
Succession 1000

Succession 1000M

Succession 3.0 Software

Signaling Server

Installation and Configuration

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Revision history

October 2003

Standard 1.00. This document is a new NTP for Succession 3.0. It was created to support a restructuring of the Documentation Library, which resulted in the merging of multiple legacy NTPs. This new document consolidates information previously contained in the following documents:

- *Branch Office* (553-3001-214)
- *IP Line: Description, Installation, and Operation* (553-3001-365)
- *Large System: Planning and Engineering* (553-3021-120)
- *Succession 1000 System: Overview* (553-3031-010)
- *Succession 1000 System: Planning and Engineering* (553-3031-120)
- *Succession 1000 System: Installation and Configuration* (553-3031-210)
- *Succession 1000 System: Upgrade Procedures* (553-3031-258)

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About this document

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

Subject

This document describes the Succession Signaling Server, and provides the information necessary to install and configure it in a Succession 1000 system or Succession 1000M system.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Succession 3.0 Software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel Networks home page:

<http://www.nortelnetworks.com/>

Applicable systems

This document applies to the following systems:

- Succession 1000
- Succession 1000M Cabinet
- Succession 1000M Chassis
- Succession 1000M Half Group

- Succession 1000M Single Group
- Succession 1000M Multi Group

System migration

When particular Meridian 1 systems are upgraded to run Succession 3.0 Software and configured to include a Succession Signaling Server, they become Succession 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a Succession 1000M system.

Table 1
Meridian 1 systems to Succession 1000M systems

This Meridian 1 system...	Maps to this Succession 1000M system
Meridian 1 Option 11C Chassis	Succession 1000M Chassis
Meridian 1 Option 11C Cabinet	Succession 1000M Cabinet
Meridian 1 Option 51C	Succession 1000M Half Group
Meridian 1 Option 61	Succession 1000M Single Group
Meridian 1 Option 61C	Succession 1000M Single Group
Meridian 1 Option 61C CP PII	Succession 1000M Single Group
Meridian 1 Option 81	Succession 1000M Multi Group
Meridian 1 Option 81C	Succession 1000M Multi Group
Meridian 1 Option 81C CP PII	Succession 1000M Multi Group

Note the following:

- When an Option 11C system is upgraded to run Succession 3.0 Software, that system becomes a Meridian 1 Option 11C Cabinet.
- When an Option 11C Mini system is upgraded to run Succession 3.0 Software, that system becomes a Meridian 1 Option 11C Chassis.

For more information, see one or more of the following NTPs:

- *Small System: Upgrade Procedures (553-3011-258)*

- *Large System: Upgrade Procedures (553-3021-258)*
- *Succession 1000 System: Upgrade Procedures (553-3031-258)*

Intended audience

This document is intended for individuals responsible for installing, configuring and maintaining the Succession Signaling Server.

Only qualified personnel should install Succession Signaling Servers. To use this document, you should have a basic knowledge of Succession 1000 and Succession 1000M equipment and operation. Contact Nortel Networks Training Centers for information on installation courses.

Complete all system engineering and planning activities before using this guide to install a Succession Signaling Server.

Conventions

Terminology

In this document, the following systems are referred to generically as “system”:

- Succession 1000
- Succession 1000M

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

- Succession 1000M Chassis
- Succession 1000M Cabinet

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

- Succession 1000M Half Group
- Succession 1000M Single Group
- Succession 1000M Multi Group

The call processor in Succession 1000 and Succession 1000M systems is referred to as the “Succession Call Server”.

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *IP Peer Networking* (553-3001-213)
- *Branch Office* (553-3001-214)
- *Succession 1000 Element Manager: Installation and Configuration* (553-3001-232)
- *Features and Services* (553-3001-306)
- *Succession 1000 Element Manager: System Administration* (553-3001-332)
- *IP Line: Description, Installation, and Operation* (553-3001-365)
- *Software Input/Output: Maintenance* (553-3001-511)
- *Small System: Planning and Engineering* (553-3011-120)
- *Small System: Installation and Configuration* (553-3011-210)
- *Small System: Upgrade Procedures* (553-3011-258)
- *Large System: Planning and Engineering* (553-3021-120)
- *Large System: Installation and Configuration* (553-3021-210)
- *Large System: Upgrade Procedures* (553-3021-258)
- *Succession 1000 System: Planning and Engineering* (553-3031-120)
- *Succession 1000 System: Installation and Configuration* (553-3031-210)
- *Succession 1000 System: Upgrade Procedures* (553-3031-258)

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CD-ROM

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

Overview

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This section contains information on the following topics:

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Description

The Succession Signaling Server, shown in Figure 1 on [page 16](#), is an industry-standard PC-based server that provides a central processor to drive H.323 signaling, Internet Telephone signaling, and IP Peer Networking. It is required in all Succession 1000 and Succession 1000M systems.

Figure 1
Succession Signaling Server



The Succession Signaling Server provides signaling interfaces to the IP network using software components that run on the VxWorks™ real-time operating system.

The Succession Signaling Server performs the following functions:

- Acts as an H.323 Gatekeeper
- Runs the H.323 Signaling Gateway (for Virtual Trunks)
- Acts as a Terminal Proxy Server (TPS)
- Acts as a web server for Element Manager

Like Succession Media Cards, the Succession Signaling Server has both an ELAN and TLAN ethernet interface. The Succession Signaling Server communicates with the Succession Call Server via the ELAN subnet.

Succession Signaling Servers can be installed in a load-sharing redundant configuration for higher scalability and reliability.

Software applications

The Succession Signaling Server provides signaling interfaces to the IP network using software components that run on the VxWorks™ real-time operating system. The software components are:

- Internet Telephone Terminal Proxy Server (TPS)
- H.323 Signaling Gateway (Virtual Trunk)

- H.323 Gatekeeper
- Element Manager web server

Internet Telephone Terminal Proxy Server

The Terminal Proxy Server (TPS) provides the signaling interface for the Internet Telephones. The TPS supports a maximum of 10,000 Internet Telephones on each Succession Signaling Server. In conjunction with the Succession Call Server, the TPS delivers a full suite of telephone features.

The Unified Network IP Stimulus protocol (UNIStim) is the single point of contact between the various server components and the Internet Telephone. UNIStim is the stimulus-based protocol used for communication between an Internet Telephone and a Terminal Proxy Server on the Voice Gateway Media Card.

IP Peer Networking supports the i2002 and i2004 Internet Telephones and the i2050 Software Phone (soft client) for IP Telephony. Each Internet Telephone can be configured through the Dynamic Host Configuration Protocol (DHCP) to register with a Succession Call Server for feature control.

The TPS on the Succession Signaling Server also manages the firmware for the Internet Telephones which are registered to it. Accordingly, the TPS also manages the updating of the firmware for those Internet Telephones. For more information on upgrading the firmware *IP Line: Description, Installation, and Operation* (553-3001-365) and *Branch Office* (553-3001-214)

H.323 Signaling software (Virtual Trunk)

H.323 is a protocol standard that specifies the components, protocols, and procedures that provide multimedia communication services over packet networks.

The H.323 Signaling software (Virtual Trunk) provides the industry-standard H.323 signaling interface to H.323 Gateways. This software uses a Gatekeeper to resolve addressing for systems at different sites.

The H.323 Gateway supports direct, end-to-end voice paths using Virtual Trunks with the following benefits:

- elimination of multiple IP Telephony to circuit-switched conversions
- improved voice quality
- simplified troubleshooting
- interoperability

Gatekeeper software

The IP Peer Networking feature provides a Gatekeeper where all systems in the network are registered.

The Gatekeeper software provides telephone number to IP address resolution. Since all systems in the network are registered to the Gatekeeper, this eliminates the need for manual configuration of IP addresses and numbering plan information at every site. As a result, it also eliminates the duplication of numbering plan information among sites. However, static registration and manual configuration are still supported for backward compatibility.

For more information about the Gatekeeper, refer to *IP Peer Networking* (553-3001-213).

Element Manager Web server

The Element Manager Web server operates on the Succession Signaling Server platform. Use the Web browser interface in conjunction with Optivity Telephony Management (OTM) and the Command Line Interface (CLI) to configure and maintain the elements in the Succession 1000 and Succession 1000M systems.

For more information on Element Manager, refer to *Succession 1000 Element Manager: System Administration* (553-3001-332).

Redundancy

To provide redundancy in the event the Succession Signaling Server fails, install an additional Succession Signaling Server. A redundant Succession Signaling Server also provides load-sharing for the TPS.

In a redundant configuration, one of the Succession Signaling Servers is designated the Leader Succession Signaling Server. The second Succession Signaling Server is designated as the Follower.

The Gatekeeper (Primary, Alternate, or Failsafe) must reside on the Leader Succession Signaling Server. In the event of Leader Succession Signaling Server failure, the Follower Succession Signaling Server assumes the role of the Leader Succession Signaling Server.

See “Redundancy” on [page 28](#) for more details.

Hardware description

This section describes the physical components of the Succession Signaling Server.

Note: With the exception of installing memory upgrades, there are no user-serviceable components in the Succession Signaling Server. Any defective Succession Signaling Servers should be returned to the supplier.

Product code

The product code for the Succession Signaling Server is NTDU27.

Power

The power cord connector is located on the left-hand corner on the rear of the Succession Signaling Server. When the green power LED, on the left-hand side is illuminated, the power is on. The Power On/Off switch is on the front faceplate. The power supplies are factory installed and not customer replaceable.

Cooling

The Succession Signaling Server has forced air cooling. The fan runs whenever the unit is on. The air flow is front-to-back.

Card slots

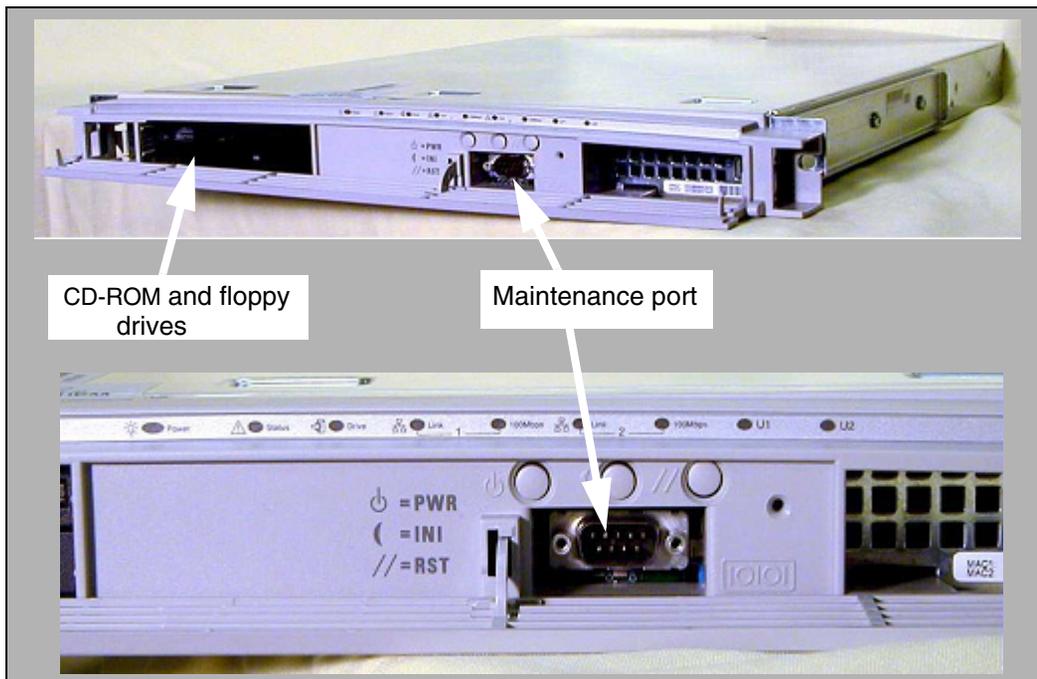
The Succession Signaling Server has no available card slots.

Connectors

Front connectors and media drives

Figure 2 shows the connectors and drives on the front of the Succession Signaling Server.

Figure 2
Connectors on the front of the Succession Signaling Server



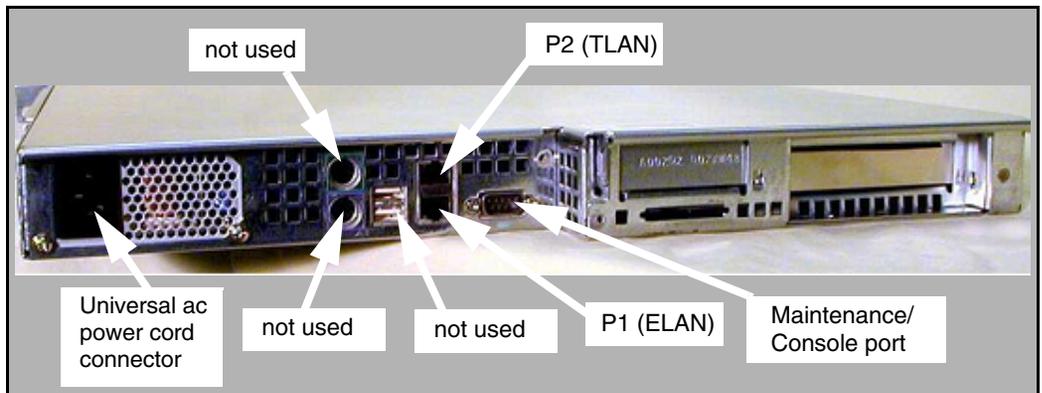
Refer to Figure 2 on [page 20](#).

