



Cisco Digital PBX Adapter 7630 Administration Guide

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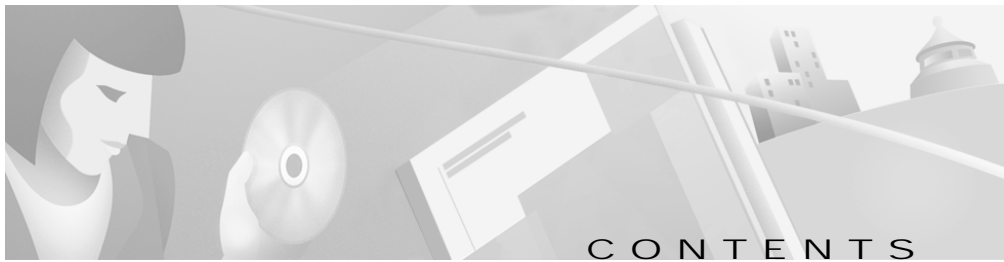
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About This Guide xi

Overview	xi
Audience	xi
Objectives	xii
Organization	xii
Related Documentation	xiii
Documentation CD-ROM	xiii
Cisco Connection Online	xiii
Document Conventions	xiv

CHAPTER 1

Overview 1-1

Understanding the DPA 7630	1-2
Understanding How the DPA 7630 Works	1-3
Why is the DPA 7630 Needed?	1-4
Can I Just Use SMDI?	1-4
What If I Cannot Use SMDI?	1-5
Choosing an Integration Mode	1-5
Using the Simple Integration Mode	1-6
Understanding the Simple Integration Mode	1-6
Implementing the Simple Integration Mode	1-7
Using the Hybrid Integration Mode	1-9
Understanding the Hybrid Integration Mode	1-10
Implementing the Hybrid Integration	1-12

Using the Multiple Integration 1-15

CHAPTER 2

Installing the DPA 7630 2-1

Preparing for Installation 2-1

Network Requirements 2-2

Safety 2-2

Required Tools and Cabling 2-4

Installing the DPA 7630 2-5

Installing the DPA 7630 in a Rack 2-5

Attaching the Brackets 2-5

Putting the DPA 7630 in a Rack 2-7

Setting the DPA 7630 on a Shelf or Table 2-7

Connecting the Cisco DPA 7630 to the Network 2-8

Connecting to the Ethernet Port 2-8

Connecting to the Telco Connectors 2-9

Connecting to the Console Port 2-10

Verifying Installation 2-11

CHAPTER 3

Preparing the Cisco CallManager and Octel Systems 3-1

Overview of Required Tasks 3-1

Configuring Cisco CallManager 3-3

Adding the DPA 7630 to Cisco CallManager 3-3

Using Auto-Registration 3-4

Adding the DPA 7630 Manually 3-5

Configuring the DPA Ports and Phones 3-5

Configuring Call Ports 3-6

Configuring Octel MWI Ports 3-7

- Configuring the Virtual Port 3-8
- Configuring an End-User Phone 3-9
- Enabling the Message Waiting Light 3-10
- Setting Up the Voice Mail Hunt Group 3-11
 - Configuring the Pilot Directory Number 3-12
 - Setting the Hop Count 3-12
 - Setting No-Answer Timeout 3-13
- Configuring the Octel Systems 3-13
 - Setting Dialing Sequence for Message Waiting Indicator 3-14
 - Assigning Incoming, Outgoing, and MWI Lines 3-14

CHAPTER 4**Configuring the DPA 7630 4-1**

- Accessing Configuration Options 4-1
 - Using the Console Port 4-2
 - Using Telnet 4-2
 - Displaying the Main Menu 4-3
- Configuring Network Settings 4-4
 - Using DHCP 4-4
 - Setting the Host Name 4-5
 - Setting the IP Address 4-6
 - Setting the Subnet Mask 4-6
 - Setting the Default Router 4-7
 - Setting the DNS Server 4-7
 - Setting the Domain Name 4-8
 - Setting the NTP Server 4-8
 - Enabling CDP 4-9
- Configuring Passwords 4-9

- Configuring the Login Password 4-9
- Configuring the Enable Password 4-10
- Configuring Octel/Lucent Integration Settings 4-10
 - Setting the Integration Mode 4-10
 - Entering Dialing Sequences for MWI Activation 4-11
 - Setting Companding Law 4-12
 - Clearing Lucent MWIs 4-12
- Configuring Cisco CallManager Settings 4-13
 - Assigning TFTP Server 4-13
 - Entering MWI for Cisco CallManager 4-13
 - Entering Cisco CallManager "Pilot" Directory Number 4-14
- Configuring SNMP Settings 4-15
 - Setting Community Strings 4-15
 - Configuring Contact Information 4-16
 - Configuring Contact Name 4-16
 - Configuring Location 4-16
 - Configuring Trap Settings 4-16
 - Enabling Authentication Traps 4-17
 - Configuring Trap Receiver Stations 4-17
- Restarting the DPA 7630 4-17
- Upgrading Software Images 4-18
 - Upgrading the Main image 4-18
 - Upgrading the Boot Loader 4-19
 - Resolving an Incomplete Upgrade 4-20
- CHAPTER 5 Troubleshooting the DPA 7630 5-1**
 - Displaying Status and Configuration Settings 5-1

- Displaying System Status 5-2
- Displaying Network Statistics 5-2
- Displaying Port Status 5-3
- Displaying Cisco CallManager Status 5-5
- Displaying Octel Integration Status 5-7
- Displaying Current Configuration 5-7
- Interpreting LED Status 5-8
- Working with the Event Log 5-9
 - Identifying a Syslog Server 5-10
 - Selecting Logging Levels and Logged Ports 5-10
 - Displaying Recent Messages 5-11
 - Resolving Error Messages 5-12

APPENDIX A

- Physical and Operating Specifications **A-1**
- Port and Cable Specifications **A-2**
- Port Pinouts **A-2**
 - Telco Port Pinouts **A-2**
 - Ethernet Port Pinouts **A-4**
 - Console Port Pinouts **A-4**
- Regulatory Safety Compliance **A-5**

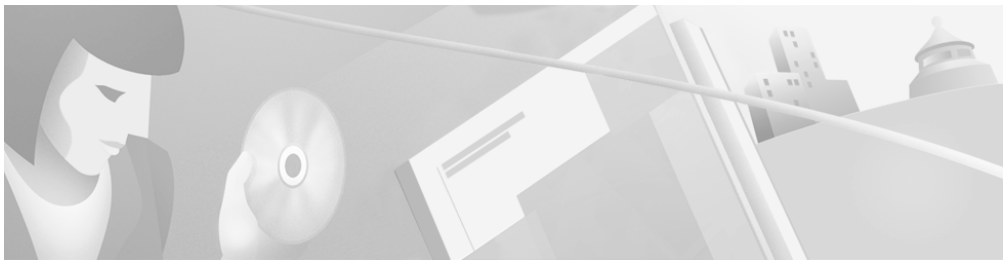
APPENDIX B

- Installation Warning **B-1**
- Installation Warning **B-2**
- Product Disposal Warning **B-3**
- Restricted Area Warning **B-4**
- No On/Off Switch Warning **B-6**
- Main Disconnecting Device **B-7**

Circuit Breaker (15A) Warning **B-8**
Ground Conductor Warning **B-10**
Safety Cover Requirement **B-12**
Jewelry Removal Warning **B-14**
Lightning Activity Warning **B-16**
SELV Circuit Warning **B-17**
TN Power Warning **B-19**
Chassis Warning—Rack-Mounting and Servicing **B-20**

GLOSSARY

INDEX



About This Guide

Overview

The *Cisco Digital PBX Adapter 7630 Administration Guide* provides you with the information you need to understand, install, configure, and manage the Cisco Digital PBX Adapter 7630 (DPA 7630) on your network.

Audience

Network engineers, system administrators, and telecom engineers should review this guide to learn the steps required to properly set up the DPA 7630 in the network.

The tasks described in this guide are considered to be administration-level tasks. Because of the close interaction of the DPA 7630 with Cisco CallManager, Lucent PBX, and Octel voice messaging systems, these tasks require that you are familiar with these systems as well.



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

Objectives

This guide provides the required steps to get the DPA 7630 up and running on the IP telephony network. Because of the complexity of an IP telephony network, this guide does not provide detailed information for required procedures performed on other Cisco or third-party devices. Refer to the documentation provided with these systems for installation and configuration instructions.

Organization

Table 1 provides an overview of the organization of this guide.

Table 1 *Cisco Digital PBX Adapter 7630 Administration Guide Organization*

Chapter	Description
Chapter 1, “Overview”	Provides conceptual overview of the DPA 7630, explanation of how the device interacts with other components in the IP telephony networks, and an overview of the required tasks.
Chapter 2, “Installing the DPA 7630”	Describes the steps required to properly and safely install and configure the DPA 7630 in your network.
Chapter 3, “Preparing the Cisco CallManager and Octel Systems”	Provides details about information required from the Cisco CallManager and Octel systems. Also includes information about registering the DPA 7630 in Cisco CallManager.
Chapter 4, “Configuring the DPA 7630”	Provides procedures for configuring network settings, verifying status, and making global changes to the DPA 7630.
Chapter 5, “Troubleshooting the DPA 7630”	Provides diagnostic and troubleshooting suggestions for the DPA 7630.
Appendix A, “Technical Specifications”	Provides a reference of the detailed technical specifications for the DPA 7630.
Appendix B, “Translated Safety Warnings”	Provides translations of safety warnings used in this guide.

Related Documentation

For information about Cisco CallManager and additional information about the Cisco DPA 7630, refer to these publications:

- *Cisco CallManager Administration Guide*
- *Cisco DPA 7630 Release Notes*

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.



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Document Conventions

This document uses the following conventions:

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .

Convention	Description
[]	Elements in square brackets are optional.
{ x y z }	Alternative keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in <code>screen font</code> .
boldface screen font	Information you must enter is in boldface screen font .
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords are in angle brackets.

Notes use the following conventions:



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the publication.

Cautions use the following conventions:



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Tips use the following conventions:



Tips

Means *the following information will help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information.

Warnings use the following conventions:



Warning

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. (To see translations of the warnings that appear in this publication, refer to the appendix, "Translated Safety Warnings.")

Waarschuwing

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen. (Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het aanhangsel "Translated Safety Warnings" (Vertalingen van veiligheidsvoorschriften) raadplegen.)

Varoitus

Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. (Tässä julkaisussa esiintyvien varoitusten käännökset löydät liitteestä "Translated Safety Warnings" (käännetyt turvallisuutta koskevat varoitukset).)

Attention

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures. Avant d'accéder à cet équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures courantes de prévention des accidents. Pour obtenir les traductions des mises en garde figurant dans cette publication, veuillez consulter l'annexe intitulée « Translated Safety Warnings » (Traduction des avis de sécurité).

- Warnung** Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewusst. (Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Anhang mit dem Titel "Translated Safety Warnings" (Übersetzung der Warnhinweise).)
- Avvertenza** Questo simbolo di avvertenza indica un pericolo. Si è in una situazione che può causare infortuni. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti. La traduzione delle avvertenze riportate in questa pubblicazione si trova nell'appendice, "Translated Safety Warnings" (Traduzione delle avvertenze di sicurezza).
- Advarsel** Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. (Hvis du vil se oversettelser av de advarelsene som finnes i denne publikasjonen, kan du se i vedlegget "Translated Safety Warnings" [Oversatte sikkerhetsadvarsler].)
- Aviso** Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes. (Para ver as traduções dos avisos que constam desta publicação, consulte o apêndice "Translated Safety Warnings" - "Traduções dos Avisos de Segurança").

- Advertencia** Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes. (Para ver traducciones de las advertencias que aparecen en esta publicación, consultar el apéndice titulado "Translated Safety Warnings.")
- Varning!** Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador. (Se förklaringar av de varningar som förekommer i denna publikation i appendix "Translated Safety Warnings" [Översatta säkerhetsvarningar].)
-



Overview

The Cisco Digital PBX Adapter 7630 (DPA 7630) enables you to integrate Cisco CallManager systems with Octel voice mail systems, which might also be connected to a Lucent Definity PBX system. You might want to do this if you have these existing third-party telephony systems in your network, and you want to continue to use them along with your Cisco IP telephony system.

For example, you can ensure that features such as message waiting indicators (MWI) for Octel voice messages are properly set on Cisco IP Phones (connected to Cisco CallManager) and traditional telephony phones (connected to Lucent PBX systems).

Using the DPA7630, you can integrate the following systems:

- Cisco CallManager 3.0(1) or higher
- Octel 200 and 300 voice messaging systems (using APIC/NPIC integration)
- Octel 250 and 350 voice messaging systems (using FLT-A/FLT-N integration)
- Lucent Definity G3 PBX systems

These sections provide you with an overview of the DPA 7630 and its interactions with the other components in traditional and IP telephony networks:

- Understanding the DPA 7630, page 1-2
- Understanding How the DPA 7630 Works, page 1-3
- Choosing an Integration Mode, page 1-5

Understanding the DPA 7630

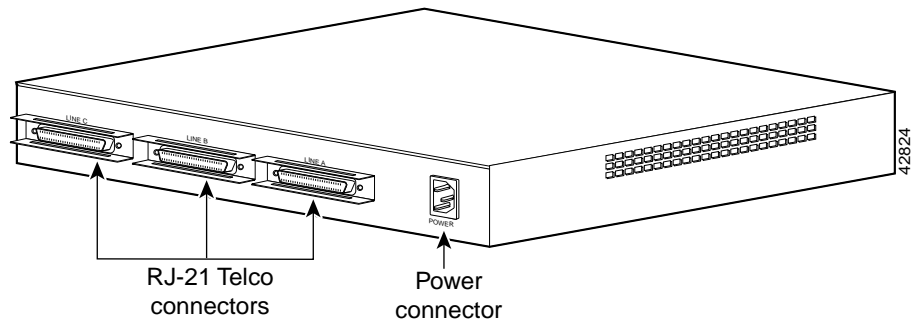
The DPA 7630 is a 19-inch, rack-mountable hardware device capable of emulating digital telephones or digital PBX ports. By emulating these devices, the DPA 7630 enables you to integrate existing Lucent PBX and Octel voice mail systems with Cisco CallManager.

DPA 7630—Rear View

The rear of the DPA 7630 (see Figure 1-1) includes the following interfaces:

- Lines C, B, A—RJ-21 telco connectors used to connect 24 lines (8 ports per connector) to the Lucent and Octel systems
- Power connector—used to provide power to the DPA 7630

Figure 1-1 Cisco DPA 7630 Rear View

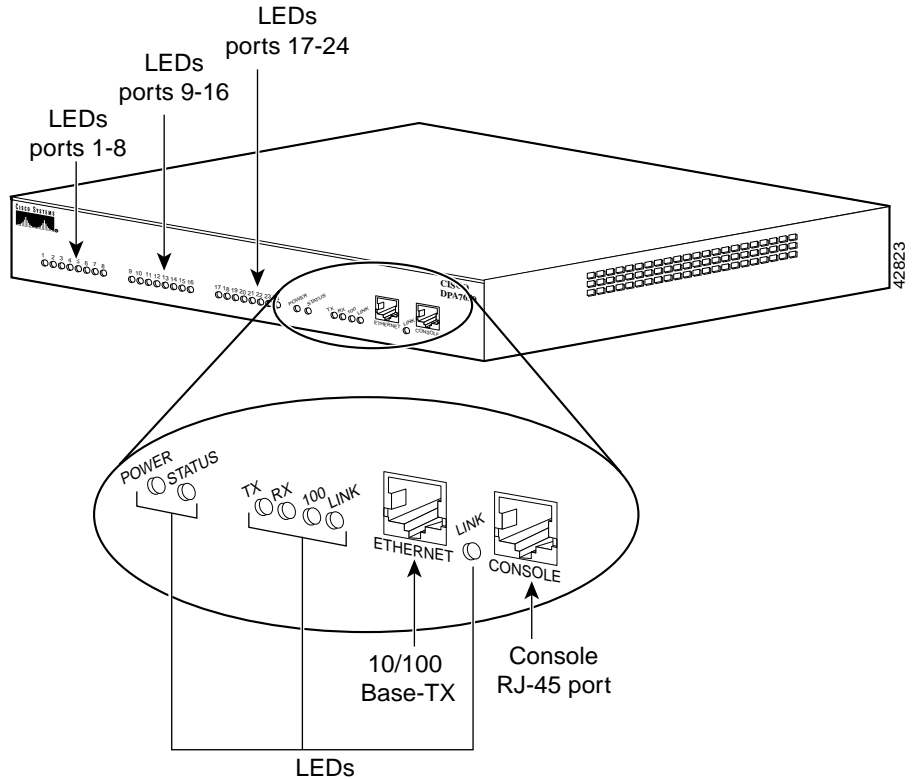


DPA 7630—Front View

The front of the DPA 7630 (see Figure 1-2) includes the following interfaces:

- 10/100 Mbps Ethernet port—RJ-45 port used to connect to IP network
- Console port—RJ-45 port used for configuring and managing the DPA 7630
- LED status indicators—used to indicate port and line status

Figure 1-2 Cisco DPA 7630 Front View



Understanding How the DPA 7630 Works

The Cisco DPA 7630 enables you to integrate your existing Octel voice mail and Lucent PBX systems with Cisco CallManager. The DPA 7630 functions by emulating digital phone or PBX systems. This capability allows it to appear like these devices to Cisco CallManager, Octel, and Lucent systems.

These sections provide an understanding of the purpose of the DPA 7630:

- Why is the DPA 7630 Needed?, page 1-4
- Can I Just Use SMDI?, page 1-4
- What If I Cannot Use SMDI?, page 1-5

Why is the DPA 7630 Needed?

If you want to migrate your telephony system from a Lucent Definity G3 PBX to Cisco CallManager, you must decide whether to do a complete cutover to Cisco CallManager or to migrate slowly. If you do a complete cutover to Cisco CallManager and uOne (Cisco's voice mail solution), you do not need the DPA 7630. However, if you are slowly migrating your systems, you might want to maintain some phones on the Lucent PBX while installing new phones on the Cisco CallManager system. You might want to use your existing Octel voice mail system with your Cisco CallManager system. In these cases, the DPA 7630 can assist your migration to Cisco CallManager.

Can I Just Use SMDI?

One difficulty with migration is that voice mail systems such as Octel were designed to integrate to only one PBX at a time. To resolve this difficulty, many people use Simplified Message Desk Interface (SMDI), which was designed to enable integrated voice mail services to multiple clients.

However, to use SMDI, the voice mail system must meet several qualifications:

- It must have sufficient database capacity to support two PBX systems simultaneously and to associate each mailbox with the correct PBX in order to send MWI information on the correct link.
- It must be possible to physically connect the IP network to the voice messaging system while maintaining the existing physical link to the PBX.
- It must support analog integration. SMDI is primarily an analog technology.

Additionally, SMDI requires reconfiguration of your existing telephony network.

What If I Cannot Use SMDI?

SMDI might not be an option for you, particularly if you are using a digital interface on your Octel systems. Octel systems with digital line cards emulate digital phones, appearing to the PBX as digital extensions, referred to as per-port or PBX integration cards (PIC). On PIC systems, the voice and data (for setting MWI) are on the same path. MWI is set and cleared via feature access codes on dedicated ports. Because these PIC ports use proprietary interfaces, you cannot use standard interfaces to connect them to the Cisco CallManager system.

However, the DPA 7630 can translate these interfaces to enable communication among the Octel, Lucent, and Cisco CallManager systems. Depending on the needs of your network, you can choose among several different integration methods.

