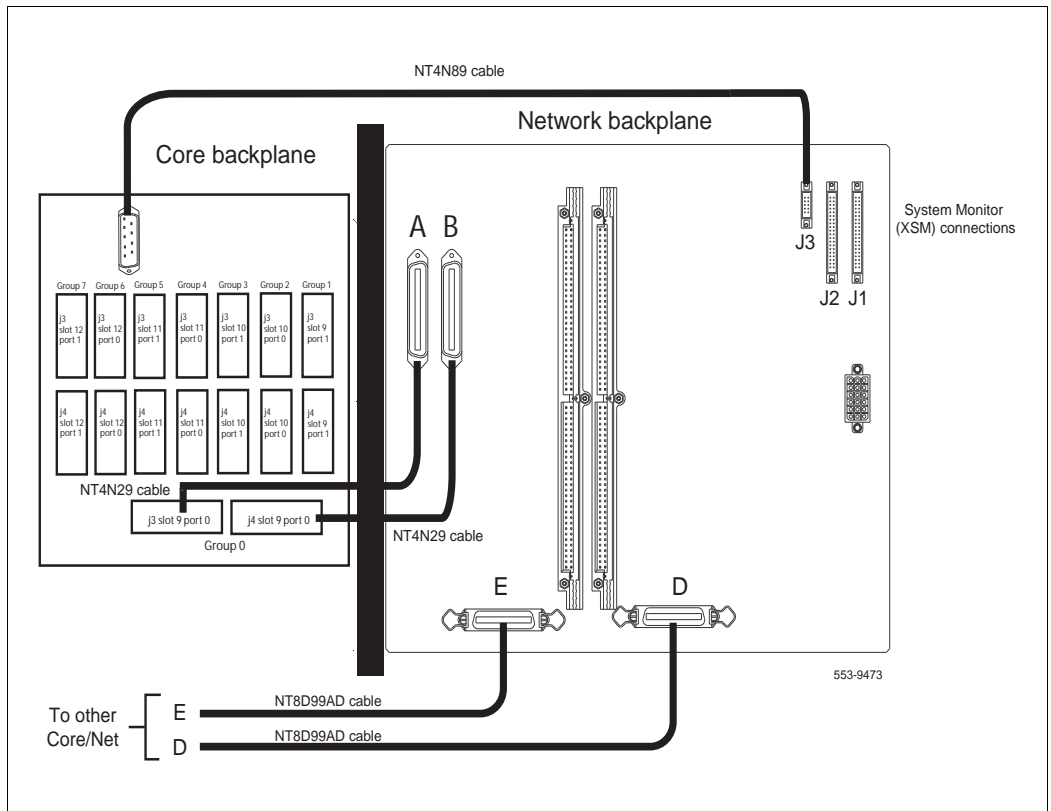
**Figure 33**
**Fanout panel connectors**

| Group 7 | Group 6 | Group 5 | Group 4 | Group 3 | Group 2 | Group 1 |
|---------|---------|---------|---------|---------|---------|---------|
| j3 slot 12 port 1 | j3 slot 12 port 0 | j3 slot 11 port 1 | j3 slot 11 port 0 | j3 slot 10 port 1 | j3 slot 10 port 0 | j3 slot 9 port 1 |
| j4 slot 12 port 1 | j4 slot 12 port 0 | j4 slot 11 port 1 | j4 slot 11 port 0 | j4 slot 10 port 1 | j4 slot 10 port 0 | j4 slot 9 port 1 |

| j3 slot 9 port 0 | j4 slot 9 port 0 |
|------------------|------------------|
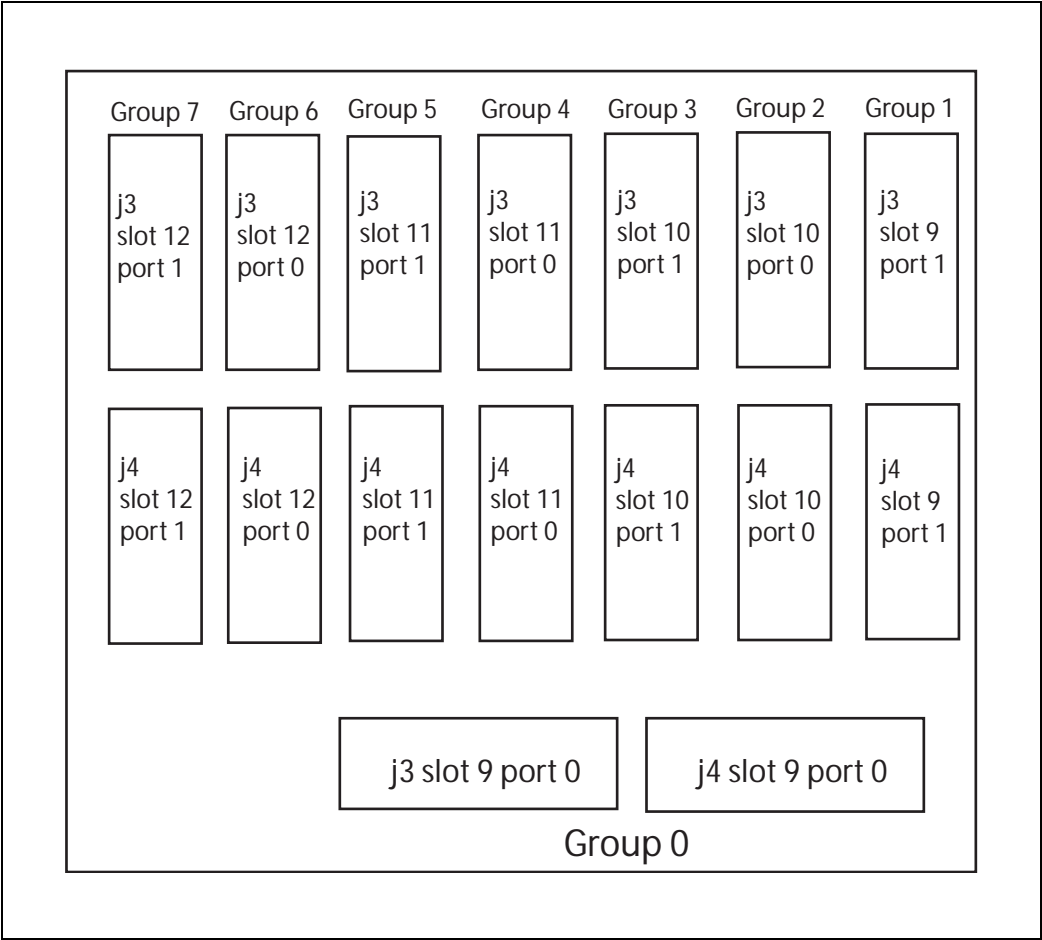
Group 0

### 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 34 on page 144 and Table 23 on page 143.

> ## 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 34 on page 144.

> **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 34 on page 144).

*Note 2:* Group 1 cables (NTND14) connect from the Fanout panel to the faceplate of the 3PE cards of Group 1 (see Figure 34 on page 144)