- The front DB-9 serial port can support a login session for Command Line Interface (CLI) management.
- The CD-ROM drive is used to load the Succession Signaling Server software files for the Succession Signaling Server, Voice Gateway Media Cards (VGMC), and Internet Telephones. The Succession Signaling Server software includes the Succession Signaling Server operating system, and applications, and all Element Manager web server files.
- The floppy drive is used if the CD-ROM is not bootable. To create a boot floppy, use the files in the `mkboot` directory on the Succession Signaling Server Software CD-ROM. You can use the same boot floppy for any or all Software CD-ROMs.

Rear connectors and ports

Figure 3 shows the cable connectors on the back of the Succession Signaling Server.

Figure 3
Connectors on the back of the Succession Signaling Server



Refer to Figure 3.

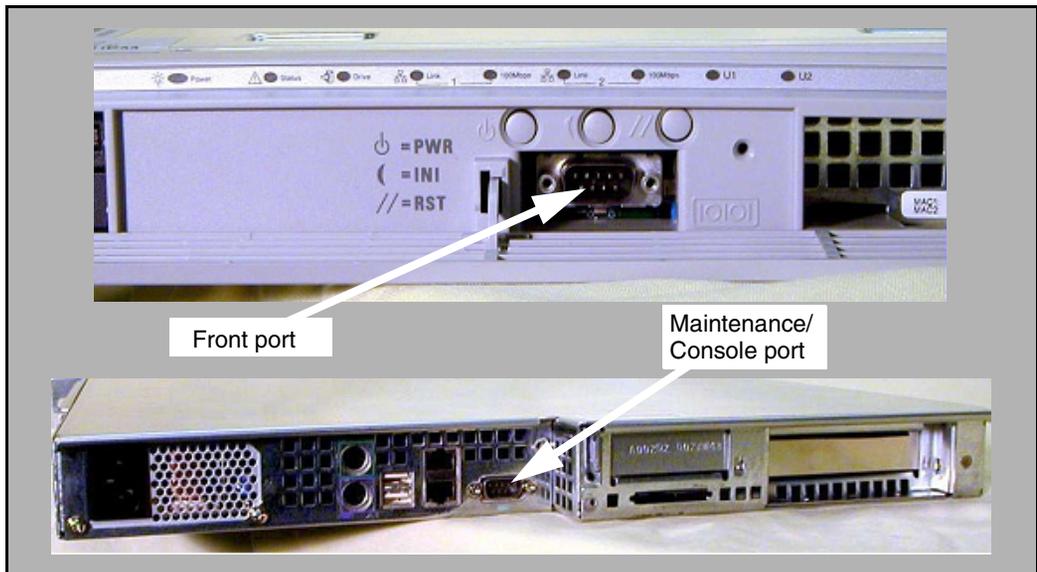
- The AC power cord connector is at the back of the Succession Signaling Server on the left side.

- The TLAN port (P2) connects the Succession Signaling Server to a Layer 2 Switch port on the TLAN subnet.
- The ELAN port (P1) connects the Succession Signaling Server to a Layer 2 Switch port on the ELAN subnet.
- The maintenance port connects the Succession Signaling Server to a maintenance and administration terminal.
- The remaining ports are not used for any function. Do not plug any device into these ports.

Maintenance ports

The Succession Signaling Server has two maintenance ports, as shown in Figure 4 on [page 22](#). Both ports can be used for maintenance. The console port is used during Succession Signaling Server software installation and basic configuration.

Figure 4
Maintenance port location on the front and rear of the Succession Signaling Server



Stand-alone support for Meridian 1 and BCM nodes

Nortel Networks supports the use of a Succession 1000 H.323 Gatekeeper for Meridian 1 Release 25.40 and BCM 3.01 nodes.

The Succession 1000 H.323 Gatekeeper in a stand-alone configuration can be used to migrate numbering plans from node-based numbering plans to centralized Gatekeeper-based numbering plans. This provides increased functionality, as well as the flexibility to migrate a traditional Meridian 1- or BCM-based network to a Succession network.

For more information, refer to *IP Peer Networking* (553-3001-213).

Planning and engineering

Contents

This section contains information on the following topics:

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Environmental conditions

The environment in which the Succession Signaling Server operates must meet the following general conditions:

- Ventilating openings on the Succession Signaling Server must be free of obstructions.
- Temperature must be maintained between 0° and 35° C (32° and 98° F).
- Humidity must be between 5% and 95% at 30° C non-condensing.
- The Succession Signaling Server must not be subject to constant vibration.
- The Succession Signaling Server and other system equipment must be located at least 12 ft. (3.66 m) away from sources of electrostatic, electromagnetic, or radio frequency interference. These sources can include:

- power tools
- appliances (such as vacuum cleaners)
- office business machines (such as copying machines)
- elevators
- air conditioners and large fans
- radio and TV transmitters
- high-frequency security devices
- all electric motors
- electrical transformers

Each Succession Signaling Server can dissipate up to 125 Watts of power.

Grounding

Like all system equipment, the Succession Signaling Server must be thoroughly grounded. Refer to *Small System: Planning and Engineering* (553-3011-120), *Large System: Planning and Engineering* (553-3021-120), or *Succession 1000 System: Planning and Engineering* (553-3031-120), as appropriate for the particular system.

This section provides information specific to the Succession Signaling Server.



CAUTION

For an installed Succession Signaling Server, link impedance between the ground post of any equipment and the single point ground to which it connects must be less than 0.25 ohms.



CAUTION

To prevent ground loops, power the Succession Signaling Server, from the same dedicated power panel as other system equipment. Ground all Succession Signaling Servers to the power panel through the grounding block.

Power

Tables 2 to Table 4, starting on [page 27](#), gives the AC power input requirements for the Succession Signaling Server in North America, Europe, the United Kingdom, and Germany respectively. Table 5 on [page 28](#) summarizes these input requirements to determine the power consumption of the Succession Signaling Server.

Table 2
AC input requirements for a Succession Signaling Server (North America)

Voltage	Recommended: 100-120 Volts Maximum limits: 90 and 132 Volts Single phase
Frequency	50-60 Hz
Power (I/P max)	200 VA maximum
Outlet Type	120 Volts, 15 Amp supply

Table 3
AC input requirements for a Succession Signaling Server (Europe and UK) (Part 1 of 2)

Voltage	Recommended: 208/220 Volts Maximum limits: 180 and 250 Volts Single phase
Frequency	50-60 Hz
Power (I/P max)	200 VA maximum

Table 3
AC input requirements for a Succession Signaling Server (Europe and UK) (Part 2 of 2)

Outlet Type	208/240 Volts, 15 Amp supply
<p>Note 1: Because local power specifications vary, consult a qualified local electrician when planning your power requirements.</p> <p>Note 2: The supplied power must be single-phase 240 or three-phase 208 Y, and must have a system ground conductor.</p>	

Table 4
AC input requirements for a Succession Signaling Server (Germany)

Voltage	Recommended: 230 Volts Maximum limits: 180 and 250 Volts Single phase
Frequency	50 Hz
Power (I/P max)	200 VA maximum
Fuse	16 A
Outlet Type	Receptacles by DIN regulation

Table 5
Power consumption for a Succession Signaling Server

Slot	Circuit card	Type	Power consumption from Table 2, Table 3, and Table 4
1	N/A	N/A	200W
Total Power In			200W

Redundancy

Succession Signaling Server redundancy ensures that telephony services can withstand single hardware and network failures. It also provides a

load-sharing basis for the Internet Telephone Proxy Server (TPS) and an alternate route for the H.323 Gateway software.

When planning survivability strategies for the Succession Signaling Server, a second Succession Signaling Server should be included in the plan. Two Succession Signaling Servers can load-share when the system contains multiple VGMCs. Also, one Succession Signaling Server is a Leader Succession Signaling Server that acts as the primary, or master, TPS. The other Succession Signaling Server is a Follower Succession Signaling Server that acts as a secondary, redundant TPS, Virtual Trunk, and Gatekeeper. The Gatekeeper (Primary, Alternate, or Failsafe) must reside on the Leader Succession Signaling Server.

If the Leader Succession Signaling Server fails, an election process takes place and the Follower Succession Signaling Server becomes the master TPS. The Internet Telephones reregister to the Follower Succession Signaling Server and system operation resumes. If the Follower fails, the Internet Telephones registered to the Follower reregister to the Leader Succession Signaling Server.

This process is explained in the following steps:

- 1 The Internet Telephones are distributed between the two Succession Signaling Servers (load-sharing). The H.323 Gateway runs on the Leader Succession Signaling Server.
- 2 The Leader Succession Signaling Server fails.
- 3 The Follower Succession Signaling Server takes on the role of the Leader Succession Signaling Server and acquires the Leader Succession Signaling Server's IP address if necessary.
- 4 The Time-to-Live (TTL) of Internet Telephones registered with the failed Succession Signaling Server expires. This causes those Internet Telephones to reset and register with the new Leader Succession Signaling Server.

Note: Only the Internet Telephones registered with the failed Succession Signaling Server are reset.

- 5 The new Leader Succession Signaling Server assumes responsibility for the H.323 Gateway.
- 6 Normal operation resumes.

Note: The same functionality is available without a redundant Succession Signaling Server. Voice Gateway Media Cards in other Succession Media Gateways can assume a TPS role and become a source for Internet Telephone registration.

Scalability

Table 6 summarizes the limits for each Succession Signaling Server. It is to be used as a quick overview, for planning purposes. For detailed calculations, refer to *Small System: Planning and Engineering* (553-3011-120), *Large System: Planning and Engineering* (553-3021-120), or *Succession 1000 System: Planning and Engineering* (553-3031-120), as appropriate to the particular system.

Note: Real-time capacity must also be considered for the specific application, and can also constrain any applications in reaching resource limits.

Table 6
Succession Signaling Server limits

Succession Signaling Server component	Limit
Gatekeeper	2000 H.323 endpoints 10 000 number plan entries 60 000 calls per hour
Terminal Proxy Server (TPS)	5000 lines
Virtual Trunks	382 trunks

A maximum of 382 Virtual Trunks can be supported by one Succession Signaling Server. All 1248 virtual TNs can be configured for Virtual Trunks if other system resources permit.

Branch Offices

There must be at least one Succession Signaling Server at the Main Office, and one at each Branch Office node. Each Main Office can support up to 255 Branch Offices, and each Branch Office can support up to a 400 Internet Telephones.

There are 30 default Virtual Trunks on a Branch Office. The Branch Office can support up to 92 T1 trunks or 120 E1 trunks, and up to 256 trunks in total.

The total number of Internet Telephones in all offices can be no greater than the capacity of the Main Office as determined using *Succession 1000 System: Planning and Engineering* (553-3031-120), *Large System: Planning and Engineering* (553-3021-120), or *Small System: Planning and Engineering* (553-3011-120), as appropriate.

For more information on Branch Offices, refer to *Branch Office* (553-3001-214).

Hardware installation

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Introduction

This chapter describes how to install the Succession Signaling Server in a 19-inch rack and connect it to the ELAN and TLAN. The chapter also contains instructions on upgrading the memory in the Succession Signaling Server.

Hardware installation

This section describes how to install the Succession Signaling Server hardware in a 19-inch rack.

Readiness checklist

Before starting the installation, complete the checklist in Table 7.

Table 7
Readiness checklist

Have you:	✓
Read all safety instructions in <i>Succession 1000 System: Installation and Configuration</i> (553-3031-210)?	
Received all equipment?	
Made sure the area meets all environmental requirements?	
Checked for all power requirements?	
Checked for correct grounding facilities?	
<p>Obtained the following:</p> <ul style="list-style-type: none"> • screwdrivers • an ECOS 1023 POW-R-MATE or similar type of test meter • appropriate cable terminating tools • a computer to be connected directly to the Succession Signaling Server by a DTE—DTE null modem cable, with: <ul style="list-style-type: none"> — teletype terminal (ANSI-W emulation, serial port, 19 200 bps) for the Succession Signaling Server — a web browser for Element Manager (configure cache settings to check for new pages every time and to empty the cache when the browser is closed) 	
Prepared the network data as suggested in <i>Data Networking for Voice over IP</i> (553-3001-160) and <i>Succession 1000 System: Planning and Engineering</i> (553-3031-120)?	

Materials required

To install the Succession Signaling Server, obtain the following items:

- 1 The Succession Signaling Server.

Note: Save the packaging container and packing materials in case you must reship the product.

- 2 The power cable for the Succession Signaling Server. Check that the power cord is the exact type required in the host region. Do not modify or use the supplied AC power cord if it is not the correct type.
- 3 The serial cable for the Succession Signaling Server.
- 4 The Ethernet cables for networking.
- 5 The contents of the accessories pouch to install the Succession Signaling Server. The accessories pouch should contain the following items:
 - a Two chassis support brackets (A)
 - b Two rack-mounting brackets (B)
 - c Six rack-mount bracket screws (10-25 x 1/4" panhead Phillips)
 - d Two bezel door long rack-mount screws

Refer to Figure 5 on [page 36](#). If any parts are missing, contact your supplier immediately.

Figure 5
Succession Signaling Server brackets



CAUTION

The load rating for this mounting kit is 50 pounds (23 kilograms). If you exceed this limit, damage or injury can occur.