Choosing an Integration Mode

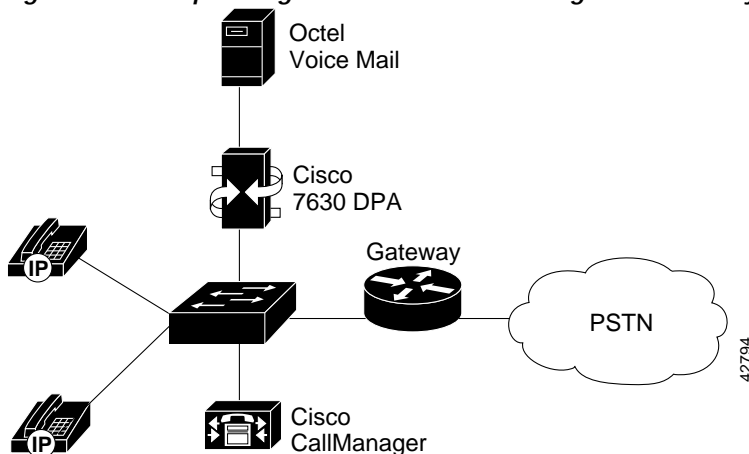
Select an integration mode based on the needs of your IP telephony network:

- **Simple**—Used to integrate Cisco CallManager with existing Octel voice mail systems. In this solution, you are not using a Lucent PBX system, or you are choosing not to integrate it with your IP telephony system. See “Using the Simple Integration Mode” section on page 1-6.
- **Hybrid**—Used to integrate Cisco CallManager with existing Octel voice mail systems and Lucent PBX systems. See “Using the Hybrid Integration Mode” section on page 1-9.
- **Multiple**—Used to integrate the systems in larger networks using a combination of simple and hybrid scenarios, which requires multiple DPA 7630 systems. See “Using the Multiple Integration” section on page 1-15

Using the Simple Integration Mode

In the simple integration mode, the DPA 7630 handles all processing and signaling between the Octel and Cisco CallManager systems (see Figure 1-3).

Figure 1-3 Simple Integration of Cisco CallManager and Octel Systems



Understanding the Simple Integration Mode

In this integration, all 24 ports on the DPA 7630 connect to the Octel system, providing 24 Octel ports for call processing. The DPA 7630 translates the messaging between Cisco CallManager and the Octel system.

The Octel System

The Octel voice mail system normally works by emulating a set of digital PBX phones. When a call goes to voice mail, the PBX “rings” one of those emulated phones. The Octel voice mail system reads the emulated phone display and gathers information about the call such as the caller, calling party, and the reason that the call was forwarded to voice mail; then, the Octel system answers the call.

When you use the DPA 7630, it emulates a PBX for the Octel voice mail system and emulates up to 24 Cisco IP Phones in Cisco CallManager. In this setup, when a call goes to voice mail, Cisco CallManager rings one of the emulated Cisco IP Phones (which is a port on the DPA 7630). The DPA 7630 translates this

ringing to a corresponding Octel voice mail port. Other aspects of the phone behavior that the DPA 7630 translates include format of the information on the display, line light behavior, call transferring, and setting MWIs.

For example, to turn on a Lucent MWI, the Octel system goes off-hook on one of its ports and dials a feature access code (typically *4) followed by the extension number. The DPA 7630 must recognize this and translate the sequence to the appropriate set of IP messages for Cisco CallManager.

The Cisco CallManager System

The DPA 7630 connects to the IP network and accesses its TFTP server to locate its assigned Cisco CallManager system. Using Skinny Station Protocol, the DPA 7630 sends its port configuration information to Cisco CallManager, and all 24 ports appear in the Cisco CallManager database as IP Phones. Additionally, a 25th port is added to the Cisco CallManager database to send MWI commands to the Cisco CallManager system.

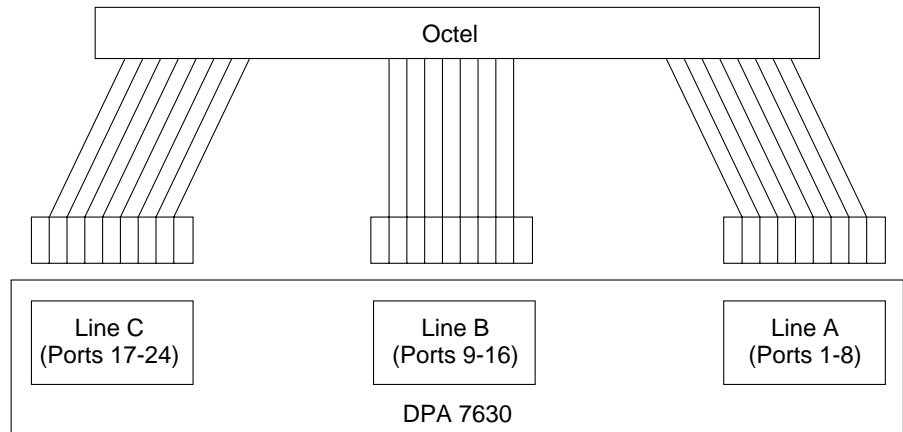
Implementing the Simple Integration Mode

To implement the simple integration mode, you must connect the DPA 7630 to the Octel and Cisco CallManager systems using these guidelines.

Connecting to the Octel System

Connect all the ports you need in Lines A, B, and C from the DPA 7630 to the Octel system (see Figure 1-4). There are 24 ports, but if you have fewer than 24 Octel ports, you can leave the remaining ports empty. On the Octel system, these 24 ports appear as 24 Lucent PBX ports.

Figure 1-4 Logical Connections of Simple Integration



- All 24 ports connected to Octel.
- Configure some lines to handle incoming calls, some for outgoing calls, and some for MWI.
- Do not enable incoming and outgoing calls on the same line.

Connecting to Cisco CallManager

You must also use the Ethernet port on the DPA 7630 to connect to the IP network, from which the DPA 7630 will connect to Cisco CallManager.

Resulting Line Configuration

This configuration results in 24 lines available for the following purposes:

- Incoming and outgoing messages between the Cisco CallManager system and the Octel system via the DPA 7630.
- Message waiting indicator (MWI) commands going from the Octel system to Cisco CallManager via the DPA 7630.

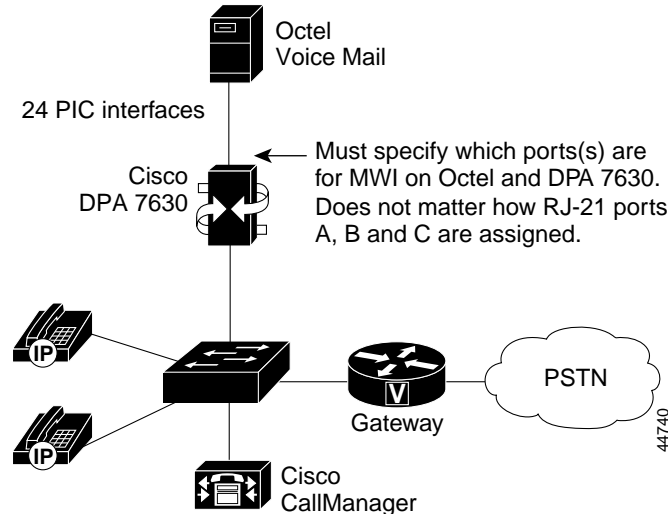
On the Octel system, you can designate which lines are used for handling incoming and outgoing messages to Cisco CallManager and which are used for setting MWI commands. You must ensure that all these lines from the Octel system connect to the DPA 7630. The DPA 7630 requires that you do not have any

one line designated for both incoming call processing and sending MWI commands. You can, however, use the same lines for setting MWIs and handling outgoing calls.

Once these 24 ports successfully connect to Cisco CallManager, they appear in the database as Cisco IP Phones. If some ports are not used, they do not appear in the Cisco CallManager database. For example, if you are only using 12 ports, only 12 IP phones appear in the Cisco CallManager database.

Additionally, a separate virtual IP phone (port 25) appears in Cisco CallManager. This virtual IP phone is created automatically by the DPA 7630, and it is responsible for setting the MWIs on the Cisco IP Phones connected to Cisco CallManager.

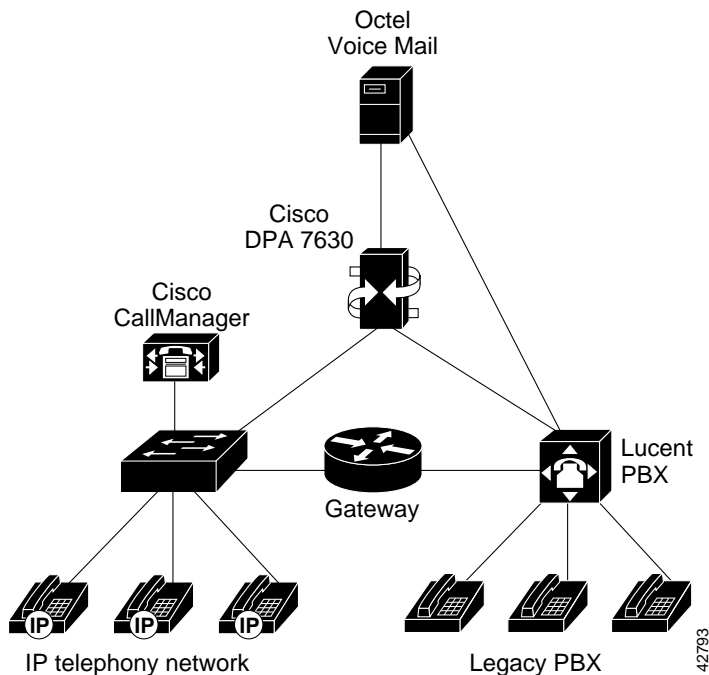
Figure 1-5 Resulting Simple Integrated Network



Using the Hybrid Integration Mode

If you want to connect Cisco CallManager to Octel voice mail and Lucent PBX systems, you must use the hybrid integration mode. In the hybrid configuration, the DPA 7630 handles processing and signaling among the Octel, Lucent, and Cisco CallManager systems (see Figure 1-6).

Figure 1-6 Hybrid Integration of Cisco CallManager, Octel, and Lucent Systems



Understanding the Hybrid Integration Mode

The hybrid integration mode requires interaction among the DPA 7630, the Octel voice mail system, the Lucent PBX, and Cisco CallManager.

The Octel and Lucent Systems

A Cisco CallManager IP-based telephony system can be connected to a PBX using an ISDN PRI card in the Lucent PBX and an ISDN PRI gateway on the IP network. This setup allows users on the IP phones and users on the Lucent digital phones to make and receive telephone calls to each other.

However, this configuration does not resolve many of the following issues with the voice mail system:

- The PRI link loses information.

When a user on an IP phone accesses the voice mail system directly, the extension number of the IP phone is not transferred across the ISDN PRI link. Therefore, the voice mail system cannot give the correct greeting to the user of the IP phone, and users must enter their voice mailbox number.

- The voice mail system cannot light the MWI light of IP phones.

On a Lucent PBX, the voice mail system controls the phones' MWI lights by dialing feature access codes. This does not work across the ISDN PRI link. For example, if IP phone 1234 is left a message, the voice mail system notifies the PBX to light MWI 1234, which the PBX considers an error because it does not have extension 1234.

To resolve these problems, up to 16 of the ports on the DPA 7630 can connect to the Octel system in the same way as in the simple integration mode. You can then set up a separate hunt group for the IP phones, which is accessed using one of the lines connected to the DPA 7630. This solution enables the following call types to function properly because the caller and number are no longer lost:

- Direct calls to the voice mail system from an IP phone
- Calls to an IP phone that is forwarded to voice mail

Because the Octel voice mail system cannot determine which MWI lines are used for particular extensions, the DPA 7630 must handle all MWI requests from the Octel system. Therefore, the remaining 8 ports on the DPA 7630 must connect to the Lucent PBX system. The DPA 7630 performs a pass-through operation on these ports, allowing the Lucent and Octel systems to function as before.

However, because the DPA 7630 does not have knowledge about the dial plans, it sends the MWI command to both the Lucent PBX system and Cisco CallManager. The DPA 7630 ignores any errors received from either the PBX or Cisco CallManager.

Cisco CallManager System

Using the hybrid integration method, the DPA 7630 emulates up to 17 IP phones. There is one emulated phone for each line (up to 16) connected to the Octel system. The remaining eight ports on the DPA 7630 connect to the Lucent system and do not appear in Cisco CallManager.

Because the lines provide specific services (incoming calls, outgoing calls, settings MWIs), you configure them differently in Cisco CallManager. Refer to the "Configuring the DPA Ports and Phones" section on page 3-5 for details.

Implementing the Hybrid Integration

To implement the hybrid integration, you must connect the DPA 7630 to the Octel, Lucent, and Cisco CallManager systems using these guidelines.

Connecting to the Octel and Lucent Systems

To use this configuration, all MWI lines for the Lucent and Cisco CallManager systems must pass through the DPA 7630, following these guidelines (see Figure 1-7):

- Line A (ports 1-8) connects to the Octel system and handles call processing. You can designate each line to handle incoming or outgoing messaging, but a single line cannot support both.
- Line B (ports 9-16) connects to the Octel system. A portion of these lines can be used for call processing (as with Line A), but all MWI lines must connect through Line B. So, if you have n MWI lines, you have $8-n$ available for incoming messages on ports 9-16 (in addition to the 8 ports available on Line A).

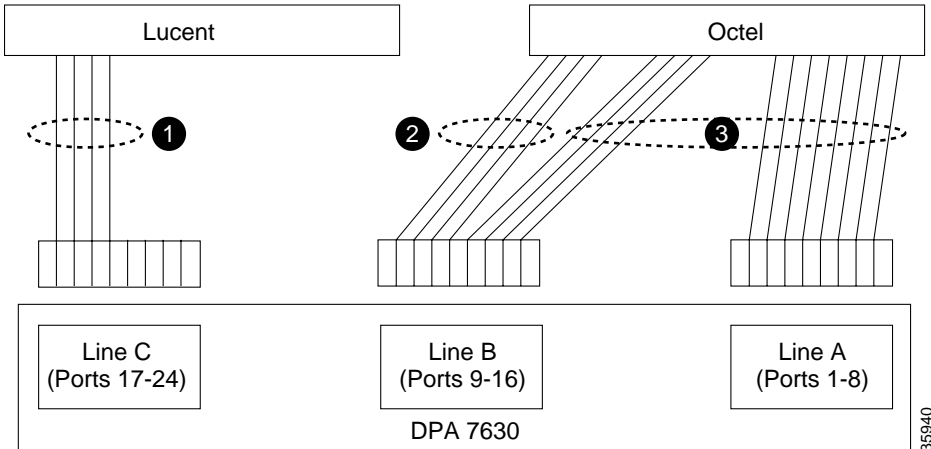
Also, ensure the MWI lines have a one-to-one correspondence with the MWI lines in Line C, in both quantity and physical location. For example, if you assign the last three ports on Line B (ports 14, 15, and 16) to be Octel MWI lines, you must also assign the last three ports on Line C (ports 22, 23, and 24) to be Lucent MWI lines.

- Line C (ports 17-24) connects to the Lucent system for setting MWI. Ensure these MWI lines have a one-to-one correspondence with the MWI lines in Line B, in both quantity and physical location. The remaining ports on Line C are not available. You cannot use them to connect to the Octel system.

For example, if you assign the last three ports on Line B (ports 14, 15, and 16) to be Octel MWI lines, you must also assign the last three ports on Line C (ports 22, 23, and 24) to be Lucent MWI lines. The remaining ports on Line C (ports 21, 20, 19, 18, and 17) are not used.

- Ensure other Octel messaging (such as outgoing calls) connect directly to the Lucent PBX. Do not pass these through the DPA 7630.

Figure 1-7 Logical Connections of Hybrid Integration



- 1 Assign these 4 lines to set MWI on the Lucent PBX system.
- 2 Assign these 4 lines to handle MWI commands. Use the same number of lines and corresponding ports as those on Line C.
- 3 Assign these 12 lines to handle either incoming calls or outgoing calls. Do not enable incoming and outgoing calls on the same line.

Connecting to Cisco CallManager

The physical connection to Cisco CallManager in the hybrid integration mode is identical to the simple integration mode. You must use the Ethernet port on the DPA 7630 to connect to the IP network, from which the DPA 7630 will connect to Cisco CallManager.

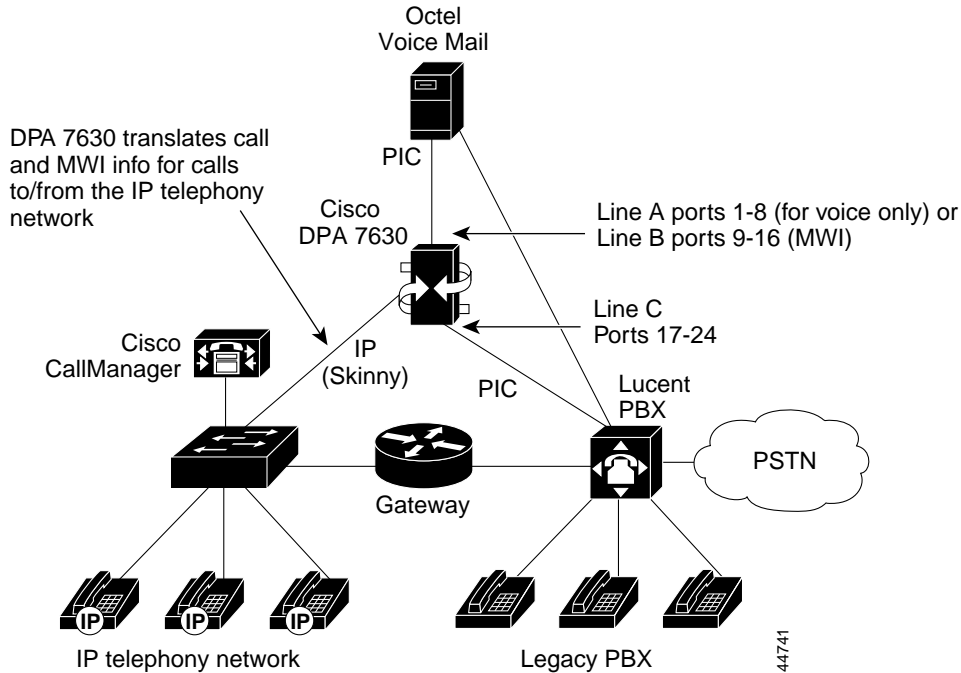
Resulting Line Configuration

This configuration results in the following line configuration, where n equals the number of MWI lines assigned to the Octel and Lucent systems:

- $16-n$ lines for call processing to and from the Octel system.
- n lines connecting to the Lucent system are responsible for sending MWI messages to the phones connected to the Lucent PBX. You can also use these lines for outgoing messages to the Octel system.
- $8-n$ lines on Line C are not used.

Only the lines connected to the Octel system (maximum of 16) appear as Cisco IP Phones in Cisco CallManager. Additionally, another virtual IP phone (port 25) appears in Cisco CallManager. This virtual IP phone is created automatically by the DPA 7630, and it is responsible for setting the MWI messages on the IP phones connected to Cisco CallManager.

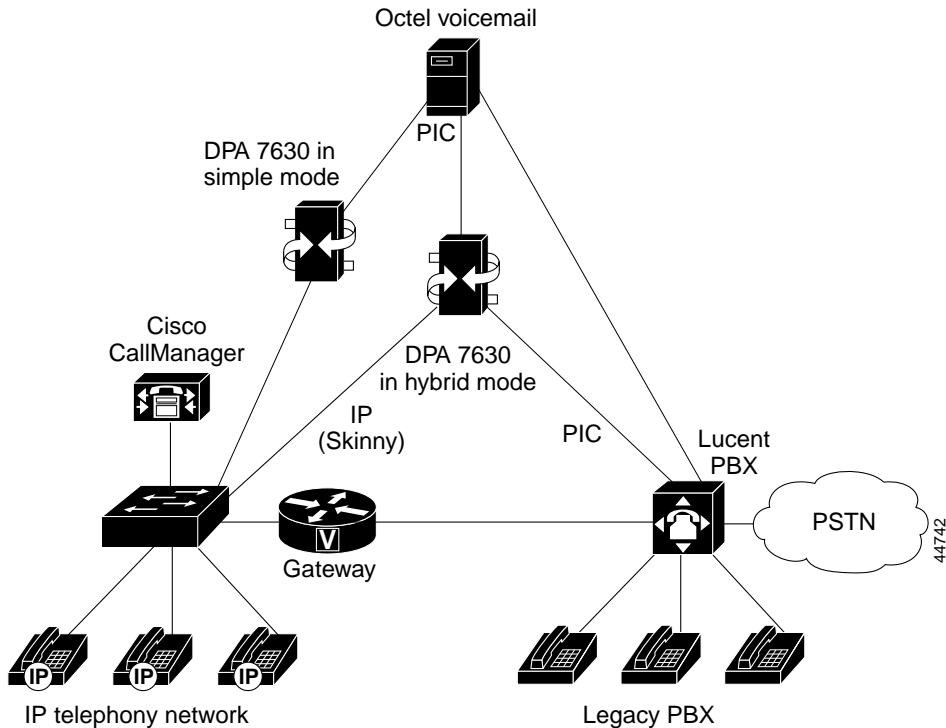
Figure 1-8 Resulting Hybrid Integrated Network



Using the Multiple Integration

If your system requires more than the hybrid integration mode provides, you might want to add multiple DPA 7630 systems to your network (see Figure 1-9).