**Figure 34**
**3PE Fanout Panel connections**



553-9492
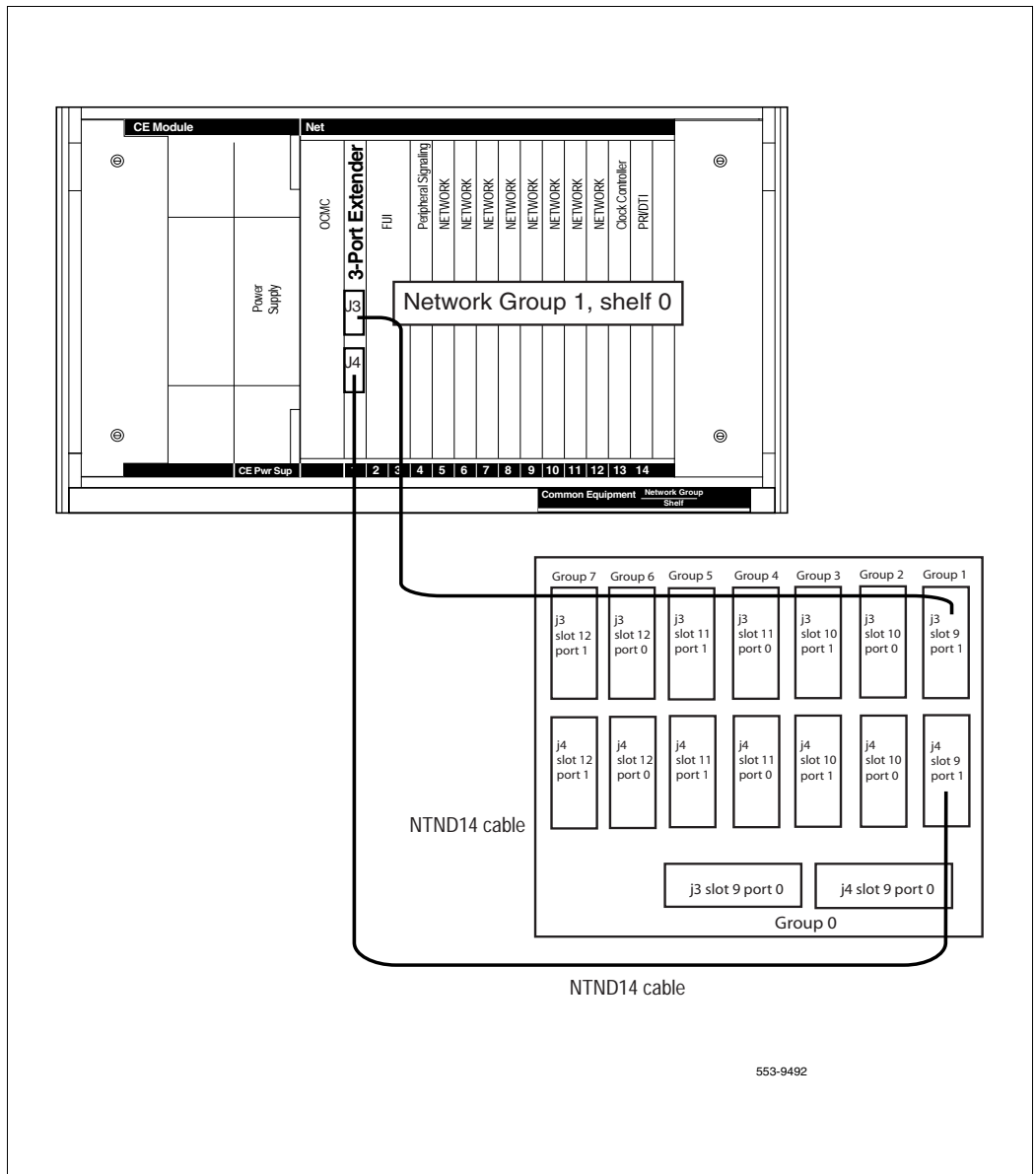
## Adding Side 0 FIJI hardware

**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.

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

———————————— **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**



NTRC47AA FIJI to FIJI cables

553-9555
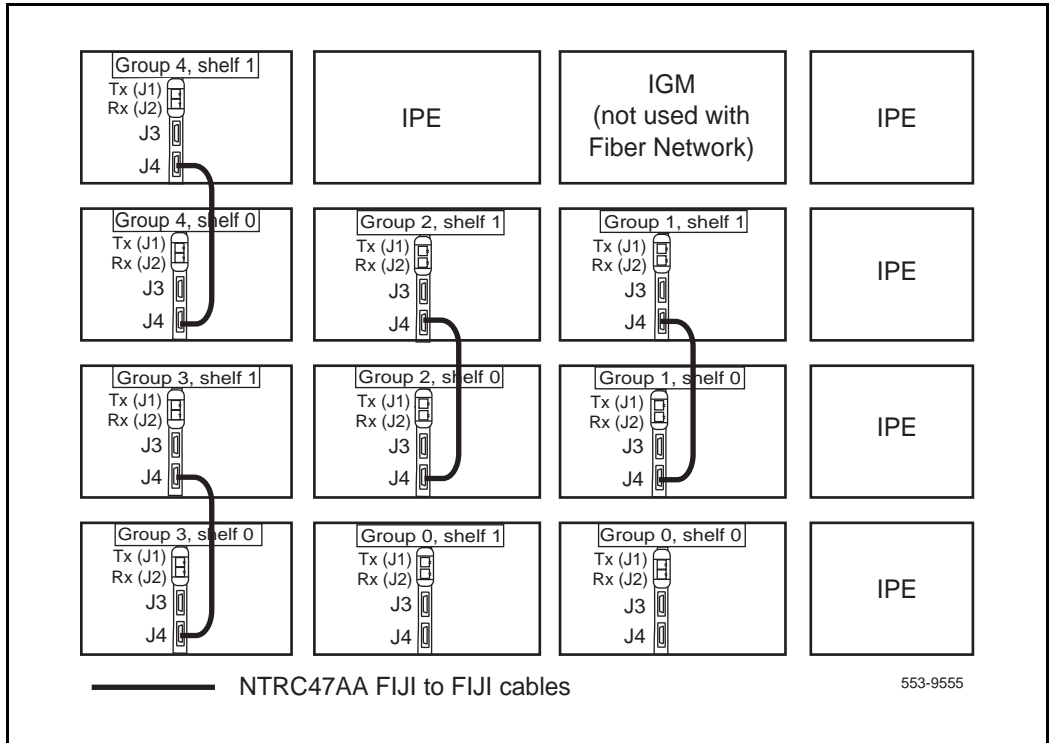
**Procedure 41**
**Connecting the shelf 0 FIJI Ring cables (ascending)**

Create Fiber Ring 0. Connect the FIJI cards in all Network shelves 0 in
**ascending** order, from Tx to Rx ports (see Figure 35 on page 148 and Figure
36 on page 150).

---

**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 35**
**Shelf 0 as*cending* fiber optic Ring (Meridian 1 Option 81C 2 group example)**



NTRC48 fiber optic cable

553-9557a
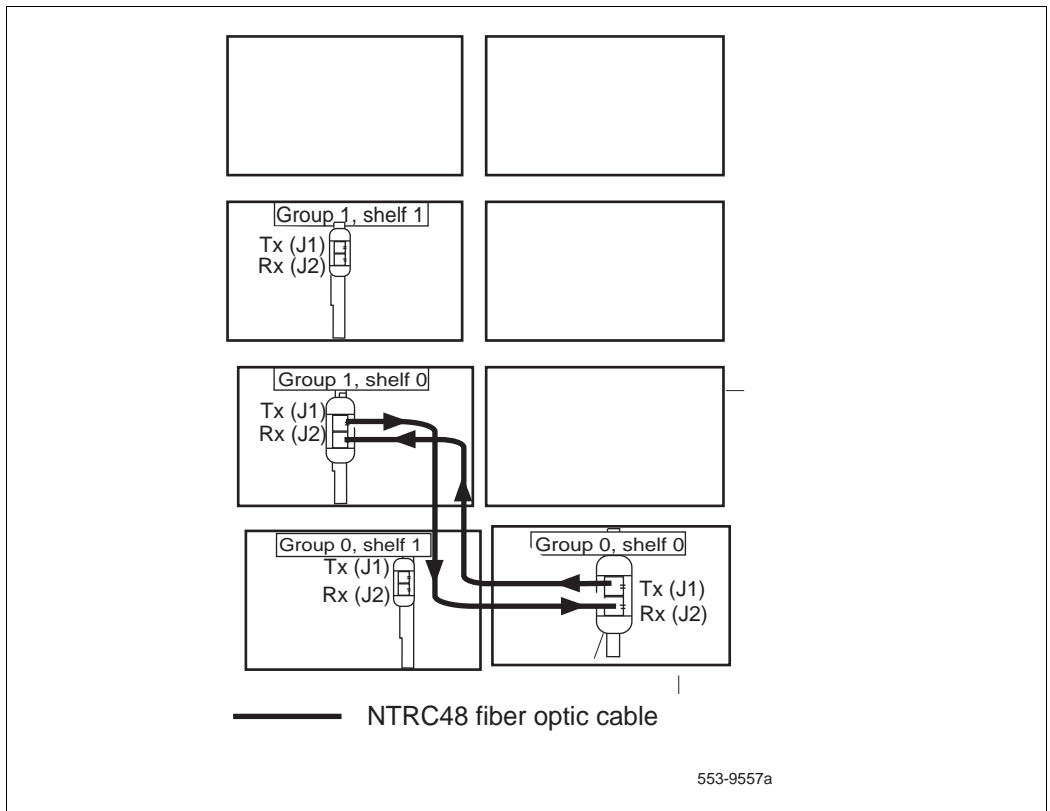
**5** To complete the Ring, connect a final cable from the Tx (J1) port in the **highest number group** back to the Rx (J2) port in **Group 0, shelf 0.**

**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 36**
**Shelf 0 *ascending* fiber optic Ring (Meridian 1 Option 81C 5 group example)**



Figure 36 caption content: NTRC48xx fiber optic cable    553-9553
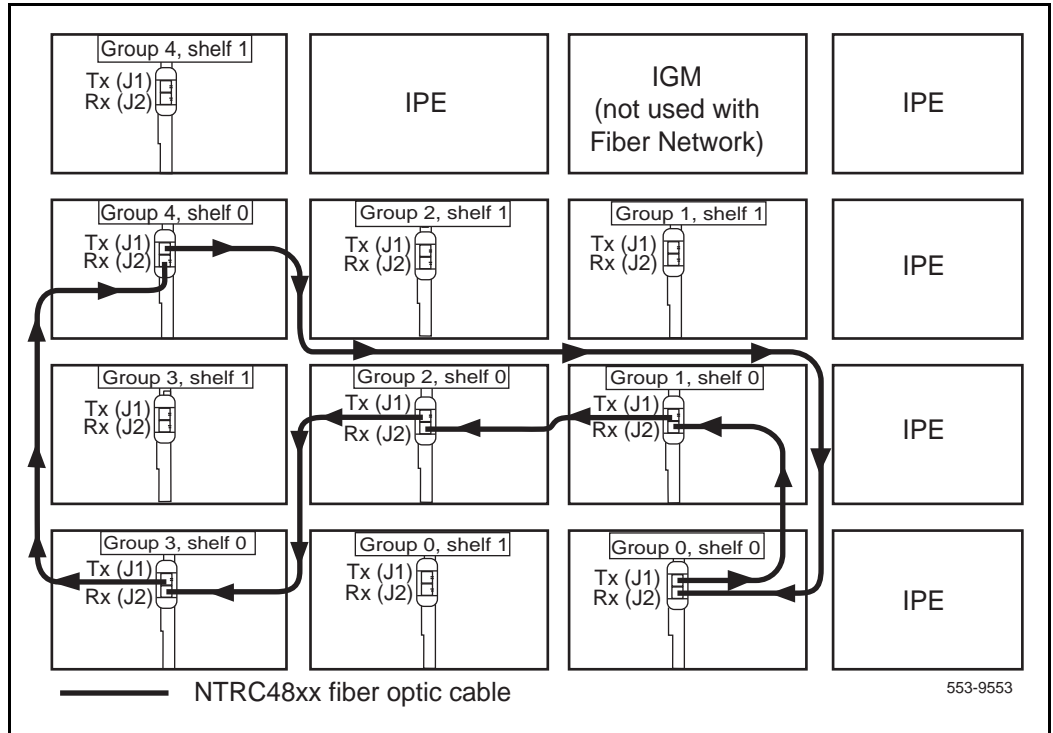
**Procedure 42**
**Cabling the Clock Controllers**

> *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 37 on :

**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 37**
**Clock Controller cable configuration**
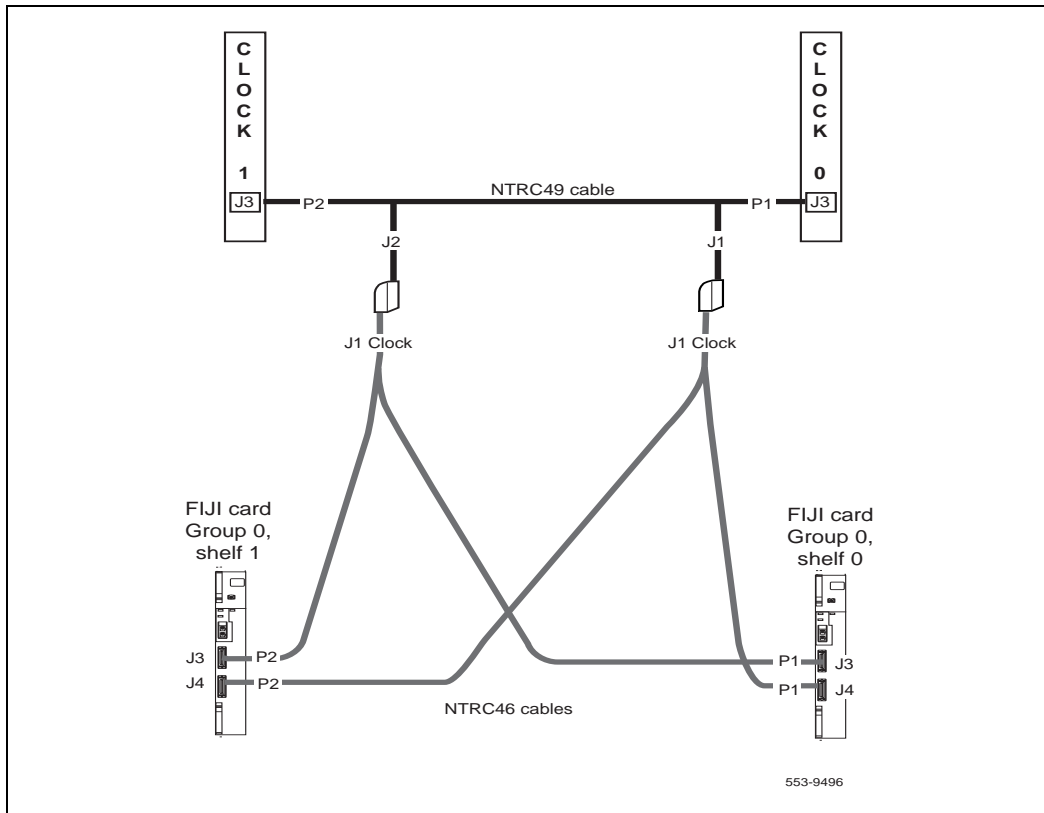
# Power up Core 0

**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 *Avaya Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

  **a.**  Check that the Fiber Rings operate correctly:

  | | |
  |---|---|
  | **LD 39** | Load program |
  | **ENL RING 0** | Enable Ring 0 |
  | **STAT RING 0** | Check the status of Ring 0 (HALF/HALF) |
  | **STAT RING 1** | Check the status of Ring 1 (HALF/HALF) |