Preparing for rack-mounting

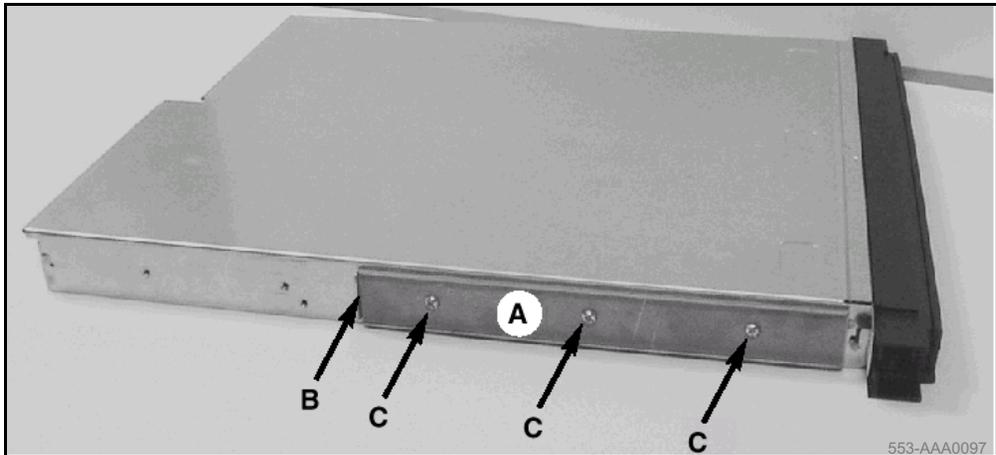
Procedure 1

Preparing the Succession Signaling Server for rack-mounting

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

- 1 Make sure the Succession Signaling Server is not plugged-in to an electrical outlet.
- 2 Align the end of the rail with the flange (B) toward the back of the Succession Signaling Server. See Figure 6 on [page 37](#).

Figure 6
Chassis support bracket



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

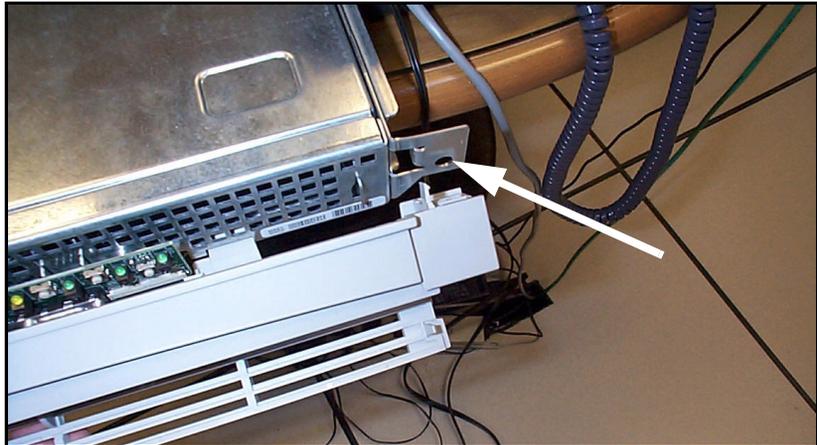
Note: Hand-tighten the screws to prevent cross-threading, then use a Phillips screwdriver to secure them.

- 4 Attach the bezel door to the faceplate of the Succession Signaling Server, as shown in Figures 7 and 8 on [page 38](#).

Figure 7
Left hinge mount

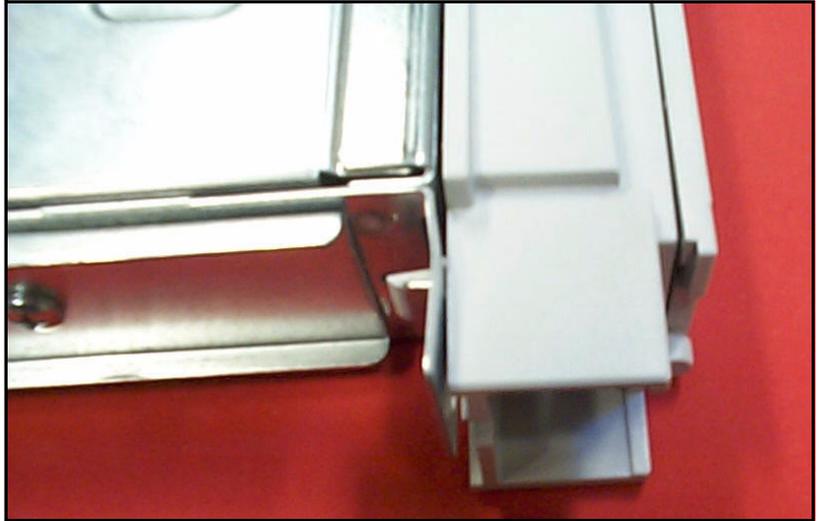


Figure 8
Right hinge mount



When the door is attached to the Succession Signaling Server and rack-mount apparatus, it should appear as shown in Figure 9.

Figure 9
Snapped-in bezel door



End of Procedure

Rack-mounting

Read the following warnings carefully before installing the Succession Signaling Server in the rack.



DANGER OF ELECTRIC SHOCK

DISCONNECT AC POWER

Make sure the Succession Signaling Server is completely disconnected from any AC power source before performing this procedure. Pressing the Power button DOES NOT turn off power to this Succession Signaling Server. Some circuitry in the Succession Signaling Server can continue to operate even though the front panel Power button is off. Failure to disconnect the Succession Signaling Server from its AC power source can result in personal injury or equipment damage.



DANGER OF ELECTRIC SHOCK

GROUNDING THE RACK INSTALLATION

To avoid the potential for an electrical shock hazard, include a third wire safety grounding conductor with the rack installation. If Succession Signaling Server power cords are plugged into AC outlets that are part of the rack, then provide proper grounding for the rack itself. If Succession Signaling Server power cords are plugged into wall AC outlets, the safety grounding conductor in each power cord provides proper grounding only for the Succession Signaling Server. Provide additional, proper grounding for the rack and other devices installed in it.

**WARNING****MAIN AC POWER DISCONNECT**

You must install an AC power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the Succession Signaling Server(s).

**Damage to Equipment****OVERCURRENT PROTECTION**

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

Procedure 2**Rack-mounting the Succession Signaling Server**

- 1 Attach the rack-mount brackets ('B' as shown in Figure 5 on [page 36](#)) to the equipment rack. Install the left and right side at an equal height. Use standard length screws from the accessories pouch, and screw them into the top and bottom drill holes of the bracket. See Figure 10 on [page 42](#).

Figure 10
Installed rack-mount bracket



- 2 When both brackets are fixed in place, do the following:
 - a. Align the rack-mount brackets on the Succession Signaling Server with the slide rail system on the rack posts.
 - b. Slide the Succession Signaling Server in place.

Refer to Figure 11 on [page 43](#).

Figure 11
Rack-mounting the Succession Signaling Server



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

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

End of Procedure

Connecting and powering up the Succession Signaling Server



WARNING

Do not modify or use a supplied AC power cord if it is not the exact type required in the region where the Succession Signaling Server is installed and used.

Be sure to replace the cord with the correct type.

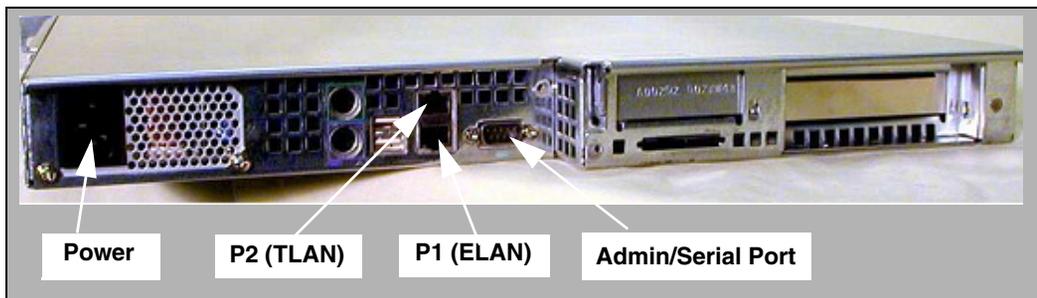
In geographic regions that are susceptible to electrical storms, Nortel Networks recommends that you plug the Succession Signaling Server into an AC surge suppressor.

Procedure 3

Connecting and powering up the Succession Signaling Server

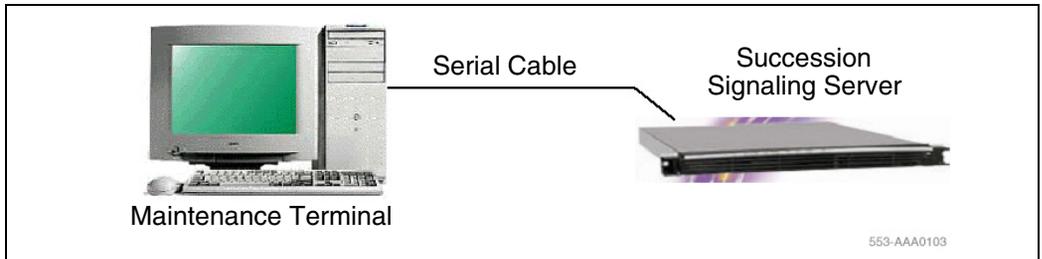
- 1 Connect the Succession Signaling Server to the TLAN subnet.
Insert the RJ-45 Category 5 (or better) TLAN Ethernet cable into the P2 (TLAN) port on the back of the Succession Signaling Server. The P2 (TLAN) port is the top one of the two Ethernet ports shown in Figure 12.
- 2 Connect the Succession Signaling Server to the ELAN subnet.
Insert the RJ-45 Category 5 (or better) ELAN Ethernet cable into the P1 (ELAN) port. The P1 (ELAN) port is the bottom one of the two Ethernet ports shown in Figure 12.

Figure 12
Back of Succession Signaling Server



- 3 Connect a maintenance terminal to the Succession Signaling Server.
 - a. Connect a DTE–DTE null modem serial cable (supplied with the Succession Signaling Server) from the Serial Port on the back of the Succession Signaling Server to a maintenance terminal. The connection looks like that shown in Figure 13.

Figure 13
Maintenance to Succession Signaling Server connection



- b. Set the COM port on the maintenance terminal as follows:
 - Terminal type: VT100
 - Speed: 19 200
 - Data bits: 8
 - Parity: none
 - Stop bits: 1
 - Flow control: none

Note: The Succession Signaling Server is shipped with the Admin/ Serial port set to 19 200 Bit/s. Other available speeds are 9600, 38 400, and 115 200 Bit/s. Once the Succession Signaling Server software has been installed, the port speed can be changed using the Tools Menu on the Succession Signaling Server Install Tool. See Procedure 11 on [page 103](#).

- 4 Configure the maintenance terminal.

The maintenance terminal can be configured any time, except during data transmission. Do not configure the terminal during data transmission to avoid data loss.

- a. Turn on the power for the maintenance terminal.
- b. Enter setup mode by pressing the <SETUP> key located on the top row of the special function keys. The terminal screen displays the current setup values.
- c. Change the value in each field on each setup screen as necessary. Use the keys listed in Table 8 to view and change setup values.

Table 8
SDI key function

Key	Function
Arrow key	Move from field to field
<Enter>	Scroll through possible values or cause requested action to occur (depends on type of field)
<Next Screen>	Move to next setup screen
<Prev Screen>	Move back to last screen

- d. Save changes by returning to the *General setup* screen, moving the cursor to the Saved field, and pressing <Enter>.

To configure the maintenance terminal, refer to “Maintenance terminal configuration parameters” on [page 49](#).

5 Connect the Succession Signaling Server power cord.

- a. Check that the power cord is the type required in the region where the Succession Signaling Server is used.

Do not modify or use the supplied AC power cord if it is not the correct type. Refer to *Succession 1000 System: Installation and Configuration* (553-3031-210) for a detailed power cord description.

- b. Attach the female end of the power cord to the mating AC power receptacle on the left side of the Succession Signaling Server’s back panel. See Figure 12 on [page 44](#). Plug the male end of the AC power cord into the AC power source (wall outlet).

- 6 Power up the Succession Signaling Server.
 - a. Open the bezel door (Figure 14) to access the Power switch:
 - i. Grasp the tab at each end of the hinged bezel door.
 - ii. Gently pull the tabs out and down to open the hinged bezel door.

Figure 14
Succession Signaling Server with open bezel door



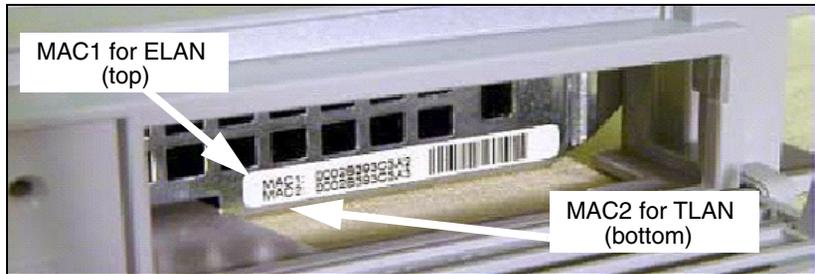
Note 1: The MAC addresses are visible on the lower right-hand side when the bezel door is open. See Figure 15 on [page 48](#).

Note 2: MAC1 is Port 1 for ELAN, and MAC2 is the Port 2 for TLAN.

Note 3: Though the MAC1/ELAN address is the top address, Port 1 is the bottom Ethernet port on the back of the Succession Signaling Server.