Figure 1-9 Multiple Integration Using Multiple DPA 7630



You might do this if you are using the DPA 7630 to capacity, and you need the following:

- More than eight MWI ports to the Lucent system.

If you need more MWI ports to the Lucent system, add an additional DPA 7630 in hybrid mode. However, you cannot use all 24 ports for Lucent MWIs. You must configure it following the guidelines for the hybrid integration, using up to eight ports.

- More than eight ports for call processing between the Cisco CallManager and Octel systems.

If you need more than eight ports for handling calls between Cisco CallManager and the Octel systems, add another DPA 7630 in simple mode. This would provide another full 24 ports dedicated to call processing between the two systems.

Alternatively, you might also add an additional DPA 7630 to achieve a higher level of fault tolerance. In this situation, you can use two DPA 7630 devices in parallel, sharing the MWI lines between the two units. If one unit were to fail, the Octel would use only the lines that were still operational, allowing voice mail to function normally.



Installing the DPA 7630

You must install the DPA 7630 into your network, connecting it to both the IP network and the PBX system. These sections provide instructions for safely installing the DPA 7630:

- Preparing for Installation, page 2-1
- Installing the DPA 7630, page 2-5
- Connecting the Cisco DPA 7630 to the Network, page 2-8
- Verifying Installation, page 2-11

After completing the installation, review the information in Chapter 3, “Preparing the Cisco CallManager and Octel Systems.”.

Preparing for Installation

Before installing the DPA 7630, review these sections:

- Network Requirements, page 2-2
- Safety, page 2-2
- Required Tools and Cabling, page 2-4

Network Requirements

For the Cisco DPA 7630 to successfully operate in your network, your network must meet the following requirements:

- Working VoIP Network
- Cisco CallManager 3.0 or higher installed in your network and configured to handle call processing
- Octel 200, 250, 300, or 350 voice mail systems installed and configured
- Lucent Definity G3 PBX systems (optional; only required for hybrid or multiple integration modes)
- IP network that supports DHCP or manual assignment of IP address, gateway, and subnet mask

Safety



Warning

Read the installation instructions before you connect the system to its power source.



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.



Warning

Ultimate disposal of this product should be handled according to all national laws and regulations.



Warning

This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.



Warning

Unplug the power cord before you work on a system that does not have an on/off switch.



Warning

The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.



Warning

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).



Warning

Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.



Warning

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.



Warning

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.



Warning

Do not work on the system or connect or disconnect cables during periods of lightning activity.

**Warning**

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.

**Warning**

The device is designed to work with TN power systems.

Required Tools and Cabling

To install the DPA 7630, you must have the following equipment:

- Number 2 Phillips screwdriver
- Mounting L brackets (included)
- Electrostatic discharge (ESD)-preventive wrist strap (included)
- Screws to secure the rack-mount brackets to the DPA 7630 (included)
- Screws to attach the DPA 7630 to the rack mount

To connect the DPA 7630 to the different systems, you also need the following items:

- Power cable (included)
- Console cable for connection to a console terminal (included)
- Ethernet cable for connection to an Ethernet port
- Telco cabling for connection to the Octel and Lucent systems

Installing the DPA 7630

You have the option of installing the DPA 7630 in a 19-inch rack or setting it on a shelf or other flat surface. Refer to these sections for detailed instructions:

- Installing the DPA 7630 in a Rack, page 2-5
- Setting the DPA 7630 on a Shelf or Table, page 2-7

Installing the DPA 7630 in a Rack

The DPA 7630 includes the brackets and screws required to install it in a 19-inch rack. Follow these instructions to install it safely and securely.



Warning

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Attaching the Brackets

The chassis comes with brackets for use with a 19-inch rack. To install the chassis in a rack, attach the brackets in one of the following ways:

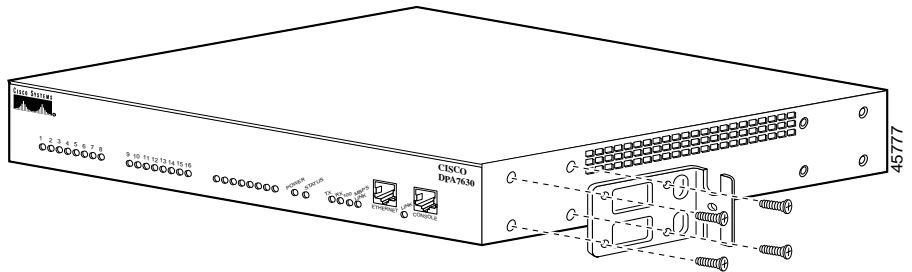
- With the front panel forward (see Figure 2-1)
- With the rear panel forward (see Figure 2-2)

These figures (Figure 2-1 and Figure 2-2) show how to connect the bracket to one side of the chassis. The second bracket connects to the opposite side of the chassis.

**Caution**

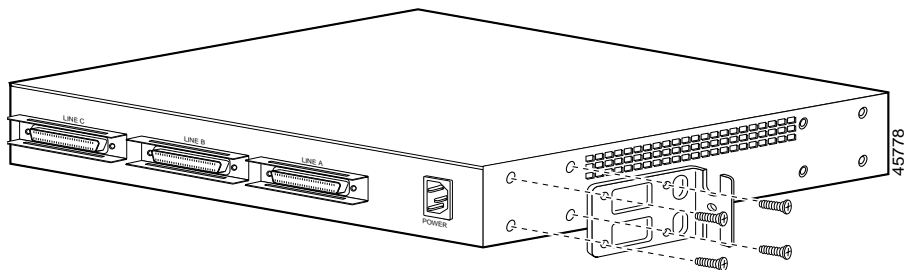
Only use the screws provided when attaching the brackets.

Figure 2-1 Bracket Installation—Front Panel Forward



Note: The second bracket attaches to the other side of the chassis.

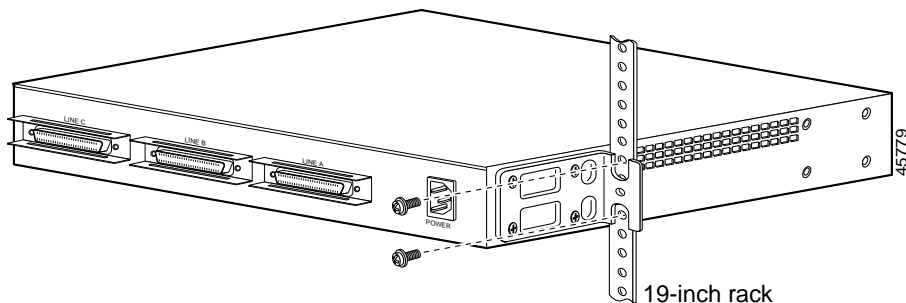
Figure 2-2 Bracket Installation—Rear Panel Forward



Putting the DPA 7630 in a Rack

After the brackets are secured to the chassis, you can rack-mount it (Figure 2-3).

Figure 2-3 Mounting the DPA 7630 in a Rack



The second bracket attaches to the rack at the other side of the chassis. The brackets can also be installed with the front panel forward.

-
- Step 1** Lift the DPA 7630 and align the mounting holes in the L brackets with the mounting holes in the rack.
- Step 2** Secure the chassis by inserting the mounting screws through the holes in the L brackets and into the threaded holes in the mounting posts.
-

Setting the DPA 7630 on a Shelf or Table

Before setting the DPA 7630 on a desktop, shelf, or other flat, secure surface, adhere the rubber feet included with the DPA 7630. To attach them to the chassis, peel the rubber feet from the black adhesive strip and place them adhesive-side down onto the round, recessed areas on the bottom of the chassis. Place the DPA 7630 right-side up on a flat, smooth, secure surface.

Connecting the Cisco DPA 7630 to the Network

You must connect the DPA 7630 to the other IP telephony systems in the network, including Cisco CallManager, Lucent, and Octel systems.

Review these sections before connecting the DPA 7630:

- Connecting to the Ethernet Port, page 2-8
- Connecting to the Telco Connectors, page 2-9
- Connecting to the Console Port, page 2-10

Connecting to the Ethernet Port

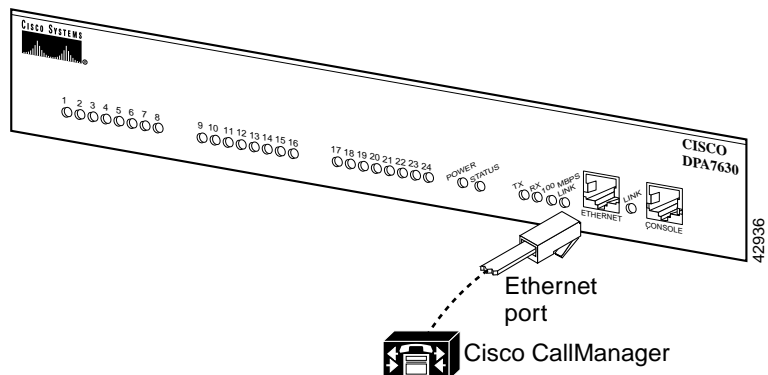
Use the Ethernet port to connect the DPA 7630 to the IP network to access Cisco CallManager.



Warning

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.

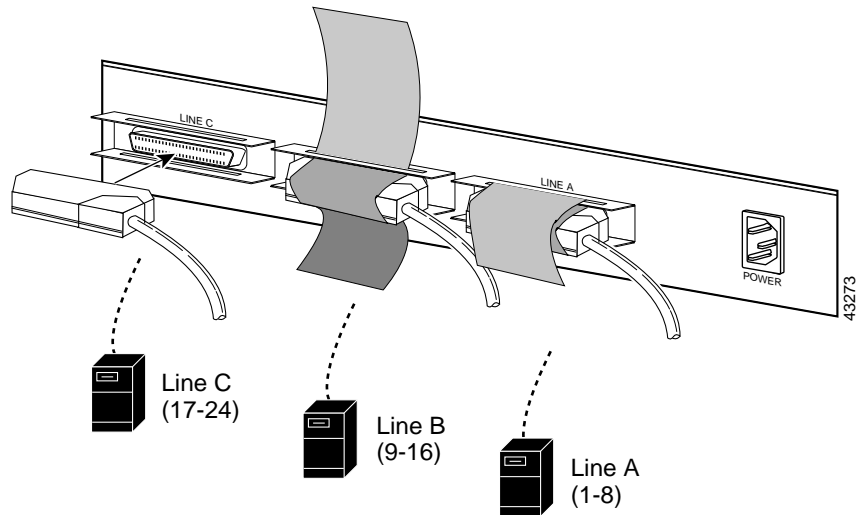
Figure 2-4 Connecting to the Ethernet Port



Connecting to the Telco Connectors

Use the three telco connectors to connect the DPA 7630 to the Octel and Lucent systems. The pinouts on the telco connectors match those on a Lucent four-wire line card (see the “Telco Port Pinouts” section on page A-2 for details).

Figure 2-5 Connecting to the Telco Connectors



The telco connectors must connect to the patch panel in specific ways depending on the configuration you are using.

Simple Integration Mode

In the simple integration mode, you are integrating Cisco CallManager and Octel voice messaging systems. In this scenario, you must connect all 24 ports in Lines A, B, and C from the DPA 7630 to the Octel system.

Hybrid Integration Mode

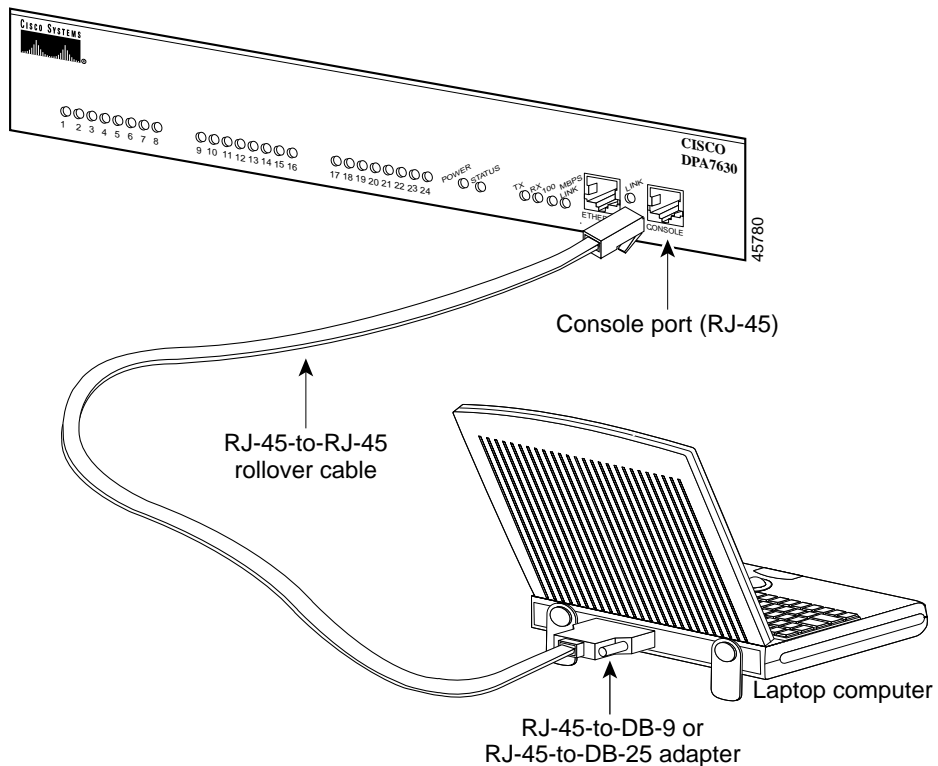
If you want to connect Cisco CallManager, Octel voice messaging, and Lucent PBX systems, you must use the hybrid integration mode. To use this configuration, all MWI lines for the Lucent and Cisco CallManager phones must pass through the DPA 7630, following the guidelines described in the “Implementing the Hybrid Integration” section on page 1-12:

Connecting to the Console Port

Use the console port to connect the DPA 7630 to a console terminal for configuration and management tasks (see Figure 2-6).

-
- Step 1** Connect the terminal using an RJ-45-to-RJ45 rollover cable and an RJ-45-to-DB-9 adapter, included with the DPA 7630.
- Step 2** Configure your terminal or PC terminal emulation software for the following settings:

Setting	Value
Baud	9600
Data bits	8
Parity	No
Stop bits	1

Figure 2-6 Connecting the DPA7630 to a Console Terminal

Verifying Installation

After you complete installation of the DPA 7630 and have connected power to it, connect a console terminal to observe its initial startup procedure. You can only observe these initial startup messages when connected to the console port. Initially, the device uses DHCP by default, but you can reconfigure this after startup.

The startup process proceeds as follows:

1. Loads boot loader software image and starts up the DPA 7630.
2. Performs self tests on the hardware, indicating whether the component passed; for example:

```

Testing RAM.....passed
Testing FLASH....passed
Testing EEPROM...passed
Testing Ethernet..passed

```

3. Pauses for 10 seconds, allowing you to perform the following tasks:
 - Initiate an FTP session to upgrade main software image before it loads, allowing recovery from a previous failed upgrade (see “Resolving an Incomplete Upgrade” section on page 4-20).
 - Press **Esc** on the console terminal to start the boot loader menu.
4. Loads the main software image and displays the main menu (see Figure 2-7):

Figure 2-7 DPA 7630 Main Menu



If the main software menu displays successfully, you can begin configuring the device as described in Chapter 4, “Configuring the DPA 7630”.



Preparing the Cisco CallManager and Octel Systems

Because the DPA 7630 depends on information from the Cisco CallManager and the Octel systems, you must verify that they are set up properly before configuring the DPA 7630, and you must obtain some information from these systems to set up the DPA 7630.

This guide does not contain details about configuring the Cisco CallManager and Octel systems. Refer to the documentation provided with these systems for installation and configuration instructions.

These sections provide details about the configuration requirements on the Cisco CallManager and Octel systems:

- Configuring Cisco CallManager, page 3-3
- Configuring the Octel Systems, page 3-13

Overview of Required Tasks

Cisco CallManager recognizes the DPA 7630 as another IP telephony device. So, to add the device to the database, you need some information from the DPA 7630. Additionally, to set up the DPA 7630, you need information from both the Cisco CallManager and Octel systems. Refer to Table 3-1 for an overview of the tasks and information you need from them to configure the DPA 7630.

Table 3-1 System Setup Checklist

	Task	For More Information	Information Required for DPA 7630 Setup
Cisco CallManager Configuration			
<input type="checkbox"/>	Add the DPA 7630 to the Cisco CallManager database manually or using auto-registration.	See “Adding the DPA 7630 to Cisco CallManager” section on page 3-3.	<ul style="list-style-type: none"> DPA 7630 host name: _____ DPA 7630 MAC address: _____ See “Setting the Host Name” section on page 4-5
<input type="checkbox"/>	Configure the ports from the DPA 7630 as Cisco IP Phones in the Cisco CallManager database.	See “Configuring the DPA Ports and Phones” section on page 3-5	
<input type="checkbox"/>	Verify that the options for enabling and disabling MWI on the Cisco IP Phones are configured in Cisco CallManager.	See “Enabling the Message Waiting Light” section on page 3-10.	MWI settings: <ul style="list-style-type: none"> ON: _____ OFF: _____
<input type="checkbox"/>	Verify that the voice mail hunt group is set up properly.	See “Setting Up the Voice Mail Hunt Group” section on page 3-11.	Pilot directory number: _____
Octel Configuration			
<input type="checkbox"/>	Set dialing sequence for message waiting indicator.	See the “Setting Dialing Sequence for Message Waiting Indicator” section on page 3-14.	MWI Dialing Sequence: <ul style="list-style-type: none"> ON: _____ OFF: _____
<input type="checkbox"/>	Assign lines to handle incoming calls, outgoing calls, and MWI commands.	See the “Assigning Incoming, Outgoing, and MWI Lines” section on page 3-14.	

Configuring Cisco CallManager

The DPA requires minor changes to Cisco CallManager because when you add the DPA 7630 to the IP network, Cisco CallManager recognizes the ports as Cisco IP Phones. Therefore, you need to add these ports to the Cisco CallManager database.

The DPA 7630 connects to Cisco CallManager to provide the following capabilities:

- Access from the Cisco IP phones to the voice messaging system on the Octel systems.

The DPA 7630 provides connection to the Octel voice messaging system by emulating IP phones. These emulated phones appear in the Cisco CallManager database.

- Proper signaling to the message waiting indicators (MWI) on the Cisco IP Phones.

Some ports on the DPA 7630 handle MWI commands from the Octel system. An additional “virtual” IP phone sends these messages to the Cisco CallManager system. Cisco CallManager then sets the MWI on the Cisco IP Phones.