  **b.**  Restore the Rings to Normal State:

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

    **c.**   Check that the Rings operate correctly:

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

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

    **\*\*\*\***    Exit program

**3**   Stat network cards:

    **LD 32**    Load program

    **STAT x**    Stat the network card, where x = loop number

    **\*\*\*\***    Exit program

**4**   Test the clocks:

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

    **LD 60**    Load program

    **SSCK *x***    To get the status of the clock controllers
              (*x* is "0" or "1" for Clock 0 or Clock 1)

    **SWCK**    Switch Clock (if necessary)

    **\*\*\*\***    Exit program

    **b.**   Verify that the clock controllers are switching correctly:

    **SWCK**    Switch Clock

              ***Note:***  You must wait a minimum of one minute for clocks to synchronize.

    **SWCK**    Switch Clock again

    **\*\*\*\***    Exit program

**5**    Stat D-channels:

    **LD 96**

    **STAT DCH**        Stat all D-channels

    **\*\*\*\***        Exit program

**6**    Stat all T1 interfaces:

    **LD 60**

    **STAT**        Stat all DTI and PRI

    **\*\*\*\***        Exit program

**7**    Stat network cards:

    **LD 32**

    **STAT x**        x = loop number

    **\*\*\*\***        Exit program

**8**    Print status of all controllers:

    **LD 97**

    **REQ**        PRT

    **TYPE**        XPE (returns status of all controller cards)

    **\*\*\*\***        Exit program

**9**    Make internal, external and network calls.

**10**    Check attendant console activity.

**11**    Check DID trunks.

**12**    Check applications.

——————————— **End of Procedure** ———————————

## CS 1000 Release 7.5 upgrade

### Upgrading the software

Procedure 46 outlines the steps involved in installing CS 1000 Release 7.5 for the CP PIV processor.

**Procedure 46**
**Upgrading the software**

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

   a.   Terminal type: VT100

   b.   9600 Baud

   c.   Data bits: 8

   d.   Parity: none

   e.   Stop bits: 1

   f.   Flow control: none

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

3   Perform a KDIF in LD 143.

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

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

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

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

---

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

---

**6**    Enter <CR> at the Install Tool Menu.

*Note:*  Blank CF prompts begin here.

```
Mounting /cf2
Found /cf2/nvram.sys
Mounting /boot|
Found /boot/nvram.sys

                      Selecting nvram file from 2
sources

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

 10 [F]

Press <CR> when ready

Reading boot parameters from /boot/nvram.sys

Press any key to stop auto-boot...
```

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



                               Avaya
               Communication Server 1000 Software

                      Install Tool version 29

                        Copyright 1992 - 2007



                 Please press <CR> when ready ...


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

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

   Proceed with the upgrade? (Y/N| y

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

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

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

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

```
            M A I N   M E N U

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

Please enter:

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

        <t> - To Tools menu.

        <q> - Quit.

        Enter Choice> <u>
```

The system searches for available keycode files in the "keycode" directory on the RMD. If no keycode file is found, the system displays the following menu:

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

No keycode files are available on the removable
media.

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

Please enter:

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

        <q> - Quit.

        Enter choice>
```

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

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

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

You selected to quit. Please confirm.

Please enter:

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

        <n> - No, DON'T quit.

        Enter choice>
```

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

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

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

Name                      Size    Date      Time

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

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

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

<q> - Quit

Enter choice> 2
```

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

**8**    Select the keycode to be used on the system.The system validates the selected keycode and displays the software release and machine type authorized.

```
Validating keycode ...

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

Copy OK: 1114 bytes copied

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

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

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

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

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

Please enter:

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

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

Enter choice>
```

**9**    If the keycode matches, enter <CR> to continue the installation. The system displays the Install Menu. Select option "<a>.

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

```
Communication Server 1000 Software/Database/
BOOTROM RMD Install Tool
=================================================
I N S T A L L    M E N U

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

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

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

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

             For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> <a>
```

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

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

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

Please enter:

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

        <q> - Quit.

Enter choice> <CR>
```

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

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

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

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

The RMD contains System S/W version xxxx.

Please enter:

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

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

Enter choice> <CR>
```

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

**13** Choosing Yes for the Dependency Lists installation.

*Note:* If Dependency Lists are not installed on media, the following prompts do not appear. Proceed to step 14 on .

Do you want to install Dependency Lists?

Please enter:

<CR> -> <y> - Yes, Do the Dependency Lists installation

<n> - No, Continue without Dependency Lists installation

Enter choice>

The default choice is YES as shown in the prompt.

If the choice is no, then the following prompt will appear for the confirmation:

Are you sure?

Please enter:

<CR> -> <n> - No, Go to the Dependency List menu

<y> - Yes, Go to the next menu

Enter choice>

The default choice is NO which will return the user to deplist menu.

Enable Automatic Centralized Software Upgrade (CSU) Feature?

Please enter:

<CR> -> <y> - Yes

<n> - No

Enter choice>

**14**  Select to enable/disable CSU option.

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

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

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

```
 Set Automatic Centralized Software Upgrade Mode to:

            Please enter:

<CR> -> <1> - Sequential

        <2> - Simultaneous

         Enter choice>

>Processing the install control file ...

>Installing release 0600x
```

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

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

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

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

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

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

>Copying new PSDL ...
```

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

**17** Enter <CR> to confirm and continue upgrade.

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

```
 Please enter:

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

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


        Enter choice>

>Checking system configuration

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

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

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

Please enter:

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

        <q> - Quit.

        Enter choice>

```

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

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

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

Software release xxxx was installed successfully
on Core x.

All files were copied from RMD to FMD.


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

**19**   Press "Enter" after checking the Installation summary.

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

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

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

        Please enter:

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

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

        <c> - To install Database only.

        <d> - To install CP-BOOTROM only.

        <t> - To go to the Tools menu.

        <k> - To install Keycode only.

              For Feature Expansion, use OVL143.

        <p> - To install 3900 set Languages.

        <q> - Quit.

        Enter Choice> q
```

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

```
You selected to quit. Please confirm.

    Please enter:

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

        <n> - No, DON'T quit.



        Enter choice> <CR>

You selected to quit the Install Tool.

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




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

        DO NOT REBOOT USING RESET BUTTON!!!


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



        Please enter:

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

        <m> - Return to the Main menu.

        Enter Choice> <CR>

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

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

>Rebooting system ...
```

At this point the system reloads and initializes.

──────── **End of Procedure** ────────

# Verifying the upgraded database

**Procedure 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 .

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**     Obtain 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**      Obtain 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 3


Local TIER 2 Health Total:10


Remote (Side 1, Inactive, Redundant):

Components without TIER 1 Health contribution:

     disp 1 15 1:In Service

     sio2 1 15 1:In Service

         cp 1 16:In Service

           ipb 1:In Service

TIER 1 Health Count Breakdown:

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

Remote TIER 1 Health Total: 20
```

```
TIER 2 Health Count Breakdown:

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

ELAN 16 IP : 47.11.138.150 Health = 2

ELAN 17 IP : 47.11.138.153 Health = 2


Remote AML over ELAN Total Health:4

Remote Total IPL health = 6


Remote TIER 2 Health Total:10
```

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

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

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

———————————— **End of Procedure** ————————————

# Completing the CP PIV upgrade

## LD 137

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

- `STAT FMD`
  display text: **Status of both Fixed Media Devices (FMD)**
  command parameter: none

- `STAT FMD`
  display text: **Status of the specified Fixed Media Device**
  command parameter: "core #" with values of 0 or 1

- `STAT RMD`
  display text: **Status of both Removable Media Devices (RMD)**
  command parameter: none

- `STAT RMD`
  display text: **Status of the specified Removable Media Device**
  command parameter: "core #" with values of 0 or 1

## Testing the Cores

### Procedure 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** | Obtain 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** | Obtain the status of the System Utility card |
| **TEST SUTL** | Test the System Utility card |
| **STAT CNI c s** | Obtain 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*     Obtain 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 *Avaya Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

    **a.** Check that the Fiber Rings operate correctly:

    **LD 39**             Load program

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

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

    **b.** If necessary, restore the Rings to Normal State:

    **RSTR**             Restore both Rings to HALF state

    **c.** Check that the Rings operate correctly:

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

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

**8**   Check the status of the FIJI alarms:

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

    **\*\*\*\***            Exit program

**9**   Check applications.

**10**  Check dial tone.

————— **End of Procedure** —————

## Switching call processing

**Procedure 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** | Obtain 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** | Obtain the status of the System Utility card |
| **TEST SUTL** | Test the System Utility card |
| **STAT CNI c s** | Obtain 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* | Obtain 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 *Avaya Software Input/Output: Maintenance* (NN43001-711) for more information about LD 39 commands.

    **a.**    Check that the Fiber Rings operate correctly:

| | |
|---|---|
| **LD 39** | Load program |
| **STAT RING 0** | Check the status of Ring 0 (HALF/HALF) |
| **STAT RING 1** | Check the status of Ring 1 (HALF/HALF) |

    **b.**    If necessary, restore the Rings to Normal State:

| | |
|---|---|
| **RSTR** | Restore both Rings to HALF state |

    **c.**    Check that the Rings operate correctly:

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

**8**    Check the status of the FIJI alarms:

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

    **\*\*\*\***     Exit program

**9**    Check applications.

**10**   Check dial tone.

———————— **End of Procedure** ————————

## Switching call processing

**Procedure 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.

<table>
<tr><td>

**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.

</td></tr>
</table>

**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 CS 1000M MG CP PIV FNF is complete.

# Installing a Signaling Server

## Contents

This chapter contains the following topics:

## Introduction

This chapter contains general instructions to install and connect Server card hardware. This chapter also contains general instructions to connect Commercial off-the-shelf (COTS) servers.

The Avaya Communication Server 1000M (Avaya CS 1000M) system supports the Common Processor Pentium Mobile (CP PM) card model NTDW66, the Common Processor Dual Core (CP DC) model NTDW54, and the Commercial off-the-shelf (COTS) servers.

A CP PM, CP DC or COTS server that you deploy with Signaling Server applications is referred to as a Signaling Server. A CP PM or COTS server that you deploy with SIP Line can be referred to as a SIP Line Gateway.

---

### IMPORTANT!

Instructions to install an IBM X306m, IBM x3350, or HP DL320-G4, or Dell R300 COTS server are not included in this chapter. Detailed installation instructions are in the IBM xSeries 306m User Guide, IBM x3350 User Guide, HP ProLiant DL320 Generation 4 Server User Guide, or the Dell PowerEdge R300 User Guide shipped with the server.

---

## Signaling Server task flow

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

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

- *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315)

- *Avaya Element Manager: System Administration* (NN43001-632)

- *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125)

**Figure 38**
**Signaling Server task flow**



CS 1000 Network

Start

Back up databases

Establish UCM Deployment Server and Primary Security Server

NN43001-315

Build software library and provide keycodes

NN43001-315

Define pre-deployment strategy and commit

NN43001-315

Deploy applications to servers with bootable Linux media or patched release 6.0

| Servers |
| --- |
| Linux Server |
| VxWorks Call Server |
| **Network Services** |
| IM Presence |
| MAS |
| NRS |
| Subscriber Manager |
| **CS 1000 Systems** |
| CS 1000 |
| CS 1000 HS |
| Signaling Server |

NN43001-315

Manage Security

NN43001-604

End

Signaling Server

Start

Back up databases

Install Linux Base bootable media on server

NN43001-315

Define pre-deployment strategy and commit to Signaling Server

NN43001-315

Deploy to server with bootable Linux media or patched release 6.0

NN43001-315

Configure Signaling Server

NN43001-125

Associate Element Manager* to Call Server

NN43001-632

End

# Readiness checklist

Before installing a Signaling Server in a Communication Server 1000 system, complete the following checklist.