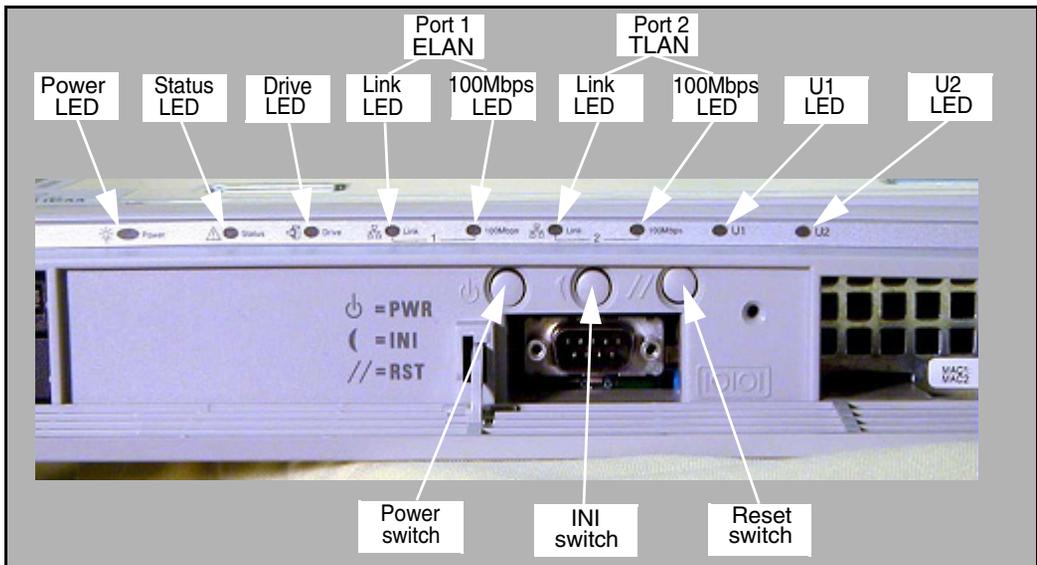
Note 4: Figure 16 on [page 48](#) shows the LEDs that correspond to these connections.

Figure 15
MAC address



- b. Press the Power switch (Figure 16). Notice that the green LED power indicator is lit.

Figure 16
Succession Signaling Server indicators and power switch



The Succession Signaling Server LED indicators show the following:

- Power - Green LED on, power on; LED off, power off.
- Status - Red LED off, CPU running; LED on, CPU halted.
- Drive - Green LED flashing, Hard Drive or CD ROM Drive active.
- Link - Green LED, Ethernet port active.
- 100 Mbps - Green LED on, Ethernet port running at 100 Mbps; LED off, Ethernet port running at 10 Mbps.

Note: When the power is turned off on a Succession Signaling Server, the two Link LEDs for Port 0 and Port 1 continue to flash. Depress the Power button for approximately seven seconds to completely turn the power off.

- 7 Refer to the Succession Signaling Server Product Guide on the resource CD-ROM shipped with the Succession Signaling Server for additional operating information.

End of Procedure

Maintenance terminal configuration parameters

This section contains the parameters for configuring a maintenance terminal for use with the Succession Signaling Server. Use these parameters in conjunction with Table 3 on [page 44](#).

Figure 17
HP700/32 setup values

Global set-up screen			
Host Port	1	Keyboard	U.S.
Background	Dark	Message Translations	English
Screen Saver	10 Min	Setup Translations	English
Refresh Rate	72 Hz	Clear Display	
Key Click	Yes	Clear Comm	
User Set-up Screen			
Smooth Scroll	Jump scroll	Display Width	80
Cursor Type	Blink Line	Display Width Allowed	80 or 132
Cursor	Off	Char Cell Height	16
2nd Message Line	On	Clr on Width Change	Yes
Message Line	On	Aux Mode	Off
Status Line	On	Aux to Host	Off
On Line	Yes	Print Terminator=FF	No
Local Echo	Off	Logical Page Size	24
Auto Wrap	Off	Number of Pages	1
Auto Linefeed	Off		
Display Ctrl Codes	Off		
Emulation Set-up			
Emulation	VT320	Cursor Keys	Normal
Terminal Id	VT220	Print Scroll Region	Off
Control Codes	7-bit	User Features Locked	No
Characters Mode	8-bit	User Keys Locked	No
Preferred Char Set	DEC Supplemental	Data Procession Keys	No
Key Pad Mode	Application		
Port 1 Set-up			
Communications	Full Duplex	Limited Transmit	Off
Data Length	8-bits	DSRI	No
Parity	None	CTS	Ignore
Stop Bits	1	CD	Ignore
Xmit Baud	2400	Break Disconnect	170ms
RecvBaud	=Xmit	Disconnect Delay	Never
Xmit pace	Xoff	Aux printer Type	National
Recv Pace	Xoff at 128		
Port 2 Set-up			
Communications	Full Duplex	Xmit pace	Xon/Xoff
Data Length	8-bits	Recv Pace	Xoff at 128
Parity	None	Limited Transmit	Off
Stop Bits	1	Break Duration	170ms
Xmit Baud	9600	Aux Printer Type	National
RecvBaud	=Xmit		
Keyboard Set-up			
Lock Key	Caps Lock	Warning Bell	Yes
Kbd Lock Enable	Yes	Auto Answerback	Yes
Save Tabs	Yes	Answerback =	
Auto Repeat	Yes	Conceal Answerback	No
Margin Bell	Yes	Do not set any tabs or programmed keys.	

Figure 18
VT420 setup values

Global Set-Up	
On Line	Comm1=RS232
Sessions on Comm1	70Hz
CRT Saver	Printer Shared
Display Set-Up	
80 Columns	No Status Display
Interpret Controls	Cursor Steady
Auto Wrap	3x24 pages
Jump Scroll	24 Lines/Screen
Dark Screen	Vertical Coupling
Cursor	Page Coupling
Block Style Cursor	Auto Resize Screen
General Set-up	
VT400 Mode, 7-bit Controls	Normal Cursor Keys
User Defined Keys Unlocked	No New Line
User Features Unlocked	UPSS DEC Supplemental
8-bit Characters	VT420 ID
Application Keypad	When Available Update
Communications Set-Up	
Transmit=2400	Disconnect, 2 s Delay
Receive=Transmit	Limited Transmit
Xoff=64	No Auto Answerback
8bits, No Parity	Answerback=
1 Stop Bit	Not Concealed
No Local Echo	Modem High Speed = ignore
Data Leads Only	Modem Low Speed = ignore
Printer Set-Up	
Speed=2400	8bits, No Parity, 1 Stop bit
No printer to Host	Print Full Page
Normal Print Mode	Print National Only
XOFF	No Terminator
Keyboard Set-up	
Keyboard Set-up	Local Compose
Typewriter Keys	Ignore Alt
Caps Lock	F1 = Hold
Auto Repeat	F2 = Print
Keyclick High	F3 = Set-Up
Margin Bell	F4 = Session
Warning Bell High	F5 = Break
Character Mode	, < and . > Keys
<X> Delete	<> Key
	'~Key
Tab Set-Up	
Leave this screen at the default values	

Figure 19
VT220 setup values

Global Set-Up	
On Line	Comm1=RS232
Sessions on Comm1	70Hz
CRT Saver	Printer Shared
Display Set-Up	
80 Columns	Light Text, Dark Screen
Interpret Controls	Cursor
Auto Wrap	Block Style Cursor
Jump Scroll	
General Set-up	
VT200 Mode, 7-bit Controls	Application Keypad
User Defined Keys Unlocked	Normal Cursor Keys
User Features Unlocked	No New Line
Multinational	
Communications Set-Up	
Transmit=2400	No Local Echo
Receive=Transmit	Data Leads Only
Xoff at 64	Disconnect, 2 s Delay
8bits, No Parity	Limited Transmit
1 Stop Bit	
Printer Set-Up	
Speed=9600	
Normal Print Mode	Print Full Page
8bits, No Parity,	Print National Only
1 Stop bit	No Terminator
Keyboard Set-up	
Typewriter Keys	Warning Bell
Caps Lock	Break
Auto Repeat	Answerback=
Keyclick High	Not Concealed
Margin Bell	
Tab Set-Up Screen	
Leave this screen at the default values	

Upgrading the Succession Signaling Server memory

For capacity reasons, the memory on the Succession Signaling Server has been increased from 256MB to 512MB. 256MB is more than sufficient for Succession 1000 Release 1.0 and 2.0 systems in smaller environments (less than 5000 Internet Telephones).

This change is effective on all Succession Signaling Servers shipped with Succession 3.0 Software. To enable customers to redeploy their current

NTDU27AA 01, 02 or 03 Succession Signaling Servers into a large Succession 3.0 environment, a Succession Signaling Server Memory Upgrade Kit (NTDU80CA) is available. Installation instructions for upgrading the memory using this kit are given in Appendix A on [page 105](#).

Software installation

Contents

This section contains information on the following topics:

Introduction	55
Software installation	55
Succession Signaling Server Software CD-ROM	56
Installing the software	58
Logging in to the Succession Signaling Server	78
Verifying a successful configuration	80
Testing the Leader Succession Signaling Server	80

Introduction

This chapter describes the Succession Signaling Server Install Tool and explains how to install Succession Signaling Server software and perform basic configuration.

Software installation

Software for the Succession Signaling Server is installed or upgraded using the Install Tool, which runs from the Succession Signaling Server Software CD-ROM. The Install Tool program also upgrades existing Succession Signaling Server software to the latest version.

Note: The Succession Signaling Server is out-of-service during software installation or upgrade.

To perform a software installation or upgrade, reboot the Succession Signaling Server with the Software CD-ROM in its drive. No floppy disk is required, since the software CD-ROM is bootable.

The Install Tool installs all Succession Signaling Server software, including the operating system, applications, and web files. The Install Tool also copies software files for the Voice Gateway Media Cards (VGMCs) and Internet Telephones, which are used to upgrade these components. For a new Succession Signaling Server, the Install Tool prompts for IP Telephony parameters to perform basic system configuration.

After installing the Succession Signaling Server software and configuring basic information about the Succession Signaling Server, the Succession Signaling Server components can be configured using the web-based Element Manager interface. Refer to *Succession 1000 Element Manager: System Administration* (553-3001-332).

Succession Signaling Server Software CD-ROM

If you do not have the latest version of the CD-ROM:

- Order or download the CD-ROM image from the Nortel Networks Electronic Software Download site. See Procedure 4 on [page 57](#) for instructions on downloading the image.
- Create the Install Tool CD-ROM from the image. See Procedure 5 on [page 57](#).

A single “.iso” file is provided to create the Software CD-ROM. This file is a ready-to-burn ISO9660 CD image that creates a bootable CD that complies to the El Torito specification. You must use CD writer software that can create a CD from this image. As the CD image is pre-configured, your software automatically creates a bootable Succession 3.0 Software CD-ROM. See your software's help pages to create a CD from an ISO file. Also review the associated README file that is associated with the Nortel Networks Succession Signaling Server Software download.

Procedure 4**Downloading the Succession Signaling Server CD image**

- 1 Connect to the Nortel website at <http://www.nortelnetworks.com>.
- 2 Navigate to the Software Downloads page.
 - a. Click on **Software Downloads** in the **Support** menu. The Software page appears.
 - b. Click on **Succession** in the **By Product Family** menu. The Products by Product Family page opens.
 - c. Select **Succession Enterprise** from the list, and click **Software**. The Succession Enterprise page opens with the Succession Enterprise product list displayed.
- 3 Download the Succession Signaling Server CD image.
 - a. Click on Succession Signaling Server CD image.

The CD-ROM image also includes the Succession Signaling Server software as well as Internet Telephone firmware and VGMC loadware.
 - b. If not logged into a My Nortel Networks account, click on Log In to sign in.

Note: If you are not registered to access this web site, refer to the Succession CSE 1000 product bulletin for directions on how to register.
 - c. The **Software: Software Details Information** page appears. Click the link next to **File Download**.
 - d. In the **Save As** window, choose the desired path to save the file to the local disk on your PC and click **Save**.

End of Procedure

Procedure 5**Creating a Succession Signaling Server software CD-ROM**

- 1 Use the software option to “burn” or “create” a CD from the CD image. Do not drag-and-drop, as this can result in a file copy and a CD-ROM that does not work. Do not write the ISO file to the CD-ROM.

Note: Select the disk-at-once write option.
- 2 Close the session.

- 3 Label the CD appropriately, for example, Succession Signaling Server, sse-x.xx.xx.

End of Procedure

The Software CD-ROM must be readable in a standard CD-ROM drive. After you create a CD from the CD image, the CD contains several directories and files. If you cannot create a CD, refer to the CD writer's software documentation.

Once the CD is created, you can use it to install new software or upgrade software on an existing Succession Signaling Server.

Installing the software

Before proceeding, you must complete Procedure 3 "Connecting and powering up the Succession Signaling Server" on page 44.

Procedure 6 Installing the Succession Signaling Server software

After you complete step 1 below, this procedure takes approximately 15 minutes.