When reviewing the following tasks, if you need additional instructions, refer to the *Cisco CallManager Administration Guide* or the online help in the Cisco CallManager application:

- Adding the DPA 7630 to Cisco CallManager, page 3-3
- Configuring the DPA Ports and Phones, page 3-5
- Enabling the Message Waiting Light, page 3-10
- Setting Up the Voice Mail Hunt Group, page 3-11

Adding the DPA 7630 to Cisco CallManager

When the DPA 7630 and Cisco CallManager connect, the ports on the DPA 7630 appear as IP phones in the Cisco CallManager database. An additional “virtual” port also appears as an IP phone to Cisco CallManager, but it does not have any correspondence to a physical port. It is created by the DPA 7630 to handle MWI commands to Cisco CallManager.

Using Auto-Registration

You can choose to have the DPA 7630 automatically added to Cisco CallManager using auto-registration. If you want to use auto-registration, you must verify that it is enabled in Cisco CallManager. Refer to the *Cisco CallManager Administration Guide* or online help in the Cisco CallManager application for details.

Through auto-registration, when the DPA 7630 connects to Cisco CallManager, the ports connected between the DPA 7630 and the Octel system are registered as Cisco IP Phones in the database. These ports are actually emulated IP phones that are used to access the voice mail system and to send MWI commands from Octel.

Cisco CallManager only recognizes these IP phones after the Octel voice mail system is up and running. So, verify that the Octel system and the Cisco DPA 7630 are up before completing these tasks in Cisco CallManager.

Auto-registration automatically assigns phones a directory number. The directory number assigned is the next one available in sequential order within the device pool assigned to this phone type in Cisco CallManager. However, if you need to, you can modify this directory number for each emulated phone (see the “Configuring the DPA Ports and Phones” section on page 3-5).

During auto registration, the host name assigned to the DPA 7630 is entered in the Description field in the record for the emulated phone in Cisco CallManager. If you do not enter a host name, the following sequence applies for the device description: SEP + the last 10 digits of the MAC address.

Additionally, Cisco CallManager requires unique MAC addresses for all devices, but all 24 ports on the DPA 7630 share the same MAC address. Therefore, an automatic conversion process converts the MAC addresses into this format:

1. The first two digits for the MAC address are dropped.
2. The number is shifted two places to the left.
3. The two-digit port number is added to the right.

For example, if the MAC address is

```
000039A44218
```

The MAC address registered for port 12 in CallManager is

```
0039A4421812
```

The 25th virtual port is automatically assigned the MAC address of 0039A4421825.

Adding the DPA 7630 Manually

If you want to assign specific directory numbers to the emulated IP phones on the DPA 7630 without using auto-registration, you must manually add each phone to the Cisco CallManager database. Keep in mind several important facts:

- Each port must have a unique MAC address. Use the auto-registration formula.
- Use the host name or other name for the Description for each port. Use the same name for ports configured on the same DPA 7630 system.
- Add each port on the DPA 7630 as a Cisco IP Phone 30 VIP

Follow the instructions for adding a Cisco IP Phone 30 VIP in the *CallManager Administration Guide* or online help.

Configuring the DPA Ports and Phones

From the perspective of the DPA 7630, several types of ports exist:

- Call ports—Handle call processing (incoming and outgoing calls).
- Octel MWI ports—Receive MWI commands from the Octel system.
- Virtual port—Send MWI commands to Cisco CallManager.
- PBX MWI ports—Send MWI on the Lucent PBX system and is only present in the hybrid integration mode.

To Cisco CallManager, these ports on the DPA appear as IP phones, but the PBX MWI ports do not appear in Cisco CallManager. The Cisco CallManager database also contains records of all the end-user phones. You must configure each of these phones properly in Cisco CallManager to ensure that calls are processed properly. You access the phones using the **Devices > Phone** menu in Cisco CallManager.

These sections provide details about the required settings in Cisco CallManager for the different ports:

- Configuring Call Ports, page 3-6
- Configuring Octel MWI Ports, page 3-7
- Configuring the Virtual Port, page 3-8
- Configuring an End-User Phone, page 3-9

Configuring Call Ports

Use call ports to connect lines from the Octel system that handle incoming messages, such as voice mail access, and outgoing calls such as fax calls, outgoing calls to pagers, and so on. However, a particular line from the Octel system must support *either* incoming or outgoing calls; it cannot support both.

Outgoing Calls

Do not include the call ports supporting outgoing calls in the voice mail hunt groups. Otherwise, configure these lines in Cisco CallManager as you normally would, assigning directory numbers to them.

Incoming Calls

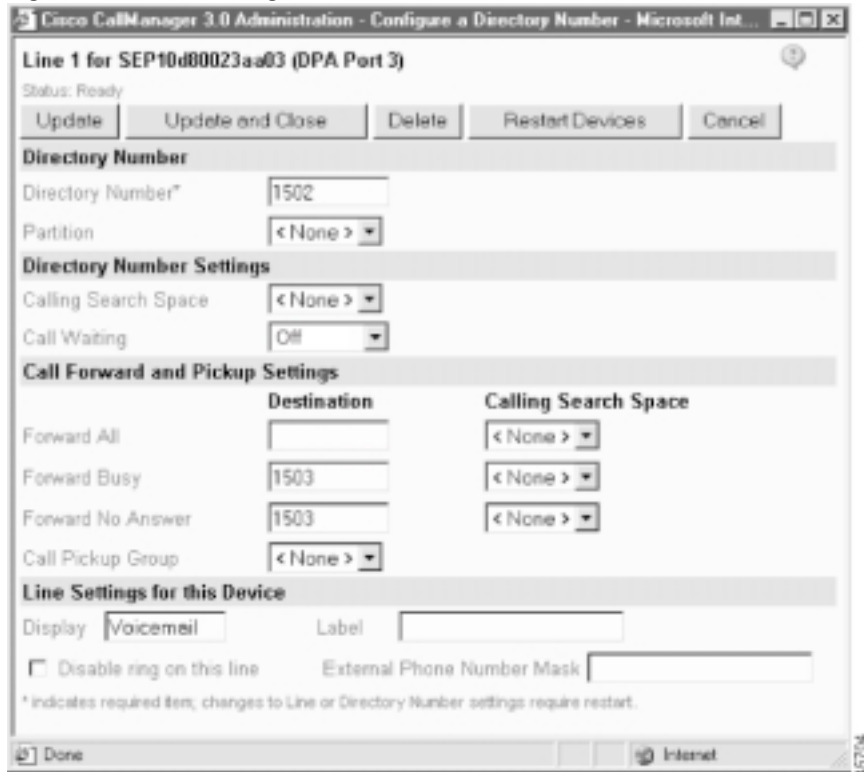
The call ports supporting incoming calls require additional configuration in Cisco CallManager. In these cases, these lines and their corresponding call ports compose the voice mail hunt groups. See Figure 3-1 for an overview of these settings.

- **Directory Number**—Assign a directory number to each of these phones. These directory numbers establish the voice mail hunt group to be used by the Cisco IP phones.

Assign one of these ports to be the primary or “pilot” directory number in the voice mail hunt group. Record this value because you need it to configure the DPA 7630. In this example, the pilot directory number is 1500.

- **Call waiting**—You must disable it on these phones.
- **Call forwarding**—Assign call forwarding numbers (Forward Busy and Forward No Answer settings), so calls roll to next available directory number in the hunt group.
- **Display**—If the DPA 7630 is connected to an Octel 200 or 300 voice mail system, you must enter D-xxxx, where xxxx is the directory number. In this example, you would enter D-1502. However, you do not need to enter anything in the Display field if the DPA 7630 is connected to an Octel 250 or 350 voice mail system.

Figure 3-1 Line Configuration for Voice Mail Ports

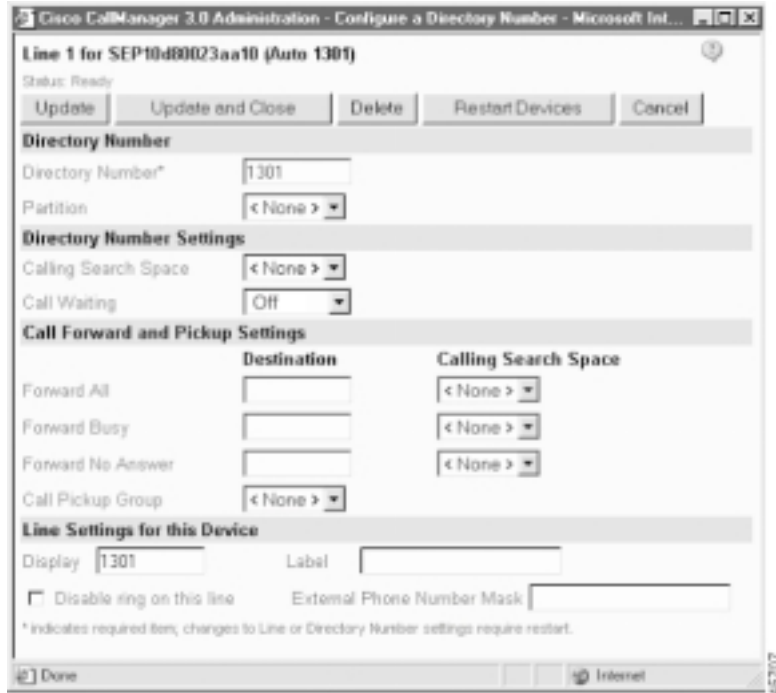


Configuring Octel MWI Ports

The DPA 7630 uses the Octel MWI ports to handle MWI messages from the Octel system. You can also enable these lines to support outgoing call processing. However, you must not configure these ports to handle any incoming call processing. See Figure 3-2 for an example of this configuration:

- Directory Number—Assign a directory number to each of these phones. Ensure that these directory numbers are not included in the voice mail hunt group. For this example, use 1301.
- Call waiting—We recommend that you disable call waiting on these phones.
- Call forwarding—Do not set.

Figure 3-2 Line Configuration for Octel MWI Ports



Configuring the Virtual Port

The DPA 7630 automatically creates and uses the virtual port to send MWI messages to Cisco CallManager. One virtual port is created regardless of the number of Octel MWI ports you have. The virtual phone settings are similar to the Octel MWI ports (see Figure 3-2).

- Directory Number—Assign a directory number to this phone.
- Call waiting—We recommend that you disable call waiting on these phones.
- Call forwarding—Do not set.

Configuring an End-User Phone

Although the DPA 7630 does not directly interact with the end-user phones, verify that you configured these phones properly to roll to voice mail. Ensure that you set the forwarding options (Forward Busy and Forward No Answer settings) to the voice mail access number for their assigned hunt group. You might want to divide users into different hunt groups to access the voice mail system. See Figure 3-3 for an example of an end-user phone configuration.

Figure 3-3 Line Configuration for End-User Phone

Line 1 for SEP003094C392FE (Auto 1600)
 Status: Ready

Update Update and Close Delete Restart Devices Cancel

Directory Number

Directory Number* 1600
 Partition <None >

Directory Number Settings

Calling Search Space <None >
 Call Waiting Default

Call Forward and Pickup Settings

	Destination	Calling Search Space
Forward All		<None >
Forward Busy	1500	<None >
Forward No Answer	1500	<None >
Call Pickup Group	<None >	

Line Settings for this Device

Display 1600 Label
 Disable ring on this line External Phone Number Mask

* Indicates required item; changes to Line or Directory Number settings require restart.

Done Internet

45697

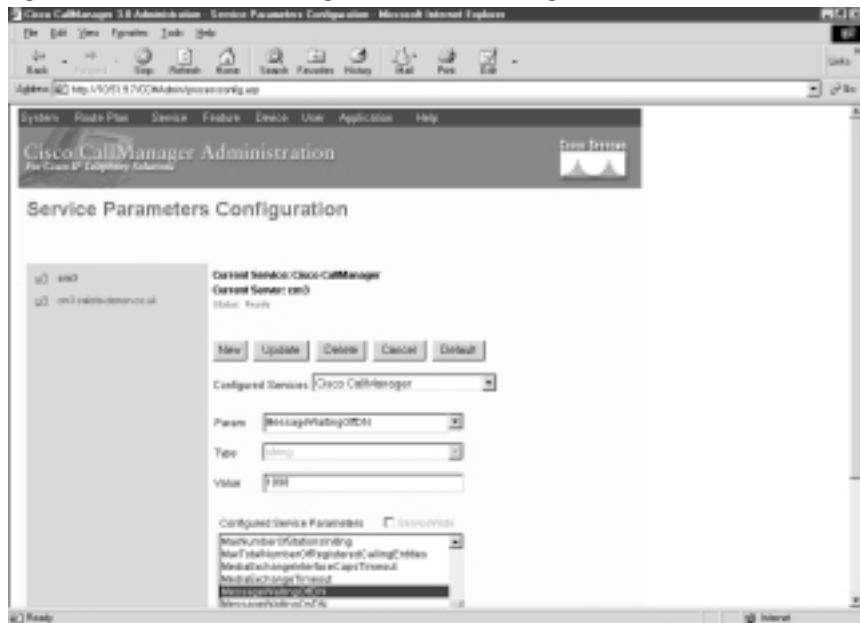
Enabling the Message Waiting Light

On Cisco CallManager, you must set the option to enable the message waiting light on Cisco IP phones. Once configured, you can access the values used to enable and disable the message waiting light by following these procedures. These options appear under the **Service > Service Parameters** menu in Cisco CallManager: You must configure these settings for each Cisco CallManager system in a cluster.

In these examples, the MessageWaitingOffDN value is 1998, and the MessageWaitingOnDN value is 1999. Record these values. You need them to configure the DPA 7630.

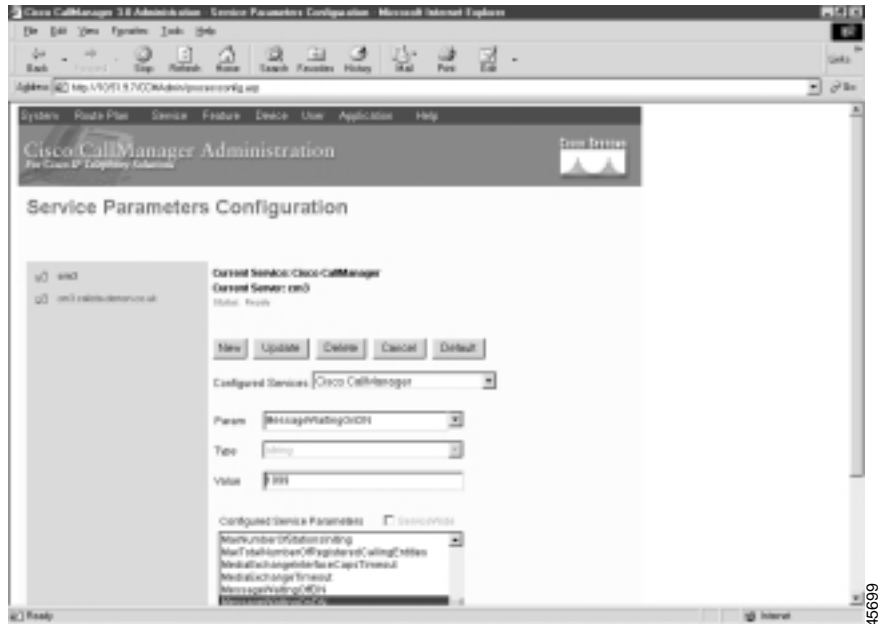
- MessageWaitingOffDN—Specifies the directory number to which calls from a voice mail system are directed to disable or turn off the MWI light for the specified calling party (see Figure 3-4).

Figure 3-4 Cisco CallManager MWI OFF Setting



- MessageWaitingOnDN—Specifies the directory number to which calls from a voice mail system are directed to enable or turn on a MWI light for the specified calling party (see Figure 3-5).

Figure 3-5 Cisco CallManager MWI ON Setting



Setting Up the Voice Mail Hunt Group

You must configure several settings in Cisco CallManager to ensure that the voice mail hunt groups function properly. These options appear under the **Service > Service Parameters** menu in Cisco CallManager: You must configure these settings for each Cisco CallManager system in a cluster.

Configuring the Pilot Directory Number

The pilot directory number is the number users dial on their Cisco IP Phones to access voice mail. Typically, it is the first directory number in the hunt group. You can configure this number to be easily accessed on Cisco IP Phones, such as with the **messages** button on a Cisco IP Phone 7960.

To configure the pilot directory number perform the following steps:

-
- Step 1 Select **Service > Service Parameters** menu from Cisco CallManager.
 - Step 2 Click the name of your Cisco CallManager system.
 - Step 3 Select the **VoiceMailDn** service parameter.
 - Step 4 Enter the pilot directory number in the Value field.

Refer to the *Cisco CallManager Administration Guide* or online help in the Cisco CallManager application if you need additional assistance.

Setting the Hop Count

You can specify the number of times Cisco CallManager forwards a call before generating an error tone. The default setting is 12, but you should set it to a number larger than the number of extensions in the largest hunt group.

To configure the hop count perform the following steps:

-
- Step 1 Select **Service > Service Parameters** menu from Cisco CallManager.
 - Step 2 Click the name of your Cisco CallManager system.
 - Step 3 Select the **ForwardMaximumHopCount** service parameter.
 - Step 4 Enter the pilot directory number in the Value field.

Refer to the *Cisco CallManager Administration Guide* or online help in the Cisco CallManager application if you need additional assistance.

Setting No-Answer Timeout

You can specify the number of seconds allowed before generating a “no-answer” error. This setting determines how much time is spent contacting a directory number before forwarding to voice mail.

The Octel systems have similar settings, which are determined by the number of rings. The Octel system expects a certain number of rings before the call forwards to voice mail. If the call forwards to voice mail prematurely, the Octel system assumes the phone was busy.

To ensure that the Cisco CallManager system allows enough time for the number of expected rings on the Octel system, you must set the no-answer timeout.

In Cisco CallManager, you should set this setting to be approximately five seconds (the ring duration on an Octel system) times the number of rings. For example, if you have the Octel system set to four rings, set the setting in Cisco CallManager to at least 20 seconds.

To configure the number of seconds before a no-answer timeout occurs perform the following steps:

-
- Step 1 Select **Service > Service Parameters** menu from Cisco CallManager.
 - Step 2 Click the name of your Cisco CallManager system.
 - Step 3 Select the **ForwardNoAnswerTimeout** service parameter.
 - Step 4 Enter the number of seconds in the Value field.

Refer to the *Cisco CallManager Administration Guide* or online help in the Cisco CallManager application if you need additional assistance.

Configuring the Octel Systems

You should not need to make any changes to the Octel system. However, you should verify your configuration and obtain information from the Octel system to properly set up the DPA 7630. This information should already be configured if you previously used Octel and Lucent systems together.

Setting Dialing Sequence for Message Waiting Indicator

On Lucent and Octel systems, you must set the dialing sequence that is used to enable and disable the MWI on phones connected to the Lucent system. After you configure this setting on the Lucent and Octel systems, record the setting. You need it when you configure the DPA 7630.

Assigning Incoming, Outgoing, and MWI Lines

On the Octel system, you must specify how each line is used, following these guidelines:

- When possible, separate the lines so that distinct lines are used for the three types of call handling: incoming calls, outgoing calls, and MWI.
You can, however, assign a single line to process outgoing calls and MWI commands. However, you must not have a single line supporting both incoming call processing and MWI commands.
- When using the hybrid integration mode, do not pass outgoing calls through the DPA 7630.
- Follow specific guidelines when physically connecting these lines to the DPA 7630 (see “Connecting to the Telco Connectors” section on page 2-9).

However, you have flexibility in determining the number of lines used for each of these tasks. For example, a company with a 144 port Octel voice mail system using the hybrid integration mode might use the following configuration:

- Line A
 - 8 ports for incoming calls
- Line B
 - 2 ports for incoming calls
 - 6 ports for MWIs
- Line C
 - 2 ports unused
 - 6 ports for MWI pass through to PBX



Configuring the DPA 7630

Because of its close interaction with Cisco CallManager, Lucent, and Octel systems, the DPA 7630 has several critical settings that you must properly configure. Although you do not make any changes on the other systems to add the DPA 7630 to your network, you need information from these systems to configure these DPA 7630 settings. Be sure to review Chapter 3, “Preparing the Cisco CallManager and Octel Systems” to ensure you have the information you need.