> ⚠️ **WARNING**
> Do not modify or use a supplied AC-power cord if it is not the exact type required in the region where you install and use the Signaling Server. Be sure to replace the cord with the correct type.

**Table 25**
**Readiness checklist (Part 1 of 2)**

| Have you: | |
|---|---|
| Read all safety instructions in *Communication Server 1000M and Meridian 1 Large System Installation and Commissioning* (NN43021-310), as appropriate for your Communication Server 1000 system? | |
| Do you have all equipment and peripherals?<br><br>**For COTS servers:**<br><br>• installation accessories for rack-mounting the server<br><br>• AC-power cord<br><br>• a DTE-DTE null modem cable (supplied)<br><br>NTE90672: Linux Signaling Server software DVD for COTS servers<br><br><br>**For Server cards (NTDW66 CP PM, and NTDW54 CP DC)**<br><br>• (CP PM only) CP PM Signaling Server Linux Upgrade kit, which includes<br><br>   — Linux OS preloaded hard drive kit (Optional, provided if required)<br><br>   — 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF<br><br>   — 1 GB DDR SO-DIMM memory upgrade (Optional, provided if required)<br><br>• 2 port SDI Cable assembly kit<br><br>• Large System Cabling kit<br><br>• Large System Cabling<br><br>• a DTE-DTE null modem cable (supplied)<br><br>*Note:* Save the packaging container and packing materials in case you must ship the product. | |
| Confirmed the area meets all environmental requirements? | |
| Checked for all power requirements? | |
| Verified the CP PM meets all required specifications (2GB ram, 40GB hard drive, NTDW66AAE6 CP PM BIOS version 18 or higher)? | |

**Table 25**
**Readiness checklist (Part 2 of 2)**

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

# Server card hardware installation

This section contains instructions for installing a Server in a Communication Server 1000M system. The Communication Server 1000M system supports the NTDW66 CP PM card, NTDW54 CP DC card, and Comercial off-the-shelf (COTS) servers.

This section contains only general instructions to install the Server card in Communication Server 1000M systems. For more detailed installation

instructions, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

---

**IMPORTANT!**

There are several switches on CP PM circuit cards. All switch settings must be factory defaults except for the switch labelled S5. Switch S5 must be in position 2 to support the internal hard drive used on the CP PM Signaling Server circuit card.

---

## Installation in a Communication Server 1000M system

For CP PM cards, the first task that you must perform is to install the hard drive shipped with the server or Linux upgrade kit. For instructions, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

The NTDW66 CP PM card and NTDW54 CP DC card are double wide faceplate cards designed for use in a CS 1000M Universal Equipment Module (UEM). You can insert the double wide CP PM or CP DC card into any slot of a CS 1000M UEM except slot 7. When upgrading from a CS 1000M system to CS 1000E, the slot next to slot 7 is occupied by the External Peripheral Equipment Controller (XPEC). This prevents the CP PM or CP DC double wide faceplate from seating into slot 7.

The next task that you must perform is to install ELAN and TLAN Ethernet ports on the back of the Communication Server 1000M UEM. These ports are used to connect your Server to the ELAN and TLAN Ethernet subnets of your Communication Server 1000M system.

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

---

### IMPORTANT!

Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M Universal Equipment Module (UEM) disrupts service. You must turn off power to the shelf during this procedure.

