



Cisco IP Interoperability and Collaboration System Server Installation Guide

Release 1.0(1)

Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

Text Part Number: OL-8155-01



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Preface

Introduction

The *Cisco IPICS Server Installation Guide* provides you with the information that you need to install the Cisco IP Interoperability and Collaboration System (IPICS) 1.0(1) server software. System administrators should review the information in this document to learn how to prepare for the Cisco IPICS server software installation and recover from any errors that might occur.

Audience

The *Cisco IPICS Server Installation Guide* targets system administrators who install, configure, and operate the Cisco IPICS server software and the Cisco Linux operating system.

Organization

This document is organized as follows:

Chapter 1, “Overview”	The introduction provides an overview of the Cisco IPICS server software installation. This chapter also includes information about the system requirements for Cisco IPICS.
Chapter 2, “Installing the Cisco IPICS Server Software”	This chapter describes the steps involved in installing the Cisco Linux operating system, and the Cisco IPICS server software and its components.
Chapter 3, “Upgrading Cisco IPICS”	This chapter describes the steps that you need to follow to upgrade the Cisco IPICS server software.
Chapter 4, “Uninstalling Cisco IPICS”	This chapter describes the steps that you follow to uninstall the Cisco IPICS server software.
Chapter 5, “Troubleshooting the Installation”	This chapter includes troubleshooting tips for server installation issues.

Related Documentation

For more information about Cisco IPICS server software and the Cisco IPICS Push-to-Talk Management Center (PMC) application, see the following documentation:

- *Cisco IPICS Server Administration Guide, Release 1.0(1)*—This document contains information about the key configuration, operation, and management tasks for the Cisco IPICS server.
- *Cisco IPICS PMC Installation and User Guide, Release 1.0(1)*—This document describes how to install, configure, manage, and operate the Cisco IPICS PMC application

- *Cisco IPICS PMC Quick Start Guide, Release 1.0(1)*—This document provides tips and quick references for the most frequently used procedures that a user can perform on the Cisco IPICS PMC.
- *Cisco IPICS PMC Debug Reference Quick Start Guide, Release 1.0(1)*—This document provides a quick reference for troubleshooting and debugging the Cisco IPICS PMC.
- *Cisco IPICS Troubleshooting Guide, Release 1.0(1)*—This document includes reference material for system administrators about how to maintain and troubleshoot the Cisco IPICS system.
- *Cisco IPICS Backup and Restore Guide, Release 1.0(1)*—This document describes the administrative procedures that you use to backup and restore the database files on the Cisco IPICS server.
- *Cisco IPICS Command Line Interface, Release 1.0(1)*—This document describes the commands that you can use from the command line interface (CLI) to obtain information or to change settings for the Cisco IPICS PMC.
- *Release Notes for Cisco IPICS Release 1.0(1)*—This document contains a description of the new and changed features, important notes, caveats, and documentation updates for Cisco IPICS release 1.0(1).
- *Cisco IPICS Compatibility Matrix*—This document contains information about compatible hardware and software that is supported for use with Cisco IPICS.
- *Cisco IPICS 1.0(1) Resources Card (Documentation Locator)*—This document includes a summary of the documentation that is available for Cisco IPICS release 1.0(1).

To access the documentation suite for Cisco IPICS, see the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/cis/c_ipics/index.htm

Cisco CallManager Documentation

For information about Cisco CallManager, see the documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Cisco 7800 Series Media Convergence Servers Documentation

For information about Cisco 7800 Series Media Convergence Servers, see the MCS data sheets at this URL:

http://www.cisco.com/en/US/products/hw/voiceapp/ps378/products_data_sheets_list.html

Cisco IP Phone Documentation

For information about Cisco IP Phones, see the documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm

Cisco Land Mobile Radio over IP

For information about Cisco Land Mobile Radio (LMR) over IP, see the documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123newft/123t/123t_7/lmrip/index.htm

Cisco Security Agent

For information about Cisco Security Agent (CSA), see the documentation at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/vpn/ciscosec/index.htm>

Cisco IOS Documentation

The Cisco IOS software documentation set describes the tasks and commands necessary to configure certain system components and other Cisco products, such as access servers, routers, and switches. Each configuration guide can be used in conjunction with its corresponding command reference.

For information about Cisco IOS software configuration, see the documentation at this URL:

<http://www.cisco.com/univercd/cc/td/doc/product/software/>

Document Notes and Conventions

This document uses the following conventions for instructions and information:



Note

Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this document.



Caution

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

Table 1 **Conventions**

Convention	Description
boldface font	Commands and keywords appear in boldface .
<i>italic font</i>	Command input for which you supply the values appear in <i>italics</i> .
[]	Optional keywords and default responses to system prompts appear within square brackets.
{x x x}	A choice of keywords (represented by x) appears in braces separated by vertical bars. You must select one.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
^ or Ctrl	Represent the key labeled <i>Control</i> . For example, when you read <i>^D</i> or <i>Ctrl-D</i> , you should hold down the Control key while you press the D key.
screen font	Examples of information displayed on the screen.

Table 1 *Conventions (continued)*

Convention	Description
boldface screen font	Information that 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> .

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/techsupport>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command

guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from the Ordering tool or Cisco Marketplace.

Cisco Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

Cisco Marketplace:

<http://www.cisco.com/go/marketplace/>

Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

<http://www.cisco.com/go/marketplace/>

Cisco will continue to support documentation orders using the Ordering tool:

- Registered Cisco.com users (Cisco direct customers) can order documentation from the Ordering tool:

<http://www.cisco.com/en/US/partner/ordering/>

- Instructions for ordering documentation using the Ordering tool are at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 1 800 553-NETS (6387).

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

<http://www.cisco.com/go/psirt>

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com

An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532



Tip

We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.x through 8.x.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco

service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

<http://tools.cisco.com/RPF/register/register.do>



Note

Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended

solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

<http://www.ciscopress.com>

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

<http://www.cisco.com/packet>

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

or view the digital edition at this URL:

<http://ciscoiq.texterity.com/ciscoiq/sample/>

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

<http://www.cisco.com/ipj>

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

<http://www.cisco.com/en/US/products/index.html>

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

<http://www.cisco.com/discuss/networking>

- World-class networking training is available from Cisco. You can view current offerings at this URL:

<http://www.cisco.com/en/US/learning/index.html>



Overview

This chapter provides an overview of the Cisco IPICS server software installation. It also contains information about system requirements for the Cisco IPICS server software and the PMC application.

This chapter includes the following sections:

- [Installation Overview, page 1-1](#)
- [Installed Components, page 1-4](#)
- [System Requirements, page 1-4](#)

Installation Overview

The Cisco IPICS server software is installed on supported Cisco Media Convergence Systems (MCS) servers. The installation process involves first installing the Cisco Linux operating system and then installing the Cisco IPICS server software. All of the software that you need for Cisco IPICS is contained on two CDs that are packaged with the product.

You would typically perform the Cisco Linux and Cisco IPICS installations in the same session, although you can choose to install the operating system and then install the Cisco IPICS server software at a later time.

The software that installs the Cisco Linux operating system and Cisco IPICS server software is mostly automated, but it does require some user interaction to complete. The installation procedures include the following steps:

Installation CD	Step	Description
Cisco Linux operating system	Cisco Linux Setup Utility	This procedure disables default features on the server that may be incompatible with Cisco Linux.
	Cisco Linux Package Installation	In this phase, the installer overwrites the hard drive and installs files on the server. A progress window displays as the files are installed.
	GRUB bootloader	This process loads the operating system image as the first step in a process called firstboot. Cisco Linux runs firstboot only once, just after the operating system is installed for the first time.
	Cisco Linux Configuration and Setup	In these steps, you set the date and time and create an administrative user.
	Entering the GNOME username/password	These windows allow you to log in as root using the password supplied by Cisco.
	Ethernet port configuration	In this procedure, you assign the IP address for the server, create a DNS name (optional), and reactivate the Ethernet port.

Installation CD	Step	Description
Cisco IPICS server software	Introduction	This window provides introductory information about the installation.
	End User License Agreement	This window allows you to review the license agreement for the Cisco IPICS server software.
	Choice of the install set	This step describes the three installation options on the Cisco IPICS installation CD and allows you to choose one of the types.
	Password change for the root user	This step allows you to change the default Cisco Linux password.
	Password creation for the ipicsadmin user	This step allows you to create a password for the ipicsadmin user, who has limited Cisco Linux privileges.
	Password creation for the informix user	This step allows you to create a password for the informix user, who has limited Cisco Linux privileges, which are related to the Informix database files and folders.
	Preinstallation summary	In this step, a window displays information such as the version of Cisco IPICS that you are installing, the installation directory, and the disk space requirement for the installation.
	Package installation	In this step, a window displays that shows the progress of the installation and what Cisco IPICS files the installer is writing to the server.
	Option to restart the server	This step allows you to choose between restarting the server immediately or at a later time.

Installed Components

The Cisco IPICS installation includes the following components:

- Cisco IPICS Administration Console (Cisco IPICS version 1.0(1))
- Cisco IPICS Data Store (IBM Informix Database Server version 10.0)
- Cisco Security Agent version 4.5
- Tomcat service

System Requirements

This section describes the hardware and software requirements for the Cisco IPICS server. This section includes the following topics:

- [Hardware Requirements, page 1-4](#)
- [Software Requirements, page 1-6](#)

Hardware Requirements

The hardware components required to deploy Cisco IPICS include a server on which you install the Cisco IPICS server software. For users of land mobile radio (LMR) systems to communicate in Cisco IPICS conferences, you must deploy one or more routers that are equipped with T1 network modules.

[Table 1-1](#) lists hardware components that Cisco supports for use with the Cisco IPICS server software:

Table 1-1 **Hardware Requirement**

Hardware Component	Supported Models
Cisco servers	Cisco Media Convergence Server (MCS), model MCS-7825-H1-S31, with 2GB memory
	Cisco Media Convergence Server (MCS), model MCS-7845-H1-S31 with 4 GB memory

Table 1-1 Hardware Requirement (continued)

Hardware Component	Supported Models
Cisco Integrated Service Routers	Cisco 2811
	Cisco 3725
	Cisco 3845
T1 network modules	VWIC-MFT1-2T1 in a 2811 or 3845 VIC/WIC slot, with internal digital signal processor (PVDM2-64)
	NM-HDV2/NM-HDV2-2T1 in a 2811, 3725, or 3845 with digital signal processor (PVDM2-64)
Analog ports	VIC2-2E/M in a 2811 or 3845 VIC/WIC slot, with internal digital signal processor (PVDM2-64)
	NM-HD-2V (or 2VE) with VIC2-2E/M 3725 and NM slots in 2811, 3725, or 3845

PMC Requirements

The minimum PMC requirements includes the following items:

- 300 MHz Pentium III class PC, including Mobile Pentium
- 256 MB RAM
- 16 MB free space
- Network interface card

Cisco IP Phone Requirements

Cisco IPICS allows virtual talk group (VTG) participation of the following models of Cisco IP Phones by enabling these phones to work with Cisco IPICS as IP phone multicast client devices:

- Cisco IP Phone 7960
- Cisco IP Phone 7970

Software Requirements

This section lists the software requirements for using Cisco IPICS.

Internet Browser

The Cisco IPICS Administration Console, the graphical user interface (GUI) for the server software, requires that you use Microsoft Internet Explorer version 6.0.2 or later.

Router Software

You must install Cisco IOS 12.4T software on any gateway router you use with Cisco IPICS.

PMC Software

Minimum requirements are Windows 2000 Professional SP4 or Windows XP Professional SP2.

Cisco IP Phone Firmware

This release of Cisco IPICS requires the following minimum versions of Cisco CallManager and Cisco IP Phone firmware:

- Cisco CallManager, version 4.1(2)
- Cisco IP Phone 7960, version 7.2(3)
- Cisco IP Phone 7970, version 7.0(1)



Installing the Cisco IPICS Server Software

This chapter describes the procedures you need to follow to install the Cisco Linux operating system and the Cisco IPICS server software. There are also tasks you must complete before you begin the installation. After you complete the installation procedures for Cisco Linux and Cisco IPICS, there are additional tasks you must accomplish before you can use the Cisco IPICS software.

This chapter includes the following sections:

- [Before You Begin, page 2-1](#)
- [Installing the Cisco Linux Operating System, page 2-3](#)
- [Installing Cisco IPICS Server Software, page 2-24](#)
- [Preparing to Use Cisco IPICS, page 2-47](#)

Before You Begin

This section describes the tasks that are necessary to prepare for the Cisco Linux operating system and Cisco IPICS installations. This section includes the following topics:

- [Obtaining the IP Addresses for Your Cisco IPICS System, page 2-2](#)
- [Preinstallation Checklist, page 2-2](#)

Obtaining the IP Addresses for Your Cisco IPICS System

To facilitate communications between your users, your Cisco IPICS system requires a supply of IP addresses that can be reached by all users in your network domain.

Cisco IPICS requires a multicast address for each of the following purposes:

- When you create a PTT channel. You can use a channel to bring an LMR signal into Cisco IPICS or to provide a meeting place for a group of PMC or Cisco IP Phone users.
- When you activate a VTG.

Consult your network administrator to obtain IP addresses for the following Cisco IPICS purposes:

- Multicast addresses for your channels and VTGs.
- For your routers, obtain a small subnet and then take addresses from it.
- The address for the Cisco IPICS server must be a static, local IP address that is advertised on the network. Cisco IPICS clients such as PMCs and Cisco IP Phones must have the static address of the Cisco IPICS server to maintain communication.

For information on how to use the IP addresses to configure Cisco IPICS, refer to the [Cisco IPICS Server Administration Guide](#).

Preinstallation Checklist

Before you begin the installation, ensure that you have performed the following tasks:

Preinstallation Tasks	Checkoff
Check that the power cords on your server and monitor are securely attached and plugged in to a power source.	<input type="checkbox"/>
Attach an Ethernet network cable to the NIC1 port on your server.	<input type="checkbox"/>
Cisco strongly recommends that you attach an uninterruptible power supply (UPS) to your system and ensure that the UPS is operating correctly.	<input type="checkbox"/>

Preinstallation Tasks (continued)	Checkoff
Check that your monitor cable connector is appropriate for the connector on the server. VGA analog and VGA digital are common connector types, but are not compatible with each other without the proper adapter.	<input type="checkbox"/>
Ensure that you have obtained the IP address, subnet mask, default gateway and DNS server (optional) information for the Cisco IPICS server from your network administrator.	<input type="checkbox"/>
<p>Before you begin the installation process, check the power settings on your monitor to make sure that the display is not configured with any timeout values.</p> <p>Note If your display times out while you are performing the installation and you can no longer see the progress on your monitor, move your mouse to restore the display. Make sure that you do not press any keys on the keyboard in an effort to restore your display; pressing keys without being able to view the information on the display can cause undesirable results.</p>	<input type="checkbox"/>
Check that you have both CDs from the Cisco IPICS installation package.	<input type="checkbox"/>

Installing the Cisco Linux Operating System

Cisco IPICS runs on Cisco Linux, which is based on the Red Hat Enterprise Linux AS 3 operating system (OS). This section describes the steps to install the Cisco Linux operating system. You may install the Cisco IPICS server software any time after you finish the Cisco Linux installation.

To perform this installation, you must have the Cisco Linux installation CD that was included with your product package. The Cisco Linux installation should take approximately 15-20 minutes.



Note

The Cisco Linux installation includes a procedure to disable the Intel SATA RAID controller option and the virtual install disk, which are default features of the Cisco MCS 7825 and Cisco MCS 7845. The Redundant Array of Disks (RAID) is a combination of multiple small, independent disk drives that create an array. This

array of drives appears to the server as a single logical storage unit or drive.

The virtual install disk is a holding place within the system ROM that contains embedded boot drivers. These boot drivers assist in completing the operating system installation.

The Cisco Linux operating system that is provided with Cisco IPICS does not support RAID or the virtual install disk. Because RAID and virtual install disk are enabled by default as part of the factory settings, you must disable these features.

To install Cisco Linux, perform the following procedure:

Procedure

- Step 1** Turn the server on by pushing the power button that is located on the front of the server.
- Step 2** Insert the Cisco Linux installation CD into the Cisco MCS disk drive.
- Step 3** If you are installing the Cisco Linux operating system on the Cisco MCS 7825-H1-S31, you must disable SATA software RAID and the Virtual Install Disk. If you have the Cisco MCS 7845, you do not have to disable these features and can proceed to Step [k](#).

To enter the System Maintenance menu, follow these steps:

- a. Listen closely to the sounds that you hear from the server and watch your monitor as the server boots.
- b. When you hear the server beep and see the message, “Press F10 to enter System Maintenance Menu,” press **F10**.

The System Maintenance menu displays with the following choices:

- Setup Utility—This menu provides access to configuration utilities with which you can change settings for server components, such as the SATA Software RAID and the Virtual Install Disk.
 - Inspect Utility—This menu provides access to statistical information about the server and its components, such as PCI Device Info and a System Memory Map.
 - Diagnostic Utility—This menu includes utilities you can use to perform diagnostic tests on the server, such as a memory test or a CPU test.
- c. To choose **Setup Utility** from the System Maintenance menu, press **Enter**.

The ROM-Based Setup Utility displays. The Utility provides information about the server in the right pane, such as the model number, serial number (S/N), and other product information.

The left pane displays a menu of settings, which you can access by pressing the **Up Arrow** and **Down Arrow** keys.

- d. From the Setup Utility menu, press the **Down Arrow** key to highlight **Advanced Options** and then press **Enter**.