These sections provide details about configuring the DPA 7630:

- Accessing Configuration Options, page 4-1
- Configuring Network Settings, page 4-4
- Configuring Passwords, page 4-9
- Configuring Octel/Lucent Integration Settings, page 4-10
- Configuring Cisco CallManager Settings, page 4-13
- Configuring SNMP Settings, page 4-15
- Restarting the DPA 7630, page 4-17
- Upgrading Software Images, page 18

Accessing Configuration Options

You can access the Cisco DPA 7630 configuration options, after the device has started up, using a console terminal connected to the RJ-45 console port or through a Telnet session.

Using the Console Port

You might want to use the console port to connect to the DPA 7630 when you initially install the device. This enables you to observe the initial startup procedure and manually assign an IP address and host name if you are not using DHCP.

To access the Cisco DPA 7630 through the console RJ-45 port, perform these steps.

	Task	Description
Step 1	Connect the console terminal to the console port.	See the “Connecting to the Console Port” section on page 2-10.
Step 2	At the prompt, enter the password. The DPA 7630 does not have a default password. If no password has been configured, the main menu displays.	<password>
Step 3	Select the necessary options to complete your desired tasks.	Select the desired option from the menus.
Step 4	When finished, exit the session.	

Using Telnet

To access the DPA 7630 through a Telnet session, you must know its IP address or host name. By default, the device uses DHCP, but if you want to assign a specific IP address or host name, you must first connect using the console port.

To access the DPA 7630 from a remote host with Telnet, perform these steps:

	Task	Command
Step 1	From the remote host, enter the telnet command and the host name or IP address of the DPA 7630 that you want to access.	telnet <i>hostname</i> <i>ip_addr</i>
Step 2	At the prompt, enter the password. The DPA 7630 does not have a default password. If no password has been configured, the main menu displays.	<i><password></i>
Step 3	Select the necessary options to complete your desired tasks.	Select the desired option from the menus.
Step 4	When finished, exit the Telnet session	

Displaying the Main Menu

After connecting to the DPA 7630 through the console port or a Telnet session, the main menu appears (see Figure 4-1). Follow these guidelines to navigate the menus:

- Use the arrow keys to navigate through the available options.
- Press **Enter** to select an option.
- Press **Esc** to return to the previous menu.

Figure 4-1 DPA 7630 Main Menu



Configuring Network Settings

You must configure the network settings on the DPA 7630 to connect it to the IP network. After configuring any network settings, you must restart the DPA 7630. See “Restarting the DPA 7630” section on page 4-17.

Using DHCP

If you are using Dynamic Host Configuration Protocol (DHCP) in your network, the DPA 7630 automatically obtains an IP address when you connect it to the network. Although the DPA 7630 uses DHCP by default, you can disable DHCP and manually assign an IP address to the DPA 7630.

To use DHCP, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network Interface**.

- Step 3** Select **Use DHCP**.
- Step 4** Press Enter to toggle between **Yes** (use DHCP) and **No** (do not use DHCP).
-

If you use DHCP, you can only modify the host name; you cannot modify the other network settings. See “Setting the Host Name” section on page 4-5 for details.

If you do not use DHCP, you must enter the additional network settings. See these sections for details:

- Setting the Host Name, page 4-5
- Setting the IP Address, page 4-6
- Setting the Subnet Mask, page 4-6
- Setting the Default Router, page 4-7
- Setting the DNS Server, page 4-7
- Setting the Domain Name, page 4-8
- Setting the NTP Server, page 4-8

Setting the Host Name

The host name identifies each DPA 7630 on your TCP/IP network, enabling you to access the device using this name rather than the IP address. Also, if you auto-register the DPA 7630, the host name is automatically sent to Cisco CallManager and used for the Description field in the database (see “Adding the DPA 7630 to Cisco CallManager” section on page 3-3 for details).

To set the host name, perform these steps:

- Step 1** From the main menu, select **Configure**.
- Step 2** Select **Network interface**.
- Step 3** Select **Host Name**.
- Step 4** Enter the host name to be used by the DPA 7630.
- Step 5** Restart the DPA 7630.
-

Setting the IP Address

The IP address identifies each DPA 7630 on your TCP/IP network. You must enter the IP address if you are not using DHCP. The DPA 7630 automatically obtains an IP address if you are using DHCP.

To assign an IP address, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **IP address**.
 - Step 4 Enter the IP address to be used by the DPA 7630.
 - Step 5 Restart the DPA 7630.
-

Setting the Subnet Mask

You must enter the subnet mask if you are not using DHCP. The DPA 7630 automatically obtains a subnet mask if you are using DHCP.

To set the subnet mask, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **Subnet mask**.
 - Step 4 Enter the subnet mask.
 - Step 5 Restart the DPA 7630.
-

Setting the Default Router

You must enter the default router if you are not using DHCP. The DPA 7630 automatically obtains a default router if you are using DHCP.

To set the default router, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **Default router**.
 - Step 4 Enter the IP address of the default router.
 - Step 5 Restart the DPA 7630.
-

Setting the DNS Server

Domain Name System (DNS) allows users to specify remote computers by host names. The DPA 7630 uses DNS to resolve the host name of TFTP servers and Cisco CallManager systems when the system is configured to use names rather than IP addresses.

To set the DNS server, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **DNS server**.
 - Step 4 Enter the IP address of the DNS server.
 - Step 5 Restart the DPA 7630.



Tips

You can enter a secondary DNS server by selecting **Network interface > DNS server 2** and entering the IP address.

Setting the Domain Name

The domain name is the name of the Domain Name System (DNS) domain in which the DPA 7630 is located.

To set the domain name, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **Domain name**.
 - Step 4 Enter the domain name.
 - Step 5 Restart the DPA 7630.
-

Setting the NTP Server

The DPA 7630 uses the Network Time Protocol (NTP) server to synchronize its date and time settings to ensure proper recording in the log files. used to obtain the current date and time for the network for diagnostic traces.

To set the NTP server, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **NTP server**.
 - Step 4 Enter the IP address of the NTP server.
 - Step 5 Restart the DPA 7630.
-

Enabling CDP

The DPA 7630 can advertise itself to other network devices using Cisco Discovery Protocol (CDP). Many network management applications require that CDP is enabled.

To enable CDP, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Network interface**.
 - Step 3 Select **CDP**.
 - Step 4 Press Enter to toggle between **Enable** and **Disable**.
 - Step 5 Restart the DPA 7630.
-

Configuring Passwords

The Cisco DPA 7630 ships without a password set or enabled on it. You should enable passwords to prevent unauthorized access to and control of the DPA 7630.



Caution

By default, the DPA 7630 does not have an assigned password. To avoid unauthorized access to this network device, assign passwords to the DPA 7630.

Configuring the Login Password

The login password enables you or other users to view the current status and settings on the DPA 7630 but not to make changes.

To configure the login password, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Passwords**.

- Step 3 Select **Login password**.
 - Step 4 Enter the new password.
-

Configuring the Enable Password

Once set, you must use the enable password to make changes to the DPA 7630. To configure the enable password, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Passwords**.
 - Step 3 Select **Enable password**.
 - Step 4 Enter the new password.
-

Configuring Octel/Lucent Integration Settings

The DPA 7630 is designed to integrate into your network without requiring any changes to the current Lucent and Octel settings. However, you must obtain information from these systems to enable the DPA 7630 to function properly.

After configuring these settings, you must restart the DPA 7630. See “Restarting the DPA 7630” section on page 4-17.

Setting the Integration Mode

You must choose the mode of integration by which you are implementing the DPA 7630:

- Simple—Cisco CallManager and Octel integration
- Hybrid—Cisco CallManager, Octel, and Lucent integration

Selecting the integration mode automatically forces the 24 ports on DPA 7630 to support particular settings. To understand these settings, review the “Choosing an Integration Mode” section on page 1-5 before selecting an integration method.

To set the integration mode, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Octel/Lucent integration**.
 - Step 3 Select **Mode**.
 - Step 4 Select the appropriate configuration type:
 - Simple—Cisco CallManager and Octel integration
 - Hybrid—Cisco CallManager, Octel, and Lucent integration
 - Step 5 Restart the DPA 7630.
-

Entering Dialing Sequences for MWI Activation

On Lucent and Octel systems, you must set the dialing sequence used to enable and disable the MWI on phones connected to the Lucent system. Verify and obtain the dialing sequences set on the Octel and Lucent systems (see the “Setting Dialing Sequence for Message Waiting Indicator” section on page 3-14 for details).

To enter the dialing sequences, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Octel/Lucent integration**.
 - Step 3 Select the appropriate settings:
 - **Lucent MWI ON pre-extension dial string**
 - **Lucent MWI OFF pre-extension dial string**
 - Step 4 Enter the appropriate values obtained from the Octel and Lucent systems.
 - Step 5 Restart the DPA 7630.
-

Setting Companding Law

You must configure the encoding algorithm, A-law or mu-law, used by the Lucent and Octel systems. The settings on the DPA 7630 must match the settings on the Lucent and Octel systems.

To set the companding law, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Octel/Lucent integration**.
 - Step 3 Select **Companding law**.
 - Step 4 Select the appropriate option so that it corresponds to the setting on the Octel system:
 - **A law**
 - **mu law**
 - Step 5 Restart the DPA 7630.
-

Clearing Lucent MWIs

The Octel system sends all MWI messages to the Lucent system through the DPA 7630. The same DPA 7630 port that sends a message to the Lucent system to enable an MWI must also send the message to disable it. However, if the DPA 7630 is turned off or restarted after the Octel system has sent a MWI message, the message might be lost.

Although the setting on the Octel system is correct, the DPA 7630 was turned off before sending the message to the Lucent system. The result is that some user phones might have MWI lights disabled erroneously or constantly enabled. If this happens, you need to clear the Lucent MWI messages from the queue.

To clear Lucent MWIs, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **Octel/Lucent integration**.

- Step 3 Select **Clear Lucent MWIs**.
 - Step 4 Enter the directory numbers or range of directory numbers to clear, using this format: 4419, 4420, 4440-4450
-

Configuring Cisco CallManager Settings

You must configure the DPA 7630 with specific settings based on your Cisco CallManager configuration.

After configuring these Cisco CallManager settings, you must restart the DPA 7630. See “Restarting the DPA 7630” section on page 4-17.

Assigning TFTP Server

The DPA 7630 uses the TFTP server to identify the correct Cisco CallManager system.

To assign a TFTP server, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **CallManager**.
 - Step 3 Select **TFTP server address**.
 - Step 4 Enter the IP address of the TFTP server.
 - Step 5 Restart the DPA 7630.
-

Entering MWI for Cisco CallManager

On Cisco CallManager, you must set the dialing sequence used to enable and disable the MWI on phones connected to Cisco CallManager. These settings must match those entered in Cisco CallManager (see the “Enabling the Message Waiting Light” section on page 3-10).

To enter the MWI settings, perform these steps:

-
- Step 1** From the main menu, select **Configure**.
- Step 2** Select **CallManager**.
- Step 3** Select the appropriate settings:
- **CallManager MWI ON directory number**
 - **CallManager MWI OFF directory number**
- Step 4** Enter the appropriate values obtained from the Cisco CallManager system.
- Step 5** Restart the DPA 7630.
-

Entering Cisco CallManager “Pilot” Directory Number

When Cisco CallManager is configured, one port on the DPA 7630 serves as the primary or “pilot” directory number for a voice mail hunt group. Typically, you only need to specify this number if

- You are using multiple DPA 7630 systems in your network (multiple integration mode).
- Any voice mail hunt group spans multiple DPA 7630 devices.

For example, DPA 7630 A has extensions 1000-1010, and DPA 7630 B has extensions 1011-1020. These extensions form one large voice mail hunt group, with all the end-user phones forwarding to extension 1000.

You would not need to enter a pilot directory number for DPA 7630 A because extension 1000 is one of its own voice mail ports. However, you would need to enter 1000 as the pilot directory number on DPA 7630 B.

This pilot directory number should match the one defined in Cisco CallManager (see the “Configuring the Pilot Directory Number” section on page 3-12

To enter a pilot directory number, perform these steps:

-
- Step 1** From the main menu, select **Configure**.
- Step 2** Select **CallManager**.

- Step 3** Select **CallManager “Pilot” directory number**.
- Step 4** Enter the directory number for the primary number in the voice mail hunt group. You can enter multiple numbers separated by a comma.
- Step 5** Restart the DPA 7630.
-

Configuring SNMP Settings

The DPA 7630 supports Simple Network Management Protocol (SNMP) by supporting standard MIBs. Modify the SNMP settings as appropriate for your network management needs. You need to configure the SNMP settings if you want to manage the DPA 7630 remotely.

Setting Community Strings

The community string settings enable network management systems to access the DPA 7630 for remote management. You can configure a read-only password, which restricts access to the device, allowing users to view information but not to make changes. You can also configure a read-write community string, which allows users to make changes to the device remotely.

To set the community strings, perform these steps:

-
- Step 1** From the main menu, select **Configure**.
- Step 2** Select **SNMP**.
- Step 3** Select the appropriate settings:
- **Read-only community string**
 - **Read-write community string**
- Step 4** Enter the passwords.
-

Configuring Contact Information

You can enter the contact name of the person responsible for the DPA 7630 and the location of the DPA 7630 on your campus.

Configuring Contact Name

To add a contact name indicating the person responsible for the DPA 7630, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **SNMP**.
 - Step 3 Select **Contact name**
 - Step 4 Enter the name of the person responsible for the DPA 7630.
-

Configuring Location

To add the location of the DPA 7630 in your network or on your site, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **SNMP**.
 - Step 3 Select **Location**.
 - Step 4 Enter the location of the DPA 7630.
-

Configuring Trap Settings

You can configure the DPA 7630 to notify a network management system that an authentication failure occurred. You can also specify the IP address for the network management system that is acting as a trap receiver.

Enabling Authentication Traps

To enable authentication traps, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **SNMP**.
 - Step 3 Select **Generate authentication traps**
 - Step 4 Press Enter to toggle between **Yes** and **No**.
-

Configuring Trap Receiver Stations

To set up to four trap receiver stations, perform these steps:

-
- Step 1 From the main menu, select **Configure**.
 - Step 2 Select **SNMP**.
 - Step 3 Select **Trap receiver stations**.
 - Step 4 Enter the IP address of the network management system used to receive the traps.
-

Restarting the DPA 7630

After configuring options on the DPA 7630, you might need to restart it for the changes take effect. Restarting the DPA 7630 loses any queued MWIs so check the queue before restarting. To restart the DPA 7630, perform these steps:

-
- Step 1 From the main menu, select **Display** and select **Octel integration status**.
 - Step 2 Verify that the “Queued MWI commands” field is empty.
 - Step 3 From the main menu, select **Configure**.
 - Step 4 Select **Restart**.
-

Upgrading Software Images

The Cisco DPA 7630 has two software images: a main software image and a boot loader. If necessary, you can upgrade these software images.

Upgrading the Main image

The main software image might need to be updated if a new release is available on CCO as a bug update or feature enhancement.



Caution

When you send a new software image to the DPA 7630 using FTP, the current image is automatically deleted. If the FTP transfer terminates before the new file is copied to the DPA 7630, the DPA 7630 might not be able to start up. See the “Resolving an Incomplete Upgrade” section on page 4-20 to resolve this problem.

To upgrade the main software image, perform these steps:

-
- Step 1** Obtain a configuration file using this naming format: `dpa-main.<version>.tar.`, where `<version>` indicates the release number, such as 1-0-2.
 - Step 2** Connect to the DPA 7630 using FTP and send the configuration file to it.
 - Step 3** Restart the DPA 7630 for the new image to take effect.
 - Step 4** From the main menu on the DPA 7630, select **Display**.
 - Step 5** Select **Versions** to verify the updated version has been installed.
-

Upgrading the Boot Loader

The boot loader is the initial startup configuration file. You should not upgrade this image unless instructed by a Cisco technical representative.



Caution

Only upgrade the boot loader if you are instructed to do so by a Cisco technical representative. If you encounter difficulties during this upgrade, such as a loss of power, the DPA 7630 might not be able to start up.

To upgrade the boot loader image, perform these steps:

-
- Step 1** Obtain a configuration file using this naming format:
`dpa-loader.<version>.bin.`, where `<version>` indicates the release number, such as 1-0-2.
 - Step 2** Ensure the DPA 7630 has started up normally.
 - Step 3** Connect to the DPA 7630 using FTP and send the configuration file to it.
 - Step 4** While still connected to the DPA 7630 using FTP, enter a `dir` command to verify that the new file is on the DPA 7630.
 - Step 5** On the DPA, select **Diagnostics** from the main menu.
 - Step 6** Select **Reprogram boot ROM**.



Caution

If the DPA 7630 loses power or experiences a failure at this step, the DPA 7630 might not start up. If this occurs, contact a Cisco technical representative for assistance.

- Step 7** Select **Yes** to confirm.
 - Step 8** Restart the DPA 7630 for the changes to take effect.
-

Resolving an Incomplete Upgrade

If you initiated an upgrade to the main software image, but terminated it before the FTP transfer of the new image completed, the DPA 7630 might not start up properly.

If this occurred, the next time the DPA 7630 starts up, it the boot loader loads, but the DPA 7630 waits indefinitely at the `Pausing for FTP` prompt. To resolve this, connect to the DPA 7630 using the console port (see “Connecting to the Console Port” section on page 2-10). Then, perform the steps in the “Upgrading the Main image” section on page 4-18.



Troubleshooting the DPA 7630

The DPA 7630 includes several built-in troubleshooting and diagnostic features. Use these sections for details about troubleshooting:

- [Displaying Status and Configuration Settings](#), page 5-1
- [Interpreting LED Status](#), page 5-8
- [Working with the Event Log](#), page 5-9

Displaying Status and Configuration Settings

Use these sections to obtain information about the current status and settings of the DPA 7630 and its connections:

- [Displaying System Status](#), page 5-2
- [Displaying Network Statistics](#), page 5-2
- [Displaying Port Status](#), page 5-3
- [Displaying Cisco CallManager Status](#), page 5-5
- [Displaying Octel Integration Status](#), page 5-7
- [Displaying Current Configuration](#), page 5-7

Displaying System Status

The system status provides an overview of the current network settings on the DPA 7630. Use this procedure to quickly check your network settings and connectivity information.

To display system status, perform these steps:

Step 1 From the main screen, select **Display**.

Step 2 Select **System status**.

The system status displays:

- Up time
 - Serial number
 - Ethernet MAC address
 - IP address
 - Subnet mask
 - Default router
 - DNS server
 - Domain
 - NTP Server
 - Time offset
 - Ethernet speed
-

Displaying Network Statistics

Use the network statistics to observe the network traffic and packet errors through the IP connection on the DPA 7630.

To display network statistics, perform these steps:

Step 1 From the main screen, select **Display**.

Step 2 Select **Network statistics**.

These statistics display:

- Octets
- Unicast packets
- Nonunicast packets
- Discarded packets

Displaying Port Status

The port status provides detailed information about each port on the DPA 7630. This is useful when determining the current state and activity on a particular port.

To display port status, perform these steps:

Step 1 From the main screen, select **Display**.

Step 2 Select **Port status**.

Step 3 Use the information in Table 5-1 and Table 5-2 to interpret the port status.

Table 5-1 Types of Ports

Type	Description
Call	This port is used for general call processing.
Oct MWI	This port is used to receive MWI commands from the Octel system
PBX MWI	This port is used to set MWI commands on the Lucent PBX system
Virtual	This “port” is an IP phone used for setting MWI commands on Cisco CallManager.
Down	The link to the Octel or PBX port is not connected. Unused ports display as “down.”