- 1 From your Planning and Engineering group, obtain the following network and IP Telephony data for this Succession Signaling Server:
 - node ID for the IP Telephony node
 - node IP address for the IP Telephony node
 - hostname for the Succession Signaling Server
 - ELAN IP address, subnet mask, and gateway
 - TLAN IP address, subnet mask, and gateway
 - ELAN IP address of the Succession Call Server
 - Gatekeeper role [refer to *IP Peer Networking* (553-3001-213) for details on the Gatekeeper]
 - primary and alternate Gatekeeper IP addresses for this networked system (refer to *IP Peer Networking* (553-3001-213))

- 2 Insert the Software CD-ROM into the Succession Signaling Server CD drive, and press the RST button on the front panel to cold-reboot the Succession Signaling Server.
Note: The Software CD-ROM should be bootable. If not, create a boot floppy using the files in the `/mkboot` directory on the Succession Signaling Server Software CD-ROM.
- 3 If this is a software upgrade or a re-installation on an existing system, observe the boot sequence. Enter 'c' at the boot menu shown in Figure 20 on [page 59](#).
Note: Entering 'c' at the "ISP 1100 System Boot" banner speeds up this process, as the keyboard input is buffered.

Figure 20
Upgrade boot sequence

```
ISP 1100 Boot
Copyright 2003 Nortel Networks, Inc.

CPU: PC PENTIUM
Version: x
BSP version: 1.2/0
Creation date: May 31 2002, 15:44:38
ataDrv 1.0: ATAPI Drive Found
Controller 1 drive 0
Controller 1 drive 1
ATAPI Controller 1 #drives found = 1
Read boot parameters from:
[C]DROM
[H]ard Disk
5 [H]
```

- Note:** If you do not select 'c' within the 5-second time-out, the Succession Signaling Server boots to the existing software on the hard disk.
- 4 When the Install Tool banner appears (Figure 21 on [page 60](#)), press <CR> to perform system checks and begin software installation.

Figure 22
First boot of a new system

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

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

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

Enter Choice> a
```

- a.** Enter 'a' to start the new installation.

The system displays the messages:

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

Creating filesystems ...
Filesystems creation succeeded.

Rebooting system ...
```

- b.** The Install Tool banner screen (Figure 21 on [page 60](#)) reappears. Press <CR> to verify the filesystems.

The disk check reports:

```
Filesystems verification succeeded.
```

- c.** Confirm or enter the date and time (Figure 23 on [page 62](#)).

Figure 23
Date and time

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

If the date or time are correct, you can press <CR> to accept the
current values.

Current date is: WEDNESDAY 13-02-2002
Enter new date (dd mm yyyy): 17 01 2002
Date is set to: FRIDAY 17-01-2002
Current time is: 09:47:18
Enter new time (hh mm ss): 08 38 30
Time is set to: 08:38:30
Current date and time is:
FRIDAY 17-01-2001, 08:38:30
```

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

Filesystems verification succeeded.

The system summary appears (Figure 24 on [page 63](#)). Enter 'a' to continue the installation.

Figure 24
System Summary

```

Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====
-----
                        SYSTEM INFORMATION
-----

+=====+
| Hostname: SS_Node276_Ldr           S/W Ver: x.xx.xx          |
|                                     |                          |
|   Role: Leader                     Set TPS: Enabled          |
| Node ID: 276                       Vtrk TPS: Enabled          |
| Node IP: 192.168.20.100            GK Svc: None              |
| H.323 ID: SS_Node276_Ldr          CS IP: 192.168.10.10         |
|                                     |                          |
| ELAN IP: 192.168.10.20            TLAN IP: 192.168.20.20       |
| ELAN SM: 255.255.255.0            TLAN SM: 255.255.255.0       |
| ELAN GW: 192.168.10.1            TLAN GW: 192.168.20.1        |
| ELAN MAC: 00:02:b3:c5:51:c6       TLAN MAC: 00:02:b3:c5:51:c7   |
+=====+

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

Enter Choice>

```

5 Test the disk.

- If the hard drive has never been tested or is corrupt, enter 'a' at the menu shown in Figure 25 on [page 64](#).

Figure 25
Hard disk test

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

The Install Tool cannot determine when the hard disk was last tested.

The hard disk must be tested before installation can continue.
This test will take approximately 14 minutes.

Please enter:
<CR> -> <a> - Test the hard disk.

Enter Choice> a
```

- If the hard disk has not recently been tested, enter 'a' at the menu shown in Figure 26.

Figure 26
Not recently tested

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

The Install Tool has detected that the hard disk has not been tested
recently.

It is recommended to test the hard disk now. This test will take
approximately 14 minutes.

Please enter:
<CR> -> <a> - Test the hard disk.
      <b> - Skip the hard disk test.

Enter Choice> a
```

- If the hard disk has been checked in the last 24 hours, enter 'a' at the menu shown in Figure 27 on [page 65](#).

Figure 27
Tested within 24 hours

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

The Install Tool has detected that the hard disk has been tested
recently.

It is recommended to skip the hard disk test.

If you select to test the hard disk anyway, it will take
approximately 14 minutes.

    Please enter:

<CR> -> <a> - Skip the hard disk test.
        <b> - Test the hard disk.
        Enter Choice> a
```

The following messages print out:

```
Testing hard disk ...
Testing partition /u (4194241 blocks) ...
xxx% complete

Testing partition /p (4194241 blocks) ...
xxx% complete

Hard disk testing succeeded.
```

Where xxx = 0 to 100.

Note: If the physical check did not pass, contact your technical support group.

Figure 28
Install Tool Main Menu

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

                M A I N   M E N U

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

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

Enter Choice>
```

- 6** At the Main Menu (Figure 28), enter 'a' to install Succession Signaling Server software. Option 'a' performs options b, c, d, and e.

The following sample lines output to the screen:

```
Copying "/cd0/sse30047.p3/disk.sys" to "/u/disk.sys".
Processing the install control file ...
"/cd0/sse30047.p3/install.dat" parsed.
```

The screen shown in Figure 29 on [page 67](#) shows actions that can be performed.

Figure 29
Installation Status

```

Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

+=====+=====+=====+=====+
|  Option  | Choice | Status |          Comment          |
+-----+-----+-----+-----+
| software |   yes  |        | new install x.xx.xx      |
+-----+-----+-----+-----+
| firmware |   yes  |        | copy ALL                  |
+-----+-----+-----+-----+
| loadware |   yes  |        | copy ALL                  |
+-----+-----+-----+-----+
| configuration |   yes  |        | set as N/A                |
+-----+-----+-----+-----+

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

Enter Choice>

```

- 7 Enter 'y' to start the installation. The screens shown in Figures 30 to 34, which start on [page 70](#), appear.

Figure 30
Installation output

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

Starting new install of version x.xx.xx.

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

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

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

Figure 31
Success

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

Software version x.xx.xx was installed successfully.

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

Figure 32
Internet Telephone firmware

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

The installation source contains multiple Internet Telephone firmware
files.

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

Figure 33
VGMC loadware

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

Copying "/cd0/IPL3xxxx.p2" to "/u/fw/IPL3xxxx.p2".
Copying "/cd0/IPL3xxxx.sa" to "/u/fw/IPL3xxxx.sa".
```

- 8** If this is an upgrade, existing configuration files are retained.

The system echoes the ELAN MAC address.

For future reference, the ELAN MAC address is:
"00:02:b3:c5:51:c6".

This address is found on the face of the Succession Signaling Server, on the right-hand side when the bezel door is open. See Figure 15 on [page 48](#).

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

Go to step 17 on [page 76](#) to complete the installation.

- 9 If this is a new installation, configure the Succession Signaling Server as Leader or Follower. See Figure 34 on [page 70](#).
 - If there is not already a Leader Succession Signaling Server in the IP Telephony node, enter 'a' at the prompt to configure this Succession Signaling Server as Leader. Then go to step 10 on [page 71](#)
 - If there is already a Leader Succession Signaling Server in the IP Telephony node, enter 'b' at the prompt to set this Succession Signaling Server as Follower. Then go to step 15 on [page 74](#). Figure 40 on [page 75](#) appears.

For more information about Leader and Follower Succession Signaling Servers, see *IP Line: Description, Installation, and Operation* (553-3001-365) and *Succession 1000 System: Overview* (553-3031-010).

Figure 34
Leader/Follower Succession Signaling Server configuration

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

In this step, you define the role of this Signaling Server.

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

If you set this Signaling Server as a Follower, then data networking
and IP Telephony parameters must be configured through Element
Manager.

NOTE: This will over-write all existing data network and IP
telephony configuration on this Signaling Server.

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

Enter Choice>
```

Figure 36 on [page 72](#) and Figure 37 on [page 73](#) also show required configuration data. These screens are prompted one after the other.

- 10** Configure the node IP using the TLAN IP and a node ID. The IP information is for a temporary IP Telephony node. This ensures that the existing node is not impacted. This also pre-configures the IP Telephony node files. In “Importing IP Telephony node files” on [page 84](#), the node files are imported to Element Manager for further configuration.

Note: IP addresses shown in Figure 35, Figure 36 on [page 72](#), and Figure 41 on [page 76](#) are examples.

Figure 35
Leader Succession Signaling Server

```

Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

Node ID           : 276

Hostname          : SS_Node276_Ldr

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

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

Node IP           : 192.168.10.20

```

- 11** Enter the ELAN IP address of the Succession Call Server at the prompt. See Figure 36.
- If installing the Succession Signaling Server in an office that is not a Branch Office, enter the ELAN IP address of the Succession Call Server.
 - If installing the Succession Signaling Server in a Branch Office, enter the ELAN IP address of the H.323 WAN Gateway.

Figure 36
Succession Call Server ELAN IP

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

If you know it, please enter the ELAN address of the Succession
Call Server that this IP Telephony node will register to.

Call Server IP   : 192.168.10.10
```

- 12** Select the Gatekeeper Service to be provided by this Succession Signaling Server. See Figure 37 on [page 73](#).
- If there is a Primary and Alternate Gatekeeper in the network, select 'a' to configure this Succession Signaling Server as a Failsafe Gatekeeper.
 - If this Succession Signaling Server will be the Primary Gatekeeper, select option 'b'.
 - If this Succession Signaling Server will be the Alternate Gatekeeper, select option 'c'.
 - If this Signaling Server will not run the Gatekeeper application, select option 'd'.
 - If no network information is known, select option 'd'.

Refer to *IP Peer Networking* (553-3001-213) for more information on the Gatekeeper.

Figure 37
Gatekeeper type

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

Please select the Gatekeeper service that this Signaling Server
will provide.

Please enter:
<CR> -> <a> - Failsafe Gatekeeper.
        <b> - Primary Gatekeeper.
        <c> - Alternate Gatekeeper.
        <d> - No co-resident Gatekeeper.

Enter Choice>
```

- 13** Enter the Primary Gatekeeper IP address, the Alternate Gatekeeper IP address, or both, depending on the option selected in step 12 on [page 72](#). See [Figure 38](#) on [page 74](#).
- If option 'a' was selected in step 12, you must enter the addresses of both the Primary Gatekeeper and the Alternate Gatekeeper.
 - If option 'b' was selected in step 12, you can enter the address of the Alternate Gatekeeper.
 - If option 'c' was selected in step 12, you must enter the address of the Primary Gatekeeper.
 - If option 'd' was selected in step 12:
 - If this Succession Signaling Server will not run the Gatekeeper application, the Primary Gatekeeper address is optional. If it is entered, the address of the Alternate Gatekeeper is prompted, but it is also optional.
 - If network information is unknown, do not enter an address.

The Gatekeeper configuration can be updated later using Element Manager.

Figure 38
Gatekeeper IP addresses

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

If you know them, please enter the addresses of the Gatekeepers that
this IP Telephony node will register to.

Primary GK IP   :
Alternate GK IP :
```

- 14 Enter 'a' to configure the Succession Signaling Server to run the Gatekeeper, TPS, and Virtual Trunks. See Figure 39. Go to step 16 on [page 75](#).

Figure 39
Succession Signaling Server application configuration

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====+==

Please select the application configuration for this
Gatekeeper.

      Please enter:
<CR> -> <a> - Co-resident (GK + TPS + VTRK) .
      <b> - Standalone (GK only) .

Enter Choice> a
```

- 15 If this is a Follower Succession Signaling Server, enter the hostname for the Follower from the menu in Figure 40 on [page 75](#).

Figure 40
Follower Succession Signaling Server configuration

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

To identify this Signaling Server, please enter a Hostname now.

Hostname : SS_Node276_Folwr
```

- 16 Confirm the parameters. The example in Figure 41 on [page 76](#) is for a Leader Succession Signaling Server. A Follower Succession Signaling Server confirmation screen is similar, with only the hostname parameter.

Note: The GK configuration parameter changes according to the Gatekeeper service and application configuration that you select.