---

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

1    Obtain the special cabling kit (NTDW69AAE5). The NTDW69AAE5 cabling kit includes the items shown in Figure 39.

**Figure 39**
**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 40.

**Figure 40**
**One Ethernet port coupler in adapter plate**
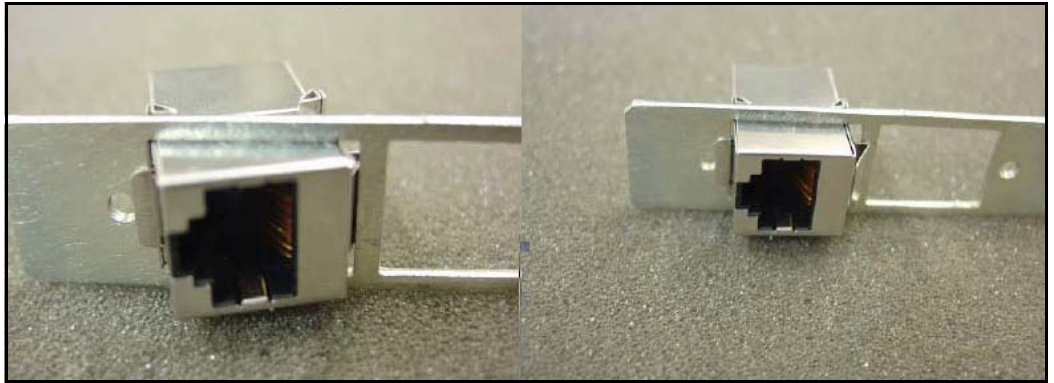


**3**   Insert the other Ethernet port coupler into the adapter plate. See Figure 41 on page 197.

**Figure 41**
**Two Ethernet port couplers in adapter plate**
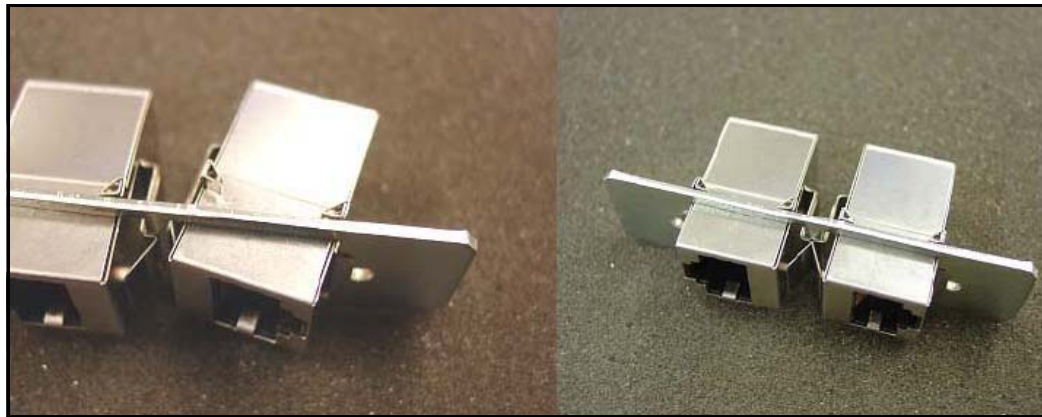


**4**    Loosely attach screws, washers, and nuts to the Ethernet port adapter
plate. See Figure 42.

**Figure 42**
**One Ethernet port coupler in adapter plate**
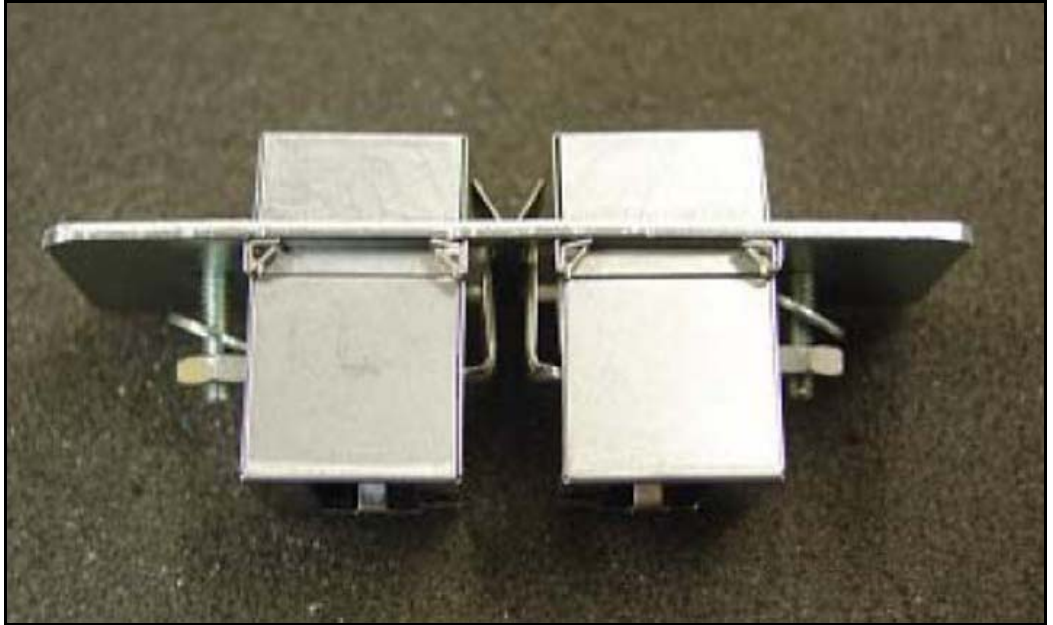


**5** Switch off the UEM power supplies. See Figure 43.

**Figure 43**
**Shut down UEM power supplies**
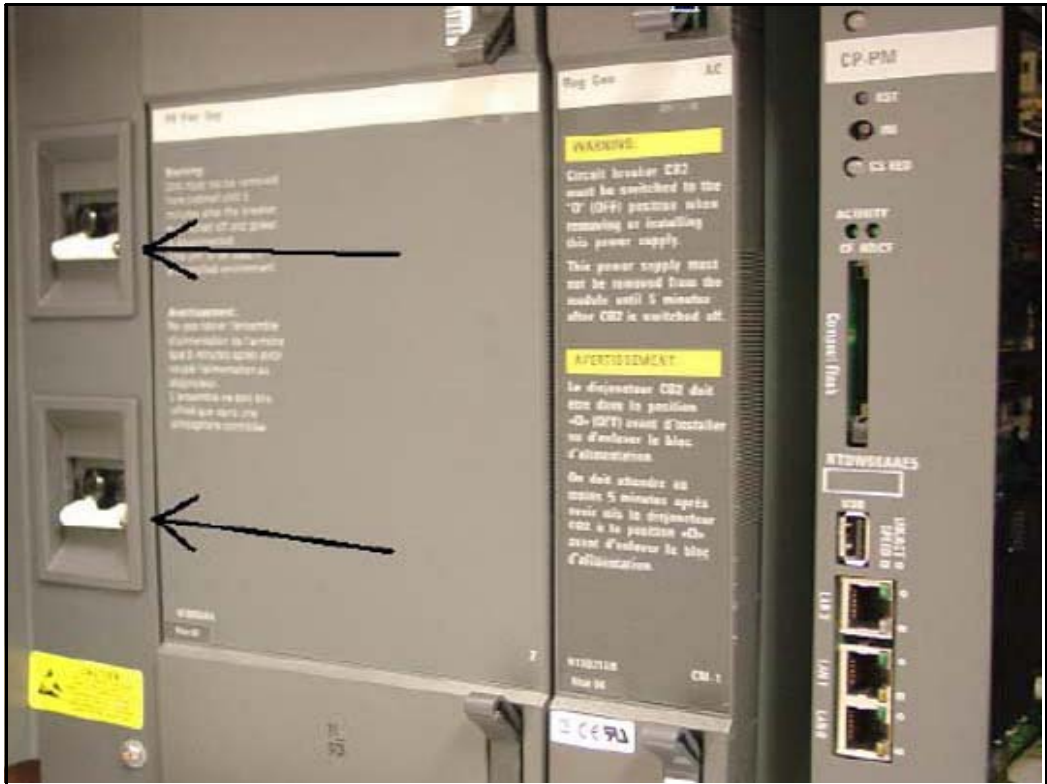


**6** Select one of the J2-J5 knock-out plates on the back of the UEM. See
Figure 44.

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

**Figure 44**
**J2-J5 plates on back panel of UEM**
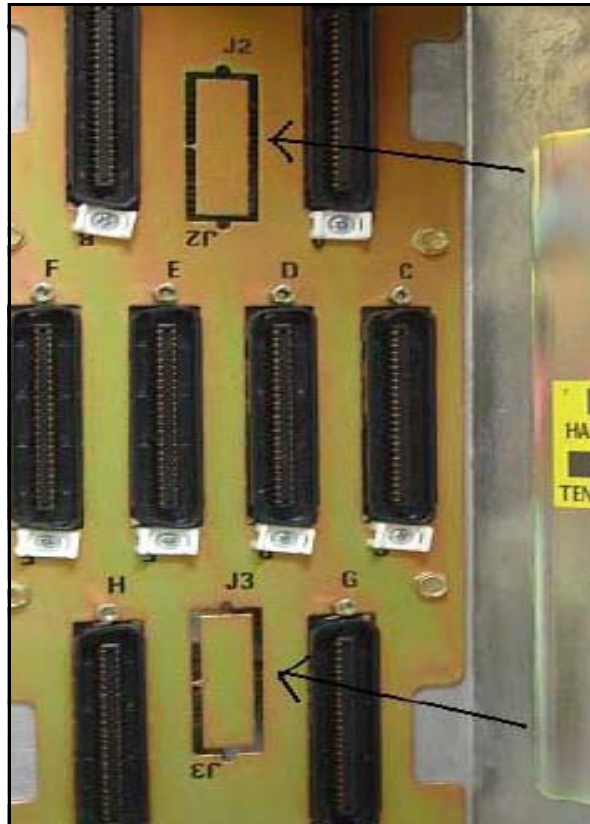


7   Knock out the metal plate from the selected J2-J5 location to provide a
    hole through which the Ethernet patch cables are routed and to which the
    Ethernet port adapter plate is attached. See Figure 45.

**Figure 45**
**Selected J2-J5 plate on back panel of UEM**
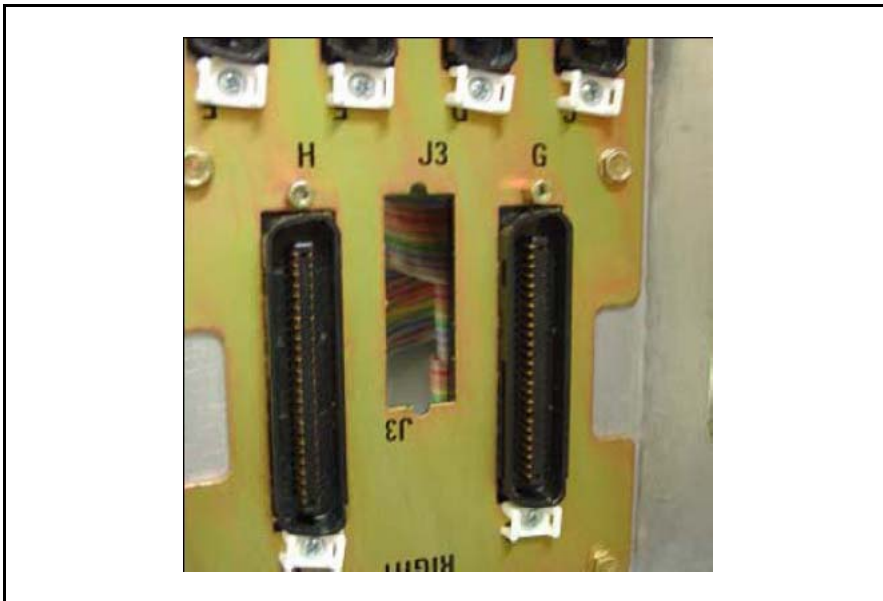


**8**    Establish an ELAN port on the back panel of the UEM.

   **a.**    Insert the end of one of the RJ-45 CAT5 Ethernet patch cables (supplied) into the ELAN network interface (ELAN port) on the Server faceplate.

   **b.**    Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

   **c.**    Plug the other end of the Ethernet patch cable into one of the Ethernet port couplers mounted in the Ethernet port adapter plate.

   **d.**    Label the Ethernet port coupler as ELAN.

   See Figure 46 and Figure 47.

**Figure 46**
**ELAN connection on CP PM faceplate**
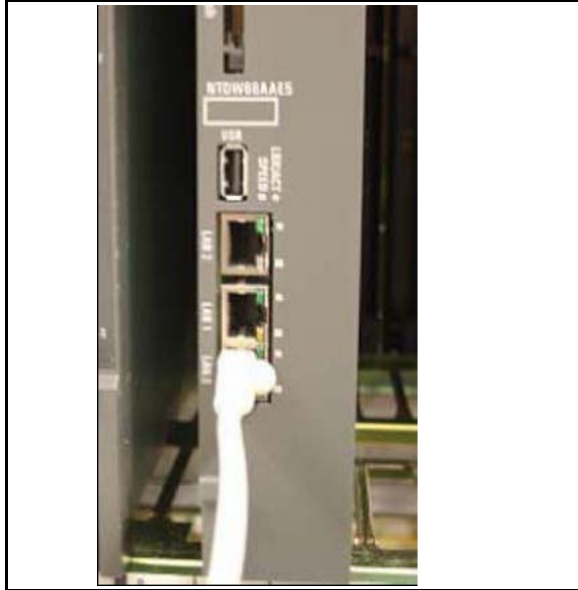
**Figure 47**
**ELAN connection on Ethernet port coupler**



**9** Connect the server to the TLAN subnet.

**a.** Insert one end of the remaining RJ-45 CAT5 Ethernet patch cable (supplied) into the TLAN network interface (TLAN port) on the Server faceplate.

**b.** Route the Ethernet patch cable through the hole you made in the back panel of the UEM.

**c.** Plug the other end of the Ethernet patch cable into the remaining Ethernet port coupler mounted in the Ethernet port adapter plate.

**d.** Label the Ethernet port coupler as TLAN.

See Figure 48 and Figure 49.

**Figure 48**
**TLAN connection on CP PM faceplate**

**Figure 49**
**TLAN connection on Ethernet port coupler**
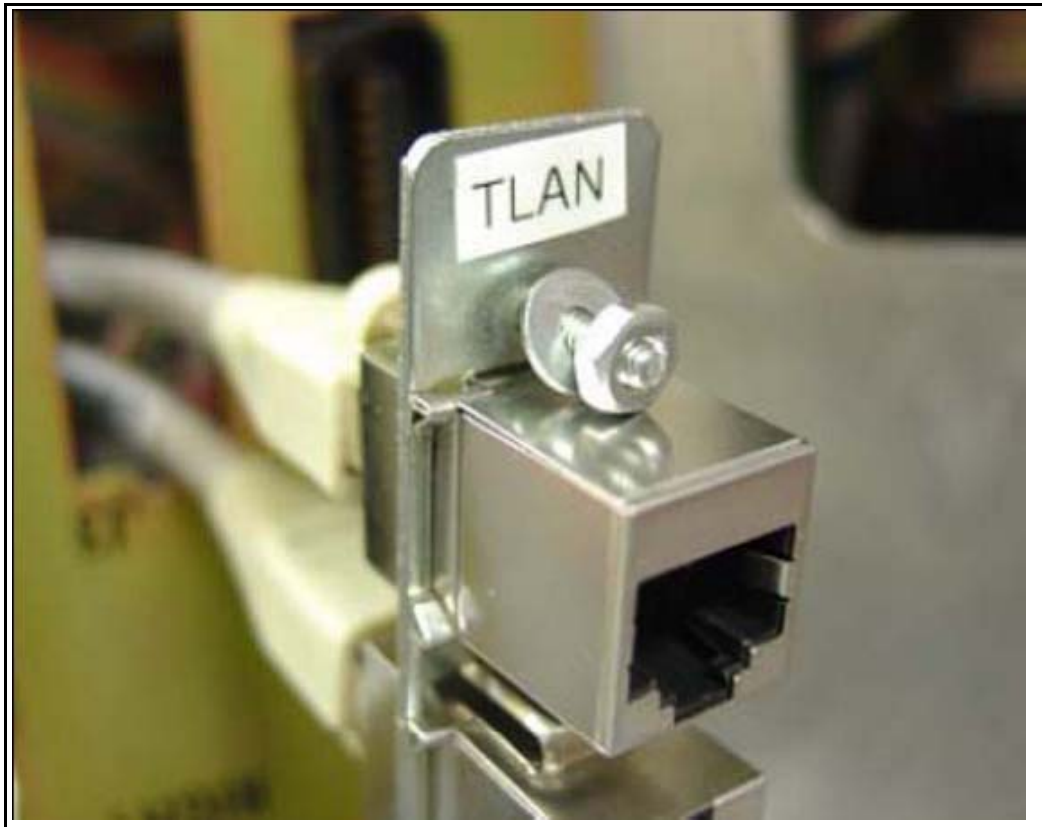


> **10**  Fit the Ethernet port adapter plate into the hole on the back of the UEM
> and tighten the screws. See Figure 50.

**Figure 50**
**Installed Ethernet port adapter plate**



**11**  Attach the ferrite beads to the Ethernet patch cables.See Figure 51.

**Figure 51**
**Attached Ethernet patch cable ferrite beads**



—————— **End of Procedure** ——————

# Connections

This section contains information about server connections.

## Connection checklist

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

> **IMPORTANT!**
>
> Server cards are powered through the backplane of the Media Gateway, Universal Equipment Module, or Media Gateway cabinet into which they are installed and do not require a power cord.

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

**Table 26**
**Connections checklist**

| Do you have: | |
|---|---|
| A serial cable (DTE-DTE null modem cable) to connect the server to a maintenance terminal? The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable. | |
| An NTAK19EC cable for each CP PM or CP DC card? If you are using a Media Gateway or Universal Equipment Module to host the cards, this cable adapts the 50-pin MDF connector on the back of the shelf to a 25-pin DB connector. | |
| Shielded CAT5 cables (or better) to connect the server to the ELAN and TLAN subnets? | |

## Connecting a Signaling Server

This section contains instructions for connecting a Server to the ELAN and TLAN subnet of a CS 1000M system. It also contains instructions for connecting a maintenance terminal to the Server.

A Server card is inserted into a slot of a Universal Equipment Module (UEM). UEMs do not have built-in ELAN and TLAN Ethernet ports. You must install Ethernet ports on the back of the UEM to enable the Server to connect to the ELAN and TLAN subnets of your Communication Server 1000 system (see Procedure 54: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .)

Perform Procedure 55 to connect a Server card to the ELAN and TLAN subnets of a Communication Server 1000M system.