Table 5-2 Port Status

Status	Description	Used By Port Type
Octel registering	This indicates an intermediate state when the DPA 7630 is starting up a port's connection to the Octel system.	<ul style="list-style-type: none"> • Call • Oct MWI
Octel link down	The port previously had a connection to the Octel system, but the connection is down.	<ul style="list-style-type: none"> • Call • Oct MWI
CM link registering	This indicates an intermediate state when the DPA 7630 is registering an IP phone with Cisco CallManager.	<ul style="list-style-type: none"> • Call • Oct MWI • Virtual
CM link down	This indicates an intermediate state when the DPA 7630 has successfully started the port connected to the Octel system but cannot establish a connection to Cisco CallManager.	<ul style="list-style-type: none"> • Call • Oct MWI • Virtual
DN=xxxx <substate>	<p>This is the normal status for the ports. The Octel port has started, and the IP phone associated with the port has registered and has a directory number assigned to it, where DN=xxxx indicates the directory number, and <substate> indicates current port activity:</p> <ul style="list-style-type: none"> • On hook • Off hook • Call in—Octel emulated phone is ringing. • Call out—Octel has made an outgoing call. • xxx—Octel has dialed out • On call—Octel port is on a call • Transfer—Octel system is transferring the caller • Outcall—Octel is dialling out a number • Hanging up—The DPA 7630 is waiting for the Octel system to hang up 	<ul style="list-style-type: none"> • Call • Oct MWI
DN=xxxx, Q=yyy	IP phone is up with assigned directory number, and there are MWI messages queued for Cisco CallManager.	Virtual
PBX down	The PBX port is down.	PBX MWI

Table 5-2 Port Status (continued)

Status	Description	Used By Port Type
PBX registering	The PBX port is starting up.	PBX MWI
Q=xxxx	The PBX port is up, and there are MWI messages queued.	PBX MWI
O=xxxx	DPA is dialing out the MWI command xxx to the PBX.	PBX MWI

Displaying Cisco CallManager Status

You can obtain detailed information about the connection to the Cisco CallManager system.

To display Cisco CallManager status, perform these steps:

- Step 1** From the main screen, select **Display**.
- Step 2** Select **Port status**.
- Step 3** Select a port and press **Enter**.
- Step 4** Refer to Table 5-3 for a description of the fields.

Table 5-3 Cisco CallManager Port Status

Type	Description
Codec in use	Indicates which codec used: G.729A, G.711 mu-law, or G.711 a-law
CallManager connection	Indicates whether the connection to Cisco CallManager is up
CallManager device name	Indicates the name assigned to the port in the Cisco CallManager database
CallManager name	Indicates the name of Cisco CallManager.
IP address	Indicates the IP address of Cisco CallManager.
State	<p>Indicates the current status of the connection to Cisco CallManager:</p> <ul style="list-style-type: none"> • Idle—No connection is in progress. • Connecting—The port is attempting to register with this Cisco CallManager system. • Retry back-off—A connection attempt failed, and the DPA 7630 is waiting before retrying. • Connect pending—The connection to this Cisco CallManager system was lost, and the port is attempting to re-establish the connection. • Active—The connection is established, and this is the primary Cisco CallManager system. • Standby—The connection to a standby Cisco CallManager system is established.

Displaying Octel Integration Status

To obtain detailed information about the Octel integration, perform these steps:

-
- Step 1** From the main screen, select **Display**.
- Step 2** Select **Octel integration status**.
- Step 3** The system displays the following information:
- Received calls
 - Ports in use (call processing)
 - Ports in use (MWI received)
 - Ports in use (MWI set)
 - Outgoing calls made
 - MWI commands received
 - Queued MWI commands
 - Executed MWI commands
 - MWI errors



Tips

In hybrid mode, the MWI status options display as separate settings for the Lucent and Cisco CallManager systems.

Displaying Current Configuration

You can quickly display all the settings you have configured on the DPA 7630.

To display the configured settings, perform these steps:

-
- Step 1** From the main screen, select **Diagnostics**.
- Step 2** Select **Show configuration**.
-

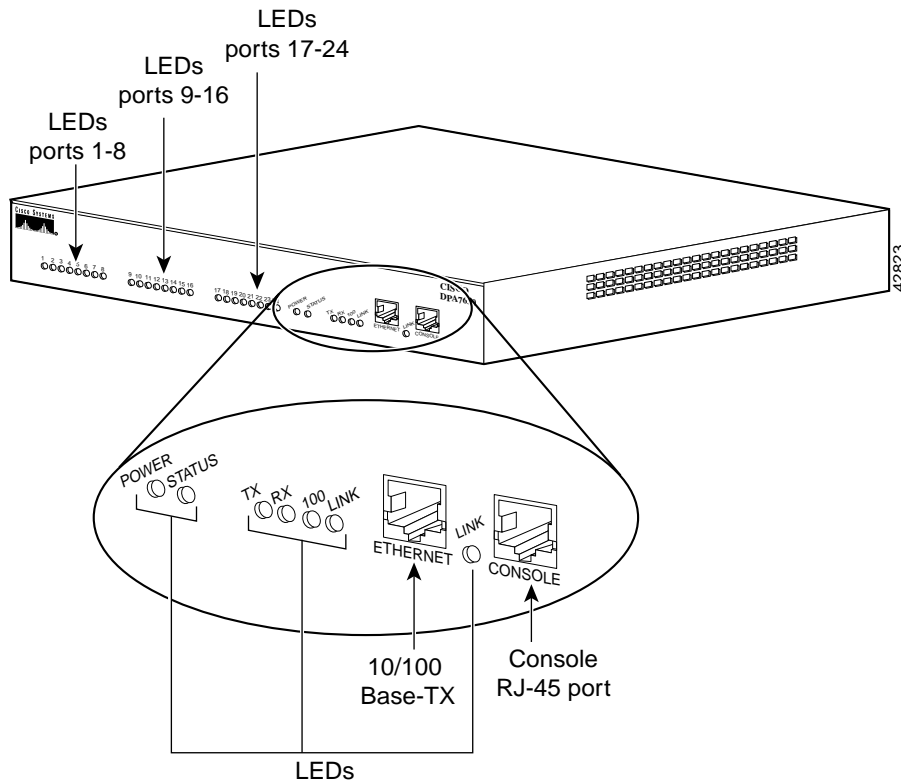
Interpreting LED Status

The DPA 7630 includes several LED status indicators on the front panel (see Figure 5-1). Table 5-4 includes descriptions of these LED lights.

Table 5-4 LED Status Explanation

LED	On	Flashing	Off
Power	Power connected and operating normally	N/A	Power not connected
Status	Operating normally	Potential hardware error detected. Check the event log for details.	Not operating normally
TX	N/A	Packet transmitted.	Nothing transmitted
RX	N/A	Packet received.	Nothing received
100 MBPS	Connected at 100 Mbps	N/A	Connected at 10 Mbps
Ethernet Link	Ethernet link connected	N/A	Not connected
Console Link	Console link connected	N/A	Console link not connected
24 Port	Connected and operating normally	Not configured or error on port	Not connected

Figure 5-1 Cisco DPA 7630 Front View



Working with the Event Log

The event log enables you to capture errors, warnings, and other informational messages from the DPA 7630. Typically, you use these options only when troubleshooting a complex issue, perhaps while working with a Cisco technical representative.

However, using the default settings and these options, you can resolve many errors on your own:

- Identifying a Syslog Server, page 5-10
- Selecting Logging Levels and Logged Ports, page 5-10
- Displaying Recent Messages, page 5-11
- Resolving Error Messages, page 5-12

Identifying a Syslog Server

You can identify a syslog server to automatically capture and receive event logs for remote network management by performing these steps:

-
- Step 1** From the main screen, select **Diagnostics**.
 - Step 2** Select **Event log**.
 - Step 3** Select **Syslog server**.
 - Step 4** Enter the IP address of the network management system you want to designate as the syslog server.
-

Selecting Logging Levels and Logged Ports

You can set the DPA 7630 to log progressively more detail (information, errors, or warnings), or you can restrict logging to specific ports.

Usually, configure these options when working with a Cisco technical representative because the nature of the problem determines the amount of information required to resolve it.

To set logging levels or select ports, perform these steps:

-
- Step 1** From the main screen, select **Diagnostics**.
 - Step 2** Select **Event log**.

- Step 3 Select **Set logging levels** or **Set logged ports**.
 - Step 4 Work with a Cisco technical representative to determine the best options to select and enter.
-

Displaying Recent Messages

You can obtain a list of recent messages from the DPA 7630 to help you resolve some configuration issues.

To display recent messages, perform these steps:

- Step 1 From the main screen, select **Diagnostics**.
- Step 2 Select **Event log**.
- Step 3 Select **View recent** to display recent messages.
- Step 4 See “Resolving Error Messages” section on page 5-12 for information on resolving these errors.



Tips

You can also select **View all** to display all errors, or **View new** to display new errors only.

Resolving Error Messages

You can use the event log to identify errors on the DPA 7630. Use Table 5-5 to interpret and resolve these errors.

Table 5-5 Error Message Explanation

System	Error	Explanation	Action
Octel/CM	Lucent MWI On dial string not set	You have not configured the dialing sequence options for setting MWI on the Lucent/Octel systems.	<ol style="list-style-type: none"> 1. From the DPA 7630 main menu, select Configure. 2. Select Octel/Lucent integration configuration. 3. Select Lucent MWI ON pre-extension dial string. 4. Enter the appropriate values obtained from the Octel and Lucent systems.
Octel/CM	Lucent MWI Off dial string not set	You have not configured the dialing sequence options for turning off MWI on the Lucent/Octel systems.	<ol style="list-style-type: none"> 1. From the DPA 7630 main menu, select Configure. 2. Select Octel/Lucent integration configuration. 3. Select Lucent MWI OFF pre-extension dial string. 4. Enter the appropriate values obtained from the Octel and Lucent systems.
Octel/CM	CM MWI On DN not set	You have not configured the options for enabling MWI on the Cisco CallManager system.	<ol style="list-style-type: none"> 1. From the DPA 7630 main menu, select Configure. 2. Select CallManager. 3. Select CallManager MWI ON directory number. 4. Enter the appropriate values obtained from the Cisco CallManager system.

Table 5-5 Error Message Explanation (continued)

System	Error	Explanation	Action
Octel/CM	CM MWI Off DN not set	You have not configured the options for disabling MWI on the Cisco CallManager system.	<ol style="list-style-type: none"> 1. From the DPA 7630 main menu, select Configure. 2. Select CallManager. 3. Select CallManager MWI OFF directory number 4. Enter the appropriate values obtained from the Cisco CallManager system.
Octel/CM	Octel/Lucent integration mode not set	You have not configured the integration mode.	<ol style="list-style-type: none"> 1. From the DPA 730 main menu, select Configure. 2. Select Octel/Lucent integration. 3. Select Mode. 4. Select the appropriate configuration type: <ul style="list-style-type: none"> • Simple—Cisco CallManager and Octel integration • Hybrid—Cisco CallManager, Octel, and Lucent integration
Octel/CM	CM register reject	The port attempted to register with Cisco CallManager but was rejected.	<p>Verify that Cisco CallManager and the settings for this port in Cisco CallManager are properly configured.</p> <p>Refer to the documentation and online help included with Cisco CallManager for additional assistance.</p>

Table 5-5 Error Message Explanation (continued)

System	Error	Explanation	Action
Octel/CM	<port> Lucent MWI controller <port> not up	A request to set or clear a Lucent MWI light was received from the Octel system, but the corresponding port connected to the PBX is not responding.	Verify that the cabling between the DPA 7630 and the Lucent and Octel systems is set up properly. Refer to the “Connecting to the Telco Connectors” section on page 2-9 for instructions on configuring these connections.
DHCP	IP address refused	The DHCP server rejected the DPA 7630’s request for an IP address.	Check configuration of DHCP server. If errors persist, assign a static IP address.
DHCP	IP address cannot be allocated	No DHCP server responded to the request.	Check configuration of DHCP server. If errors persist, assign a static IP address.
DHCP	Server address not configured	DHCP is not being used so you must assign a static IP address.	Refer to “Configuring Network Settings” section on page 4-4 for details on assigning a static IP address.
Ethernet	Ethernet failed to start	The Ethernet cable is not properly connected to the DPA 7630 or to the hub or switch.	Check the Ethernet cable and reconnect it to the DPA 7630 and the hub or switch. If error persists, replace cable.
OS	Incorrect password entered	A user attempted to use a telnet or console connection to the DPA but entered an incorrect password.	Check the passwords and verify that you are using the correct one. Change the password if you suspect an unauthorized login attempt. Refer to the “Configuring Passwords” section on page 4-9 for details.

Table 5-5 Error Message Explanation (continued)

System	Error	Explanation	Action
SNMP	Attempt to use Get with invalid community name "<name>"	The DPA was sent an SNMP request with an invalid read-only community name (password).	Check the community string setting on the DPA and ensure that your network management system has the correct password. See "Configuring SNMP Settings" section on page 4-15 for details.
SNMP	Attempt to use Set with invalid community name "<name>"	The DPA was sent an SNMP request with an invalid read-write community name (password).	Check the community string setting on the DPA and ensure that your network management system has the correct password. See "Configuring SNMP Settings" section on page 4-15 for details.



Technical Specifications

These sections describe the technical specifications and safety approvals of the DPA 7630:

- Physical and Operating Specifications, page A-1
- Port and Cable Specifications, page A-2
- Port Pinouts, page A-2
- Regulatory Safety Compliance, page A-5

Physical and Operating Specifications

Table A-1 includes the physical and operating specifications of the DPA 7630.

Table A-1 Cisco DPA 7630 Specifications

Specification	Value or Range
Dimensions (HxWxD)	1.75 x 17.25 x 15.5 inches
Weight	5.2kg (11lbs 8oz)
Power	100-240 VAC, 50-60 Hz
Processor	50 MHz MPC 860T
Operating environment	0° to 40° C (32° to 104° F)
Operating humidity	10% to 95% (noncondensing)
Nonoperating environment	-10° to 60° C (14° to 140° F)

Port and Cable Specifications

The DPA 7630 includes the following ports:

- RJ-21 Telco connectors for connection to Octel and Lucent systems (labeled Lines A, B, and C).

Maximum cable length between the DPA 7630 and the Lucent and Octel systems is 100 meters.

- RJ-45 jack for the 10/100BaseT connection (labeled Ethernet)
- RJ-45 jack for the console connector (labeled Console)
- 3-pin IEC AC adapter

Port Pinouts

These sections describe the port pinouts on the DPA 7630:

- Telco Port Pinouts, page 2
- Ethernet Port Pinouts, page 4
- Console Port Pinouts, page 4

Telco Port Pinouts

Table A-2 describes the telco port connector pinouts.

Table A-2 *Telco Port Connector Pinouts*

Pin Number	Function
1, 26	Unused
2, 27	Port 1 receive
3, 28	Port 1 transmit
4,29	Unused
5, 30	Port 2 receive
6,31	Port 2 transmit

Table A-2 Telco Port Connector Pinouts (continued)

Pin Number	Function
7, 32	Unused
8, 33	Port 3 receive
9, 34	Port 3 transmit
10, 35	Unused
11, 36	Port 4 receive
12, 37	Port 4 transmit
13, 38	Unused
14, 39	Port 5 receive
15, 40	Port 5 transmit
16, 41	Unused
17, 42	Port 6 receive
18, 43	Port 6 transmit
19, 44	Unused
20, 45	Port 7 receive
21, 46	Port 7 transmit
22, 47	Unused
23, 48	Port 8 receive
24, 49	Port 8 transmit
25, 50	Unused

Ethernet Port Pinouts

Table A-3 describes the Ethernet port connector pinouts.

Table A-3 Ethernet Port Connector Pinouts

Pin Number	Function
1	TD+
2	TD-
3	RD+
4	
5	
6	RD-
7	
8	

Console Port Pinouts

Table A-4 describes the console port connector pinouts.

Table A-4 Console Port Connector Pinouts

Pin Number	Function
1, 8	Connected
2	DTR
3	TxD
4,5	Ground
6	RxD
7	DSR

Regulatory Safety Compliance

The DPA 7630 meets the following regulatory safety and compliance approvals:

- CE Marking
- Safety:
 - UL 1950
 - CSA C22.2 No.950
 - EN60950
 - IEC 60950
- EMC:
 - FCC Part 15 (CFR 47) Class A
 - ICES 003 Class A
 - EN55022 Class A
 - CISPR22 Class A
 - AS/NZS 3548 Class A
 - VCCI Class A with UTP Cable
 - EN55022 Class B
 - CISPR22 Class B
 - AS/NZS 3548 Class B
 - VCCI Class B with FTP Cable



Caution

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



Caution

Hungarian Class A Warning: This equipment is a class A product and should be used and installed properly according to the Hungarian EMC Class A requirements (MSZEN55022), the Class A

equipment are derived for typical commercial establishments for which special conditions of installation and protection distance are used.

Taiwan (BSMI)

警告使用者：這是甲類資訊產品，在居住環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Japan (VCCI)

この装置は、情報処理装置等電磁障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるより要求されることがあります。



Translated Safety Warnings

These sections include the translations for the safety warnings used in this guide.

Installation Warning



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

- Waarschuwing** Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door bevoegd geschoold personeel.
- Varoitus** Tämän laitteen saa asentaa, vaihtaa tai huoltaa ainoastaan koulutettu ja laitteen tunteva henkilökunta.
- Attention** Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.
- Warnung** Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.
- Avvertenza** Questo apparato può essere installato, sostituito o mantenuto unicamente da un personale competente.

Advarsel	Bare opplært og kvalifisert personell skal foreta installasjoner, utskiftninger eller service på dette utstyret.
Aviso	Apenas pessoal treinado e qualificado deve ser autorizado a instalar, substituir ou fazer a revisão deste equipamento.
¡Advertencia!	Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.
Warning!	Endast utbildad och kvalificerad personal bör få tillåtelse att installera, byta ut eller reparera denna utrustning.

Installation Warning



Warning	Read the installation instructions before you connect the system to its power source.
Waarschuwing	Raadpleeg de installatie-aanwijzingen voordat u het systeem met de voeding verbindt.
Varoitus	Lue asennusohjeet ennen järjestelmän yhdistämistä virtalähteeseen.
Attention	Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.
Warnung	Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.
Avvertenza	Consultare le istruzioni di installazione prima di collegare il sistema all'alimentatore.

Advarsel	Les installasjonsinstruksjonene før systemet kobles til strømkilden.
Aviso	Leia as instruções de instalação antes de ligar o sistema à sua fonte de energia.
¡Advertencia!	Ver las instrucciones de instalación antes de conectar el sistema a la red de alimentación.
Varning!	Läs installationsanvisningarna innan du kopplar systemet till dess strömförsörjningsenhet.

Product Disposal Warning



Warning

Ultimate disposal of this product should be handled according to all national laws and regulations.

Waarschuwing	Dit produkt dient volgens alle landelijke wetten en voorschriften te worden afgedankt.
Varoitus	Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.
Attention	La mise au rebut définitive de ce produit doit être effectuée conformément à toutes les lois et réglementations en vigueur.
Warnung	Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.
Avvertenza	L'eliminazione finale di questo prodotto deve essere eseguita osservando le normative italiane vigenti in materia.

Advarsel	Endelig disponering av dette produktet må skje i henhold til nasjonale lover og forskrifter.
Aviso	A descartagem final deste produto deverá ser efectuada de acordo com os regulamentos e a legislação nacional.
¡Advertencia!	El desecho final de este producto debe realizarse según todas las leyes y regulaciones nacionales.
Varning!	Slutlig kassering av denna produkt bör skötas i enlighet med landets alla lagar och föreskrifter.

Restricted Area Warning



Warning

This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

Waarschuwing

Dit toestel is bedoeld voor installatie op plaatsen met beperkte toegang. Een plaats met beperkte toegang is een plaats waar toegang slechts door servicepersoneel verkregen kan worden door middel van een speciaal instrument, een slot en sleutel, of een ander veiligheidsmiddel, en welke beheerd wordt door de overheidsinstantie die verantwoordelijk is voor de locatie.

Varoitus

Tämä laite on tarkoitettu asennettavaksi paikkaan, johon pääsy on rajoitettua. Paikka, johon pääsy on rajoitettua, tarkoittaa paikkaa, johon vain huoltohenkilöstö pääsee jonkin erikoistyökalun, lukkoon sopivan avaimen tai jonkin muun turvalaitteen avulla ja joka on paikasta vastuussa olevien toimivaltaisten henkilöiden valvoma.