The Advanced Options menu displays.

- e. Press the **Down Arrow** key to highlight **Virtual Install Disk**

When you highlight Virtual Install Disk, the current status displays below the menu.

- f. If the status displays as Disabled, proceed to Step [h](#).

If the Virtual Install Disk displays as Enabled, change the Configuration Selection. To change the selection, press **Enter** to open the menu and then press the **Down Arrow** key to highlight **Disabled**.

- g. To confirm your choice, press **Enter** again.

The Virtual Install Disk setting displays as Disabled.

- h. From the Advanced Options Menu, press the **Down Arrow** key to highlight **SATA Software Raid**.

The current status displays below the menu.

- i. If the status displays as Disabled, proceed to Step [k](#).

If the SATA Software Raid status displays as Enabled, press **Enter** to open the menu and press the **Down Arrow** key to highlight **Disabled**.

- j. To confirm your choice, press **Enter** again.

- k. To close the menus and exit the utility, press **Esc** twice.

- l. To confirm the exit and save your changes, press **F10**.

If you press any other key, you will be returned to the Main Menu of the Setup Utility.

The server begins to boot from the CD. This time, when the system beeps, let it continue to boot from the CD.

The Cisco Linux installation displays the CD version and the option to overwrite the hard drive. See [Figure 2-1](#) for an example of this message.



Note The CD version that displays reflects the version of Cisco Linux, not the Cisco IPICS server software.

Figure 2-1 *Overwrite Hard Drive Message*

```

*****
Versions on the hard drive:

The version of this CD/DVD is: 1.0
Do you want to overwrite the hard drive? [Y]es | [N]o

*****
> y

```

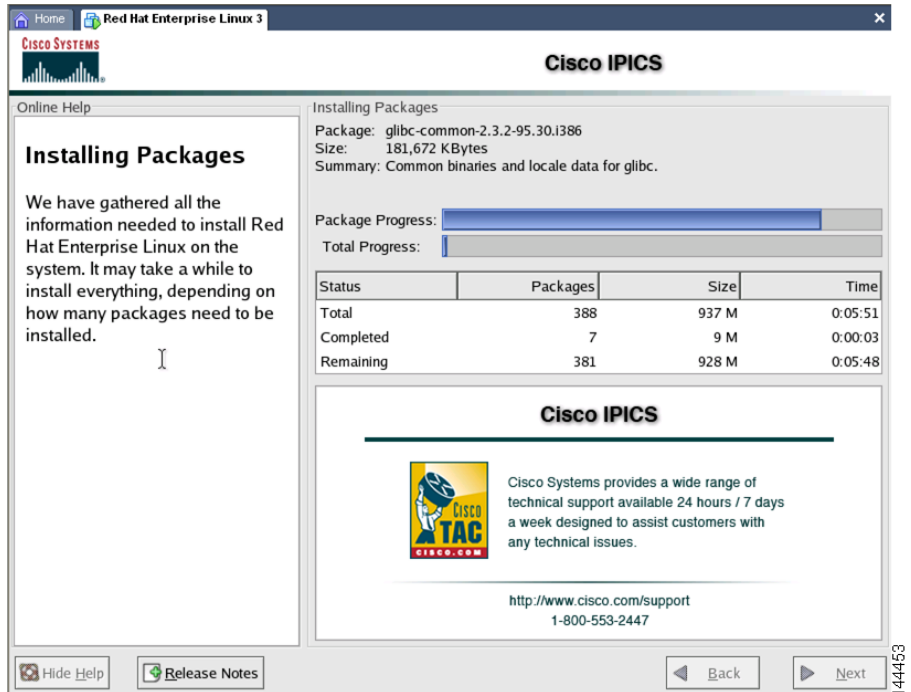
144463

Step 4 To overwrite the hard drive and install Cisco Linux files, follow these steps:

- a. When the system prompts you to overwrite the hard drive, enter **Y** and then press **Enter**.

The Cisco Linux Installation Progress window displays information about the version of Cisco Linux that you are installing. A table displays the progress of the installation and the number of software packages that remain to be installed. See [Figure 2-2](#) for an example of this window.

Figure 2-2 Cisco Linux Installing Packages Window



The Cisco Linux installer first formats the file system and then proceeds with installing the software packages.



Note The file system formatting and package installation takes approximately 12 minutes. However, the screen may appear unresponsive for a few minutes after the package installation completes. This period of inactivity occurs because the system must complete background security processes.

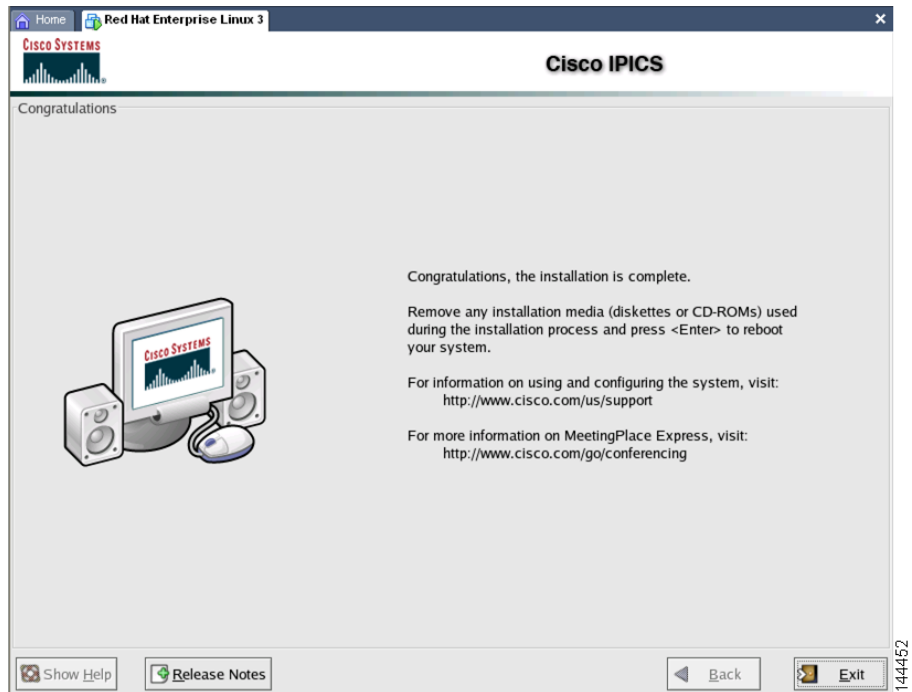
The MCS server ejects the installation CD and the Installation Complete window displays (see Figure 2-3 for an example of the Installation Complete window).

- b. Remove the CD from the drive.

**Note**

Keep your installation CD in a safe location, so that you can reinstall the operating system, if necessary.

Figure 2-3 *Installation Complete Window*



- c. (Optional) Click **Release Notes** or press **Alt-R** to view the technical information related to this release of Cisco Linux.

**Note**

Although the window indicates that the installation is complete (see [Figure 2-3](#) for an example of this window), you still must complete several more tasks before you can proceed to the Cisco IPICS server software installation. The remaining steps in this section describe the process of configuring the Cisco Linux operating system.

- d. To close the window and reboot the server, click **Exit** or press **Alt-E**.

The server reboots.



Note During the bootup process a GRUB version window displays. The window times out in a few seconds. Let the time expire and boot process continue.

The Linux hardware detection utility window displays with a message that it has detected the Intel SATA Controller in your server. The utility allows you to configure controller.

Step 5 Press any key to configure the controller before the window times out.

A Hardware Added window displays and states that the Intel SATA Controller was added to your system. The window displays the following options:

- Configure the device—This option specifies the default.
- Ignore the device—No configuration is added to the system, but you would not be prompted if the system detected the controller again when you restart the server in the future.
- Do nothing—No configuration is added to the system and you would be notified again if the system detects the controller the next time you restart the server.

Step 6 To configure the hardware detection utility, press **Enter** to accept the default and configure the controller.

A Cisco Linux Welcome window displays. See [Figure 2-4](#) for an example of this window.

Figure 2-4 Cisco Linux Welcome Window

Step 7 To proceed with the setup of Cisco Linux, follow these steps:

- a. At the Welcome window, click **Next**.

The Date and Time Window displays. See [Figure 2-5](#) for an example of this window.

Figure 2-5 *Date and Time Window*

Date and Time

Please set the date and time for the system.

Date

← August → 2005 →

Sun	Mon	Tue	Wed	Thu	Fri	Sat
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

Time

Current Time : 07:23:18

Hour : 14

Minute : 22

Second : 3

Network Time Protocol

Your computer can synchronize its clock with a remote time server using the Network Time Protocol.

Enable Network Time Protocol

Server:

◀ Back ▶ Next

144467

- b. In the Date pane, use the arrows to navigate to the correct month and year and then click the current day of the month. Then, in the Time pane, use the arrows to set the Hour, Minute, and Second to the current time.

**Caution**

Make sure that you only perform system date changes before you install the Cisco IPICS server software. Cisco IPICS does not support any modification of the system date in the operating system after the Cisco IPICS server software has been installed. Therefore, it is very important that you check your system date to ensure that it properly reflects your local date and time. If the system date is not properly set to your local date and time, you must adjust it before you install the Cisco IPICS server software. If you try to change the system date and time after you install the software, you will invalidate your license and cause the system to become inoperable.

**Note**

Cisco IPICS does not support the Network Time Protocol (NTP) feature.

- c. To continue with the installation, click **Next**.

The System User window displays.

**Note**

The system user you create in Step [d](#) is a non-administrative user that has limited capabilities in Cisco Linux. For example, this user can browse the directories on the server, including the Cisco IPICS directories, and open configuration files to view them. However, the system user, by default, cannot modify configuration files.

See [Figure 2-6](#) for an example of the window.

Figure 2-6 System User Window

- d. To create a non-administrator user for the Cisco Linux system, enter the name for the user into the Username field.
- e. Press **Tab** to move to the other fields:
 - The Full Name field is optional.
 - The Password and Confirm Password fields are required. The password must contain at least six characters.



Note Be aware that Cisco IPICS does not support the use of network authentication functionality.

- f. To continue with the setup, click **Next**.
The Additional CDs window displays. See [Figure 2-7](#) for an example.

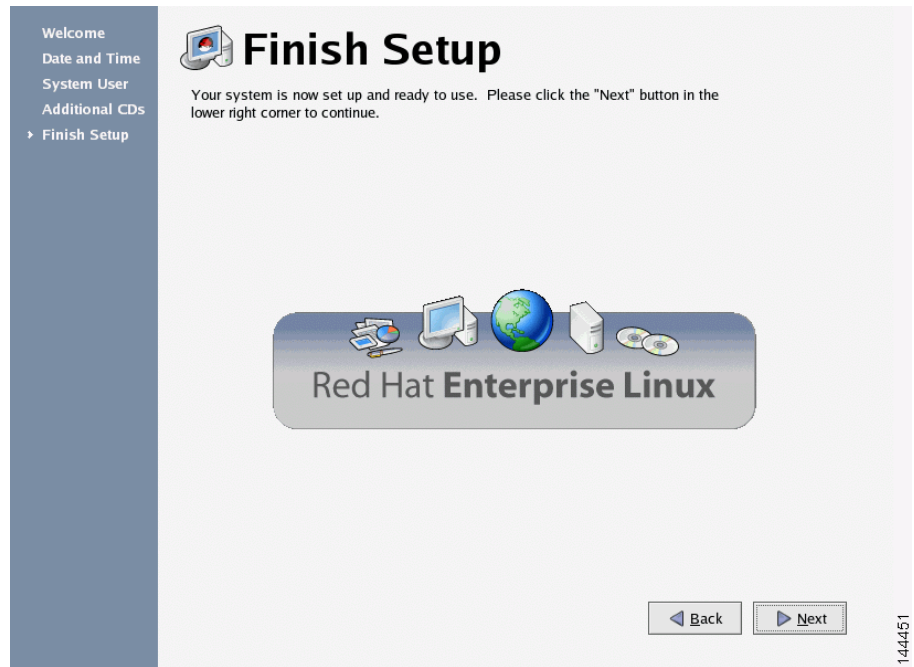
Figure 2-7 *Additional CDs Window***Note**

Because Cisco IPICS does not support the use of third-party plug-ins and applications, documentation CDs, or add-ons, do not click any of the **Install** buttons in the Additional CDs window.

- g. To continue with the setup, click **Next**.

The Finish Setup window displays. See [Figure 2-8](#) for an example of this window.

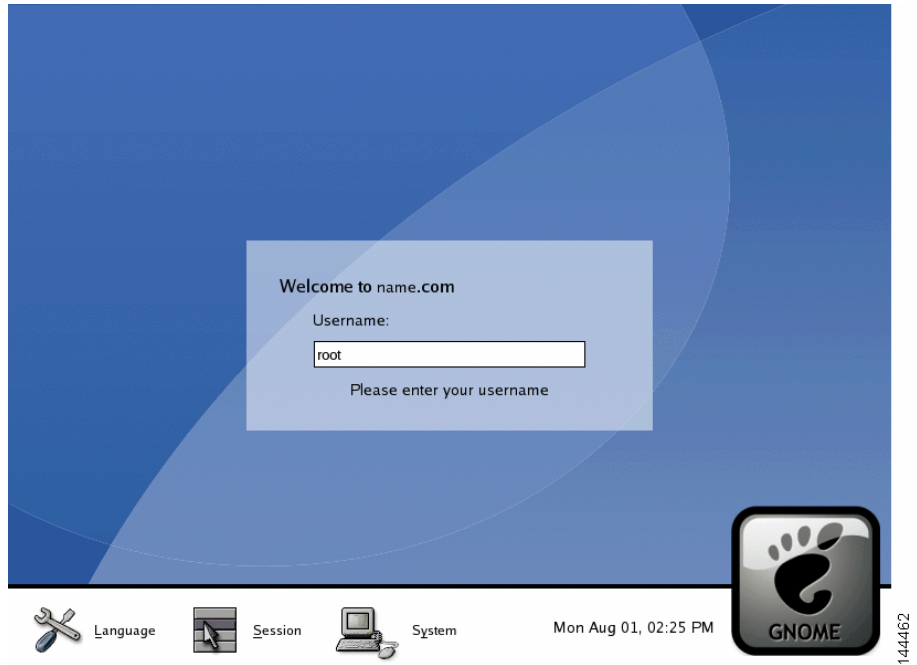
Figure 2-8 *Finish Setup Window*



- h. To continue, click **Next**.

The GNOME login window displays with a Username field. See [Figure 2-9](#) for an example.

Figure 2-9 GNOME Username Field



Note In [Step 8](#), ensure that you log in as the root user and not the system user that you created earlier in the installation. If you do not log in as root, you cannot configure the Ethernet port.

Step 8 Enter **root** in the Username field and press **Enter**.
The GNOME login window displays with a password field.

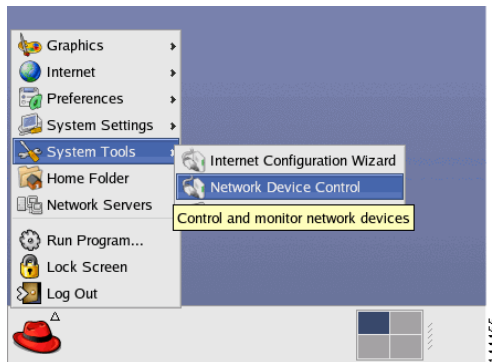
Step 9 Enter **cisco** in the Password field and press **Enter**.
The Cisco Linux desktop displays.



Note While Cisco supplies the root password to use in this part of the installation, the Cisco IPICS installation provides an opportunity to change this password to ensure system security.

- Step 10** You must now configure the Ethernet port in your server that you will use for Cisco IPICS. To configure the port, follow these steps:
- Open a terminal window to enter commands. To do so, open the Red Hat menu on the Cisco Linux desktop by clicking the **Red Hat** icon.
 - Choose **System Tools > Network Device Control**. See [Figure 2-10](#) for an example of the menu.

Figure 2-10 Using the Red Hat Menu

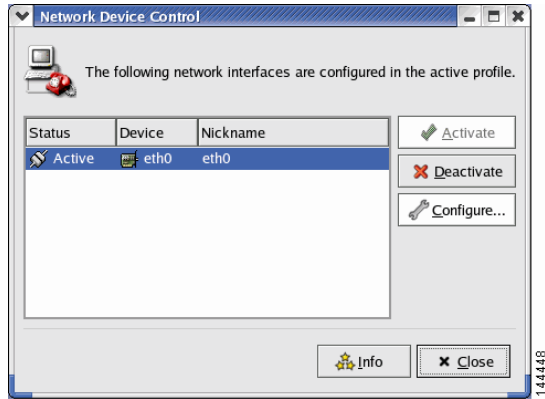


The Network Device Control window displays at least one active port. See [Figure 2-11](#) for an example of the window.



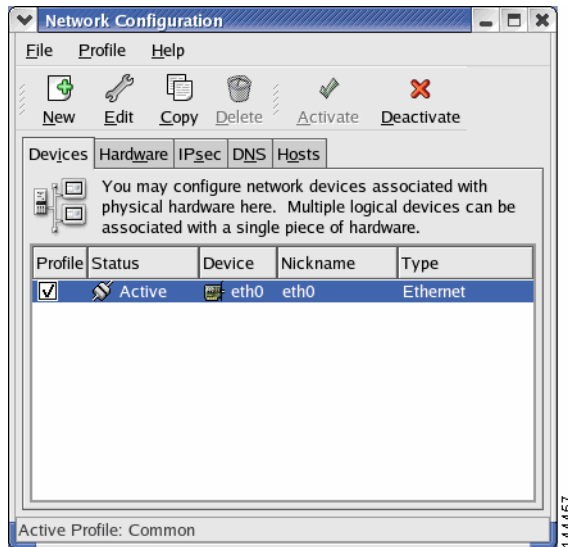
Note Your server may have more than one Ethernet port. If so, choose eth0.