---

### IMPORTANT!

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

---

**Procedure 55**
**Connecting a Server Card to the ELAN and TLAN subnets of a Communication Server 1000M system**

1   Insert the end of an RJ-45 CAT5 Ethernet cable (not supplied) into the ELAN network interface port (ELAN port) on the back of the Communication Server 1000M UEM. (You installed this ELAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 54: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .

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

3   Insert the end of another RJ-45 CAT5 Ethernet cable (not supplied) into the TLAN network interface port (TLAN port) on the back of the Communication Server 1000M UEM. (You installed this TLAN port at the back of the UEM when you installed the Signaling Server in the UEM. For more information, see Procedure 54: "Installing ELAN and TLAN Ethernet ports on the back of a Communication Server 1000M UEM" on .

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

———————    **End of Procedure**    ———————

### Verify or change the baud rate

To verify or change the baud rate on an Avaya CP PM Signaling Server, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

## Connecting an IBM COTS server

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

Figure 52 shows the rear view of the IBM X306m server.

**Figure 52**
**IBM X306m (rear view)**
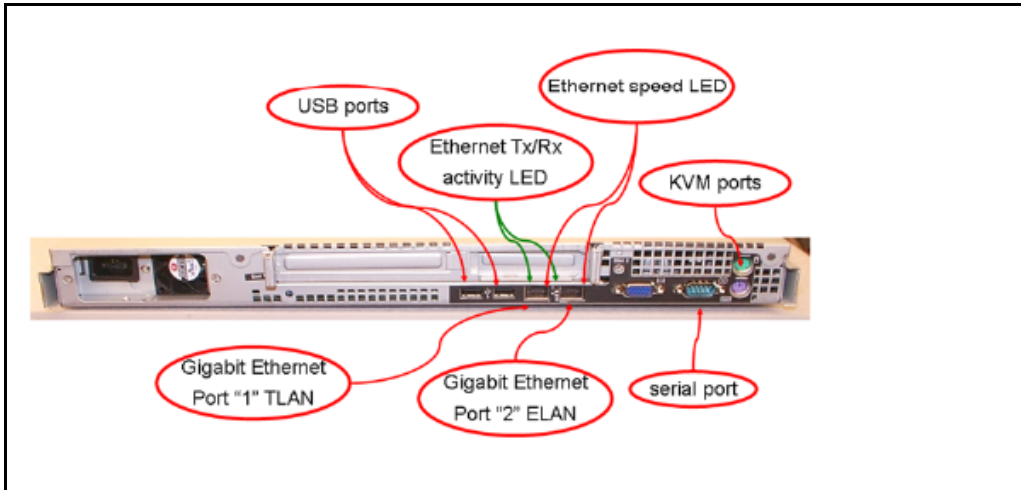


Figure 53 shows the rear view of the IBM x3350 server.

**Figure 53**
**IBM x3350 (rear view)**
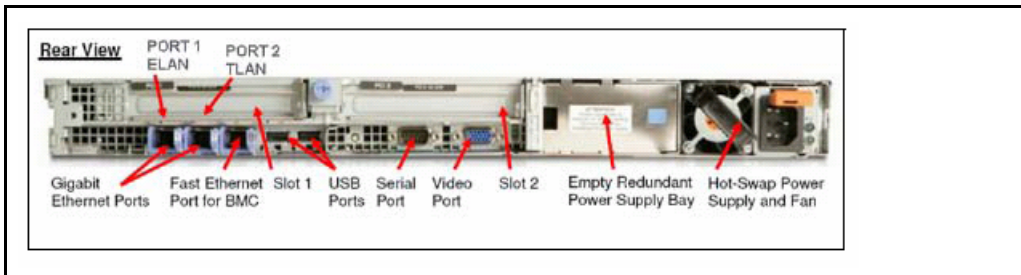
*Note:* When you perform Procedure 56, "Connecting an IBM COTS server," on , see Figure 52 or Figure 53.

**Procedure 56**
**Connecting an IBM COTS server**

1    Connect the IBM server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2    Connect the IBM server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

3    Connect a DTE–DTE null modem serial cable from the serial port on the back of the server to the serial port on a maintenance terminal. The IBM x3350 requires a NTRX26NPE6 9 pin female to 9 pin female null modem cable.

4    Connect the IBM server power cord.

   a.    Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

   b.    Attach the female end of the power cord to the mating AC power receptacle on the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

5    Set the baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

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

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

7    Press the Power switch.

   *Note:* For more information about operating information, see the IBM User Guide for your IBM server.

———————————— **End of Procedure** ————————————

## Connecting an HP COTS server

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

Figure 54 shows the rear view of the HP DL320-G4 server.

**Figure 54**
**HP DL320-G4 (rear view)**
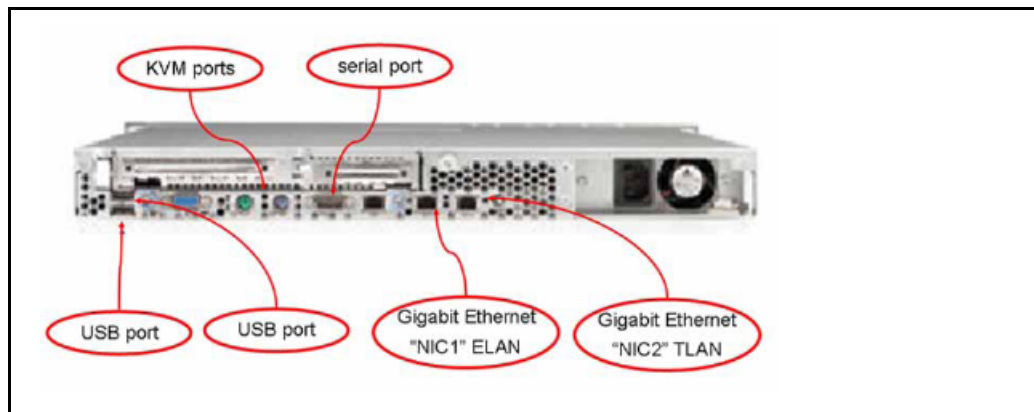


*Note:* When you perform Procedure 57, "Connecting an HP COTS server," on , see Figure 54.

**Procedure 57**
**Connecting an HP COTS server**

1   Connect the HP server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2   Connect the HP server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

3   Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.

4   Connect the HP server power cord.

    **a.**  Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

    **b.**  Attach the female end of the power cord to the mating AC power receptacle on the right-hand side of the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

**5**  Configure the COM1 serial port as the communication port for the connected maintenance terminal. Configure the COM 1 baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

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

**7**  Press the Power switch.

—————— **End of Procedure** ——————

## Connecting a Dell COTS server

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

Figure 55 shows the rear view of the Dell R300 server.

**Figure 55**
**Dell R300 server (rear view)**
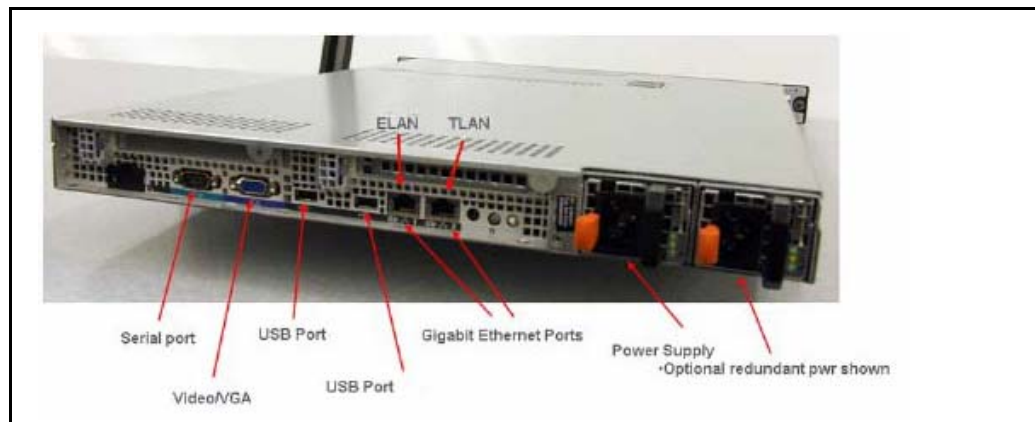


*Note:*  When you perform Procedure 58, "Connecting a Dell COTS server," on , see Figure 55.

**Procedure 58**
**Connecting a Dell COTS server**

1   Connect the Dell server to the TLAN subnet. Insert the RJ-45 CAT5 (or better) cable into the TLAN Ethernet port on the back of the server. Insert the other end of the cable into the TLAN subnet of the Layer 2 switch.

2   Connect the Dell server to the ELAN subnet. Insert the RJ-45 CAT5 (or better) cable into the ELAN Ethernet port on the back of the server. Insert the other end of the cable into the ELAN subnet of the Layer 2 switch.

3   Connect a DTE–DTE null modem serial cable from the Serial Port on the back of the server to a maintenance terminal.

4   Connect the Dell server power cord.

    **a.**  Check that the power cord is the type required in the region where you use the server. Do not modify or use the supplied AC power cord if it is not the correct type.

    **b.**  Attach the female end of the power cord to the mating AC power receptacle on the right-hand side of the server back panel. Plug the male end of the AC power cord into the AC power source (wall outlet).

**5**  Configure the COM1 serial port as the communication port for the connected maintenance terminal. Configure the COM 1 baud rate for the serial port on the server to 9600 b/ps. See *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

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

**7**  Press the Power switch.

—————————————— **End of Procedure** ——————————————

## Maintenance terminal configuration parameters

To configure Signaling Server maintenance terminal configuration parameters, see the Maintenance chapter of *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

## IP subnet configuration

CS 1000 Release 7.6 Signaling Servers support IPv6 and IPv4 addresses. If the Signaling Server and Call Server reside in different IP subnets, you must manually add a route from Base Manager in order for Element Manager to communicate and interact with the Call Server. For more information, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

# Upgrading and reconfiguring the software

This section contains information and references for upgrading the Signaling Server software from a previous release to CS 1000 Release 7.5. Signaling Server applications in CS 1000 Release 7.5 require Linux. You must install

CS 1000 Linux Base on your CP PM, CP DC or COTS server before you can install any Signaling Server applications.

CS 1000 Release 7.5 supports the following Signaling Server hardware:

- CP PM server
- CP DC server
- IBM X306m server
- IBM x3350 server
- HP DL320-G4 server
- Dell R300 server

> **IMPORTANT!**
>
> Avaya CS 1000 Release 7.5 does not support the ISP1100 Signaling Server. You must replace the ISP1100 with a CP PM, CP DC, or COTS Signaling Server.

If you are upgrading from a Vxworks Signaling Server, Avaya recommends that you backup your IP Phone database and Network Routing Service (NRS) database on your current software release before upgrading to CS 1000 Linux Base and installing applications. You can restore your IP Phone database and NRS backups after you complete the Signaling Server upgrade.

CS 1000 Release 7.5 requires a Signaling Server to have at least 2 GB of RAM memory, and at least 40 GB of hard drive capacity. You must upgrade Signaling Servers with less than 2GB of RAM before installing CS 1000 Release 7.5 Linux Base and Signaling Server software. For detailed instructions on performing this memory upgrade, see *Avaya Circuit Card: Description and Installation* (NN43001-311).

You can upgrade a CP PM Signaling Server to support the CS 1000 Linux Base and applications for Communication Server 1000 with a CP PM Signaling Server Linux upgrade kit. The upgrade kit includes the following components.