Attention	<p>Cet appareil est à installer dans des zones d'accès réservé. Ces dernières sont des zones auxquelles seul le personnel de service peut accéder en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité. L'accès aux zones de sécurité est sous le contrôle de l'autorité responsable de l'emplacement.</p>
Warnung	<p>Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Ein Bereich mit beschränktem Zutritt ist ein Bereich, zu dem nur Wartungspersonal mit einem Spezialwerkzeugs, Schloß und Schlüssel oder anderer Sicherheitsvorkehrungen Zugang hat, und der von dem für die Anlage zuständigen Gremium kontrolliert wird.</p>
Avvertenza	<p>Questa unità deve essere installata in un'area ad accesso limitato. Un'area ad accesso limitato è un'area accessibile solo a personale di assistenza tramite un'attrezzo speciale, lucchetto, o altri dispositivi di sicurezza, ed è controllata dall'autorità responsabile della zona.</p>
Advarsel	<p>Denne enheten er laget for installasjon i områder med begrenset adgang. Et område med begrenset adgang gir kun adgang til servicepersonale som bruker et spesielt verktøy, lås og nøkkel, eller en annen sikkerhetsanordning, og det kontrolleres av den autoriteten som er ansvarlig for området.</p>
Aviso	<p>Esta unidade foi concebida para instalação em áreas de acesso restrito. Uma área de acesso restrito é uma área à qual apenas tem acesso o pessoal de serviço autorizado, que possua uma ferramenta, chave e fechadura especial, ou qualquer outra forma de segurança. Esta área é controlada pela autoridade responsável pelo local.</p>

- ¡Advertencia!** Esta unidad ha sido diseñada para instalarse en áreas de acceso restringido. Área de acceso restringido significa un área a la que solamente tiene acceso el personal de servicio mediante la utilización de una herramienta especial, cerradura con llave, o algún otro medio de seguridad, y que está bajo el control de la autoridad responsable del local.
- Varning!** Denna enhet är avsedd för installation i områden med begränsat tillträde. Ett område med begränsat tillträde får endast tillträdas av servicepersonal med ett speciellt verktyg, lås och nyckel, eller annan säkerhetsanordning, och kontrolleras av den auktoritet som ansvarar för området.
-

No On/Off Switch Warning



Warning

Unplug the power cord before you work on a system that does not have an on/off switch.

Waarschuwing

Voordat u aan een systeem werkt dat geen aan/uit schakelaar heeft, dient u de stekker van het netsnoer uit het stopcontact te halen.

Varoitus

Ennen kuin teet mitään sellaiselle järjestelmälle, jossa ei ole kaksiasentokytkintä, kytke irti virtajohto.

Attention

Avant de travailler sur un système non équipé d'un commutateur marche-arrêt, débrancher le cordon d'alimentation.

Warnung

Bevor Sie an einem System ohne Ein/Aus-Schalter arbeiten, ziehen Sie das Netzkabel heraus.

Avvertenza

Prima di lavorare su un sistema che non è dotato di un interruttore on/off, scollegare il cavo di alimentazione.

Advarsel	Før det skal utføres arbeid på et system som ikke har en av/på-bryter, skal strømledningen trekkes ut.
Aviso	Antes de começar a trabalhar num sistema que não possua um interruptor ON/OFF, desligue o cabo de alimentação.
¡Advertencia!	Antes de trabajar sobre cualquier sistema que carezca de interruptor de Encendido/Apagado (ON/OFF), desenchufar el cable de alimentación.
Varning!	Dra ur nätsladden innan du utför arbete på ett system utan strömbrytare.

Main Disconnecting Device



Warning	The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.
Waarschuwing	De combinatie van de stekker en het elektrisch contactpunt moet te allen tijde toegankelijk zijn omdat deze het hoofdmechanisme vormt voor verbreking van de aansluiting.
Varoitus	Pistoke/liitinkohta toimii pääkatkaisumekanismina. Pääsy siihen on pidettävä aina esteettömänä.
Attention	La combinaison de prise de courant doit être accessible à tout moment parce qu'elle fait office de système principal de déconnexion.
Warnung	Der Netzkabelanschluß am Gerät muß jederzeit zugänglich sein, weil er als primäre Ausschaltvorrichtung dient.
Avvertenza	Il gruppo spina-presa deve essere sempre accessibile, poiché viene utilizzato come dispositivo di scollegamento principale.

Advarsel	Kombinasjonen støpsel/uttak må alltid være tilgjengelig ettersom den fungerer som hovedfrakoplingsenhet.
Aviso	A combinação ficha-tomada deverá ser sempre acessível, porque funciona como interruptor principal.
¡Advertencia!	El conjunto de clavija y toma ha de encontrarse siempre accesible ya que hace las veces de dispositivo de desconexión principal.
Varning!	Man måste alltid kunna komma åt stickproppen i uttaget, eftersom denna koppling utgör den huvudsakliga fränkopplingsanordningen.

Circuit Breaker (15A) Warning



Warning

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors).

Waarschuwing

Dit produkt is afhankelijk van de installatie van het gebouw voor kortsluit- (overstroom) beveiliging. Controleer of er een zekering of stroomverbreker van niet meer dan 120 Volt wisselstroom, 15 A voor de V.S. (240 Volt wisselstroom, 10 A internationaal) gebruikt wordt op de fasegeleiders (alle geleiders die stroom voeren).

Varoitus

Tämä tuote on riippuvainen rakennukseen asennetusta oikosulkusuojauksesta (ylivirtasuojauksesta). Varmista, että vaihevirtajohtimissa (kaikissa virroitetuissa johtimissa) käytetään Yhdysvalloissa alle 120 voltin, 15 ampeerin ja monissa muissa maissa 240 voltin, 10 ampeerin sulaketta tai suojakytintä.

Attention	Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifier qu'un fusible ou qu'un disjoncteur de 120 V alt., 15 A U.S. maximum (240 V alt., 10 A international) est utilisé sur les conducteurs de phase (conducteurs de charge).
Warnung	Dieses Produkt ist darauf angewiesen, daß im Gebäude ein Kurzschluß- bzw. Überstromschutz installiert ist. Stellen Sie sicher, daß eine Sicherung oder ein Unterbrecher von nicht mehr als 240 V Wechselstrom, 10 A (bzw. in den USA 120 V Wechselstrom, 15 A) an den Phasenleitern (allen stromführenden Leitern) verwendet wird.
Avvertenza	Questo prodotto dipende dall'installazione dell'edificio per quanto riguarda la protezione contro cortocircuiti (sovracorrente). Verificare che un fusibile o interruttore automatico, non superiore a 120 VCA, 15 A U.S. (240 VCA, 10 A internazionale) sia stato usato nei fili di fase (tutti i conduttori portatori di corrente).
Advarsel	Dette produktet er avhengig av bygningens installasjoner av kortslutningsbeskyttelse (overstrøm). Kontroller at det brukes en sikring eller strømbryter som ikke er større enn 120 VAC, 15 A (USA) (240 VAC, 10 A internasjonalt) på faselederne (alle strømførende ledere).
Aviso	Este produto depende das instalações existentes para protecção contra curto-circuito (sobrecarga). Assegure-se de que um fusível ou disjuntor não superior a 240 VAC, 10A é utilizado nos condutores de fase (todos os condutores de transporte de corrente).

- ¡Advertencia!** Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del propio edificio. Asegurarse de que se utiliza un fusible o interruptor automático de no más de 240 voltios en corriente alterna (VAC), 10 amperios del estándar internacional (120 VAC, 15 amperios del estándar USA) en los hilos de fase (todos aquellos portadores de corriente).
- Varning!** Denna produkt är beroende av i byggnaden installerat kortslutningsskydd (överströmsskydd). Kontrollera att säkring eller överspänningsskydd används på fasledarna (samtliga strömförande ledare) för internationellt bruk max. 240 V växelström, 10 A (i USA max. 120 V växelström, 15 A).
-

Ground Conductor Warning



Warning

Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.

Waarschuwing

De aardingsleiding mag nooit buiten werking gesteld worden en de apparatuur mag nooit bediend worden zonder dat er een op de juiste wijze geïnstalleerde aardingsleiding aanwezig is. Neem contact op met de bevoegde instantie voor elektrische inspecties of met een elektricien als u er niet zeker van bent dat er voor passende aarding gezorgd is.

Varoitus

Älä koskaan ohita maajohdinta tai käytä laitteita ilman oikein asennettua maajohdinta. Ota yhteyttä asianmukaiseen sähkötarkastusviranomaiseen tai sähköasentajaan, jos olet epävarma maadoituksen sopivuudesta.

Attention	Ne jamais rendre inopérant le conducteur de masse ni utiliser l'équipement sans un conducteur de masse adéquatement installé. En cas de doute sur la mise à la masse appropriée disponible, s'adresser à l'organisme responsable de la sécurité électrique ou à un électricien.
Warnung	Auf keinen Fall den Erdungsleiter unwirksam machen oder das Gerät ohne einen sachgerecht installierten Erdungsleiter verwenden. Wenn Sie sich nicht sicher sind, ob eine sachgerechte Erdung vorhanden ist, wenden Sie sich an den zuständigen elektrischen Fachmann oder einen Elektriker.
Avvertenza	Non escludere mai il conduttore di protezione né usare l'apparecchiatura in assenza di un conduttore di protezione installato in modo corretto. Se non si sa con certezza che è disponibile un collegamento di messa a terra adeguato, esaminare le Norme CEI pertinenti o rivolgersi a un elettricista qualificato.
Advarsel	Omgå aldri jordingslederen og bruk aldri utstyret uten riktig montert jordingsleder. Ta kontakt med det riktige organet for elektrisk inspeksjon eller en elektriker hvis du er usikker på om det finnes velegnet jording.
Aviso	Nunca anule o condutor à terra nem opere o equipamento sem ter um condutor à terra adequadamente instalado. Em caso de dúvida em relação ao sistema de ligação à terra, contacte os serviços locais de inspeção eléctrica ou um electricista qualificado.

- ¡Advertencia!** No inhabilitar nunca el conductor de tierra ni hacer funcionar el equipo si no existe un conductor de tierra instalado correctamente. Póngase en contacto con una autoridad apropiada de inspección eléctrica o con un electricista competente si no está seguro de que hay una conexión a tierra adecuada.
- Varning!** Koppla aldrig från jordledningen och använd aldrig utrustningen utan en på lämpligt sätt installerad jordledning. Om det föreligger osäkerhet huruvida lämplig jordning finns skall elektrisk besiktningsauktoritet eller elektriker kontaktas.
-

Safety Cover Requirement



Warning

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards.

Waarschuwing

Het beveiligingsdeksel is een integraal onderdeel van het product. Deze eenheid niet bedienen als het beveiligingsdeksel niet geïnstalleerd is. Als het deksel niet op zijn plaats is tijdens de bediening, zal dit de veiligheidsaanbevelingen ongeldig maken en een risico op brand en elektrische gevaren vormen.

Varoitus

Suojakansi on tärkeä osa tuotetta. Yksikköä ei saa käyttää ilman suojakantta. Yksikön käyttö ilman suojakantta mitätöi turvallisuushyväksynät ja aiheuttaa tulipalon ja sähköiskun vaaran.

Attention

Le plateau de sécurité est une partie intégrante du produit. Pour éviter tout risque de feu ou d'accident électrique, n'utilisez jamais l'unité lorsque ce plateau n'est pas installé. Les garanties de sécurité seraient annulées.

Warnung	Die Sicherheitsabdeckung ist integraler Bestandteil des Produkts. Die Einheit darf nicht ohne installierte Sicherheitsabdeckung betrieben werden. Ein Betreiben der Einheit ohne korrekt installierte Abdeckung verstößt gegen die Sicherheitsnormen und führt zu Brandgefahr sowie elektrischen Sicherheitsrisiken.
Avvertenza	Attenzione: Il pannello di sicurezza è parte integrante del prodotto. Non fate funzionare il sistema senza il pannello di sicurezza. Far funzionare il sistema senza il pannello invaliderà le certificazioni di sicurezza e può dare luogo a rischi di incendio e a cortocircuiti.
Advarsel	Dette sikkerhetsdekselet er en integral del av produktet. Enheten skal ikke brukes uten at sikkerhetsdekselet er montert. Bruk av enheten uten at sikkerhetsdekselet sitter på plass, vil ugyldiggjøre sikkerhetsgodkjenningene, og kan dessuten utgjøre fare for brann og faremomenter i forbindelse med elektrisitet.
Aviso	A cobertura de segurança é uma parte integral do produto. Não opere a unidade sem a respectiva cobertura de segurança instalada. Operar a unidade sem esta cobertura anulará as aprovações de segurança e constituirá um risco de incêndio e perigo eléctrico.
¡Advertencia!	La cubierta de seguridad forma parte integral del producto. No haga funcionar este producto sin la cubierta de seguridad instalada, de lo contrario se invalidarían las aprobaciones de seguridad y se correría el riesgo de incendio o de descargas eléctricas.
Varning!	Skyddshuven är en väsentlig del av produkten. Använd inte enheten utan installerad skyddshuv. Om enheten används utan skyddshuven på plats upphävs alla säkerhetsgodkännanden och risk för brandfara och elektrisk fara föreligger.

Jewelry Removal Warning



Warning

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals.

Waarschuwing

Alvorens aan apparatuur te werken die met elektrische leidingen is verbonden, sieraden (inclusief ringen, kettingen en horloges) verwijderen. Metalen voorwerpen worden warm wanneer ze met stroom en aarde zijn verbonden, en kunnen ernstige brandwonden veroorzaken of het metalen voorwerp aan de aansluitklemmen lassen.

Varoitus

Ennen kuin työskentelet voimavirtajohtoihin kytkettyjen laitteiden parissa, ota pois kaikki korut (sormukset, kaulakorut ja kellot mukaan lukien). Metalliesineet kuumenevat, kun ne ovat yhteydessä sähkövirran ja maan kanssa, ja ne voivat aiheuttaa vakavia palovammoja tai hitsata metalliesineet kiinni liitännänpoihin.

Attention

Avant d'accéder à cet équipement connecté aux lignes électriques, ôter tout bijou (anneaux, colliers et montres compris). Lorsqu'ils sont branchés à l'alimentation et reliés à la terre, les objets métalliques chauffent, ce qui peut provoquer des blessures graves ou souder l'objet métallique aux bornes.

Warnung

Vor der Arbeit an Geräten, die an das Netz angeschlossen sind, jeglichen Schmuck (einschließlich Ringe, Ketten und Uhren) abnehmen. Metallgegenstände erhitzen sich, wenn sie an das Netz und die Erde angeschlossen werden, und können schwere Verbrennungen verursachen oder an die Anschlußklemmen angeschweißt werden.

Avvertenza	<p>Prima di intervenire su apparecchiature collegate alle linee di alimentazione, togliersi qualsiasi monile (inclusi anelli, collane, braccialetti ed orologi). Gli oggetti metallici si riscaldano quando sono collegati tra punti di alimentazione e massa: possono causare ustioni gravi oppure il metallo può saldarsi ai terminali.</p>
Advarsel	<p>Fjern alle smykker (inkludert ringer, halskjeder og klokker) før du skal arbeide på utstyr som er koblet til kraftledninger. Metallgjenstander som er koblet til kraftledninger og jord blir svært varme og kan forårsake alvorlige brannskader eller smelte fast til polene.</p>
Aviso	<p>Antes de trabalhar em equipamento que esteja ligado a linhas de corrente, retire todas as jóias que estiver a usar (incluindo anéis, fios e relógios). Os objectos metálicos aquecerão em contacto com a corrente e em contacto com a ligação à terra, podendo causar queimaduras graves ou ficarem soldados aos terminais.</p>
¡Advertencia!	<p>Antes de operar sobre equipos conectados a líneas de alimentación, quitarse las joyas (incluidos anillos, collares y relojes). Los objetos de metal se calientan cuando se conectan a la alimentación y a tierra, lo que puede ocasionar quemaduras graves o que los objetos metálicos queden soldados a los bornes.</p>
Varning!	<p>Tag av alla smycken (inklusive ringar, halsband och armbandsur) innan du arbetar på utrustning som är kopplad till kraftledningar. Metallobjekt hettas upp när de kopplas ihop med ström och jord och kan förorsaka allvarliga brännskador; metallobjekt kan också sammansvetsas med kontakterna.</p>

Lightning Activity Warning



Warning	Do not work on the system or connect or disconnect cables during periods of lightning activity.
Waarschuwing	Tijdens onweer dat gepaard gaat met bliksem, dient u niet aan het systeem te werken of kabels aan te sluiten of te ontkoppelen.
Varoitus	Älä työskentele järjestelmän parissa äläkä yhdistä tai irrota kaapeleita ukkosilmalla.
Attention	Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.
Warnung	Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.
Avvertenza	Non lavorare sul sistema o collegare oppure scollegare i cavi durante un temporale con fulmini.
Advarsel	Utfør aldri arbeid på systemet, eller koble kabler til eller fra systemet når det tordner eller lyner.
Aviso	Não trabalhe no sistema ou ligue e desligue cabos durante períodos de mau tempo (trovoada).
¡Advertencia!	No operar el sistema ni conectar o desconectar cables durante el transcurso de descargas eléctricas en la atmósfera.
Varning!	Vid åska skall du aldrig utföra arbete på systemet eller ansluta eller koppla loss kablar.

SELV Circuit Warning

**Warning**

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Use caution when connecting cables.

Waarschuwing

Om elektrische schokken te vermijden, mogen veiligheidscircuits met extra lage spanning (genaamd SELV = Safety Extra-Low Voltage) niet met telefoonnetwerkspanning (TNV) circuits verbonden worden. LAN (Lokaal netwerk) poorten bevatten SELV circuits en WAN (Regionaal netwerk) poorten bevatten TNV circuits. Sommige LAN en WAN poorten gebruiken allebei RJ-45 connectors. Ga voorzichtig te werk wanneer u kabels verbindt.

Varoitus

Jotta välttyt sähköiskulta, älä kytke pienjännitteisiä SELV-suojapiirejä puhelinverkkojännitettä (TNV) käyttäviin virtapiireihin. LAN-portit sisältävät SELV-piirejä ja WAN-portit puhelinverkkojännitettä käyttäviä piirejä. Osa sekä LAN- että WAN-porteista käyttää RJ-45-liittimiä. Ole varovainen kytkiessäsi kaapeleita.

Attention

Pour éviter une électrocution, ne raccordez pas les circuits de sécurité basse tension (Safety Extra-Low Voltage ou SELV) à des circuits de tension de réseau téléphonique (Telephone Network Voltage ou TNV). Les ports du réseau local (LAN) contiennent des circuits SELV et les ports du réseau longue distance (WAN) sont munis de circuits TNV. Certains ports LAN et WAN utilisent des connecteurs RJ-45. Raccordez les câbles en prenant toutes les précautions nécessaires.

- Warnung** Zur Vermeidung von Elektroschock die Sicherheits-Kleinspannungs-Stromkreise (SELV-Kreise) nicht an Fernsprechnetzspannungs-Stromkreise (TNV-Kreise) anschließen. LAN-Ports enthalten SELV-Kreise, und WAN-Ports enthalten TNV-Kreise. Einige LAN- und WAN-Ports verwenden auch RJ-45-Steckverbinder. Vorsicht beim Anschließen von Kabeln.
- Avvertenza** Per evitare scosse elettriche, non collegare circuiti di sicurezza a tensione molto bassa (SELV) ai circuiti a tensione di rete telefonica (TNV). Le porte LAN contengono circuiti SELV e le porte WAN contengono circuiti TNV. Alcune porte LAN e WAN fanno uso di connettori RJ-45. Fare attenzione quando si collegano cavi.
- Advarsel** Unngå å koble lavspenningskretser (SELV) til kretser for telenettspenning (TNV), slik at du unngår elektrisk støt. LAN-utganger inneholder SELV-kretser og WAN-utganger inneholder TNV-kretser. Det finnes både LAN-utganger og WAN-utganger som bruker RJ-45-kontakter. Vær forsiktig når du kobler kabler.
- Aviso** Para evitar choques eléctricos, não conecte os circuitos de segurança de baixa tensão (SELV) aos circuitos de tensão de rede telefónica (TNV). As portas LAN contêm circuitos SELV e as portas WAN contêm circuitos TNV. Algumas portas LAN e WAN usam conectores RJ-45. Tenha o devido cuidado ao conectar os cabos.