Also, ensure that your Ethernet cable is plugged into NIC1 and not NIC2.

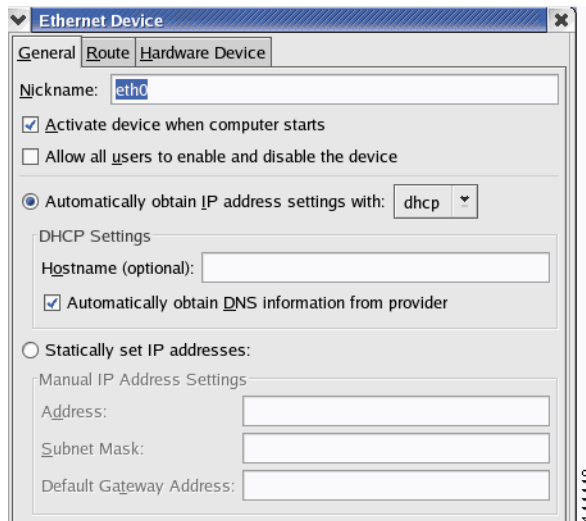
Figure 2-11 Network Device Control Window

- c. To configure the port, click the **eth0** device from the list and then click **Configure**.

The Network Configuration window displays. See [Figure 2-12](#) for an example of the window.

Figure 2-12 Network Configuration Window

- d. To continue with the configuration, click **eth0** again and then click **Edit**. The Ethernet Device window displays. See [Figure 2-13](#) for an example of the window.

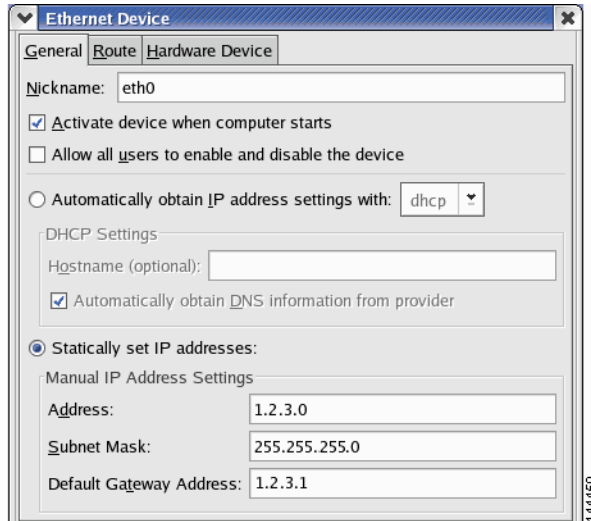
Figure 2-13 Ethernet Device Window

- e. To enter a static IP address for eth0, click the **Statically set IP addresses** option.

The Statically set IP addresses fields become active.



Note For Cisco IPICS to function properly, the Cisco IPICS server must have a static IP address.

Figure 2-14 Entering the Static IP Address

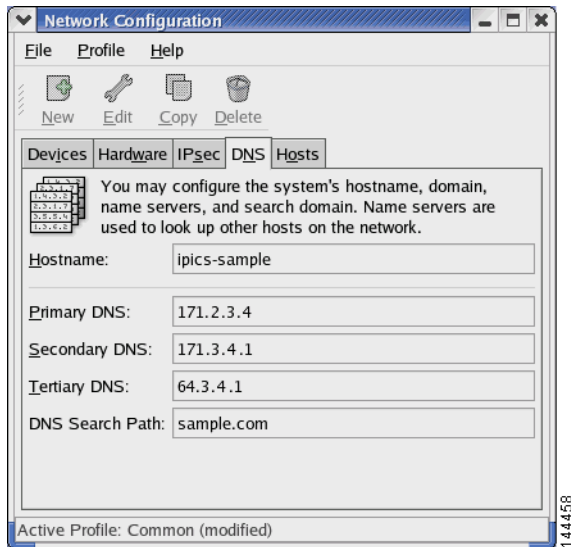
- f. In the Address field, enter the static IP address.
- g. Press **Tab** to enter information into the Subnet Mask and Default Gateway Address fields. See [Figure 2-14](#) for an example and the “[Obtaining the IP Addresses for Your Cisco IPICS System](#)” section on page 2-2 for more information.
- h. To continue with the configuration, click **OK**.



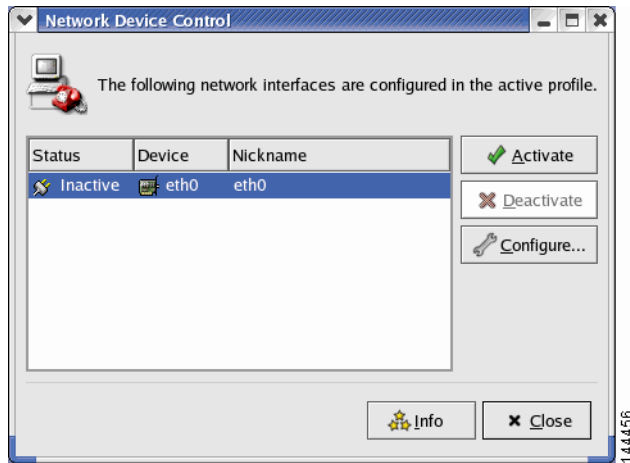
Note Creating a Domain Name Service (DNS) name for the server is optional. If you want to enter DNS information for eth0, continue to Step [i](#).

If you do not want to enter DNS information, proceed to Step [m](#).

- i. To enter DNS information for this port, click the **DNS** tab.

Figure 2-15 Entering DNS Information

- j. In the Hostname field, enter a name for the system. Then, press **Tab**.
- k. In the Primary DNS field, enter the IP addresses for primary DNS server for your network. Then press **Tab**.
- l. If your network has secondary and tertiary DNS servers, enter those IP address, using the **Tab** key to move between fields. If you do not have secondary and tertiary DNS servers, continue to Step **m**.
- m. To close the Ethernet Device window, click **X**.
A window displays and allows you to save your changes.
- n. Click **Yes** to save your changes.
The system displays a message that indicates that you may want to restart network services or restart the system.
- o. To close the message window, click **OK**.
The Network Device Control window displays that eth0 is inactive (see [Figure 2-15](#) for an example of the window).

Figure 2-16 Network Device Control Window

- p. To activate eth0, click **Activate**.

The status for eth0 changes to active.



Note If this is not a fresh install of Cisco Linux, eth0 should already be active. If the port is active, proceed to Step q.

- q. Click **Close**.

Cisco Linux activates eth0 and closes the window. The Cisco Linux desktop displays.

- Step 11** To restart the server so that the installation completes successfully, follow these steps:
- To open the Log Out window, click the **Red Hat** menu and choose **Log Out**. The Log Out window displays.
 - Choose **Restart the Computer**. Then, click **OK** or press **Enter**. The server reboots and returns you to GNOME Login window.

Step 12 To log in, enter the username as **root** and press **Enter**.

Step 13 Enter the password as **cisco** and press **Enter**.

The Cisco Linux desktop displays.

- Step 14** To verify network connectivity, follow these steps:
- To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**
 - To ping another server on the network, enter the following command:
ping <destination IP address>
where *destination IP address* represents the default gateway address, or an IP address of another server on the network.
If the ping is not successful, troubleshoot the network connectivity with your network administrator.
- Step 15** To locate the hardware MAC address so that you can obtain your Cisco IPICS license, follow these steps:
- To view the MAC address for your hardware, enter the following command:
[root] #ifconfig -a
Information displays about the network interface cards.
 - Locate the eth0 heading and note the HWaddr field. This is the MAC address for the server. Note this information so that you can use it to obtain your license for Cisco IPICS. For more information, see the [“Obtaining Your License File”](#) section on page 2-49.
 - To close the terminal window, click **X**.
-

The Cisco Linux operating system installation is now complete. You can continue with the installation of the Cisco IPICS server software. If you do not want to install Cisco IPICS immediately, you can resume the installation at a later time.

To install the Cisco IPICS server software, see the [“Installing Cisco IPICS Server Software”](#) section on page 2-24.

Installing Cisco IPICS Server Software

To install the Cisco IPICS server, you must have successfully completed the Cisco Linux operating system installation. For more information on installing Cisco Linux, see the [“Installing the Cisco Linux Operating System”](#) section on page 2-3.

You can install the Cisco IPICS server software by using the installation CD at the Cisco IPICS server or you may install it remotely by copying the installer file to the server.

This installation procedure includes a choice of the following install options:

- **Typical**—This option installs the Cisco IPICS server software, including CSA
- **Custom**—This option allows you to install the Cisco IPICS server software without CSA
- **Upgrade**—For information on performing an upgrade of the Cisco IPICS server software, see [Chapter 3, “Upgrading Cisco IPICS”](#)

If you choose not to install CSA during the Cisco IPICS server software installation, you can install CSA any time after the Cisco IPICS installation is complete.

This section includes the following topics:

- [Installing the Cisco IPICS Server Software at the Server, page 2-25](#)
- [Installing Cisco IPICS from a Remote Location, page 2-38](#)
- [Manually Installing CSA, page 2-46](#)

Installing the Cisco IPICS Server Software at the Server

To perform the Cisco IPICS server software installation, you must have the Cisco IPICS installation CD that was included with your product package.



Caution

Make sure that you only perform system date changes before you install the Cisco IPICS software. Cisco IPICS does not support any modification of the system date in the operating system after the Cisco IPICS software has been installed. Therefore, it is very important that you check your system date to ensure that it properly reflects your local date and time. If the system date is not properly set to your local date and time, you must adjust it before you install the Cisco IPICS software. If you try to change the system date and time after you install the software, you will invalidate your license and cause the system to become inoperable.

For information about setting the date and time as part of the operating system installation, see the “[Installing Cisco IPICS Server Software](#)” section on [page 2-24](#).

**Note**

You must log in with root privileges to perform the Cisco IPICS installation. If you attempt to run the installation from any other user ID, the installation returns an error and exits.

To install the Cisco IPICS server software, perform the following procedure:

Procedure

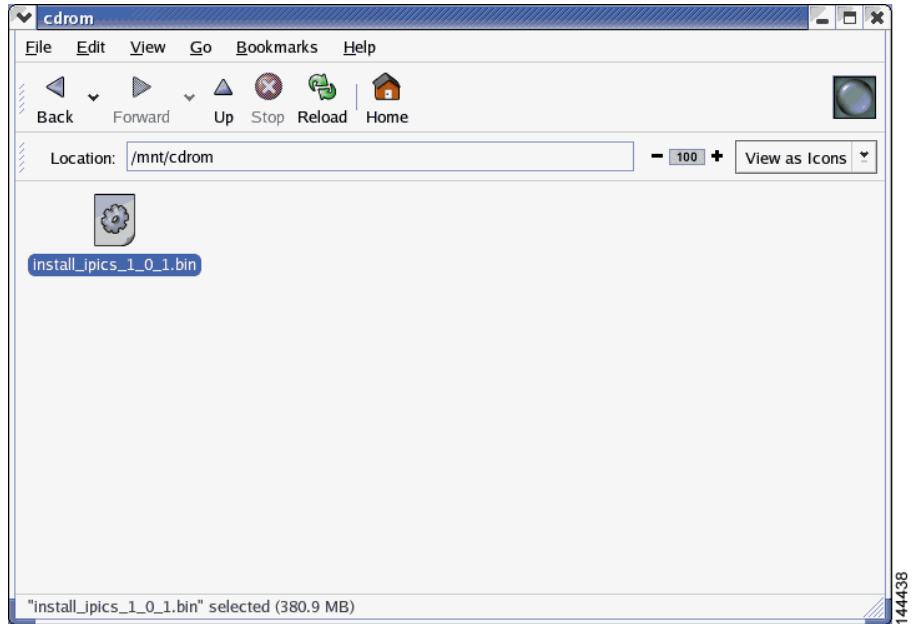
-
- Step 1** To log in to the Cisco Linux operating system, enter **root** in the username field of the Login window and press **Enter**.
Cisco Linux displays a window with a password field.
- Step 2** Enter your root password and press **Enter**. The default password is cisco.
The Cisco Linux desktop displays.
- Step 3** Insert the Cisco IPICS installation CD into the Cisco MCS disk drive.
The Cisco IPICS CD icon displays on the desktop. See [Figure 2-17](#) for an example.

Figure 2-17 Cisco IPICS CD Icon



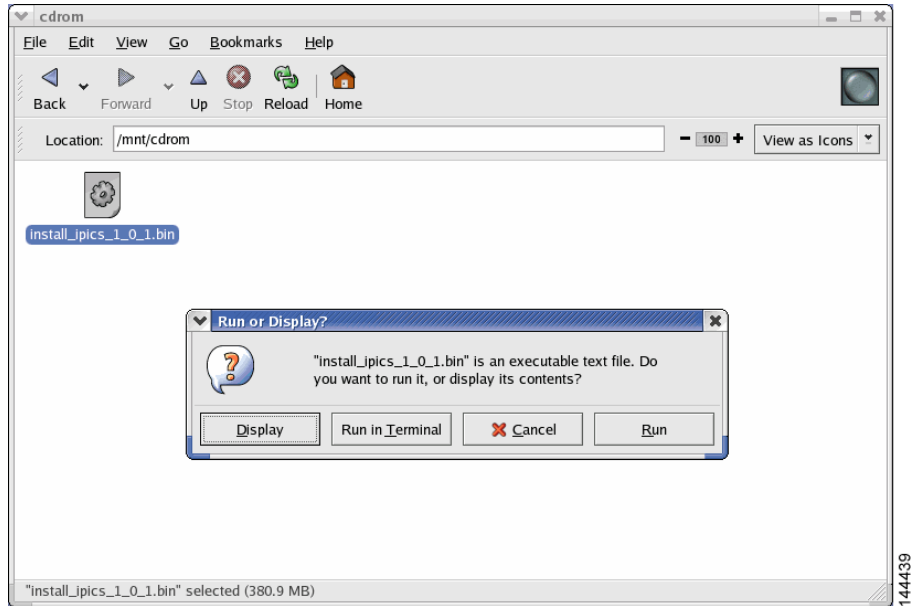
Step 4 To open the CD contents, double-click the CD icon.

Cisco Linux displays a window that shows the Cisco IPICS installer file. See [Figure 2-18](#) for an example.

Figure 2-18 *Installer File on the Cisco IPICS CD*

Step 5 To start the installation, double-click the installer icon.

Cisco Linux displays a message window that offers options to display or run the installer file. See [Figure 2-19](#) for an example of the window.

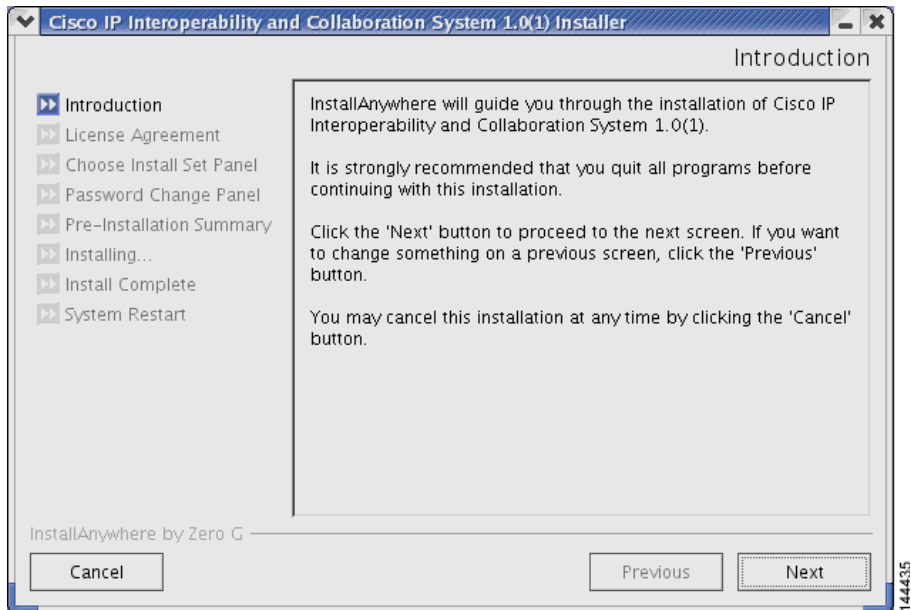
Figure 2-19 Run or Display Message Window

- Step 6** When you are prompted to run or display the file contents, click **Run in Terminal**. The Cisco IPICS installer window displays with an introduction to the process. See [Figure 2-20](#) for an example of the window.



Note If you click **Run**, rather than **Run in Terminal**, there is a delay of approximately 3 minutes while the installer completes background security processes, such as extracting the necessary files for the installation. During this delay, the screen may appear unresponsive. Do not click **Run** or **Run in Terminal** again or you will start an additional instance of the installer.

Figure 2-20 Introduction in the Installer Window



Step 7 To continue with the installation, click **Next**.

The Cisco IPICS installer displays the End User License Agreement.

Step 8 Use the scroll bar in the License Agreement pane to view the entire agreement. Read and review the license agreement; then, click the **I accept the terms of the License Agreement** radio button. Then, click **Next**.