Figure 41
IP Telephony parameter configuration

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====

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

Node ID           : 276
Hostname          : SS_Node276_Ldr
ELAN IP           : 192.168.20.100
ELAN subnet mask : 255.255.255.0
ELAN gateway IP  : 192.168.10.1
TLAN IP           : 192.168.20.20
TLAN subnet mask : 255.255.255.0
TLAN gateway IP  : 192.168.20.1
Node IP           : 192.168.20.100
Call Server IP   : 192.168.10.10
GK configuration: No Gatekeeper
Primary GK IP    : 0.0.0.0
Alternate GK IP  : 0.0.0.0

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

Enter Choice>
```

The system echoes the ELAN MAC address.

For future reference, the ELAN MAC address is:
"00:02:b3:c5:51:c6".

This address is on the face of the Succession Signaling Server, on the right-hand side when the bezel door is open. See Figure 15 on [page 48](#).

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

- 17** To complete the installation, the Installation Status Summary screen is displayed as shown in Figure 42 on [page 77](#).

Figure 42
Installation Status Summary

```

Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====
-----
                        INSTALLATION STATUS SUMMARY
-----

+=====+=====+=====+=====+
|  Option   | Choice | Status |      Comment      |
+=====+=====+=====+=====+
| software  |   yes  |   ok   | new install/upgrade x.xx.xx |
+-----+-----+-----+-----+
| firmware  |   yes  |   ok   | copy i2002 version 1.xx     |
| firmware  |   yes  |   ok   | copy i2004 version 1.xx     |
+-----+-----+-----+-----+
| loadware  |   yes  |   ok   | copy IP Line 3.xx for P2    |
| loadware  |   yes  |   ok   | copy IP Line 3.xx for SA    |
+-----+-----+-----+-----+
| configuration | yes  |   ok   | set as Leader/Follower     |
+-----+-----+-----+-----+

Please press <CR> when ready ...

```

- 18** Press <cr> to exit to the Main Menu (see Figure 28 on [page 66](#)). Enter 'q' at the Main Menu to quit the installation process. Figure 43 on [page 78](#) appears. Enter 'q' again.

Figure 43
Quit

```
Succession Enterprise Software Signaling Server Install Tool (sse-x.xx.xx)
=====
You have selected to quit the Install Tool.
Before quitting and rebooting the system, remove all disks (floppy,
CDROM) from the drives.

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

Enter Choice> q

Rebooting system ...
```

- 19 Remove the CD-ROM from the drive and reboot the system.

Note: After software installation and reboot, a Follower Succession Signaling Server sends out BOOTP requests and waits for a response. Since the Follower Succession Signaling Server is not yet configured in an IP Telephony node, there is no BOOTP response. Do not wait for this response; go directly to “Adding a Follower Succession Signaling Server to a node” on [page 84](#).

End of Procedure

Use Element Manager to install the Follower Succession Signaling Server in the IP Telephony node. Refer to “Adding a Follower Succession Signaling Server to a node” on [page 84](#).

Logging in to the Succession Signaling Server

Use this procedure to log in to the vxWorks™ shell to access the Succession Signaling Server from a maintenance terminal.

Procedure 7

Logging in to the Succession Signaling Server

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

- 1 Make sure the Succession Signaling Server is powered up and connected to the maintenance terminal. Refer to Procedure 3 on [page 44](#).

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

- 2 Press <cr > to invoke the login prompt.
- 3 Enter the login credentials.Succession Signaling Server Command Line Interface (CLI) user name.

Note: If the Succession Signaling Server has connected to the Succession Call Server (the startup messages indicate if the PBX link is up), use the PWD1 login to access the Succession Signaling Server.

- a. Enter the default Succession Signaling Server Command Line Interface (CLI) login **admin**.
- b. Enter the Succession Signaling Server Command Line Interface (CLI) password.
 - If this Succession Signaling Server has just been installed and you are logging in for the first time, enter the default password **cseadmin**.

The system immediately prompts you to change the default password.

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

If you have forgotten the password, reset it from the Tools Menu (see Procedure 9 on [page 101](#)).

End of Procedure

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

Verifying a successful configuration

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

Procedure 8

Verifying the Succession Signaling Server Ethernet connection

- 1 Log in to the Succession Signaling Server, using Procedure 7 on [page 79](#).
- 2 Ping the IP address of the Succession Signaling Server. Enter the command:

```
ping x.x.x.x
```

Where **x.x.x.x** is the Succession Signaling Server ELAN IP address.

- 3 Ping the IP address of the Succession Call Server. Enter the command:

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

Where **x.x.x.x** is the Succession Call Server ELAN IP address.

- 4 If desired, repeat step 3 for other devices connected to the network.

End of Procedure

Testing the Leader Succession Signaling Server

Configure two Internet Telephones to register to the Succession Signaling Server on its temporary node. These Internet Telephones have to be provisioned on the Succession Call Server. Refer to *Succession 1000 System: Installation and Configuration* (553-3031-210), *Large System: Installation and Configuration* (553-3021-210), or *Small System: Installation and Configuration* (553-3011-210) for the procedure appropriate to the system. After provisioning, the telephones can call each other.

IP Telephony node configuration

Contents

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Importing and upgrading an IP Trunk node	85
Reviewing and submitting IP Telephony node configuration	85
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Introduction

This chapter describes the configuration and management of IP Telephony nodes. The procedures can be carried out in either OTM or Element Manager, and are fully described in *IP Line: Description, Installation, and Operation* (553-3001-365).

For information on Element Manager, refer to *Succession 1000 Element Manager: Installation and Configuration* (553-3001-232).

IP Telephony nodes

An IP Telephony node is defined as a collection of Succession Signaling Servers and Voice Gateway Media Cards (VGMC). Each network node has a unique Node ID, which is an integer value. A node has only one Leader Succession Signaling Server. All other Succession Signaling Servers and VGMCs are defined as Followers.

An IP Telephony node must be configured to make a Succession 1000 or Succession 1000M system operational. The IP Telephony node files are BOOTP.TAB and CONFIG.INI. The master copies of the BOOTP.TAB and CONFIG.INI files reside on the Succession Call Server, with an additional copy on each node component (Succession Signaling Server and Voice Gateway Media Cards).

The node database files are backed up, along with the customer database, by using the EDD command in LD 43. Refer to *Software Input/Output: Maintenance* (553-3001-511) for details about this command. The backup can also be done in Element Manager using the procedure described in “Backing up IP Telephony node configuration files” on [page 85](#).

When a Leader Succession Signaling Server is first installed, the IP Telephony nodes are pre-configured during software installation. The node configuration files are then imported into Element Manager for further configuration of the nodes. These files are saved on the Succession Call Server as the following:

- `c:/u/db/node/nodex.cfg` where *x* is the node number
- `c:/u/db/node/nodex.btp` where *x* is the node number

Note: Do not attempt to alter the above database files manually or by importing to IP Trunk or IP Telephony management in OTM. Use Element Manager.

IP Telephony nodes are configured in Element Manager. Therefore, a Succession Signaling Server, which hosts Element Manager, must be installed.

For more information about IP Telephony nodes and their configuration, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

Element Manager

Element Manager can be used to configure IP Telephony parameters on the system. It is accessed by pointing a web browser (Internet Explorer 6.026 or higher) to the ELAN, TLAN, or node IP address of the Succession Signaling Server.

Before and after you make a change to the customer database, perform a data dump. The customer database is not impacted in this chapter. However, the IP Telephony node is, and its files are backed up at the same time as the customer database. Use the EDD command in LD 43, or use Element Manager, (see “Backing up IP Telephony node configuration files” on [page 85](#)).

For more information about Element Manager, refer to *Succession 1000 Element Manager: Installation and Configuration* (553-3001-232) and *Succession 1000 Element Manager: System Administration* (553-3001-332).

Internet Explorer browser configuration for Element Manager

Element Manager requires Microsoft Internet Explorer 6.026 or higher. Element Manager is not supported on the Netscape browser.

Internet Explorer caching interferes with the Element Manager application, such that users cannot see real-time changes as they occur. For this reason, Internet Explorer caching must be turned off.

Logging in to Element Manager

Before logging in to Element Manager, obtain the IP address of:

- the Succession Call Server (at a location other than a Branch Office), or
- the H.323 WAN Gateway (at a Branch Office)

Use the following credentials when logging in to Element Manager:

- User ID = **admin1** or any LAPW
- Password = **0000**

IP Telephony configuration procedures

This section summarizes procedures used to configure IP Telephony. For more information, and detailed procedures using OTM or Element Manager, refer to *IP Line: Description, Installation, and Operation* (553-3001-365).

For information about upgrading IP Trunk nodes, refer to *Succession 1000 System: Upgrade Procedures* (553-3031-258), *Large System: Upgrade Procedures* (553-3021-258), or *Small System: Upgrade Procedures* (553-3011-258).

Importing IP Telephony node files

Use this procedure to import existing IP Telephony nodes, including those that have been pre-configured during software installation of a Succession Signaling Server (see Procedure 6 on [page 58](#)).

Adding a Follower Succession Signaling Server to a node

Use this procedure to add a follower Succession Signaling Server to an IP Telephony node.

After software installation and reboot, the Follower Succession Signaling Server sends out BOOTP requests, and waits for a response. Since the Follower Succession Signaling Server has not booted successfully before, it waits for a BOOTP response that will not arrive. Do not wait for this response; perform this procedure immediately.

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

Importing and upgrading an IP Trunk node

To work with IP Trunk nodes, the IP Trunk cards must first be converted to Voice Gateway Media Cards. They can then be added to new and existing IP Telephony nodes. To import and upgrade an IP Trunk node to an IP Telephony Node, refer to *Succession 1000 System: Upgrade Procedures* (553-3031-258), *Large System: Upgrade Procedures* (553-3021-258), or *Small System: Upgrade Procedures* (553-3011-258).

Reviewing and submitting IP Telephony node configuration

Use this procedure to review IP Telephony node configuration before submitting. If the configuration is correct, they data can be submitted.

Transferring IP Telephony files

Use this procedure whenever you change the IP telephony node configuration. This procedure transfers the node data files to the other nodes in the system. You can transfer the data files to one, many, or all other nodes in the system.

Note: After completing this procedure, reboot the Succession Signaling Server if you changed its configuration.

Backing up IP Telephony node configuration files

Use this procedure as an alternative to the EDD command in LD 43 to perform a data dump. The data dump backs up new and updated IP Telephony node files on the Succession Call Server at the same time as it backs up the customer database.

Command line interface (CLI) commands

Contents

This section contains information on the following topics:

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Introduction

This section contains Succession Signaling Server Command Line Interface (CLI) commands. The commands are available at two levels:

- **IPL->prompt** – for technicians and installers
- **->prompt** – for advanced troubleshooting

Patch commands (Table 17 on [page 98](#)) are entered at the PDT shell. All other commands are entered at the vxWorks™ shell.

You must log into the Succession Signaling Server to use CLI, using Procedure 7 on [page 79](#).

Many of these commands are also available in Element Manager. The tables in this section list the available commands, and indicate if each command is available in Element Manager.

For more information on CLI commands, refer to *IP Line: Description, Installation, and Operation* (553-3001-365). For more information on Element Manager, refer to *Succession 1000 Element Manager: System Administration* (553-3001-332).

General purpose IPL> commands

Table 9 lists the general purpose IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 9
General purpose commands (Part 1 of 3)

IPL> command	Description	Element Manager