- ¡Advertencia!** Para evitar la sacudida eléctrica, no conectar circuitos de seguridad de voltaje muy bajo (safety extra-low voltage = SELV) con circuitos de voltaje de red telefónica (telephone network voltage = TNV). Los puertos de redes de área local (local area network = LAN) contienen circuitos SELV, y los puertos de redes de área extendida (wide area network = WAN) contienen circuitos TNV. En algunos casos, tanto los puertos LAN como los WAN usan conectores RJ-45. Proceda con precaución al conectar los cables.
- Varning!** För att undvika elektriska stötar, koppla inte säkerhetskretsar med extra låg spänning (SELV-kretsar) till kretsar med telefonnätspänning (TNV-kretsar). LAN-portar innehåller SELV-kretsar och WAN-portar innehåller TNV-kretsar. Vissa LAN- och WAN-portar är försedda med RJ-45-kontakter. Iaktta försiktighet vid anslutning av kablar.
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TN Power Warning



Warning

The device is designed to work with TN power systems.

Waarschuwing

Het apparaat is ontworpen om te functioneren met TN energiesystemen.

Varoitus

Koje on suunniteltu toimimaan TN-sähkövoimajärjestelmien yhteydessä.

Attention

Ce dispositif a été conçu pour fonctionner avec des systèmes d'alimentation TN.

Warnung

Das Gerät ist für die Verwendung mit TN-Stromsystemen ausgelegt.

Avvertenza	Il dispositivo è stato progettato per l'uso con sistemi di alimentazione TN.
Advarsel	Utstyret er utfomet til bruk med TN-strømsystemer.
Aviso	O dispositivo foi criado para operar com sistemas de corrente TN.
¡Advertencia!	El equipo está diseñado para trabajar con sistemas de alimentación tipo TN.
Varning!	Enheten är konstruerad för användning tillsammans med elkraftssystem av TN-typ.

Chassis Warning—Rack-Mounting and Servicing



Warning

To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

- Waarschuwing** **Om lichamelijk letsel te voorkomen wanneer u dit toestel in een rek monteert of het daar een servicebeurt geeft, moet u speciale voorzorgsmaatregelen nemen om ervoor te zorgen dat het toestel stabiel blijft. De onderstaande richtlijnen worden verstrekt om uw veiligheid te verzekeren:**
- Dit toestel dient onderaan in het rek gemonteerd te worden als het toestel het enige in het rek is.
 - Wanneer u dit toestel in een gedeeltelijk gevuld rek monteert, dient u het rek van onderen naar boven te laden met het zwaarste onderdeel onderaan in het rek.
 - Als het rek voorzien is van stabiliseringshulpmiddelen, dient u de stabilisatoren te monteren voordat u het toestel in het rek monteert of het daar een servicebeurt geeft.
- Varoitus** **Kun laite asetetaan telineeseen tai huolletaan sen ollessa telineessä, on noudatettava erityisiä varotoimia järjestelmän vakavuuden säilyttämiseksi, jotta vältetään loukkaantumiselta. Noudata seuraavia turvallisuusohjeita:**
- Jos telineessä ei ole muita laitteita, aseta laite telineen alaosaan.
 - Jos laite asetetaan osaksi täytettyyn telineeseen, aloita kuormittaminen sen alaosaan kaikkein raskaimmalla esineellä ja siirry sitten sen yläosaan.
 - Jos telinettä varten on vakaimet, asenna ne ennen laitteen asettamista telineeseen tai sen huoltamista siinä.

- Attention** Pour éviter toute blessure corporelle pendant les opérations de montage ou de réparation de cette unité en casier, il convient de prendre des précautions spéciales afin de maintenir la stabilité du système. Les directives ci-dessous sont destinées à assurer la protection du personnel :
- Si cette unité constitue la seule unité montée en casier, elle doit être placée dans le bas.
 - Si cette unité est montée dans un casier partiellement rempli, charger le casier de bas en haut en plaçant l'élément le plus lourd dans le bas.
 - Si le casier est équipé de dispositifs stabilisateurs, installer les stabilisateurs avant de monter ou de réparer l'unité en casier.
- Warnung** Zur Vermeidung von Körperverletzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen Sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt. Die folgenden Richtlinien sollen zur Gewährleistung Ihrer Sicherheit dienen:
- Wenn diese Einheit die einzige im Gestell ist, sollte sie unten im Gestell angebracht werden.
 - Bei Anbringung dieser Einheit in einem zum Teil gefüllten Gestell ist das Gestell von unten nach oben zu laden, wobei das schwerste Bauteil unten im Gestell anzubringen ist.
 - Wird das Gestell mit Stabilisierungszubehör geliefert, sind zuerst die Stabilisatoren zu installieren, bevor Sie die Einheit im Gestell anbringen oder sie warten.

- Avvertenza** **Per evitare infortuni fisici durante il montaggio o la manutenzione di questa unità in un supporto, occorre osservare speciali precauzioni per garantire che il sistema rimanga stabile. Le seguenti direttive vengono fornite per garantire la sicurezza personale:**
- Questa unità deve venire montata sul fondo del supporto, se si tratta dell'unica unità da montare nel supporto.
 - Quando questa unità viene montata in un supporto parzialmente pieno, caricare il supporto dal basso all'alto, con il componente più pesante sistemato sul fondo del supporto.
 - Se il supporto è dotato di dispositivi stabilizzanti, installare tali dispositivi prima di montare o di procedere alla manutenzione dell'unità nel supporto.
- Advarsel** **Unngå fysiske skader under montering eller reparasjonsarbeid på denne enheten når den befinner seg i et kabinett. Vær nøye med at systemet er stabilt. Følgende retningslinjer er gitt for å verne om sikkerheten:**
- Denne enheten bør monteres nederst i kabinettet hvis dette er den eneste enheten i kabinettet.
 - Ved montering av denne enheten i et kabinett som er delvis fylt, skal kabinettet lastes fra bunnen og opp med den tyngste komponenten nederst i kabinettet.
 - Hvis kabinettet er utstyrt med stabiliseringsutstyr, skal stabilisatorene installeres før montering eller utføring av reparasjonsarbeid på enheten i kabinettet.

Aviso Para se prevenir contra danos corporais ao montar ou reparar esta unidade numa estante, deverá tomar precauções especiais para se certificar de que o sistema possui um suporte estável. As seguintes directrizes ajudá-lo-ão a efectuar o seu trabalho com segurança:

- Esta unidade deverá ser montada na parte inferior da estante, caso seja esta a única unidade a ser montada.
- Ao montar esta unidade numa estante parcialmente ocupada, coloque os itens mais pesados na parte inferior da estante, arrumando-os de baixo para cima.
- Se a estante possuir um dispositivo de estabilização, instale-o antes de montar ou reparar a unidade.

¡Advertencia! Para evitar lesiones durante el montaje de este equipo sobre un bastidor, o posteriormente durante su mantenimiento, se debe poner mucho cuidado en que el sistema quede bien estable. Para garantizar su seguridad, proceda según las siguientes instrucciones:

- Colocar el equipo en la parte inferior del bastidor, cuando sea la única unidad en el mismo.
- Cuando este equipo se vaya a instalar en un bastidor parcialmente ocupado, comenzar la instalación desde la parte inferior hacia la superior colocando el equipo más pesado en la parte inferior.
- Si el bastidor dispone de dispositivos estabilizadores, instalar éstos antes de montar o proceder al mantenimiento del equipo instalado en el bastidor.

Varning! För att undvika kroppsskada när du installerar eller utför underhållsarbete på denna enhet på en ställning måste du vidta särskilda försiktighetsåtgärder för att försäkra dig om att systemet står stadigt. Följande riktlinjer ges för att trygga din säkerhet:

- Om denna enhet är den enda enheten på ställningen skall den installeras längst ned på ställningen.
 - Om denna enhet installeras på en delvis fylld ställning skall ställningen fyllas nedifrån och upp, med de tyngsta enheterna längst ned på ställningen.
 - Om ställningen är försedd med stabiliseringsdon skall dessa monteras fast innan enheten installeras eller underhålls på ställningen.
-



Numerics

- 802.1 P** IEEE specification for the prioritization of traffic. Supported by the DPA 7630.
- 802.1 Q** IEEE specification for the implementation of VLANs in Layer 2 LAN switches. Supported by the DPA 7630.

A

- auto registration** Process by which Cisco CallManager automatically detects and adds new IP telephony devices to its database, assigning the next available directory number designated for the device type.

C

- call forwarding** Feature of telephony systems that sends incoming calls to a particular directory number to another number.
- call waiting** Feature of telephony systems that notifies caller when another call is coming in during an active call.
- CDP (Cisco Discovery Protocol)** Device-discovery protocol that runs on all Cisco-manufactured equipment. Using CDP, a device can advertise its existence to other devices and receive information about other devices in the network.

Cisco CallManager	Software-based call-processing component of the Cisco IP telephony solution, which extends enterprise telephony features and functions to packet telephony network devices such as IP phones, media processing devices, voice-over-IP (VoIP) gateways, and multimedia applications.
Cisco IP Phone	Phone designed to work with Cisco IP telephony systems. The DPA 7630 appears as multiple Cisco IP Phones to the Cisco CallManager system.
community strings	Passwords used by SNMP to remotely manage network devices.

D

DHCP (Dynamic Host Control Protocol)	Protocol that dynamically allocates and assigns an IP address to network devices.
directory number	Unique phone number assigned to devices in the Cisco CallManager database.
DNS server	Server that maintains a database for resolving host names and IP addresses, allowing network devices to query the DNS to specify remote computers by host names rather than IP addresses.
DPA (digital PBX adapter)	Gateway device used to integrate Cisco CallManager with other Octel and Lucent systems in an IP telephony network.

H

host name	Name that identifies network devices on the TCP/IP network, enabling you to access the device using this name rather than the IP address.
hunt group	Series of directory numbers organized to share the load in such a way that if the first line is busy, the next line is “hunted” until an available number is found.

I

integration mode	Method of using the DPA 7630 to integrate Cisco CallManager, Octel, and Lucent systems. Includes simple, hybrid, and multiple integration modes.
IP (Internet Protocol)	Messaging protocol that addresses and sends packets across the network. To communicate using IP, network devices must have an IP address, subnet, and gateway assigned to them.
IP Address	32-bit address assigned to hosts using TCP/IP. An IP address belongs to one of five classes (A, B, C, D, or E) and is written as 4 octets separated by periods (dotted decimal format). Each address consists of a network number, an optional subnetwork number, and a host number. The network and subnetwork numbers together are used for routing, while the host number is used to address an individual host within the network or subnetwork. A subnet mask is used to extract network and subnetwork information from the IP address.

M

MAC address (Media Access Control Address)	Address identified at the Media Access Control layer in the network. All network devices have unique MAC addresses.
MWI (message waiting indicator)	Method of indicating that a voice mail message was left for a particular directory number. Cisco IP Phones indicate this by lighting an LED on the handset. The DPA 7630 works with Cisco CallManager, Octel, and Lucent systems to ensure that these MWIs are set properly.

N

NTP (network time protocol)	Protocol that ensures that computer systems are set to the same time, relative to Greenwich Mean Time. The DPA 7630 supports NTP to access a designated NTP server in the network to ensure the time in the logs is properly set.
------------------------------------	---

P

PBX (private branch exchange) Call processing device used in traditional (analog or digital) telephony networks. The DPA 7630 can interact with Lucent PBX systems to enable messages between callers on them and Cisco CallManager systems to be handled properly.

pilot directory number Primary directory number used by users to access voice mail. Different hunt groups have different pilot directory numbers.

R

RTP (Real Time Transport Protocol) A standard for transporting real-time data, such as interactive voice and video over data networks.

S

Simple Network Management Protocol (SNMP) Method by which network manage applications can query a device using a supported Management Information Base (MIB).

subnet mask Used to partition the IP address into a network and a host identifier. The subnet mask is used to mask a portion of the IP address so that TCP/IP can distinguish the network ID from the host ID

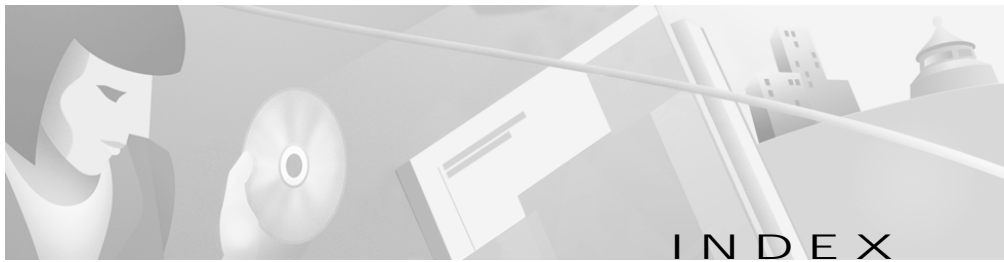
T

TFTP (Trivial File Transfer Protocol) Protocol that allows transfer of files over the network. TFTP requires a TFTP server in your network, which can automatically be identified from the DHCP server.

V

voice mail system Devices used to record, store, and retrieve voice messages. The DPA 7630 integrates with Cisco CallManager and the Octel voice mail system.

Voice over IP Protocol (VOIP) Protocol that enables transfer of voice communications over a data network using the Internet Protocol.



INDEX

A

assigning

default router 4-7

DNS server 4-7

domain name 4-8

host name 4-5

IP address 4-6

NTP server 4-8

subnet mask 4-6

syslog server 5-10

TFTP server 4-13

attaching brackets 2-5

audience, for this document xi

authentication traps, enabling 4-17

auto registration

definition 1

MAC address conversion 3-4

of DPA 7630 to Cisco CallManager 3-4

B

brackets

attaching 2-5

installing 2-6

C

call forwarding

configuring on incoming call ports 3-6

definition 1

disabling on Octel MWI ports 3-7

disabling on virtual port 3-8

call ports, configuring 3-6

call waiting

definition 1

disabling on incoming call ports 3-6

disabling on Octel MWI ports 3-7

disabling on virtual port 3-8

CDP

definition 1

enabling 4-9

checklist, for system setup 3-1

Cisco CallManager

adding DPA

auto-registration 3-4

manually 3-5

configuring 3-5

configuring call ports in 3-6

configuring end-user phones 3-9

configuring Octel MWI ports in 3-7

- definition 2
- enabling message waiting light 3-10
- overview, required tasks 3-2
- purpose of 3-3

Cisco CallManager status

- displaying 5-5
- purpose 5-5

Cisco IP Phone

- definition 2
- ports appearing as 3-4

community strings

- definition 2
- purpose 4-15
- setting 4-15

companding law, setting 4-12

configuration, displaying current 5-7

configuring

- enable password 4-10
- login password 4-9
- SNMP settings 4-15

connecting

- console port 2-10
- Ethernet port 2-8
- telco connectors 2-9

console

- connecting to 2-10
- port pinouts A-4
- using 4-2

contact name, configuring 4-16

D

default router, assigning 4-7

DHCP

- definition 2
- enabling 4-4
- purpose of 4-4

dialing sequence, setting for Octel/Lucent integration 4-11

directory number

- for incoming call ports 3-6
- for Octel MWI ports 3-7
- for virtual port 3-8

displaying

- Cisco CallManager status 5-5
- current configuration 5-7
- network statistics 5-2
- Octel integration status 5-7
- port status 5-3
- system status 5-2

DNS server

- assigning 4-7
- definition 2
- purpose 4-7

documentation, organization xii

domain name, assigning 4-8

DPA 7630

- adding to Cisco CallManager 3-3, 3-4, 3-5
- Cisco CallManager, message waiting light, enabling 3-10

- configuring ports in Cisco CallManager 3-5
- physical description 1-2
- ports, types 3-5
- purpose 1-4
- restarting 4-17

E

- enable password
 - configuring 4-10
 - purpose 4-10
- enabling
 - authentication traps 4-17
 - CDP 4-9
 - DHCP 4-4
 - message waiting light, in Cisco CallManager 3-10
- end-user phone, configuring in Cisco CallManager 3-9
- error messages, resolving 5-12
- Ethernet
 - connecting to 2-8
 - port pinouts A-4

H

- host name
 - assigning 4-5
 - definition 2
 - purpose 4-5

- hunt group
 - definition 2
 - setting up 3-11
- hybrid integration
 - connecting to, Cisco CallManager 1-13
 - connecting to, Octel and Lucent 1-12
 - line configuration 1-13
 - setting 4-10
 - understanding 1-9

- installation
 - connecting, console port 2-10
 - connecting, Ethernet port 2-8
 - connecting, telco connectors 2-9
 - network requirements for 2-2
 - procedure 2-5
 - required tools 2-4
 - safety warnings 2-2
 - verifying 2-11
- integration mode
 - definition 3
 - setting 4-10
 - types 1-5
- IP address
 - assigning 4-6
 - definition 3
 - purpose 4-6

L

- LED status, interpreting 5-8
- location, configuring 4-16
- logging in
 - using console port 4-2
 - using Telnet 4-2
- logging levels, setting 5-10
- login password
 - configuring 4-9
 - purpose 4-9
- Lucent MWI, clearing 4-12

M

- MAC address
 - converted format 3-4
 - definition 3
 - used during auto registration 3-4
- main menu
 - figure 4-4
 - navigating 4-3
- MWI
 - Cisco CallManager settings 4-13
 - clearing on Lucent 4-12
 - definition 3
 - dialing sequence on Octel 3-14

N

- navigating, main menu 4-3
- network statistics
 - displaying 5-2
 - purpose 5-2
- NTP, definition 3
- NTP server
 - assigning 4-8
 - purpose 4-8

O

- Octel, configuring 3-13
- Octel/Lucent integration menu
 - clear Lucent MWIs 4-12
 - companding law 4-12
 - mode 4-10
 - MWI settings 4-11
- Octel integration status
 - displaying 5-7
 - purpose 5-7
- Octel MWI ports
 - configuring in Cisco CallManager 3-7
 - directory number 3-7
 - on the DPA 7630 3-7

P

passwords

- configuring 4-9
- enable 4-10
- login 4-9

pilot directory number

- configuring 4-14
- definition 4
- purpose 4-14
- setting up 3-12

ports

- pinouts A-2
- setting logging on 5-10
- types 3-5

port status

- displaying 5-3
- purpose 5-3

R

rack, installing DPA 7630 in 2-5

- read-only community string, setting 4-15
- read-write community string, setting 4-15
- restarting, DPA 7630 4-17

S

safety warnings

- for installation 2-2

- translations B-1

setting

- community strings 4-15
- companding law 4-12
- dialing sequence 4-11
- integration mode 4-10

- shelf, placing DPA 7630 on 2-7

simple integration

- connecting, to Octel 1-7
- connecting to, Cisco CallManager 1-8
- line configuration 1-8
- setting 4-10
- understanding, Cisco CallManager 1-7
- understanding, Octel 1-6

- SNMP, definition 4

SNMP settings

- community strings 4-15
- configuring 4-15
- configuring contact name 4-16
- configuring location 4-16
- configuring trap receiver stations 4-17
- configuring trap settings 4-16
- enabling authentication traps 4-17

subnet mask

- assigning 4-6
- definition 4

- syslog server, assigning 5-10

- system status

displaying 5-2

purpose 5-2

T

technical specifications

physical and operation specifications A-1

port and cable specifications A-2

port pinouts A-2

telco

connecting to 2-9

port pinouts A-2

Telnet, using 4-2

TFTP, definition 4

TFTP server

assigning 4-13

purpose 4-13

translations, safety warnings B-1

trap receiver stations, configuring 4-17

trap settings, configuring 4-16

V

verifying, installation 2-11

virtual port

assigning directory number 3-8

configuring 3-8