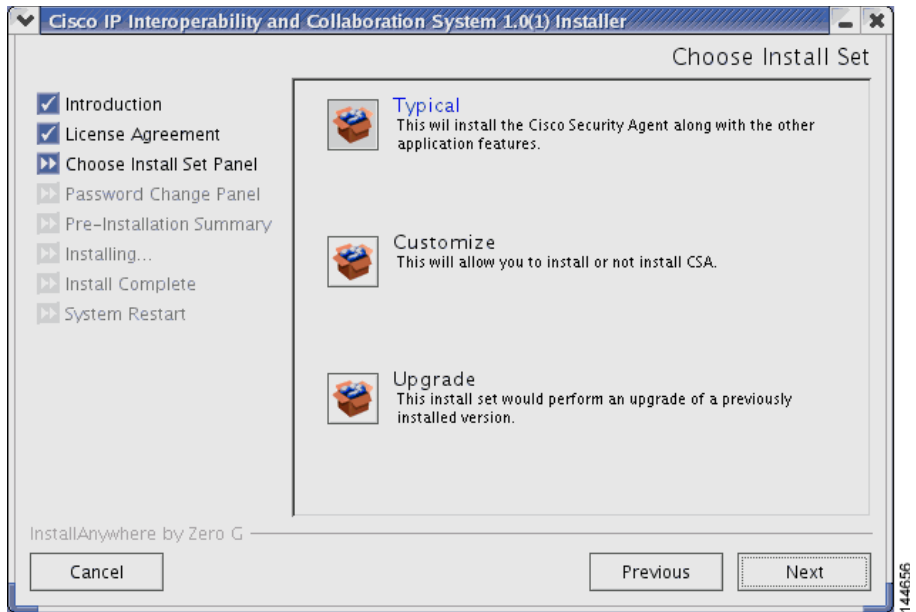
Note You can only continue with the installation if you accept the End User License Agreement.

The Choose Install Set window displays with the following installation option (see [Figure 2-21](#) for an example of the window):

- **Typical**—This option installs Cisco IPICS server software with CSA
- **Customize**—This option allows you to choose whether to install Cisco IPICS server software with or without CSA

- Upgrade—This option installs an upgrade to a previously installed version of Cisco IPICS server software

Figure 2-21 *Install Set Window*



Step 9 To install Cisco IPICS with the CSA, choose **Typical**. Then, click **Next**.



Note

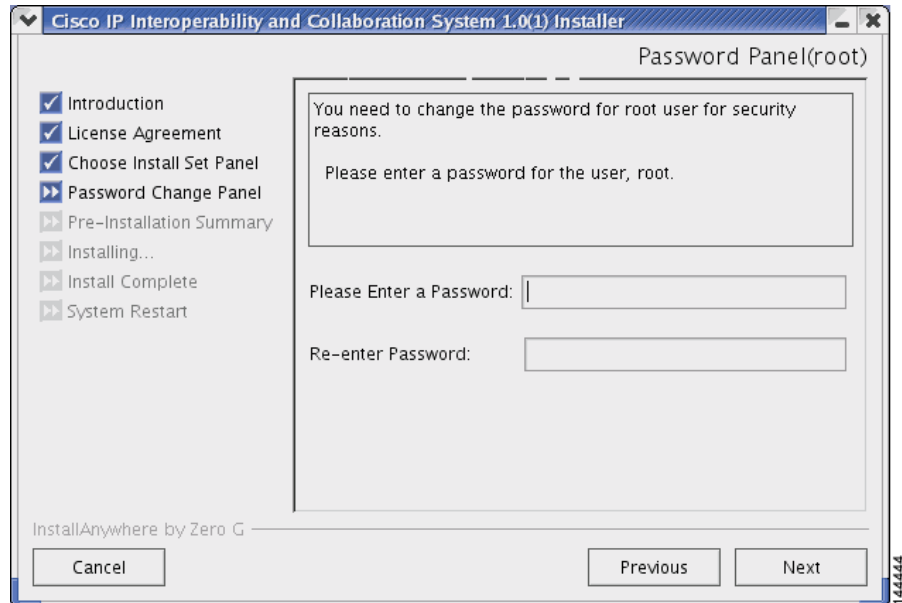
If you decide not to install CSA with the installation of this server software, you can manually install CSA at a later time. For more information, see the [“Manually Installing CSA”](#) section on page 2-46. For information about manually uninstalling CSA, see the [“Uninstalling CSA”](#) section on page 5-7.

The Cisco IPICS installer displays the Password Change Panel for the root user. See [Figure 2-22](#) for an example. The root user has complete privileges in the Cisco Linux environment.

**Caution**

For security reasons, Cisco strongly recommends that you change the root password from the default password that was supplied in your product package.

Figure 2-22 Password Panel for root User



Step 10 To change the root user password, enter a new password in the first password field.

**Caution**

When you enter your new root user password, make sure that you only use passwords that begin with a-z, A-Z or 0-9. Cisco IPICS does not support the use of special characters as the first character in the root password. If you enter a special character as the first character in the root password, your root login will become inoperable and you will need to boot the system in the single user mode to change the root password and reinstall Cisco IPICS to resolve the problem.

For information about single user mode and changing the root password, see [Appendix A, “Changing the Cisco Linux Root Password.”](#)

Step 11 To confirm the new password, press **Tab** and type the password again. Then, click **Next**.

The Cisco IPICS installer displays the Password Change Panel for the ipicsadmin user.



Note After you complete the installation, you can change the password for the Cisco Linux root user at any time. For more information about changing the root user password, see [Appendix A, “Changing the Cisco Linux Root Password.”](#)

Step 12 Repeat [Step 10](#) and [Step 11](#) for the ipicsadmin user and then for the informix user. These users have the following capabilities:

- The ipicsadmin user has limited capability in the Cisco Linux environment. This user can start, stop and restart the Tomcat service and browse the Cisco IPICS directories on the server machine.
- The informix user can perform all database-related activities, such as backup and restore. The informix user cannot, however, perform activities related to the Tomcat service, such as starting or stopping the Tomcat service.



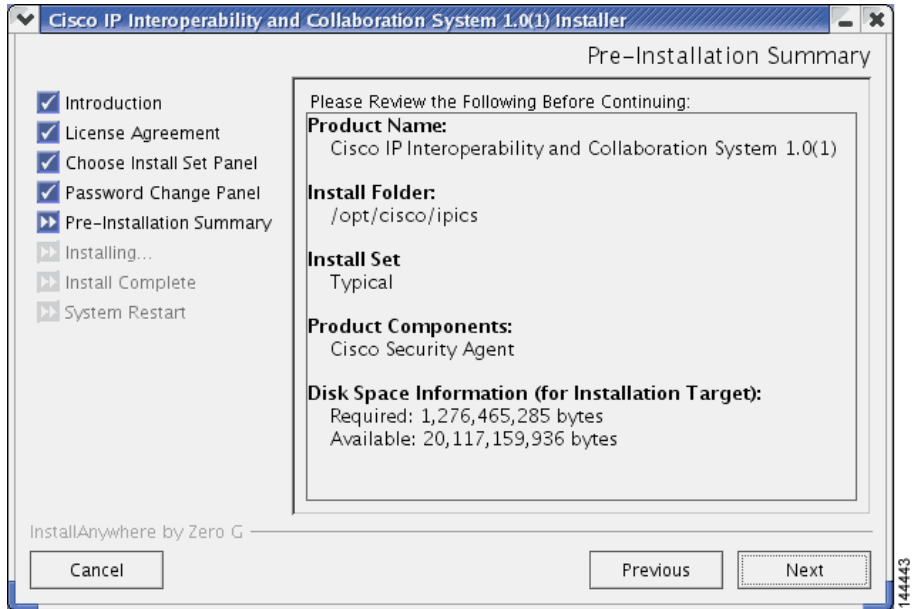
Caution

Never change the password for the informix user outside of the Cisco IPICS installer. If you need to change the informix password, you should only do so when performing a Cisco IPICS installation or upgrade. When you manually change the informix password, the Cisco IPICS Administration Console becomes unusable.

The Cisco IPICS installer displays the Preinstallation Summary. See [Figure 2-23](#) for an example.

The Preinstallation Summary displays the following information:

- The product name and version
- The destination folder for the installation
- Disk space information, including:
 - The amount of space required for the installation
 - The available space on the disk

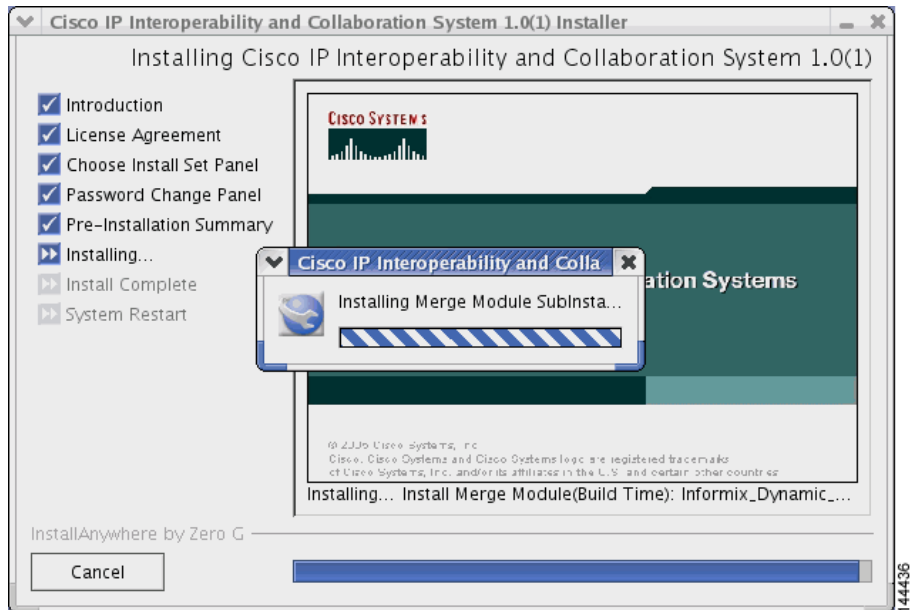
Figure 2-23 Preinstallation Summary

Step 13 To begin installing Cisco IPICS files, click **Next**.

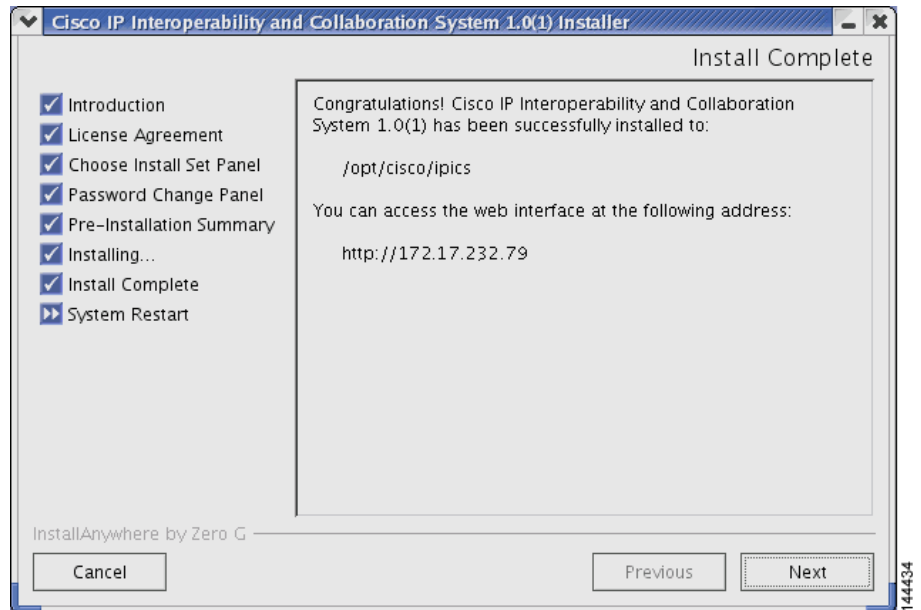
The Installation Progress window displays, showing the files and folders being written to the disk. See [Figure 2-24](#) for an example.



Note The Cisco IPICS server software installation typically takes about 20 minutes to complete.

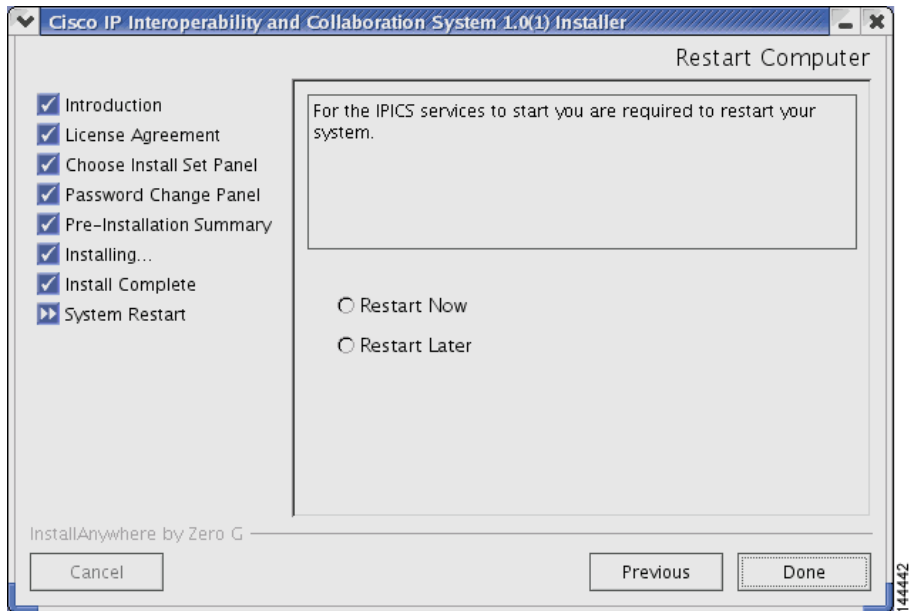
Figure 2-24 Cisco IPICS Installation Progress Window

- Step 14** When the file installation completes, the Cisco IPICS Install Complete window displays. See [Figure 2-25](#) for an example of the window. This window lists the directory in which Cisco IPICS was installed, along with the URL where you may access the Cisco IPICS Administration Console.

Figure 2-25 *Install Complete Window*

Step 15 To continue, click **Next**.

The Restart Computer window displays to provide you the option of restarting the computer now or at a later time. See [Figure 2-26](#) for an example.

Figure 2-26 Restart Computer Window

- Step 16** At the Restart Computer window, choose from the following options:
- If you want to reboot the computer immediately, click the **Restart Now** radio button and then click **Done**. The computer reboots after you click **Done**.
 - If you want to reboot the computer later, click the **Restart Later** radio button and then click **Done**. The installer closes this window and returns you to the Cisco Linux desktop.



Note If you choose the **Restart Later** option, be sure to complete the restart before you attempt to log in to Cisco IPICS. Cisco IPICS processes, such as the Tomcat service and Informix database, will not start without rebooting the server.

Installing Cisco IPICS from a Remote Location

You may find it necessary or desirable to perform the Cisco IPICS server software installation from a remote location on your network. This section describes the method for installing Cisco IPICS from a PC that is connected to the network.

Before you start the remote installation, you must transfer the installer file from the Cisco IPICS installation CD to the Cisco IPICS server. You use the one of the following methods to transfer the file:

- Place the CD (or have someone place it for you) in the Cisco IPICS server and copy the installer file to the server
- Place the CD in a PC and transfer the installer file to the Cisco IPICS server by using an FTP client software program, such as SSH Tectia File Transfer Client

After you transfer the file to the Cisco IPICS server, you can execute the installer from an SSH Tectia Client window with the **-i console** option.

To install the Cisco IPICS server software from a remote location, perform the following procedure:

Procedure

- Step 1** Perform one of the following procedures to transfer the Cisco IPICS installer file to the Cisco IPICS server:

Copying the File from the CD Drive in the Server

- a. Place the Cisco IPICS installation CD in the disk drive of the Cisco IPICS server or have someone place the CD in the drive for you.
- b. To connect remotely to the Cisco IPICS server from your PC, open the SSH Tectia Client by choosing **Start > All Programs > SSH Tectia Client > SSH Tectia Client**.
- c. To open a window for entering the server IP address, click **Quick Connect**. The Connect to Remote Host window displays.
- d. In the Host field, enter the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.
- e. In the User Name field, enter **root**. Then, click **Connect**.

The Enter Password window displays.

- f. Enter the root password and then click **OK**.

An SSH Tectia Client window displays.

- g. To see the contents of the CD, enter the following commands:

```
[root] #cd /mnt/cdrom
```

```
[root] #ls -l
```

The name of the Cisco IPICS installer file displays with a .bin extension.

- h. To copy the file to your root directory, enter the following command:

```
[root] #cp /mnt/cdrom/<name of Cisco IPICS installer file>.bin .
```

where *name of Cisco IPICS installer file* represents the name of the .bin file that was displayed in Step g.

The file copies from the CD to your root directory.

Transferring the File from the your PC to the Server

- a. Place the Cisco IPICS installation CD in the CD drive of your PC.
- b. Open the SSH Tectia File Transfer Client by choosing **Start > All Programs > SSH Tectia Client > SSH Tectia Client - File Transfer**.

The SSH Tectia File Transfer window displays. The desktop of your PC displays in the left pane.

- c. To open a window for entering the server IP address, click **Quick Connect**.

The Connect to Remote Host window displays.

- d. In the Host field, enter the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.

- e. In the User Name field, enter **root**. Then, click **Connect**.