i	Displays the current task list.	✓
routeAdd	Adds a route to the network routing table.	
routeShow	Displays the current host and network routing tables.	✓

Table 9
General purpose commands (Part 2 of 3)

IPL> command	Description	Element Manager
ping "host", "numpackets"	<p>Sends an ICMP ECHO_REQUEST packet to a network host. The host matching the destination address in the packets responds to the request. If a response is not returned, the sender times out. This command is useful to determine if other hosts or Voice Gateway Media Cards are communicating with the sender card. The "numpackets" parameter specifies how many packets to send. If it is not included, ping runs until it is stopped by Ctrl-C (also exits the IPL> Command Line Interface).</p> <p>Example:</p> <p>IPL> ping "47.82.33.123", 10</p>	
itgCardShow	Displays Voice Gateway Media Card information.	✓
itgMemShow	Displays memory usage.	
ifShow	Displays detailed IP address information, including MAC addresses.	✓
IPInfoShow	Displays IP address information.	✓
swVersionShow	Displays software version.	
isetShow	Displays general information for all registered Internet Telephones. For example, the command displays the IP address of the Internet Telephone, the VTN that the Internet Telephone is associated with, indicates the type of Internet Telephone such as i2001, i2002, i2004, CPVIP, or i2050, and provides the type of registration and the new registration status.	
isetShowByTN	Displays general information about all registered Internet Telephones, sorted by TN.	
isetShowByIP	Displays general information about all registered Internet Telephones, sorted by IP address.	

Table 9
General purpose commands (Part 3 of 3)

IPL> command	Description	Element Manager
pbxLinkShow	Displays information about the link to the CPU, including the configuration and link status.	✓
itgAlarmTest	Generates ITGxxxx test alarms.	
electShow	Displays a list of cards in the node and information about each.	
elmShow	Displays a list of supported languages.	
cardRoleShow	Shows the actual role of the card.	✓
ipstatShow	Displays the IP protocol statistics.	✓
rudpShow	Displays the status of the RUDP links on the card. This includes the Succession 1000 or Succession 1000M CPU and to all Internet Telephones registered with the card.	✓
vgwShowAll	Displays voice gateway channels.	✓
servicesStatusShow	Displays the status of services (iset/vtrk/gk).	✓
loadBalance	Attempts to balance the registration load of telephones between this Succession Signaling Server and the rest of the node components.	✓
soHelpMenu	Shows all the Succession Signaling Server switch-over CLIs that are available to the user.	

File transfer IPL> commands

Table 10 lists the file transfer IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 10
File transfer commands

IPL> command	Description	Element Manager
bootPFileGet	Sends an updated bootptab file from the host to the card.	
bootPFilePut	Send the bootptab file to the specified host.	
configFileGet	Sends an updated config.ini file from the host to the card.	
currOMFilePut	Sends the current OM file to the specified host.	
omFilePut	Sends the current OM file to the specified host.	
hostFileGet	Transfers any file from OTM to ITG.	
hostFilePut	Transfers any file from ITG to the specified host.	

Reset IPL> commands

Table 11 lists the reset IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 11
Reset commands (Part 1 of 2)

IPL> command	Description	Element Manager
isetReset "tn" l s c u	Resets the Internet Telephone on Succession 1000M Large Systems.	
isetReset "tn" c u	Resets the Internet Telephone on Succession 1000 and Succession 1000M Small Systems.	

Table 11
Reset commands (Part 2 of 2)

IPL> command	Description	Element Manager
isetResetAll	Resets all registered Internet Telephones.	
resetOM	Resets the operational measurement file timer. This command resets all operational measurement parameters collected since last log dump.	

Upgrade IPL> commands

Table 12 lists the upgrade IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 12
Upgrade commands

IPL> command	Description	Element Manager
umsPolicyShow	Displays the current upgrade policy.	✓
umsUpgradeAll	Upgrades all registered telephones according to policy and firmware file.	✓
umsUpgradeTimerShow	Shows the upgrade schedule.	
umsUpgradeTimerCancel	Cancels the scheduled upgrade.	

Internet Telephone Installer Password IPL> commands

Table 13 lists the Internet Telephone Installer Password IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 13
Internet Telephone Installer Password commands (Part 1 of 3)

IPL> command	Description	Element Manager
nodePwdEnable	Enables the administrative Internet Telephone Installer Password setting. After this command is entered, all Internet Telephones registering display the password screen.	✓
nodePwdDisable	Disables both the administrative and the temporary Internet Telephone Installer Password settings. After this command is entered, all Internet Telephones display the original Node ID and TN screen during registration.	✓
nodePwdShow	Displays the settings of the Internet Telephone Installer Password. The command displays the current password, the state of password entry (enable/disable), the temporary password, and the number of uses and time to expiry.	
nodeTempPwdClear	Deletes the temporary Internet Telephone Installer Password. It also resets the uses and time parameters to zero.	✓
clearLockout <TN IP>	Clears the lockout at the TPS for a particular Internet Telephone resulting from three consecutive failed attempts to enter either the Internet Telephone Installer Password or the Temporary Internet Installer Password.	

Table 13
Internet Telephone Installer Password commands (Part 2 of 3)

IPL> command	Description	Element Manager
<p>nodeTempPwdSet “tempPwd”, uses, <time></p>	<p>Sets the temporary Internet Telephone Installer Password. This password is disabled by default.</p> <p>The password must be a string 6 to 14 digits in length. A null password cannot be entered. The valid tempPwd characters are 0 – 9 * #.</p> <p>The uses parameter is a numeric value from 0-1000. This parameter specifies the number of uses for which the temporary password is valid. The range for the time parameter is 0 – 240 hours, which is a maximum of 10 days. The time parameter specifies the duration in hours that the password is valid.</p> <ul style="list-style-type: none"> • If the uses parameter is set to zero, the time parameter is mandatory. As a result, the password only expires based on time. • If the uses parameter is non-zero, the time parameter is optional. • If both the uses and time parameters are entered, the password expires on whichever comes first, that is, uses is reduced to zero or the time has expired. • If both uses and time are entered and both are set to zero, it is the same as not setting the temporary password at all. <p>This command can be entered at any time and the new parameters overwrite the existing temporary password’s parameters.</p>	<p>✓</p>

Table 13
Internet Telephone Installer Password commands (Part 3 of 3)

IPL> command	Description	Element Manager
nodePwdSet "password"	<p>Sets and enables the administrative Internet Telephone Installer (node) Password. This is also known as the node level Internet Telephone Installer Password.</p> <p>If a null password (0 characters in length) is configured, all Internet Telephones that attempt to register after this command has been issued display a prompt for node password before the TN can be modified.</p> <p>The "password" parameter must be null or 6 to 14 digits in length; The valid characters are 0 – 9 * #.</p> <p>The null password causes the Node ID and Password screen on the Internet Telephone to be skipped during restart. This command can be entered at any time; the new password entered overwrites the prior password.</p>	✓

Enable IPL> commands

Table 14 lists the enable IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 14
Enable commands (Part 1 of 2)

IPL> command	Description	Element Manager
enIServices	Enables acceptance of resources registration.	✓
enIVTRK	Enables acceptance of Virtual Trunks registration.	✓

Table 14
Enable commands (Part 2 of 2)

IPL> command	Description	Element Manager
enITPS	Enables the TPS application and the registration process.	✓
enIGK	Puts local Gatekeeper in service.	✓

Graceful disable IPL> commands

Table 15 lists the graceful disable IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 15
Graceful disable commands (Part 1 of 2)

IPL> command	Description	Element Manager
disiAll	Gracefully disables both the LTPS and voice gateway service on the Voice Gateway Media Card. Gracefully disables the LTPS on the Succession Signaling Server.	✓
disiTPS	Gracefully disables the LTPS service on the Voice Gateway Media Card. Prevents new Internet Telephones registering on the card, and all registered Internet Telephones are redirected to another card when idle.	✓
enaAll	Enables both the LTPS and voice gateway service on the Voice Gateway Media Card. Enables the LTPS on the Succession Signaling Server.	
enaTPS	Enables the LTPS service.	

Table 15
Graceful disable commands (Part 2 of 2)

IPL> command	Description	Element Manager
disServices	Gracefully switches the registered resources to the other Succession Signaling Servers located in the same node. This command will not interrupt established calls.	✓
disVTRK	Gracefully switches the registered Virtual Trunks to the other Succession Signaling Servers located in the same node.	✓
disTPS	Gracefully switches the registered Line TPS to the other Succession Signaling Servers located in the same node.	✓
disGK	Puts the local Gatekeeper out of service and puts the alternate Gatekeeper in service.	✓

Forced disable IPL> commands

Table 16 lists the forced disable IPL> commands. These commands must be entered at the vxWorks™ shell.

Table 16
Forced disable commands (Part 1 of 2)

IPL> command	Description	Element Manager
forcedisServices	Forces all registered resources on the Succession Signaling Server to unregister and let Gatekeeper go out of service.	✓
forcedisVTRK	Forces all registered Virtual Trunks on the Succession Signaling Server to unregister.	✓
forcedisTPS	Forces the Line TPS on the Succession Signaling Server to unregister.	✓

Table 16
Forced disable commands (Part 2 of 2)

IPL> command	Description	Element Manager
forcedisGK	Forces the local Gatekeeper out of service.	✓

Patch IPL> commands

Table 17 lists the patch commands. These commands must be entered at the PDT shell.

Table 17
Patch commands

IPL> command	Description	Element Manager
pnew	Creates memory patches for the card.	✓
pload	Loads a patch file from the filesystem on Flash memory into DRAM memory.	✓
pins	Puts a patch into service that has been loaded into memory using pload.	✓
pout	Removes a patch from the DRAM memory.	✓
poos	Deactivates a patch by restoring the patched procedure to its original state.	✓
plis	Gives detailed patch status for a loaded patch.	✓
pstat	Gives summary status for one or all loaded patches.	✓

Maintenance

Contents

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Introduction

This section explains how to use and maintain the Succession Signaling Server and its software after installation. Some of the tasks included in this section are:

- Using the Succession Signaling Server tools menu.
- Restricting web access to the ELAN.
- Setting the Succession Signaling Server port speed.
- Replacing a faulty Succession Signaling Server.

Connecting a maintenance terminal

A maintenance terminal is required for installation, configuration and maintenance of the Succession Signaling Server.

To connect and configure a maintenance terminal for the Succession Signaling Server, see Procedure 3 on [page 44](#).

Obtaining software

The Succession Signaling Server Install CD-ROM includes the Succession Signaling Server software, as well as Internet Telephone firmware and VGMC loadware. If the CD-ROM is not available, an image can be downloaded from the Nortel Networks website, and a CD-ROM created from that image.

Once you have the CD, you can install new software or upgrade software on an existing Succession Signaling Server.

To download the CD-ROM image, use Procedure 4 on [page 57](#). To create the Succession Signaling Server CD-ROM, use Procedure 5 on [page 57](#).

The Software CD-ROM must be readable in a standard CD-ROM drive. After you create a CD from the CD image, the CD contains several directories and files. If you cannot create a CD, refer to the CD writer's software documentation.

Logging in to the Succession Signaling Server

To access the Succession Signaling Server from a maintenance terminal, you must log in to the vxWorks™ shell using Procedure 7 on [page 79](#). From this shell, you can change the Succession Signaling Server port speed (see Procedure 11 on [page 103](#)) and run the commands described in “Command line interface (CLI) commands” on [page 87](#).

Succession Signaling Server tools menu

From the Tools Menu in the Succession Signaling Server Install Tool, you can perform the following tasks:

- set the system time and date
- repartition and initialize the hard desk
- reset the Administrator login and password
- test the hard disk
- change the web server security flag

Use Procedure 9 to access the Tools Menu options in the Succession Signaling Server Install Tool.

Procedure 9

Using the Tools Menu in the Succession Signaling Server Install Tool

- 1 Enter 't' at the Install Tool Main Menu (Figure 28 on [page 66](#)) to access the Tools Menu. The Tools Menu appears, as shown in Figure 44 on [page 101](#).

Figure 44
Tools menu