- Linux OS preloaded hard drive kit (optional, provided if required)

- 2 GB Compact Flash (CF) with Linux software, 2 GB blank CF

- 1 GB DDR SO-DIMM memory upgrade (optional, provided if required)

## Overview

An upgrade of the Signaling Server software consists of the following steps:

- Back up application databases using Element Manager

- Install CS 1000 Linux Base and configure parameters

- Use Centralized Deployment manager to deploy and install Signaling Server applications

- Configure the system or import backup node files in Element Manager

- Use Element Manager to restore backups of application databases

Avaya recommends that you back up the application databases before performing the upgrade. The application databases consist of the IP Phone database and the NRS database.

If you do not know whether the Signaling Server being upgraded has an NRS, use Procedure 59, "Verifying the presence of an NRS," on to make this determination.

If you have an NRS database on the Signaling Server and want to back it up before performing the upgrade, you must use the backup tool in NRS Manager. After the Signaling Server is upgraded, use NRS Manager to restore the NRS database (from your local PC) and activate it for use by the NRS.

For instructions on backing up and restoring an NRS database, see *Avaya Network Routing Service Fundamentals* (NN43001-130).

For instructions on backing up and restoring the IP Phone database, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125).

**Procedure 59**
**Verifying the presence of an NRS**
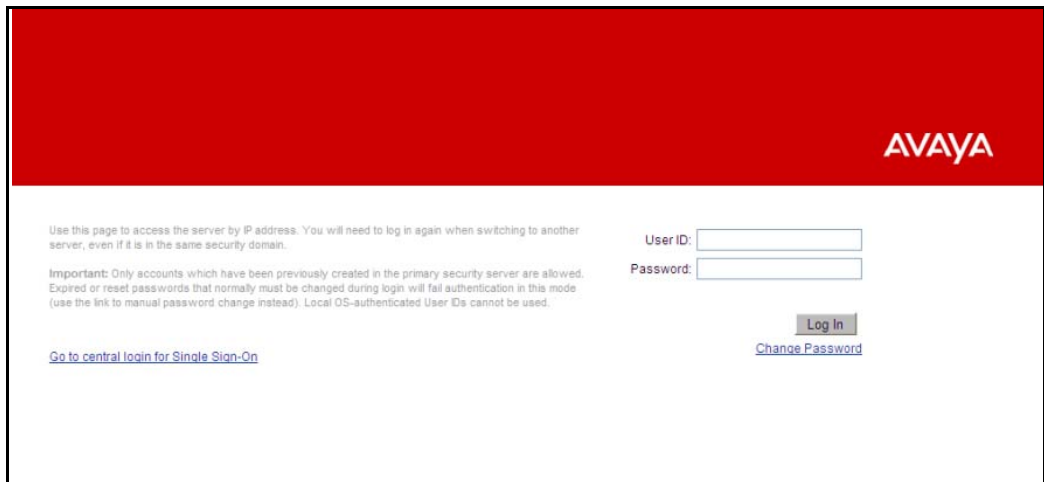
**1**    Open the supported Web browser.

**2**    Enter the ELAN or TLAN network interface IP Address of the primary
Signaling Server as the URL.

*Note:*  Note: Do not assign the same IP address for the Node ID and the
TLAN network interface IP address. This must be verified manually. The
Node IP address must be on the same subnet as the TLAN network
interface IP addresses of the Media Cards. In addition, the TLAN and
ELAN network interfaces of the Media Card must reside on separate
logical subnets.

If additional configuration parameters were entered during installation, the
node IP address can also be used as the URL.

The Element Manager logon web page appears.

**Figure 56**
**Element Manager logon page**

Initially, you can be prompted to enter the Call Server IP address, because the Call Server is used for web logon authorization. The Call Server IP address is a requirement, because unless you entered additional configuration parameters during the Signaling Server installation, the node configuration data file containing the Call Server IP address does not yet exist.

**3** Enter a Level 1 or Level 2 user ID and password. If configured, you can also use a Limited Access Password (LAPW) user ID and password.

If this is the first time the Call Server is accessed, the default Level 1 or Level 2 user ID and password must be used.

If the logon is successful, the Element Manager "Home - System Overview" screen appears (see Figure 57 on ).

**Figure 57**
**Element manager: Home - System Overview**
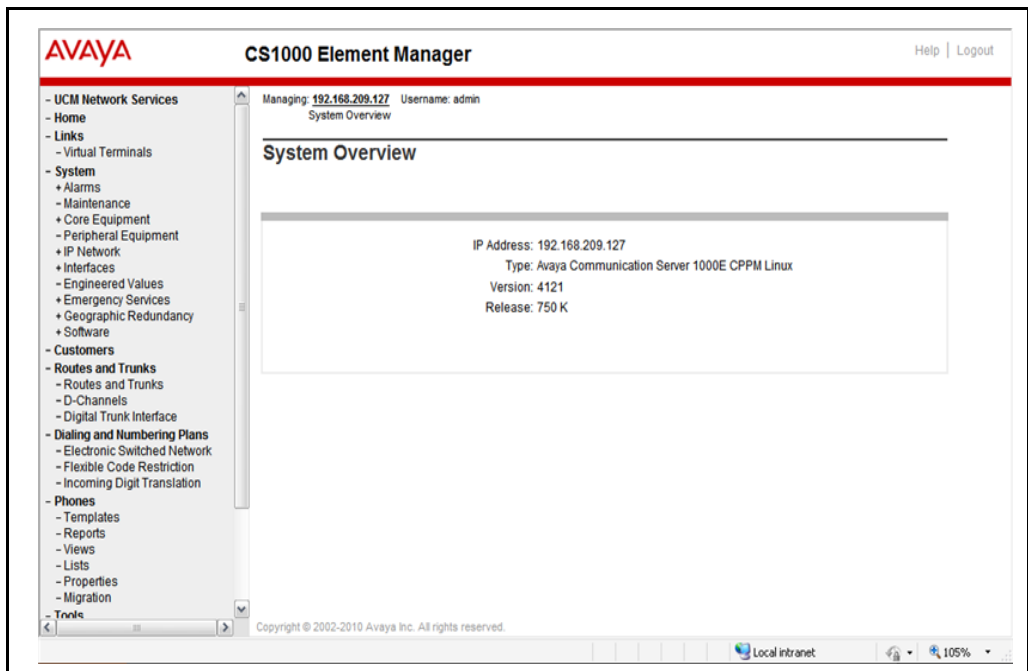


This screen identifies the components of your CS 1000 system.

**4** Click the "+" symbol in front of the Signaling Server component.

The Signaling Server component expands to display the properties of the Signaling Server (see Figure 58 on page 221).

**Figure 58**
**Signaling Server properties**



5   View the contents of the "Gatekeeper configuration" property.

If the Gatekeeper configuration property indicates Primary (as is the case here), Alternate or Failsafe, the Signaling Server hosts an NRS. If the property indicates nothing, the Signaling Server does not host an NRS.

——————————— **End of Procedure** ———————————

## Before you begin

Before upgrading the software, you must do the following:

- Connect the Signaling Server. For details, see "Connections" on page 208 or refer to *Avaya Linux Platform Base and Applications Installation and Commissioning*  (NN43001-315).

- Take a precautionary backup of the IP Phones application database.

- Take a precautionary backup of the NRS database.

- Obtain the CS 1000 Release 7.5 version of the Signaling Server Software Install media. For details, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

- Ensure that there is 2 GB of RAM and at least 40 GB of hard drive capacity on your CP PM or COTS Signaling Server.

## Upgrade the CP PM BIOS

The NTDW66CAE6 CP PM card (CP PM version 2) does not require a BIOS upgrade. The CP PM version 2 uses an updated design, BIOS, and boot manager. Older NTDW66 CP PM cards (CP PM version 1) might require a BIOS upgrade to support Linux.

The Communication Server 1000 Linux Platform Base installer requires that a CP PM version 1 card runs BIOS version 18 or higher. If the installer detects a lower version on the CP PM card it automatically loads software for you to upgrade the CP PM BIOS. Perform the steps in Procedure 60 to upgrade the CP PM BIOS to version 18.

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

**Procedure 60**
**Upgrading the CP PM BIOS with the CS 1000 Linux Base installer**

**1** Connect to serial port 1 on the CP PM.

**2** Insert the CS 1000 Linux Base installation CF card into the faceplate CF slot.

**3** Power on the system.

**4** Once the initial boot and memory check completes for a CP PM version 1 card, Figure 59 appears. Press the **F** key to boot from the CS 1000 Linux Base installation faceplate CF card.

*Note:* For CP PM version 2 cards, press the **F** key to enter the boot menu, select Faceplate RMD, and press **Enter** to boot from the faceplate CF card.

**Figure 59**
**CP PM faceplate drive boot**

```
+------------------------------------+------------------------------------
| System CPU         : Pentium M     | Low Memory         : 632KB
| Coprocessor        : Enabled       | Extended Memory    : 1011MB
| Ide 0 Type         : 3             | Serial Ports 1-2   : 03F8 02F8
| Ide 1 Type         : 3             | ROM Shadowing      : Enabled
| Ide 2 Type         : 3             | BIOS Version       : NTDU74AA 14
+------------------------------------+------------------------------------

Press F to force board to boot from faceplate drive.
.................................................

Attempting to boot from faceplate drive.


CPU Frequency = 1400 MHz

V1.6a++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++■
```

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

6    Figure 60 appears if the CP PM card has a BIOS version lower than 18.
Enter **yes** to proceed with the automatic upgrade.

> **CAUTION — Damage to Equipment**
>
> Do not interrupt the BIOS upgrade process.

**Figure 60**
**CP PM BIOS automatic upgrade**

```
############################################################################
#                                                                          #
#     CP-PM BIOS version is less than 18.  BIOS upgrade is required.       #
#                                                                          #
# To complete the upgrade, BIOS settings must be changed to defaults.  #
#         Please refer to the documentation for more information.          #
#                                                                          #
############################################################################


Do you want to upgrade BIOS ROM up to the version 18? (yes/no): yes

BIOS ROM upgrade. Please wait...


BIOS ROM upgrade is finished.

Machine will be rebooted right now... Press Enter key to continue
```

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

**8** During the reboot memory check, press **Ctrl c** to access the CP PM BIOS setup menu.

*Note:* If you miss the timing to press **Ctrl c** you must reboot the system and try again. The Linux Platform Base installation software will display a warning if you do not reset the CP PM BIOS to factory defaults.