The Enter Password window displays.

- f. Enter the root password and then click **OK**.

The SSH Tectia File Transfer Client connects to the Cisco IPICS server and displays the contents of the root directory in the right pane of the window.

- g. In the left pane of the window, navigate to the directory on your PC to which you saved the upgrade file.

- h. To initiate the copy procedure, drag the upgrade file from the left pane of the window to the right pane.

A progress window displays while the file copies to the server. When the copy completes, the upgrade file displays in the right pane.

- i. To close the SSH Tectia File Transfer Client, click **X**.

Step 2 To connect to the Cisco IPICS server, open an SSH Tectia Client window on your PC by performing the following procedure:

- a. To open the SSH Tectia Client, click **Start** and choose **All Programs > SSH Tectia Client > SSH Tectia Client**.

The SSH Tectia Client displays.

- b. To open a connection to the Cisco IPICS server, click **Quick Connect**.

The Connect to Remote Host window displays.

- c. In the Host field, enter the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.

- d. In the User Name field, enter **root**. Then, click **Connect**.

The Enter Password window displays.

- e. Enter the root password and then click **OK**.

After the login completes, the SSH Tectia Client displays a root prompt for the Cisco IPICS server.

Step 3 To view the files in the root directory, enter the following command and press **Enter**:

```
[root] #ls -l
```

Step 4 Locate the installer file, **install_ipics_x_x.bin**, where the *x_x* variable represents the version of Cisco IPICS you are installing.

Step 5 To begin the installation, type the following command and then press **Enter**:

```
[root] #./<name of installer file>.bin -i console
```

where *name of upgrade file* represents the name of the .bin file you transferred to the server.

The window displays a message that informs you that the installer is extracting. See [Figure 2-27](#) for an example of the message. Please wait while the server extracts the files.

Figure 2-27 Starting the Remote Installation

```
[root]# ./install_ipics_1_0_1.bin -i console e
Preparing to install...
Extracting the JRE from the installer archive...
Unpacking the JRE...
Extracting the installation resources from the installer archive...
█
```

144530

After the files are extracted, the installer displays an introduction. See [Figure 2-28](#) for an example.

Figure 2-28 Introduction to the Remote Installation

```
=====
Introduction
-----

InstallAnywhere will guide you through the installation of Cisco IP
Interoperability and Collaboration System 1.0(1).

It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation.  If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE: █
```

144531

Step 6 To continue, press **Enter**.

The first page of the End User License Agreement displays. There are approximately eight pages to the agreement.

Step 7 Read each page and press **Enter** when you finish.

At the end of the final page of the End User License Agreement, the installer prompts you to accept the terms of the license agreement.

Step 8 If you accept the terms, press **Y** and **Enter**.

The Choose Install Set menu displays. You can choose from the following options:

- **Typical**—This option installs Cisco IPICS server software with CSA
- **Customize**—This option allows you to choose whether to install Cisco IPICS server software with or without CSA

- Upgrade—This option installs an upgrade to a previously installed version of Cisco IPICS server software

Figure 2-29 Install Set Options

```

=====
Choose Install Set
-----

Please choose the Install Set to be installed by this installer.

->1- Typical
   2- Customize
   3- Upgrade

ENTER THE NUMBER FOR THE INSTALL SET, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
: █

```

144655

Step 9 To choose the Typical option, press **Enter**.



Note If you decide not to install CSA with this installation of Cisco IPICS server software, you can manually install CSA at a later time. For more information, see the [“Manually Installing CSA” section on page 2-46](#). For information about manually uninstalling CSA, [“Uninstalling CSA” section on page 5-7](#).

The installer prompts you to enter a new password for the root user.

Step 10 Enter a root password that is at least six characters in length. Then, press **Enter**.



Caution

When you enter your new root user password, make sure that you only use passwords that begin with a-z, A-Z or 0-9. Cisco IPICS does not support the use of special characters as the first character in the root password. If you enter a special character as the first character in the root password, your root login will become inoperable and you will need to boot the system in the single user mode to change the root password and reinstall Cisco IPICS to resolve the problem.

For information about single user mode and changing the root password, see [Appendix A, “Changing the Cisco Linux Root Password.”](#)

The installer prompts you to re-enter the root password.

Step 11 Enter the root password again and press **Enter**.

The installer prompts you to enter a password for the ipicsadmin user.

Step 12 Repeat [Step 10](#) and [Step 11](#) for the ipicsadmin user and the informix user. These users have the following capabilities:

- The ipicsadmin user has limited capability in the Cisco Linux environment. This user can start, stop and restart the Tomcat service and browse the Cisco IPICS directories on the server machine.
- The informix user can perform all database-related activities, such as backup and restore. The informix user cannot, however, perform activities related to the Tomcat service, such as starting or stopping the Tomcat service.

**Caution**

Never change the password for the informix user outside of the Cisco IPICS installer. If you need to change the informix password, you should only do so when performing a Cisco IPICS installation or upgrade. When you manually change the informix password, the Cisco IPICS Administration Console becomes unusable.

The Cisco IPICS installer displays the Preinstallation Summary. See [Figure 2-30](#) for an example.

The Preinstallation Summary displays the following information:

- The product name and version
- The destination folder for the installation
- Disk space information, including:
 - The amount of space required for the installation
 - The available space on the disk

Figure 2-30 Preinstallation Summary

```

Please Review the Following Before Continuing:

Product Name:
  Cisco IP Interoperability and Collaboration System 1.0(1)

Install Folder:
  /opt/cisco/ipics

Install Set
  Typical

Product Components:
  Cisco Security Agent

Disk Space Information (for Installation Target):
  Required: 1,276,465,285 bytes
  Available: 20,117,164,032 bytes

PRESS <ENTER> TO CONTINUE: █

```

144821

Step 13 To continue, press **Enter**.

The installation process begins. [Figure 2-31](#) shows an example of the installation progress indicator.

Figure 2-31 Installation Progress Indicator

```

=====
Installing...
-----

[=====|=====|=====|=====]
[-----|-----|-----|-----] █

```

144654

The Cisco IPICS Install Complete message displays. See [Figure 2-32](#) for an example of the window. This window lists the directory in which Cisco IPICS was installed, along with the URL where you may access the Cisco IPICS Administration Console.

Figure 2-32 Install Complete Message

```

=====
Install Complete
-----

Congratulations. Cisco IP Interoperability and Collaboration System 1.0(1) has
been successfully installed to:

/opt/cisco/ipics

You can access the web interface at the following address:

http://172.17.232.79

PRESS <ENTER> TO EXIT THE INSTALLER: .....

```

144653

To continue, press **Enter**.

The Restart Computer page displays an option for you to restart the server now or later. See [Figure 2-33](#) for an example.

Figure 2-33 Restart Computer Option

```

=====
Restart Computer
-----

For the IPICS services to start you are required to restart your system.

->1- Restart Now
   2- Restart Later

ENTER A COMMA-SEPARATED LIST OF NUMBERS REPRESENTING THE DESIRED CHOICES, OR
PRESS <ENTER> TO ACCEPT THE DEFAULT: .....

```

144651

Step 14 To restart the computer now, press **Enter**.

A broadcast message from root displays an announcement that the system will reboot in one minute. See [Figure 2-34](#) for an example. After one minute, another broadcast message displays another announcement that the system is rebooting.

Figure 2-34 Cisco Linux Reboot Broadcast Messages

```
Broadcast message from root (Mon Oct 31 15:56:28 2005):

System rebooting in 1 min
The system is going DOWN for reboot in 1 minute!
.....
Broadcast message from root (Mon Oct 31 15:57:28 2005):

System rebooting in 1 min
The system is going down for reboot NOW!
```

144660

When the system reboots, the connection to the server is disrupted.

- Step 15** To close the SSH Tectia Client window, click **X**.

Manually Installing CSA

If you did not install CSA at the time of the Cisco IPICS server software installation, you can perform the CSA installation manually at any time. To install CSA manually, perform the following procedure:

Procedure

- Step 1** Log in to the Cisco IPICS server with root privileges.
The Cisco Linux desktop displays.
- Step 2** To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**
A terminal window displays.
- Step 3** Install the Linux kernel source package by entering the following command:
[root] #rpm -Uv kernel-source-2.4.21-32.0.1.EL.i386.rpm
- Step 4** Change directory to the /tmp directory by entering the following command:
[root] #cd /tmp
- Step 5** Enter the following command to untar the CSAStanAlone.tar file and place the extracted copy in the /tmp/CSCOcsa directory:


```
[root tmp] #tar xvf /root/CSAStandAlone.tar
```

Step 6 Navigate to the /CSCOcsa directory by entering the following command:

```
[root tmp] #cd CSCOcsa
```

Step 7 To install the CSA software, enter the following command:

```
[root CSCOcsa] #sh install_rpm.sh
```

Step 8 Enter the following command to restart the server and complete the installation:

```
[root] #reboot
```

For information about manually uninstalling CSA, see the [“Uninstalling CSA” section on page 5-7](#).

Preparing to Use Cisco IPICS

Now that you have completed the Cisco IPICS installation, complete the following tasks, so that you can begin using the software:

- [Checking the Installation, page 2-47](#)
- [Managing Your Licenses, page 2-49](#)
- [Generating the Cisco IPICS PMC Application Installer, page 2-58](#)

For information on other Cisco IPICS setup and configuration tasks, refer to the [Cisco IPICS Server Administration Guide](#).

Checking the Installation

When you complete the Cisco IPICS server software installation, you should be able to access the Cisco IPICS Administration Console by using a browser. You can test the installation by opening a browser and logging in to the Administration Console.



Note There may be a delay of a few minutes before users can access the Administration Console after the Cisco IPICS server restarts.

To access the Cisco IPICS Administration Console from a browser and check the installation, perform the following procedure:

Procedure

- Step 1** Open a browser window on your PC.
- Step 2** In the Address field, enter either the static IP address or the DNS name that you established for your Cisco IPICS server in the [“Installing the Cisco Linux Operating System”](#) section on page 2-3:

`http://<static IP address or DNS name>`

The Cisco IPICS Login window displays.

- Step 3** Log in by using the Username, ipics, and the password, cisco123.



Note The ipics user has all privileges in Cisco IPICS and can perform any of the setup and configuration tasks.

The Manage License window of the Cisco IPICS Administration Console displays with a message that you must upload a license file before you can use the software. See [Figure 2-35](#) for an example.

Figure 2-35 Cisco IPICS Manage License Window

Configured License		Total Ports	Current usage	Add a License
Cisco IPICS Ports:	0	0	0	Enter or Select a license file
Concurrent PMC Users:	0	0	0	License File*: <input type="text"/> <input type="button" value="Browse..."/>
Concurrent IP Phone Users:	0	0	0	<input type="button" value="Upload"/> <input type="button" value="Cancel"/> <input type="button" value="Apply"/>
Cisco IPICS Ops View:	Not Licensed			

144446

To obtain your license file, see the [“Obtaining Your License File”](#) section on page 2-49.

Managing Your Licenses

Cisco IPICS manages the number of concurrent PMC and Cisco IP Phone users and the number of active voice ports with the license manager. As you use Cisco IPICS, the license manager tracks the number of PMC users and Cisco IP Phone users who are logged in at one time and the number of voice ports that are currently active. The number of users or voice ports cannot exceed the number of licenses that you have.

When you finish the Cisco IPICS installation, you can use the Product Authorization Key that was included in your Cisco IPICS product package to obtain a license file. You can then upload the license file to the Cisco IPICS server and begin using the system.

After you begin using Cisco IPICS, you may find that you require more user or voice port licenses. You can increase the number of licenses by purchasing more from Cisco. Cisco IPICS does not support removal or reduction of the number of licenses.

This section includes the following topics:

- [Obtaining Your License File, page 2-49](#)
- [Purchasing Additional Licenses, page 2-54](#)
- [Uploading the Cisco IPICS Licenses, page 2-55](#)
- [Managing Licenses with the Ops Views Feature, page 2-57](#)
- [Tracking Your License Consumption, page 2-57](#)

When you install Cisco IPICS, you may log in the Administration Console, but you cannot operate any features, such as configuring channels or creating VTGs, until you upload the licenses.

Obtaining Your License File

Your Cisco IPICS product package includes a Software License Claim Certificate that contains a Product Authorization Key (PAK), which is uniquely created from your sales order. You use this key to obtain licenses for your Cisco IPICS installation.

After you upload your licenses and begin using Cisco IPICS, the license manager component monitors the concurrent usage of PMC users, Cisco IP Phone users, and active ports. If you find that you need additional licenses, you can purchase them from Cisco. For information on purchasing additional licenses, see the [“Purchasing Additional Licenses” section on page 2-54](#).

You can order your initial licenses any time after you begin the installation process.

To use your PAK to obtain your Cisco IPICS licenses, perform the following procedure:

Procedure

-
- Step 1** Locate your Software License Claim Certificate that was included in your Cisco IPICS product package. Look for the Product Authorization Key at the bottom of this certificate.



Note If you ordered your Cisco IPICS server software directly from Cisco, your package may include only one Product Authorization Key. However, if you purchased Cisco IPICS through a distributor or reseller, you should have several individual packages, each with its own Product Authorization Key. In this case, you must process all of your Product Authorization Keys individually. Cisco sends you a license file for each one.

- Step 2** Retrieve the MAC address that you noted during the Cisco Linux operating system installation. If you misplaced the information, you can use one of the following methods to obtain it:

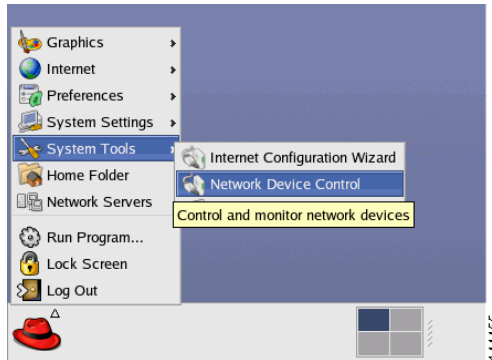
Obtain the MAC address using the Network Device Control window

To gather the MAC address information from the Network Device Control window, follow these steps:

- a. Log in to the Cisco IPICS server with root privileges.
- b. Open Network Device Control window to view information about the server hardware. To do so, open the Red Hat menu on the Cisco Linux desktop and click the **Red Hat** icon.

- c. Choose **System Tools > Network Device Control**. See [Figure 2-10](#) for an example of the menu.

Figure 2-36 Using the Red Hat Menu

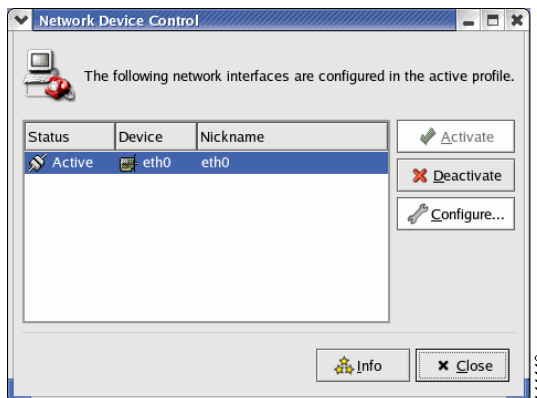


The Network Device Control window displays at least one active port. See [Figure 2-11](#) for an example of the window.



Note Your server may have more than one Ethernet port. If so, choose eth0.

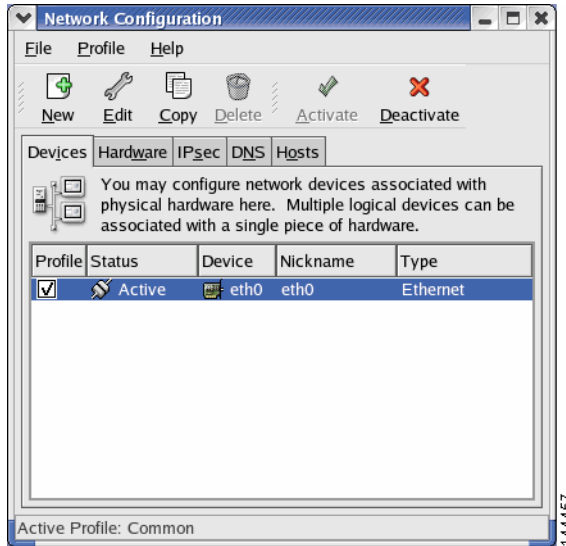
Figure 2-37 Network Device Control Window



- d. To open the Network Configuration window, click the **eth0** device from the list and then click **Configure**.

The Network Configuration window displays. See [Figure 2-12](#) for an example of the window.

Figure 2-38 Network Configuration Window



- e. To open the Ethernet Device Window, click **eth0** again and then click **Edit**.
The Ethernet Device window displays.
- f. To view the MAC address for eth0, click the Hardware Device tab.
The MAC displays in the Bind to MAC Address field.
- g. Click **X** in each of the windows to close them.

Obtain the MAC address with a Cisco Linux command:

To gather the information using a Cisco Linux command, perform the following procedure:

- a. Log in to the Cisco IPICS server with root privileges.

- b. Open a terminal window to enter commands. To do so, open the Red Hat menu on the Cisco Linux desktop by clicking the **Red Hat** icon and choosing **System Tools > Terminal**.
A terminal window displays.
- c. To view the MAC address for your hardware, enter the following command:
`[root] #ifconfig -a`
Information displays about the network interface cards.
- d. Locate the eth0 heading and note the HWaddr field. This is the MAC address for the server.
- e. To log out of the server, enter **Exit** at the command line and press **Enter**.
- f. To close the terminal window, click **X**.