```
Succession Enterprise Software Signaling Server Install Tool (sse-3.xx.xx)
=====
                                T O O L S   M E N U

This is the Tools Menu. Please select one of the options below.

Please enter:
<CR> -> <a> - To set system date and time.
        <b> - To partition and initialize the hard disk.
        <c> - To reset the Administrator login and password.
        <d> - To test the hard disk.
        <e> - To change the web server security flag.
        <m> - To return to the Main Menu.

Enter Choice>
```

- 2 Under the Tools menu, you can enter:
 - 'a' to set the date and time (default).
 - 'b' to repartition and reinitialize the hard disk. This option results in a reboot. Leave the Succession Signaling Server Software CD-ROM in the drive so that the Install Tool can restart. Then, reinstall the Succession Signaling Server software as described in Procedure 6 on [page 58](#).
 - 'c' to reset the Administrator login and password.
 - 'd' to test the hard disk.
 - 'e' to change the web server security flag. See "Restricting web access to ELAN" on [page 102](#).

End of Procedure

Restricting web access to ELAN

By default, Element Manager can be accessed from management workstations (web browsers) on any subnet. A security flag can be enabled to restrict Element Manager access to hosts on the ELAN subnet.

Procedure 10 **Changing the web server security flag**

If this Succession Signaling Server's IP Telephony node is already managed using Element Manager, then ensure that the Succession Signaling Server has the latest node files before performing this procedure, by performing a node file transfer.

- 1 Open the Tools Menu in the Succession Signaling Server Install Tool.
 - a. Load the Succession Signaling Server Install Tool.
 - b. At the Main Menu, enter 't' to open the Tools Menu.
- 2 Enter 'e' to change the web server security flag. The current value of the flag displays:

Currently, the flag is set to: DISABLED
- 3 Change the flag:

- a. To disable the web server security flag, enter 'a'. The new value of the flag displays.
 - b. To enable the web server security flag, enter 'b'. The new value of the flag displays.
 - c. To exit this menu without changing the web server security flag, enter 'q'.
- 4 Enter 'm' to exit the Succession Signaling Server Install Tool.
 - 5 Import the IP Telephony node files for the web security flag change to take affect. Refer to "Importing IP Telephony node files" on [page 84](#).

If this is a first-time Succession Signaling Server or node installation, the pre-configured IP Telephony node files are imported. If this is an upgrade of the Succession Signaling Server, the web server security flag change is saved to the master copy of the node files on the Succession Call Server.

End of Procedure

Setting the Succession Signaling Server port speed

Administrators can change the port speed of the Succession Signaling Server for a maintenance terminal connection.

Procedure 11

Changing the Succession Signaling Server port speed

- 1 Log in to the Succession Signaling Server. See Procedure 7 on [page 79](#).
- 2 Enter `stty 9600` to change the port speed to 9600 baud.
Note: Acceptable values for the maintenance port speed are 9600, 19 200, 38 400 and 115 200.
- 3 Change the port speed on the terminal, terminal emulator, or PC (which can require a terminal emulator reset).
- 4 Press <cr> several times until the command line prompt is visible at the new speed.
- 5 Enter the `exit` command to log out of the CLI.

End of Procedure

Replacing a defective Succession Signaling Server

Note: The Succession Signaling Server is not a user-serviceable device. Any defective units should be returned to the supplier.



WARNING

Before replacing a defective Succession Signaling Server, back up the IP Telephony node database files. Use the EDD command in LD 43 or use Element Manager (refer to “Backing up IP Telephony node configuration files” on [page 85](#)).

To replace a defective Succession Signaling Server:

- 1** Remove the defective Succession Signaling Server.
 - a** Turn off the power to the defective unit.
 - b** Disconnect all cables from the unit, including the power cord.
 - c** Loosen the screws through the faceplate of the Succession Signaling Server to the rack-mount bracket, and slide the unit out of the rack.
- 2** Install the new Succession Signaling Server hardware. Refer to the procedures in “Hardware installation” on [page 33](#).
- 3** Install the Succession Signaling Server software and configure it. Refer to the procedures in “Software installation” on [page 55](#).

Appendix A: Upgrading memory

Contents

This section contains information on the following topics:

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Preparation	106
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Introduction

For capacity reasons, the memory on the Succession Signaling Server has been increased from 256MB to 512MB. 256MB is more than sufficient for Succession 1000 Release 1.0 and 2.0 systems in smaller environments (less than 5000 Internet Telephones).

This change is effective on all Succession Signaling Servers shipped with Succession 3.0 Software. To enable customers to redeploy their current NTDU27AA 01, 02 or 03 Succession Signaling Servers into a large Succession 3.0 environment, a Succession Signaling Server Memory Upgrade Kit (NTDU80CA) is available. This section explains how to upgrade the memory using this kit.

Note: These instructions are intended for qualified technical personnel with experience installing and configuring servers.

Preparation

Read the following warnings carefully before beginning the upgrade process.



DANGER OF ELECTRIC SHOCK

SYSTEM POWER ON/OFF: The Power button on the front panel of the Succession Signaling Server **DOES NOT** remove ac power to the Succession Signaling Server system. Some circuitry in the Succession Signaling Server may continue to operate even through the front panel Power button is off. Always disconnect the power cord from the ac power source or wall outlet before performing any of the procedures in this section. Failure to do so can result in personal injury or equipment damage.



DANGER OF ELECTRIC SHOCK

HAZARDOUS CONDITIONS, POWER SUPPLY: Hazardous voltage, current, and energy levels are present inside the power supply. There are no-user-serviceable parts inside the power supply; servicing should be done by technically qualified personnel.



DANGER OF ELECTRIC SHOCK

HAZARDOUS CONDITIONS, DEVICES, AND CABLES: Hazardous electrical conditions may be present on power, telephone, and communication cables. Press the Power button to turn off the Succession Signaling Server, and disconnect the power cord from the ac power source, telecommunications systems, networks, and modems attached to the Succession Signaling Server before removing the cover. Failure to do so can result in personal injury or equipment damage.

**CAUTION WITH ESDS DEVICES**

ELECTROSTATIC DISCHARGE (ESD) AND ESD PROTECTION: Since the Succession Signaling Server can be extremely sensitive to ESD, perform the procedures in this section only at an ESD workstation. If an ESD station is not available, you can reduce the risk of ESD damage by:

- Wearing the antistatic wrist strap provided and attach it to a metal part of the Succession Signaling Server.
- Touch the metal on the Succession Signaling Server chassis before touching the Succession Signaling Server components.
- Keep part of your body in contact with the metal Succession Signaling Server chassis to dissipate the static charge while handling the components.
- Avoid moving around unnecessarily.
- Hold the Succession Signaling Server components (especially boards) only by the edges.
- Place the Succession Signaling Server components on a grounded, static-free surface. Use a conductive foam pad if available, but NOT the component wrapper.
- Do not slide the components over any surface.

**CAUTION — Service Interruption**

COOLING AND AIRFLOW: For proper cooling and airflow, always install the chassis access cover before turned on the system. Operating the system without the cover in place can cause overheating and damage to system parts.

Upgrading the memory

To upgrade the memory of the Succession Signaling Server, perform the following:

- 1 Remove the cover of the Succession Signaling Server.
- 2 Remove the existing DIMM boards.
- 3 Insert the new DIMM boards.
- 4 Replace the cover on the Succession Signaling Server.

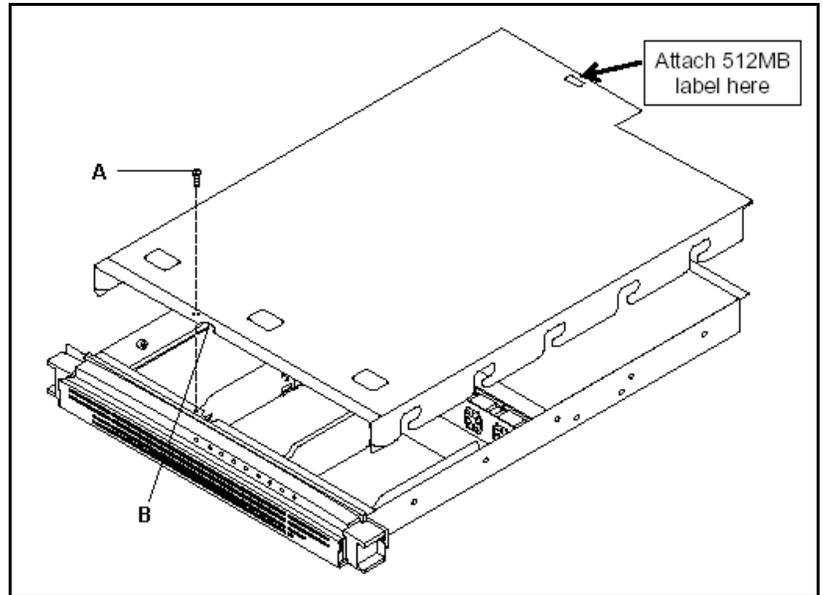
These steps are described in Procedure 12.

Procedure 12

Upgrading the Succession Signaling Server memory

- 1 Remove the cover from the Succession Signaling Server. Refer to Figure 45 on [page 109](#).
 - a. Use a Phillips screwdriver to remove the screw (A) from the front edge of the cover.
 - b. Grasp the back edge of the cover. Simultaneously, pull from the back edge and push near the front edge until the cover slides out from under the edge of the Succession Signaling Server front panel.
 - c. Grasp the notch (B) in the front center of the cover and lift up to remove the cover.

Figure 45
Removing/replacing the cover on the Succession Signaling Server



- 2 Remove the 128 MB DIMM boards from the Succession Signaling Server. Refer to Figure 46 on [page 110](#).



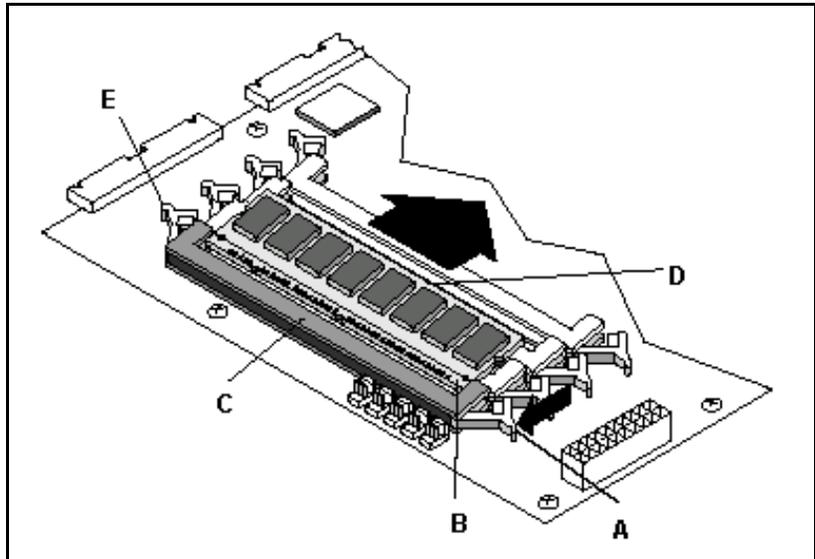
CAUTION

Hold the tips of your fingers lightly on the back edge (D) of the DIMM board to prevent the board from suddenly ejecting from the socket (C). The DIMM board or other components on the Succession Signaling Server board could be damaged if the DIMM board is allowed to suddenly eject from the socket.

Note: Remove all of the original 128MB DIMM boards.

- a. Grasp the ejector lever (A) on one end of the DIMM board and push down on the lever until the edge of the board connector (B) just lifts out of the socket (C).
- b. Grasp the ejector lever (E) on the other end of the DIMM board and carefully push down on the lever until the DIMM board is loose from the socket.

Figure 46
Removing a 128MB DIMM board



- 3 Install the new 512MB DIMM boards in the Succession Signaling Server. Refer to Figure 47 on [page 112](#).

**CAUTION**

Use extreme care when installing a DIMM board. Applying too much pressure or misaligning the board in the socket can damage the sockets or DIMM board edge connectors. DIMM board edge connectors are keyed and can be inserted only one way.

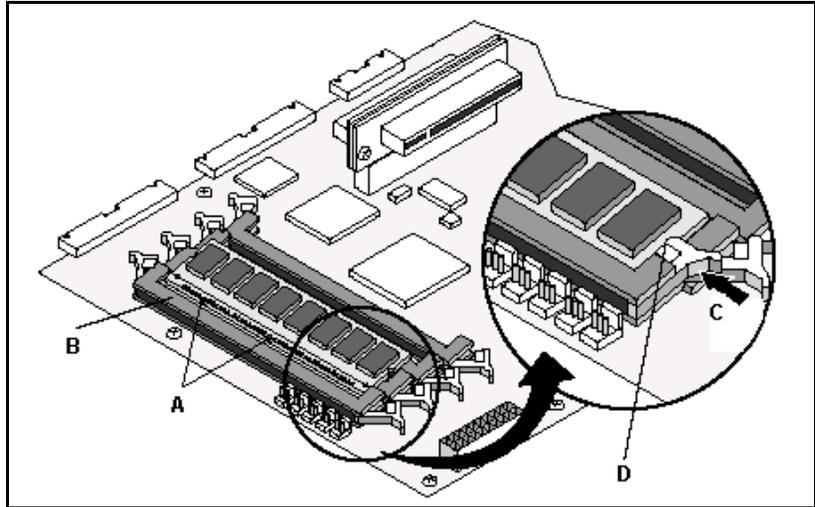
To reduce the risk of damaging a connector, install the DIMM boards starting with the back socket on the Succession Signaling Server board and move toward the front of the Succession Signaling Server board.

Note 1: Use only DIMM boards contained in the NTDU80CA Succession Signaling Server Memory Upgrade Kit. Nortel Networks does not recommend the use of other memory modules.

Note 2: Do not mix the new 512MB DIMM boards with the original 128MB DIMM boards. Make sure that all the original boards have been removed during step 2 on [page 109](#).

- a. Align the key slots (A) in the edge of the DIMM board with the corresponding slots in the mating board socket (B). (The connectors are keyed to mate in only one direction.)
- b. Firmly press the DIMM board straight down and all the way into the Succession Signaling Server board socket.
- c. Ensure the DIMM board is locked in by pressing the levers (C) on each end of the Succession Signaling Server board socket into the mating notches (D) on each edge of the DIMM board.

Figure 47
Installing a 512MB DIMM board



- 4 Replace the cover on the Succession Signaling Server. Refer to Figure 45 on [page 109](#).
 - a. Position the cover on the chassis with the notched edge (B) facing the front and the slotted sides of the cover *inside* the chassis frame.
 - b. Grasp the back edge of the cover. Simultaneously, push from the back and top until the cover slides all the way under the edge of the Succession Signaling Server front panel.
 - c. Use a Phillips screwdriver and the screw (A) removed in step 1 on [page 108](#) to securely attach the cover to the chassis.
 - d. Attach the memory label (reading “512MB”) to the back edge of the cover.

End of Procedure

Verifying a successful memory upgrade

Use this procedure to ensure that the memory upgrade was successful.

Procedure 13**Verifying a successful memory upgrade**

- 1 Connect a standard serial interface (straight-through) cable to the maintenance terminal and to the serial port on the back (not the front) of the Succession Signaling Server.
- 2 Using a terminal software program, such as Microsoft Windows HyperTerminal, configure the terminal type of the maintenance terminal serial port to “auto detect” terminal type.
- 3 Connect the power cable to the Succession Signaling Server.
- 4 Press the power switch, the left-most button on the front of the Succession Signaling Server.

The following should appear on the maintenance terminal screen:

```
AMIBIOS (C)2001 American Megatrends Inc.  
Copyright 1996-2001 Intel Corporation  
  
TR440BXA.86B.0042.P15.0107200951  
  
Intel(R) Pentium(R)III processor, 700MHz  
512MB OK  
  
Hit <F2> if you want to run SETUP
```

- 5 <Optional> To do a more detailed memory test:
 - a. Press the F2 button.
 - b. Navigate to the “Boot” menu.
 - c. Disable the Quickstart option.
 - d. Exit, saving the changes.

Do not change any other settings. The Succession Signaling Server reboots and performs a more detailed memory test at boot time.

If “512MB OK” appears on the screen, the memory upgrade has been successful. If not, the memory upgrade has failed.

- 6 Power off the Succession Signaling Server by depressing the Power button for seven seconds.
- 7 Disconnect the power cable.

End of Procedure

List of terms

ELAN

Embedded Local Area Network. This isolated section of the LAN connects the Succession Signaling Server to other system components for system communication purposes.

H.323

A standard approved by the International Telecommunication Union (ITU) that defines how audiovisual conferencing data is transmitted across networks. In theory, H.323 enables users to participate in the same conference even though they are using different videoconferencing applications. Although most videoconferencing vendors have announced that their products conform to H.323, it is too early to say whether such adherence actually results in interoperability.

IP

Abbreviation of **Internet Protocol**, pronounced as two separate letters. IP specifies the format of packets, also called datagrams, and the addressing scheme. Most networks combine IP with a higher-level protocol called Transport Control Protocol (TCP), which establishes a virtual connection between a destination and a source.

IP by itself is something like the postal system. It enables you to address a package and drop it in the system, but there's no direct link between you and the recipient. TCP/IP, on the other hand, establishes a connection between two hosts so that they can send messages back and forth for a period of time.

TLAN

Telephony Local Area Network. This isolated section of the network connects the Voice Gateway Media Cards, the Succession Signaling Server, and the Internet Telephones for telephony communication purposes.

TPS

Internet Telephone Terminal Proxy Server. This server controls the connection of Internet Telephones. It resides on the Succession Signaling Server with an emergency backup on the Voice Gateway Media Card.

Succession 1000, Succession 1000M

Signaling Server

Installation and Configuration

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