**9** Figure 61 appears. Select **Reset CMOS to factory defaults** from the menu.

**Figure 61**
**CP PM BIOS setup**



```
                System BIOS Setup - Utility v5.3
        (C) 2005 General Software, Inc. All rights reserved
------------------------------------------------------------




                    Basic CMOS Configuration
                    Features Configuration
                    Custom Configuration
                       PnP Configuration
                Start System BIOS Debugger
               Reset CMOS to last known values
              >Reset CMOS to factory defaults
                    Write to CMOS and Exit
                 Exit without changing CMOS




------------------------------------------------------------
      ^E/^X/<Tab> to select. <Esc> to continue (no save)
                       www.gensw.com
```
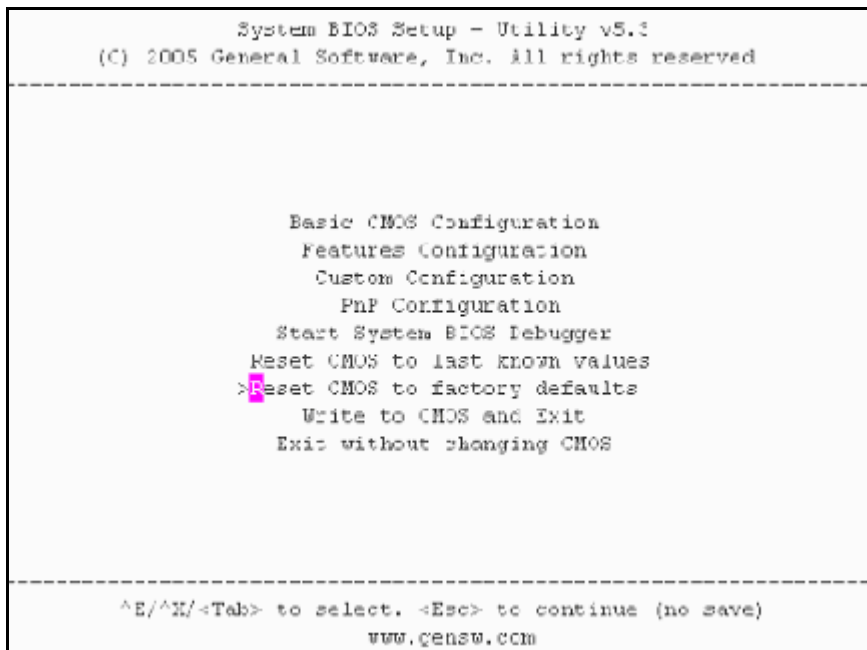
    **10** Figure 62 appears. Press **y** to reset CMOS to factory defaults.

**Figure 62**
**CP PM BIOS reset**



```
              System BIOS Setup - Utility v5.3
      (C) 2005 General Software, Inc. All rights reserved
------------------------------------------------------------------



                    Basic CMOS Configuration
                    Features Configuration
         +------------------------------------------------+
         |  Reset CMOS to factory defaults? (Y/N): y      |
         |                                                |
               Reset CMOS to last known values
               Reset CMOS to factory defaults
                    Write to CMOS and Exit
                  Exit without changing CMOS



------------------------------------------------------------------
      ^E/^X/<Tab> to select. <Esc> to continue (no save)
                        www.gensw.com
```
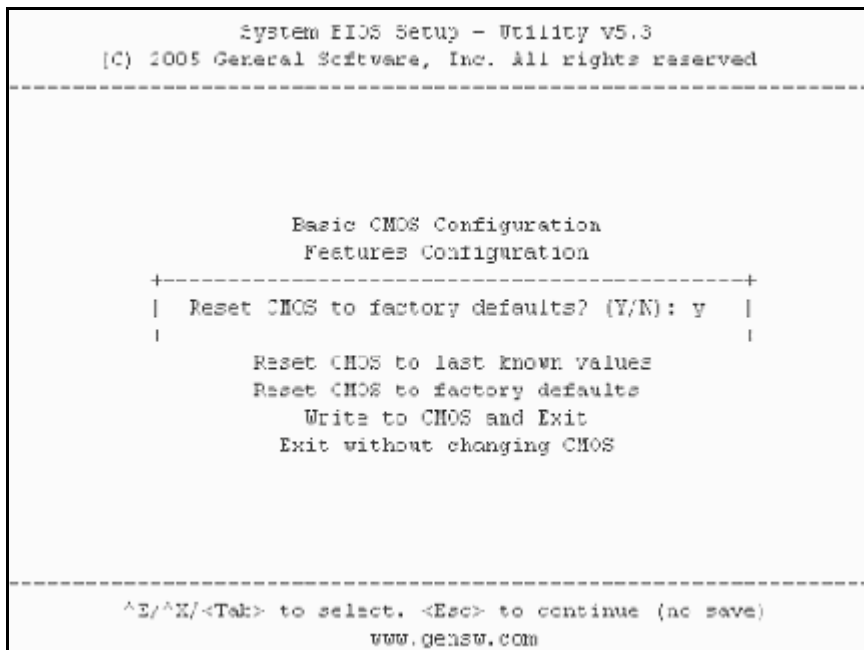
**11** The system reboots. After the initial boot, Figure 59 appears and the new BIOS version displays. Verify the BIOS version is 18. You can now press the **F** key to boot from the faceplate CF card and proceed with the Linux Platform Base software installation.

———————————— **End of Procedure** ————————————

## Installing the CS 1000 Linux Base

You must install CS 1000 Linux Base if your Signaling Server is not running the latest CS 1000 Linux Base software release. The CP PM Linux upgrade kit contains a hard drive with CS 1000 Linux Base preloaded. You can install CS 1000 Linux Base from the command line interface (CLI) using a bootable CF card on CP PM, and using a bootable optical disk on COTS.

Configure the ELAN, TLAN, IP address, Gateway, subnet masks, date, and time settings during the CS 1000 Linux Base installation.

For information about installing or upgrading CS 1000 Linux Base, see *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

## Installing Linux applications

Avaya CS 1000 Release 7.5 Signaling Server and SIP line software are Linux applications. Linux applications install on CS 1000 Linux Base and interact with the CS 1000 Linux Base application framework. You can deploy and install Linux applications with the CS 1000 Linux Base Centralized Deployment Manager. You can configure and deploy SIP Line with Element Manager (EM).

For information about Linux applications and Centralized Deployment Manager, see *Avaya Signaling Server IP Line Applications Fundamentals* (NN3001-125) and *Avaya Linux Platform Base and Applications Installation and Commissioning* (NN43001-315).

For information about Element Manager, see *Avaya Element Manager: System Administration* (NN43001-632).

## Joining the UCM security domain

The UCM Primary Security Server acts as the RADIUS server that CS 1000 devices use to obtain authentication and access control parameters for CLI access. The UCM Primary Security Server sends RADIUS related parameters to CS 1000 devices using the SSH protocol.

When a device joins the UCM security domain, a mutually-trusted SSH channel is created. You must manually confirm the fingerprint of the public key before the UCM Primary Security Server RSA public key is added to the authorized key file. This verification prevents third-party intercepts.

When a mutually-trusted SSH tunnel establishes a connection to a CS 1000 device, the UCM Primary Security Server can send SSH remote commands to the device using RSA public key-based authentication.

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

# Appendix A: Upgrade checklists

## Contents

This chapter contains the following topics:

## Introduction

The following section provides Large System upgrade checklists.

### Technical Support

Avaya can provide an Installation and Upgrade Support team to assist with PBX upgrades on a scheduled bases. This service is billable and a purchase order is required. Please refer to current price book for rates.

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

# Site details

**Table 27**
**Site Details**

| | |
|---|---|
| Customer Name | |
| Tape ID (LD 22) | |
| Modem Number (Core) | |
| Switch Room Telephone | |
| Baud Rate | |
| Modem Password | |
| PBX Password | |
| System Type | |
| Software Generic | |

# Upgrade details

**Table 28**
**Upgrade details**

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

# Preupgrade checklists

## Software Upgrade

### Software audit

**Table 29**
**Software audit**

| Software Audit | | |
|---|---|---|
| Perform the software audit prior to the scheduled upgrade. | | |
| Take corrective action if answer is no | | |
| | Yes | No |
| Software CD Ready | | |
| Keycode Disk Ready | | |
| Install Disk Ready | | |
| DEP Patch Disk Ready | | |
| Review Keycode Data Sheet - (SDID,PKGS,License,TID) | | |
| Review Site Specific Patches - (Non MDCS) | | |
| Read GRB for target Release – (Verify Memory Requirements) | | |

## License Upgrade

**Table 30**
**Keycode audit**

| Keycode Audit | | |
|---|---|---|
| Perform the keycode Audit prior to the scheduled upgrade. | | |
| Take corrective action if answer is no | | |
| | Yes | No |
| Keycode Disk Ready | | |
| Keycode Data Sheet Ready | | |
| SDID Matches System | | |
| TID Matches System | | |
| Perform a KDIFF in LD 143 to compare keycodes | | |

## Conversion Required

**Table 31**
**Conversion Procedures**

| Conversion Procedures | |
|---|---|
| Upgrades between different machine types require some type of conversion. | |
| If the disk media is changing the database must be physically transferred | |
| between storage devices. Please select source and target media. | |

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

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

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

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

## Hardware Upgrade

### Hardware audit

**Table 33**
**Hardware audit**

| Hardware Audit | | |
| --- | --- | --- |
| Perform the Hardware Audit prior to the scheduled upgrade. | | |
| | Yes | No |
| Verify Shipping List - Complete and Accurate | | |
| Audit Site for new hardware locations | | |
| Pre Run Cables if possible | | |
| Review All switch settings for new cards | | |
| Read all applicable document Procedures completely | | |

# Preconversion steps

**Table 34**
**Preconversion steps (Part 1 of 2)**

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

**Table 34**
**Preconversion steps (Part 2 of 2)**

| |
|---|
| LD 30 LDIS (Verify what Is disabled if any) |
| Obtain Software Information from LD 22 |
| ISSP - Patches in service - Future Reference if required |
| LD 143 - MDP ISSP -Prints all inservice patches and patch handle numbers (includes all DepList patches) |
| TID/SLT - License Parameters - To compare with converted database |
| LD 21 - PRT CFN |
| LD 97 - PRT SUPL/XPEC |
| Run a Template Audit |
| LD 1 - Auto Run |
| Perform a Datadump |
| Backup at least two copies of the current database, retain the copies. |
| Print History File or System Event Log |
| LD 22 - Print AHST - Capture Systems Events to compare will new software if required |
| LD 117 - PRT SEL 500 - Same as above |

# Postconversion checks

**Table 35**
**Postconversion checks**

| 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 off on on | off on on off on off on on |
| 2 | 1 | 5 | 80-95 | 2 1 | off 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 off off on | off on on off on off off on |
| 3 | 1 | 7 | 112-127 | 3 1 | off on on on off off off | off on on off on off off off |
| 4 | 0 | 8 | 128-143 | 4 0 | off on on off on on on | off on on off off on on on |
| 4 | 1 | 9 | 144-159 | 4 1 | off on on off on on off | off on on off off on on off |
| 5 | 0 | 1 0 | 160-175 | 5 0 | off on on on off on off on | off on on off off on off on |

**Table 37**
**Switch settings (Part 2 of 2)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5 | 1 | 1 1 | 176-19 1 | 5 1 | off on on on off on off off | off on on off off on off off |
| 6 | 0 | 1 2 | 192-20 7 | 6 0 | off on on on off off on on | off on on off off off on on |
| 6 | 1 | 1 3 | 208-23 3 | 6 1 | off on on on off off on off | off on on off off off on off |
| 7 | 0 | 1 4 | 224-23 9 | 7 0 | off on on on off off off on | off on on off off off off on |
| 7 | 1 | 1 5 | 240-25 5 | 7 1 | off on on on off off off off | off on on off off off off off |

# Index

## B

backup the database, 33

BKO, 33

## C

call processing, effect of software upgrades on, 18

Clock Controller
cabling, 89

conversion media
defined, 18

## D

data dump, 33

## F

Fiber Network
verification and status, 153, 181, 185

FIJI card
install, 83, 145
sync cables, 145

## P

printouts
site data, 30

## S

single CPU systems
call processing disruptions on, 18

site data printouts
pre-conversion procedure, 30

source software
defined, 18

## T

target software, 18

terminal
connection and settings, 29

## U

Unattended backup (BKO command), 33