Step 3 Access Cisco.com using one of the following URLs:

- If you are a registered user of Cisco.com, use this URL:

<http://www.cisco.com/go/license>

- If you are not a registered user of Cisco.com, use this URL:

<http://www.cisco.com/go/license/public>

After you process your license order at Cisco.com, Cisco sends you an e-mail with the license file as an attachment.



Note Cisco IPICS does not support the edit or modification of the license file name or file contents in any capacity. If you change or overwrite the license file name, you may invalidate your license and cause the system to operate incorrectly.

Step 4 Use the attached license file to upload licenses to Cisco IPICS after you finish the installation.

If you processed several separate Product Authorization Keys, then you would receive several e-mail responses with a license file attached to each. When you upload these files, Cisco IPICS adds the licenses from each file and monitors your system activity according to the total number.

For information about uploading the license files, see the “[Uploading the Cisco IPICS Licenses](#)” section on page 2-55.

Purchasing Additional Licenses

After you begin using Cisco IPICS, you may find that you need additional licenses, so that you can provide access to more PMC or Cisco IP Phone users or accommodate more voice ports. You can purchase additional licenses from Cisco and then process them in the same way as the licenses that came with your original Cisco IPICS purchase.

When you need to purchase additional licenses, perform the following procedure:

Procedure

Step 1 Visit <http://www.cisco.com> or contact your reseller to purchase the additional licenses.

Cisco processes your order and mails you a package that contains a license certificate with a new Product Authorization Key.



Note This Product Authorization Key is different than the one that you used to process your original Cisco IPICS licenses.

Step 2 Locate the MAC address information for your hardware. If you have misplaced it or you have new hardware, follow the procedure in [Step 2](#) of the “[Obtaining Your License File](#)” section on page 2-49 to retrieve the MAC address.

Step 3 To process your license file, follow the procedure in [Step 3](#) of the “[Obtaining Your License File](#)” section on page 2-49

Step 4 To upload the license file to Cisco IPICS, see the “[Uploading the Cisco IPICS Licenses](#)” section on page 2-55.

After you upload your license file, the license manager processes the new licenses and updates your total number of licences.

Uploading the Cisco IPICS Licenses

When you receive your license file(s), you can upload them by accessing the Manage License window of the Cisco IPICS Administration Console.

**Note**

When you upload the license file, Cisco IPICS places the file in the following directory:

```
/opt/cisco/ipics/tomcat/current/webapps/ipics_server/license
```

To upload a license file, perform the following procedure:

Procedure

-
- Step 1** Open a browser window on your PC.
- Step 2** In the Address field, enter either the static IP address or the DNS name that you established for your Cisco IPICS server in the [“Installing the Cisco Linux Operating System”](#) section on page 2-3:
- ```
http://<static IP address or DNS name>
```
- The Cisco IPICS Login window displays.
- Step 3** Log in by using the Username, ipics, and the password, cisco123.
- The Manage License window displays.
- Step 4** In the Add a License area, click **Browse**.
- A navigation window displays files and folders on your PC.
- Step 5** Navigate to the location where you saved the .LIC license file that you received as an attachment from Cisco. Then, select the file and click **Open**.
- The file name displays in the License File field.
- Step 6** Click **Upload** to upload the file into the Cisco IPICS database. If you choose not to upload this file, click **Cancel**.
- A message displays with the status of the license file upload.
- Step 7** To refresh the Cisco IPICS License Manager so that it recognizes the new licenses, click **Apply**.

**Figure 2-39 Refreshing the License Window**

| Configured License         |              | Total Ports | Current usage |
|----------------------------|--------------|-------------|---------------|
| Cisco IPICS Ports:         | 10           | 0           |               |
| Concurrent PMC Users:      | 5            | 0           |               |
| Concurrent IP Phone Users: | 5            | 0           |               |
| Cisco IPICS Ops View:      | Not Licensed |             |               |

**Add a License**  
Enter or Select a license file

License File\*:

144657

The license manager processes the new licenses and updates your total number of licences in the Configured Licenses area of the Manage License window.

**Step 8** If you uploaded a license for the ops views feature, you must restart the Tomcat service before you can use ops views. To restart the Tomcat service, follow these steps:

- a. Log in to the Cisco IPICS server with root user privileges.

The Cisco Linux desktop displays.

- b. To enter a CLI command, open a Cisco Linux terminal window by clicking the **Red Hat** menu and choosing **System Tools > Terminal**.

A terminal window displays.

- c. Enter the following command at the prompt:

```
[root] #/etc/init.d/ipics_tomcat restart
```

After stopping, and then again after starting, the Tomcat service, Cisco Linux displays the message, [OK].

**Note**

There may be a delay of a few minutes before users can access the Administration Console after the Tomcat service restarts.

For more information on Cisco IPICS licenses and the ops views feature, refer to the [Cisco IPICS Server Administration Guide](#).

## Managing Licenses with the Ops Views Feature

When the ops views feature is enabled on the server, the system displays a Cisco Ops View entry under the Configured License area in the Administration Console License window, along with the word “Licensed” to indicate that the ops views functionality has been enabled. (When ops views is not enabled, this entry displays “Not Licensed.”)

**Note**

---

When ops views is not enabled, Cisco IPICS displays the number of available licenses and concurrent usage information in the License browser window, which does not reflect real-time data. The data that displays in this window shows the usage at the time that the license window was last accessed. To view the most current license information, make sure that you refresh your browser window often.

---

## Tracking Your License Consumption

Cisco IPICS uses the following criteria to determine license consumption for ports and PMC usage:

- Cisco IPICS Ports Usage—A configured channel or activated VTG consumes a port license. After the channel is deleted or the VTG is deactivated, the server releases the license and makes it available for use.

Cisco IPICS bases license usage for ports on the unique combination of a multicast address and a location; that is, if a channel has two multicast addresses that are assigned to the channel, two licenses are used. If one of the multicast addresses is removed, the system releases one of the licenses so that the port now consumes one license.

**Note**

---

Be aware that an inactive VTG (VTG template) consumes a license when a policy triggers (activates) that VTG. Therefore, if the number of licenses has been exceeded, the policy will not be able to activate the VTG. Make sure that the server has a sufficient number of licenses available for the configuration of policies.

---

- Cisco IPICS PMC Usage—A PMC user consumes a license each time that the user logs in to a PMC session.

If the same PMC user logs in to multiple PMC sessions from different PMC client machines, that user will consume multiple licenses (one for each PMC session).



---

**Note** If all Cisco IPICS licenses have been used, PMC user access to the system will be interrupted. Make sure that you are aware of the current status of PMC licenses and that additional user licenses are purchased and installed immediately if this situation occurs.

---

## Generating the Cisco IPICS PMC Application Installer

Cisco IPICS allows a user to download the PMC application installer from the Administration Console to a PMC client machine. After the user installs the PMC software, Cisco IPICS manages the automatic download of updates to the application. The Manage PMC window of the Administration Console allows a Cisco IPICS system administrator to upload version updates to the Cisco IPICS server and manage the distribution of the current and previous PMC versions to PMC users.

Before a user can access the installer from the Cisco IPICS server, you must first use the Administration Console to generate the installer. This procedure places the application onto the server, so that the PMC users can easily download the PMC application. When you generate the PMC installer, the Cisco IPICS server also writes the IP address of the server into the installer. Then, after the user downloads and installs the software, the PMC application can locate the server to log in.

To generate a new PMC installer for your system, perform the following procedure:

### Procedure

---

- Step 1** Open a browser window on your PC.
- Step 2** In the Address field, enter either the static IP address or the DNS name that you established for your Cisco IPICS server in the [“Installing the Cisco Linux Operating System”](#) section on page 2-3:

`http://<static IP address or DNS name>`

The Cisco IPICS Login window displays.

**Step 3** Log in with system administrator privileges. You may also log in with the Username, ipics, and the password, cisco123.

The User tab displays of the Administration Console displays.

**Step 4** From the **System Administrator** tab, click the **PMC Installer** link.

The Manage PMC Installer window displays with information about the last time and date that the installer was generated.

**Figure 2-40** Manage PMC Installer Window

The screenshot shows the 'Manage PMC Installer' window. At the top, there is a navigation menu with the following items: RMS, Channels, Multicast Pool, Locations, Activity Logs, System Status, License, PMC Auto Update, PMC Installer (highlighted), Database, and Options. Below the menu, the window title is 'Manage PMC Installer'. The main content area is divided into three sections:
 

- Installer Status:** A red message states 'A PMC installer (pmcsetup.exe) has not been generated for the server.'
- Components:** Shows 'pmcinst.exe' with 'Version 1.0(1)'. There is an input field for 'Upload pmcinst.exe' with a 'Browse...' button, and another input field for 'Version' with an 'Upload' button.
- Configuration:** Shows 'Server IP Address' with a dropdown menu currently displaying '172.17.232.70'. Below this is a 'Generate PMC Installer' button.

 On the right side of the window, the number '144659' is visible vertically.

**Step 5** Choose the server IP address from the drop-down list box.

**Step 6** Click **Generate PMC Installer**.

A message displays to inform you whether the PMC installer was successfully generated.

For more information on managing PMCs, refer to the [Cisco IPICS Server Administration Guide](#).





## Upgrading Cisco IPICS

---

When Cisco releases a new version of Cisco IPICS, you receive the upgrade in one of two ways:

- Downloading an installer by following the link that Cisco provides you when an upgrade becomes available. You would then use a Secure File Transfer Protocol (SFTP) utility program to transfer the file to the Cisco IPICS server. This section includes a procedure that describes how to use the SSH Tectia File Transfer Client to accomplish this task.
- Using an installation CD, so that you can upgrade in the same way as you would install Cisco IPICS.

The Cisco IPICS upgrade procedure installs new application software files, but preserves your database and log files. Cisco recommends that you back up your files before you begin the upgrade procedure. For information on backing up files, refer to the *Cisco IPICS Backup and Restore Guide*.

This chapter provides information about the procedures that you need to follow to upgrade Cisco IPICS after you have initially installed the system. This chapter includes the following sections:

- [Performing the Upgrade from a CD, page 3-2](#)
- [Performing the Upgrade from a Downloaded File, page 3-10](#)

# Performing the Upgrade from a CD

When Cisco provides an upgrade to Cisco IPICS, you may receive a CD so that you can perform the upgrade in a similar manner to the way that you performed the original Cisco IPICS installation.



**Note** Before you begin the upgrade procedure, back up your data and log files. For more information, refer to the *Cisco IPICS Backup and Restore Guide*.

To upgrade Cisco IPICS from a CD, perform the following procedure:

## Procedure

- Step 1** To log in to the Cisco Linux operating system on the Cisco IPICS server, enter **root** in the Username field of the Login window and press **Enter**.  
Cisco Linux displays a window with a password field.
- Step 2** Enter your root password and press **Enter**.  
The Cisco Linux desktop displays.
- Step 3** Back up your data and log files. For more information, refer to the *Cisco IPICS Backup and Restore Guide*.
- Step 4** Insert the Cisco IPICS installation CD into the Cisco MCS disk drive.  
If you did not install CSA, or if CSA is not running on the Cisco IPICS server, continue to [Step 6](#).  
If you installed CSA, a window displays a message about the removable media you placed in the disk drive and allows you to continue or terminate the mounting of the CD.
- Step 5** To continue with the upgrade, click the **Yes** radio button and then click **Apply**.

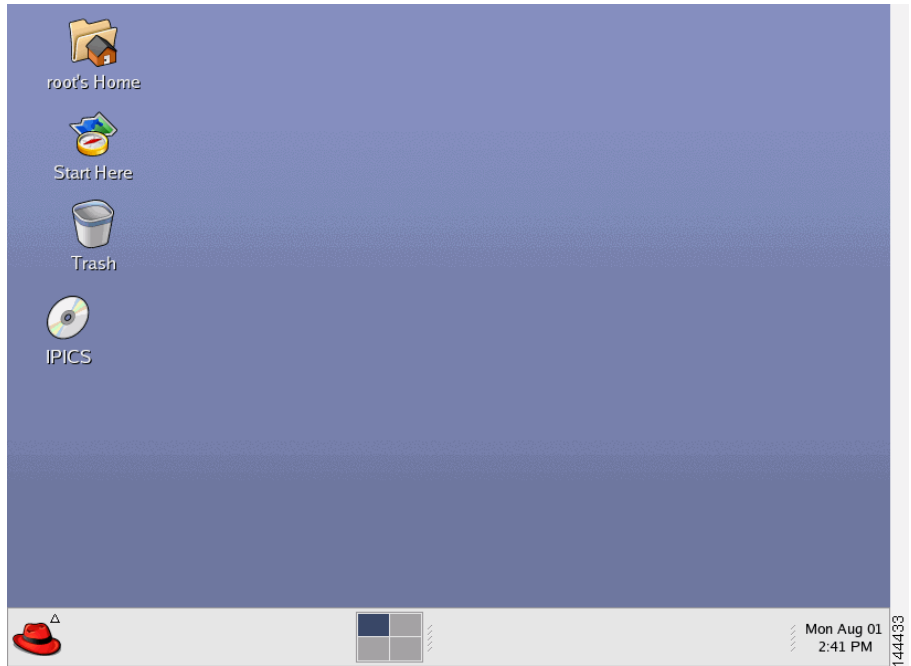


**Note** You must click **Yes** and **Apply** before the time limit of the window expires or CSA will terminate the application by default.

The Cisco IPICS CD icon displays on the desktop. See [Figure 3-1](#) for an example.



**Figure 3-1** Cisco IPICS CD Icon

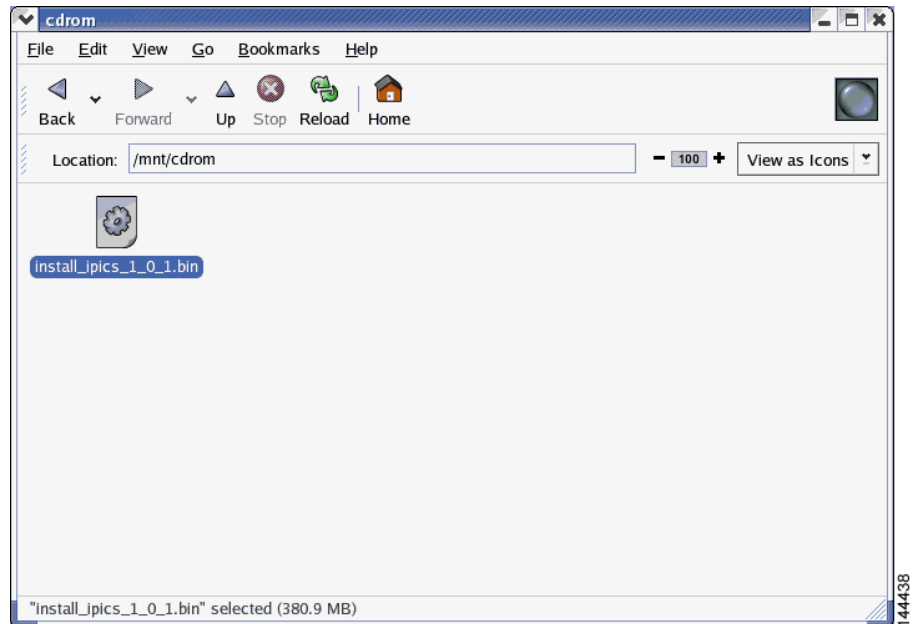


**Step 6** To open the CD contents, double-click the CD icon.

Cisco Linux displays a window that shows the Cisco IPICS installer file. See [Figure 3-2](#) for an example.



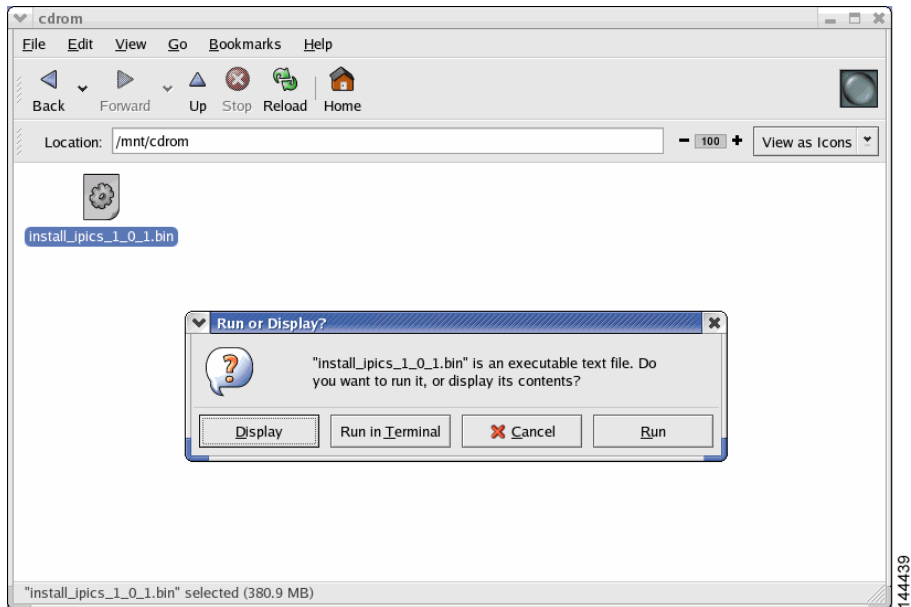
**Note** Please wait while the server is processing your request.

**Figure 3-2** *Installer File on the Cisco IPICS CD*

**Step 7** To start the installation, double-click the installer icon.

Cisco Linux displays a message window that offers options to display or run the installer file. See [Figure 3-3](#) for an example.

Figure 3-3 Run or Display Message Window



**Step 8** When you are prompted to run or display the file contents, click **Run in Terminal**.



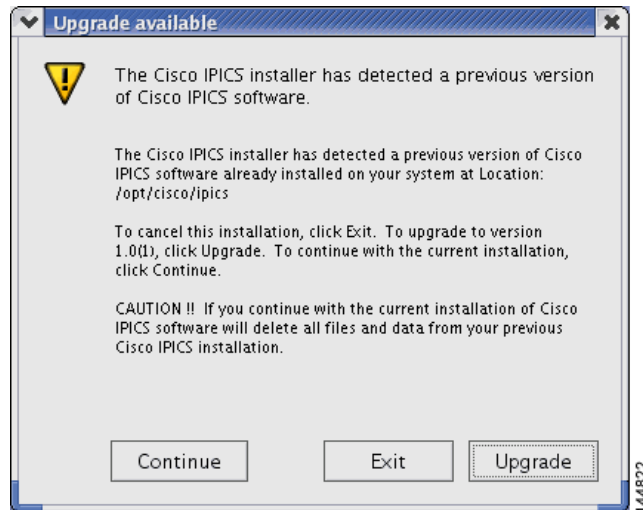
**Note** If you click **Run**, rather than **Run in Terminal**, there is a delay of approximately 3 minutes while the installer completes background security processes, such as extracting the necessary files for the installation. During this delay, the screen may appear unresponsive. Do not click **Run** or **Run in Terminal** again or you will start an additional instance of the installer.

A message window displays and indicates that the installer has detected a previous version of Cisco IPICS exists on your server. See Figure 3-4 for an example of the window. You can choose from the following options:

- **Continue**—Proceeds with a full installation and overwrites your current installation, including the contents of your database and any files that were backed up to the default backup directory, **/devices**
- **Exit**—Exits from the installation

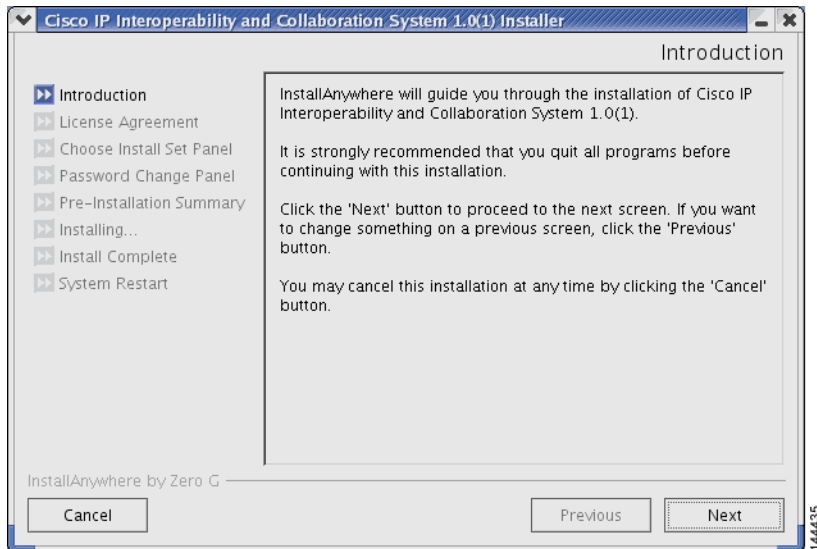
- Upgrade—Upgrades your Cisco IPICS server software to the new version, but leaves your database and the data in the `/devices` directory intact

**Figure 3-4** Upgrade Available Message



**Step 9** To continue with the upgrade, click **Upgrade**.

The Cisco IPICS installer window displays with an introduction to the process. See [Figure 3-5](#) for an example of the window.

**Figure 3-5** Introduction in the Installer Window

**Step 10** To continue with the installation, click **Next**.

The Cisco IPICS installer displays the End User License Agreement.

**Step 11** Use the scroll bar in the License Agreement pane to view the entire agreement. After you read the entire agreement text, click the **I accept the terms of the License Agreement** option. Then, click **Next**.



**Note** You can only continue with the installation if you accept the End User License Agreement.

The Choose Install Set window displays with the following installation options:

- **Typical**—This option installs Cisco IPICS server software with CSA
- **Customize**—This option allows you to choose whether to install Cisco IPICS server software with or without CSA
- **Upgrade**—This option installs an upgrade to a previously installed version of Cisco IPICS server software

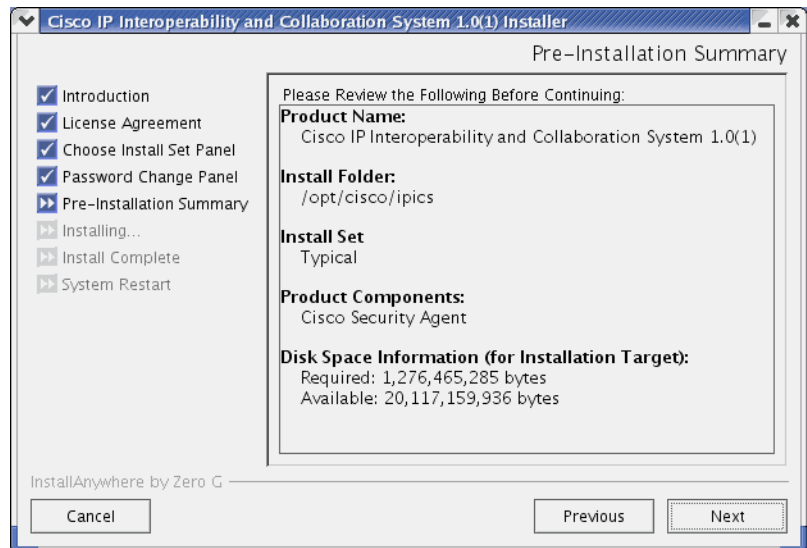
**Step 12** To upgrade Cisco IPICS, choose **Upgrade**. Then, click **Next**.

The Cisco IPICS installer displays the Preinstallation Summary. See [Figure 3-6](#) for an example.

The Preinstallation Summary displays the following information:

- The product name and version
- The destination folder for the installation
- Disk space information, including:
  - The amount of space required for the installation
  - The available space on the disk

**Figure 3-6** Preinstallation Summary



**Step 13** To continue, click **Next**.

The installer prompts you to enter a new password for the informix user.

**Step 14** Enter an informix password that is at least six characters in length. Then, press **Enter**.

The installer prompts you to re-enter the informix password.

**Step 15** Enter the informix password again and press **Enter**.

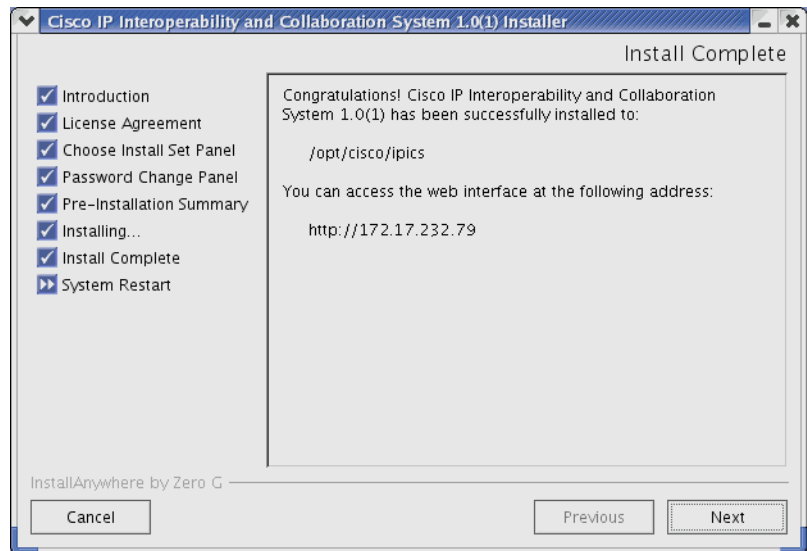
**Caution**

Never change the password for the informix user outside of the Cisco IPICS installer. If you need to change the informix password, you should only do so when performing a Cisco IPICS installation or upgrade. When you manually change the informix password, the Cisco IPICS Administration Console becomes unusable.

The Installation Progress window displays, showing the files and folders being written to the disk.

When the upgrade completes, the Cisco IPICS Install Complete window displays. See [Figure 3-7](#) for an example.

**Figure 3-7** *Install Complete Window*



**Step 16** To close the installer and complete the upgrade, press **Enter**.

The installer closes this window and returns you to the Cisco Linux desktop.

# Performing the Upgrade from a Downloaded File

If Cisco makes an upgrade file available on a Cisco website, you must download the upgrade file to your PC and then transfer it to the Cisco IPICS server.

After you place the upgrade file on the server, you can choose to use the graphical installer utility to perform the upgrade or you can perform the upgrade remotely, using the console option.

This section includes the following topics:

- [Transferring the Upgrade File to the Server, page 3-10](#)
- [Performing the Upgrade at the Server, page 3-12](#)
- [Performing the Upgrade from a Remote Location, page 3-17](#)

## Transferring the Upgrade File to the Server

When you transfer the upgrade file to the Cisco IPICS server, you place the file in the root directory, where you can access it from the server or from a remote location on the network.

To download the file from a website and transfer it to the server, perform the following procedure:

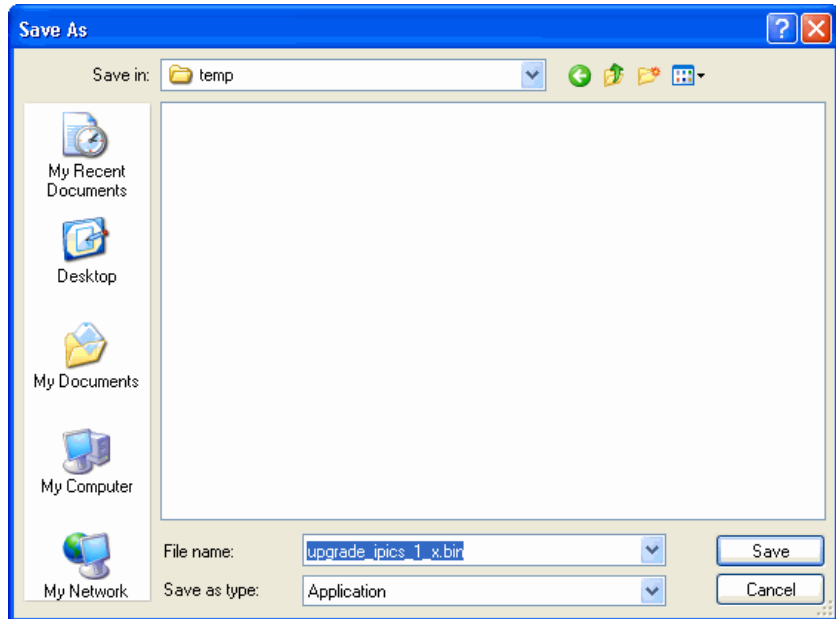
### Procedure

---

- Step 1** From your PC, open a browser and enter in the Address field the URL Cisco provides to access the download link that Cisco provides to you.
- Step 2** Click the download link.
- Step 3** When you are prompted to open or save the file, click **Save**.  
A Save As window displays, that shows files and folders on your computer.
- Step 4** Navigate to the **C:\temp** directory. See [Figure 3-8](#) for an example.



**Figure 3-8** Saving the Upgrade File to Your Computer



- Step 5** Click **Save**.
- The file downloads to the directory that you specified.
- Step 6** Open the SSH Tectia File Transfer Client by choosing **Start > All Programs > SSH Tectia Client > SSH Tectia Client - File Transfer**.
- The SSH Tectia File Transfer window displays. The desktop of your PC displays in the left pane.
- Step 7** To open a window for entering the server IP address, click **Quick Connect**.
- The Connect to Remote Host window displays.
- Step 8** In the Host field, enter the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.
- Step 9** In the User Name field, enter **root**. Then, click **Connect**.
- The Enter Password window displays.
- Step 10** Enter the root password and then click **OK**.

The SSH Tectia File Transfer Client connects to the Cisco IPICS server and displays the contents of the root directory in the right pane of the window.

- Step 11** In the left pane of the window, navigate to the directory on your PC to which you saved the upgrade file.
- Step 12** To initiate the copy procedure, drag the upgrade file from the left pane of the window to the right pane.
- A progress window displays while the file copies to the server. When the copy completes, the upgrade file displays in the right pane.
- Step 13** To close the SSH Tectia File Transfer Client, click **X**.

## Performing the Upgrade at the Server

When you perform the upgrade directly from the server, you use a Cisco Linux terminal window. The procedure in this section assumes that you have transferred the upgrade file to the root directory of the Cisco IPICS server. If you have not already performed this step, see the [“Transferring the Upgrade File to the Server” section on page 3-10](#).



**Note** Before you begin the upgrade procedure, back up your data and log files. For more information, refer to the [Cisco IPICS Backup and Restore Guide](#).

To perform the upgrade at the Cisco IPICS server, perform the following procedure:

### Procedure

- Step 1** Log in to the Cisco IPICS server with root privileges.
- The Cisco Linux desktop displays.
- Step 2** To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**
- A terminal window displays.
- Step 3** To view the upgrade file, type the following command and then press **Enter**:

```
[root] #ls -al
```

The contents of the root directory display in the window.

**Step 4** To begin the upgrade, enter the following command:

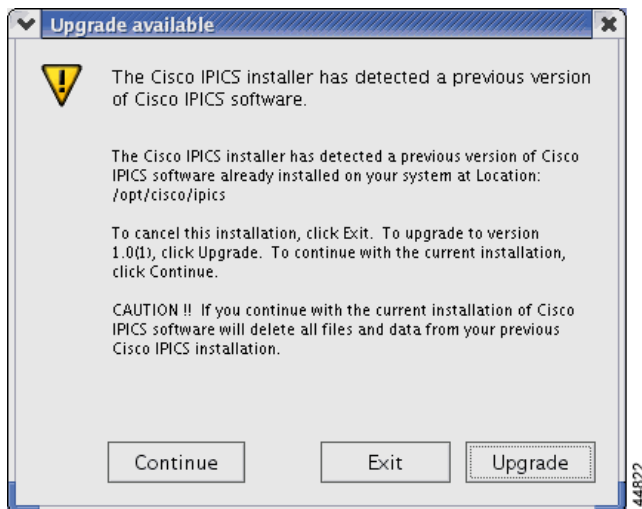
```
[root] #./<name of upgrade file>.bin
```

where *name of upgrade file* represents the name of the .bin file that you downloaded and transferred to the server.

A message window displays and indicates that the installer has detected a previous version of Cisco IPICS exists on your server. See [Figure 3-9](#) for an example of the window. You can choose from the following options:

- Continue—Proceeds with a full installation and overwrites your current installation, including the contents of your database and any files that were backed up to the default backup directory, **/devices**
- Exit—Exits from the installation
- Upgrade—Upgrades your Cisco IPICS server software to the new version, but leaves your database and the data in the **/devices** directory intact

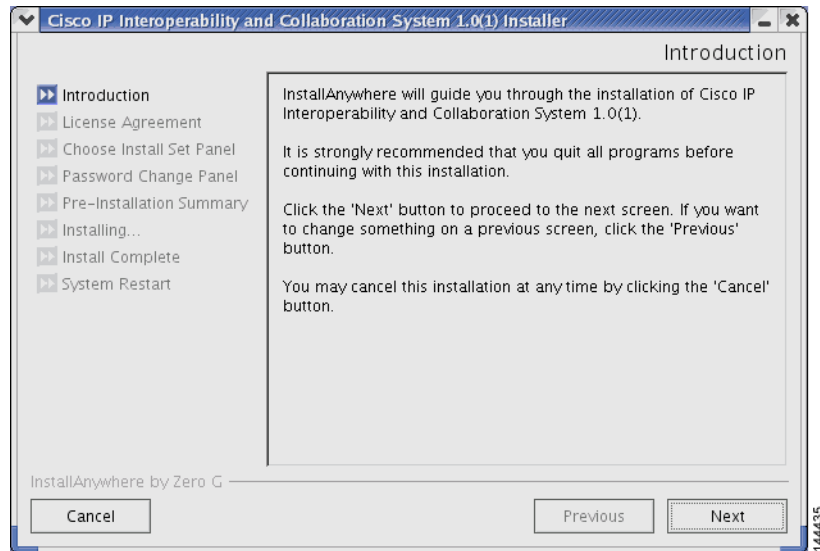
**Figure 3-9** Upgrade Available Message



**Step 5** To continue with the upgrade, click **Upgrade**.

The Cisco IPICS installer window displays with an introduction to the process. See [Figure 3-10](#) for an example.

**Figure 3-10** Introduction in the Installer Window



**Step 6** To continue with the upgrade, click **Next**.

The Cisco IPICS installer displays the End User License Agreement.

**Step 7** Use the scroll bar in the License Agreement pane to view the entire agreement. After you read the entire agreement text, click the **I accept the terms of the License Agreement** option. Then, click **Next**.



**Note** You can only continue with the installation if you accept the End User License Agreement.

The Choose Install Set window displays with the following installation options:

- **Typical**—This option installs Cisco IPICS server software with CSA
- **Customize**—This option allows you to choose whether to install Cisco IPICS server software with or without CSA

- Upgrade—This option installs an upgrade to a previously installed version of Cisco IPICS server software

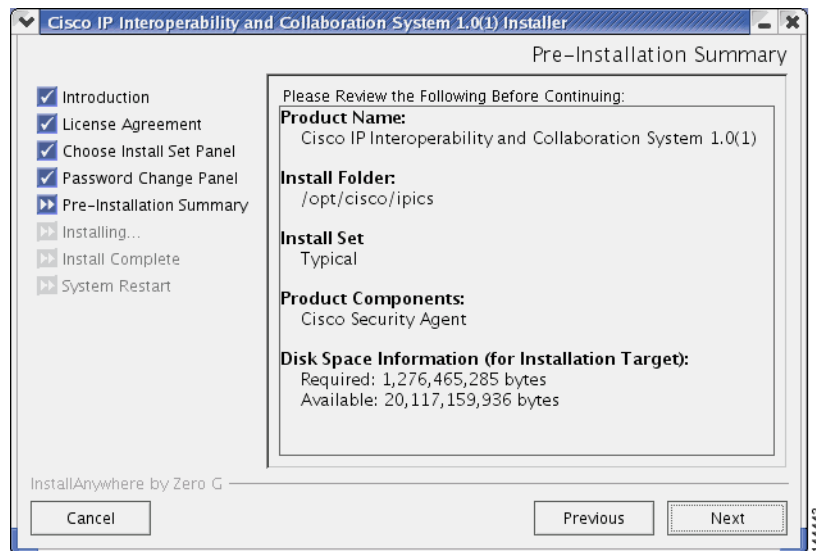
**Step 8** To upgrade Cisco IPICS, choose **Upgrade**. Then, click **Next**.

The Cisco IPICS installer displays the Preinstallation Summary. See [Figure 3-6](#) for an example.

The Preinstallation Summary displays the following information:

- The product name and version
- The destination folder for the installation
- Disk space information, including:
  - The amount of space required for the installation
  - The available space on the disk

**Figure 3-11** Preinstallation Summary



The installer prompts you to enter a new password for the informix user.

**Step 9** Enter a informix password that is at least six characters in length. Then, press **Enter**.

The installer prompts you to re-enter the informix password.

**Step 10** Enter the informix password again and press **Enter**.

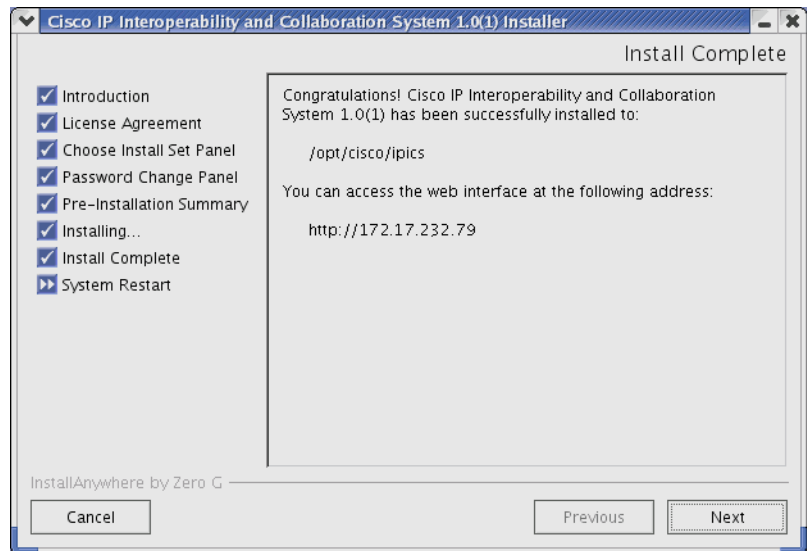


**Caution**

Never change the password for the informix user outside of the Cisco IPICS installer. If you need to change the informix password, you should only do so when performing a Cisco IPICS installation or upgrade. When you manually change the informix password, the Cisco IPICS Administration Console becomes unusable.

The Installation Progress window displays, showing the files and folders being written to the disk. When the upgrade completes, the Cisco IPICS Install Complete window displays. See [Figure 3-7](#) for an example of the window.

**Figure 3-12** *Install Complete Window*



**Step 11** To close the installer and complete the upgrade, press **Enter**.

## Performing the Upgrade from a Remote Location

Cisco IPICS allows you to perform an upgrade remotely, using the SSH Tectia Client on a PC. This upgrade process includes all of the steps that you would follow if you performed the procedure at the server. However, this procedure displays all of your instructions in text, rather than in the graphic format of the installer utility.

The procedure in this section assumes that you have transferred the upgrade file to the Cisco IPICS server. If you have not completed the download and transfer, see the “[Transferring the Upgrade File to the Server](#)” section on page 3-10

**Note**

Before you begin the upgrade procedure, back up your data and log files. For more information, refer to the *Cisco IPICS Backup and Restore Guide*.

To perform the upgrade from a network PC, perform the following procedure:

**Procedure**

- 
- Step 1** From a PC, click **Start > All Programs > SSH Tectia Client > Secure Tectia Client**.
- The SSH Tectia Client displays.
- Step 2** Click **Quick Connect** on the button bar.
- The Connect to Remote Host window displays.
- Step 3** In the Host field, enter into the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.
- Step 4** In the User Name field, enter **root**. Then, click **Connect**.
- The Enter Password window displays.
- Step 5** Enter the root password and then click **OK**.
- An SSH Tectia Client window displays.
- Step 6** To view the upgrade file, type the following command and then press **Enter**:
- ```
[root] #ls -l
```
- The contents of the root directory display in the window.
- Step 7** To begin the upgrade, type the following command and then press **Enter**:

```
[root] #./<name of upgrade file>.bin -i console
```

where *name of upgrade file* represents the name of the .bin file you downloaded and transferred to the server.

The window displays a message that informs you that the installer is extracting. The extraction may take up to two minutes to complete.

A message displays and indicates that the installer has detected a previous version of Cisco IPICS exists on your server. You can choose from the following options:

- Upgrade—Upgrades your Cisco IPICS server software to the new version, but leaves your database and the data in the **/devices** directory intact.
- Exit—Exits from the installation.
- Continue—Proceeds with a full installation and overwrites your current installation, including the contents of your database and any files that were backed up to the default backup directory, **/devices**.

Step 8 To choose the Upgrade option, press **Enter**.

The first page of the End User License Agreement displays. There are approximately eight pages to the agreement.

Step 9 Read each page and press **Enter** when you finish.

At the end of the final page of the End User License Agreement, a question displays that asks if you accept the terms of the license agreement.

Step 10 If you accept the terms, press **Y** and **Enter**.

The Choose Install Set menu displays. You can choose from the following options:

- Typical—This option installs Cisco IPICS server software with CSA
- Customize—This option allows you to choose whether to install Cisco IPICS server software with or without CSA
- Upgrade—This option installs an upgrade to a previously installed version of Cisco IPICS server software

Step 11 To choose the Upgrade option, press **Enter**.

The Preinstallation Summary displays.

Step 12 To continue, press **Enter**.

The installer prompts you to enter a new password for the informix user.

Step 13 Enter a informix password that is at least six characters in length. Then, press **Enter**.

The installer prompts you to re-enter the informix password.

Step 14 Enter the informix password again and press **Enter**.



Caution

Never change the password for the informix user outside of the Cisco IPICS installer. If you need to change the informix password, you should only do so when performing a Cisco IPICS installation or upgrade. When you manually change the informix password, the Cisco IPICS Administration Console becomes unusable.

The upgrade process install files. When the file installation completes, the screen displays a message that the upgrade is complete.

The installer quits and returns you to a SSH Tectia Client prompt.

Step 15 To exit the SSH Tectia Client window, enter **Exit** at the command line and then press **Enter**.



Uninstalling Cisco IPICS

This chapter provides information about the procedures that you need to follow to the Cisco IPICS server software. You can perform the uninstallation procedure in one of the following ways:

- From the Cisco IPICS server by using a Cisco Linux terminal window
- From a remote PC on the network by using SSH Tectia Client or similar software

This chapter includes the following sections:

- [Uninstalling Cisco IPICS from the Cisco IPICS Server, page 4-2](#)
- [Uninstalling Cisco IPICS from a Remote Location, page 4-5](#)

The Cisco IPICS uninstallation procedure removes all of the components and directories that were created during the Cisco IPICS installation. If you intend to reinstall Cisco IPICS at a later time, you should back up your database and log files before you begin the uninstall process.

For information on backing up files, refer to the [Cisco IPICS Backup and Restore Guide](#).



Note

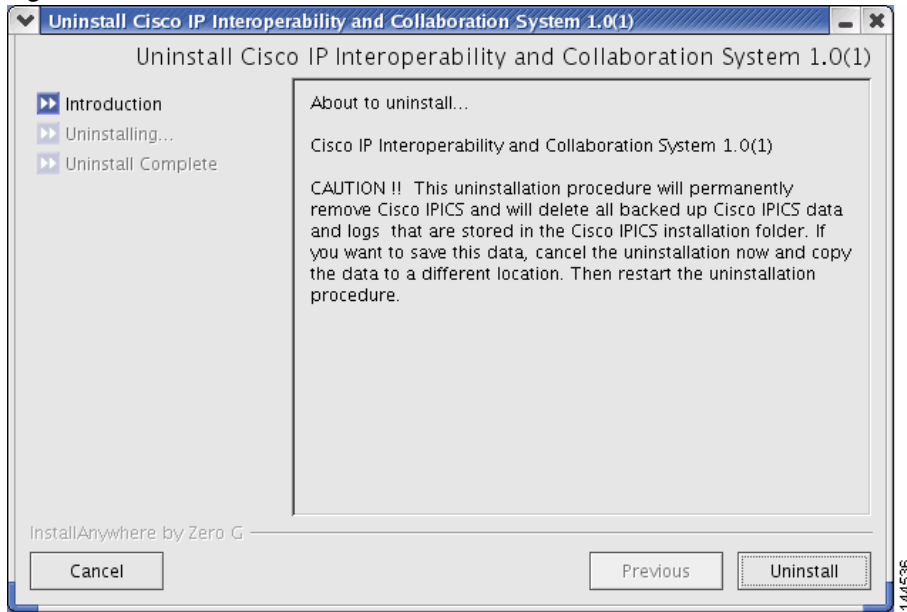
If a VTG or other conference is in progress using a Cisco IPICS resource, such as a Router Media Service (RMS), that conference will not be interrupted when you uninstall Cisco IPICS. However, if you then reinstall Cisco IPICS and add the RMS that hosts that conference, Cisco IPICS clears the voice ports, disconnecting the participants. So, before uninstallation, you should warn users that communications will be temporarily disrupted.

Uninstalling Cisco IPICS from the Cisco IPICS Server

To uninstall Cisco IPICS directly from the Cisco IPICS server, perform the following procedure:

Procedure

- Step 1** Log in to the Cisco IPICS server with root privileges.
The Cisco Linux desktop displays.
- Step 2** To locate the uninstaller file, follow these steps:
- To open the root directory, double-click the **Root's Home** icon.
The contents of the **/root** directory display.
 - To open the **ipics_db** directory, double-click the **ipics_db** icon.
The contents of the **/opt/cisco/ipics/ipics_db** directory display.
 - To navigate to the **/opt/cisco/ipics** directory, click **Up**.
The contents of the **/opt/cisco/ipics** directory display.
 - To open the uninstaller directory, double-click the **uninstaller** icon.
The contents of the **/opt/cisco/ipics/uninstaller** directory display.
 - Locate the uninstaller icon, labeled **uninstall_ipics_x_x**, where the **x_x** variable represents the version of Cisco IPICS you are uninstalling.
- Step 3** To begin the uninstallation process, double-click the **uninstall_ipics_x_x** icon.
Cisco Linux displays a message window that offers options to display or run the installer file.
- Step 4** To open the installer, click **Run in Terminal**.
The installer displays a message about the information that will be overwritten during the uninstall process. See [Figure 4-1](#) for an example of the window.

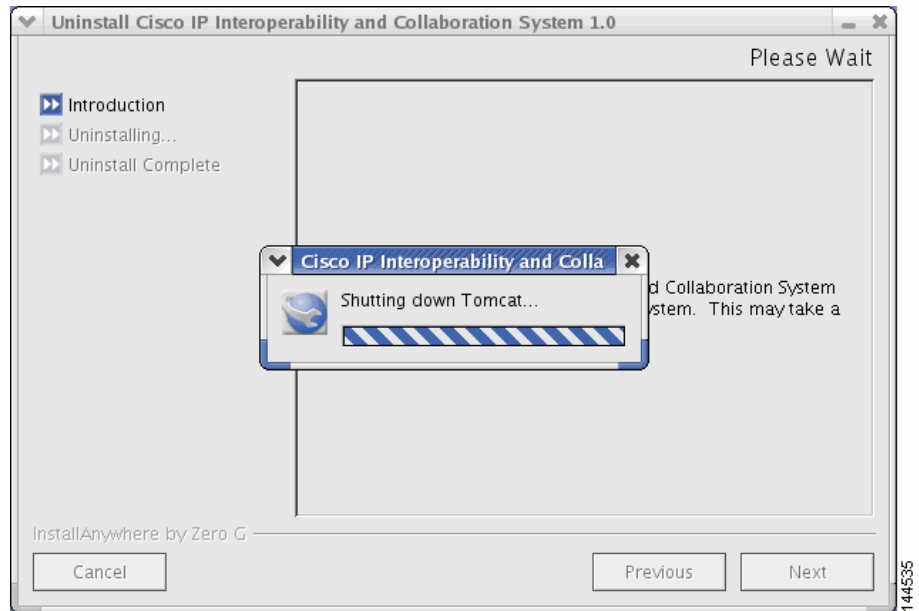
Figure 4-1 Introduction Window of the Uninstaller

Step 5 To continue with the uninstallation, click **Uninstall**. To exit from the uninstallation, click **Cancel**.

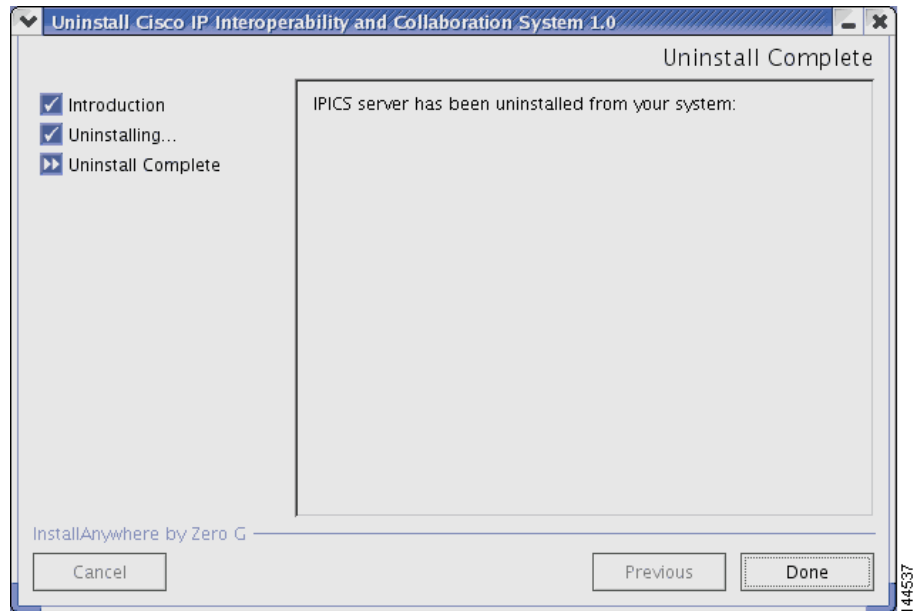
**Caution**

Be aware that the Cisco IPICS uninstallation process permanently removes the Cisco IPICS software and deletes the Cisco IPICS data that the server stores in the **/devices** directory. If you need to save your data, make sure that you click **Cancel** to cancel the uninstallation process; then, copy your data to another location. After you have preserved a copy of your data, you can restart the uninstallation process.

The uninstaller begins and uninstalls the Cisco IPICS components, such as the Informix database and the Tomcat service. See [Figure 4-2](#) for an example of the window.

Figure 4-2 Uninstallation Progress

When the uninstaller finishes removing files, the Uninstall Complete window displays.

Figure 4-3 Uninstall Complete Window

- Step 6** To close the Uninstaller window, click **Done**.
The window closes and you are returned to the Cisco Linux desktop.
- Step 7** To exit the SSH Tectia Client window, enter **Exit** at the command line and then press **Enter**.

Uninstalling Cisco IPICS from a Remote Location

It may be necessary or desirable for you to perform the Cisco IPICS server software uninstallation from a remote location on your network. This section describes the method for uninstalling Cisco IPICS from a PC that is connected to the network.

To uninstall the Cisco IPICS server software from a PC on the network, perform the following procedure:

Procedure

- Step 1** On your PC, open the SSH Tectia Client by choosing **Start > All Programs > SSH Tectia Client > SSH Tectia Client**.
- The SSH Tectia Client displays. The desktop of your PC displays in the left pane.
- Step 2** To open a window for entering the server IP address, click **Quick Connect** on the button menu.
- The Connect to Remote Host window displays.
- Step 3** In the Host field, enter into the DNS name or the IP address for your Cisco IPICS server. Then, press **Tab**.
- Step 4** In the User Name field, enter **root**. Then, click **Connect**.
- The Enter Password window displays.
- Step 5** Enter the root password and then click **OK**.
- The SSH Tectia Client connects to the Cisco IPICS server and displays a command prompt for the root user.
- Step 6** To change directories, enter the following command and press **Enter**:
- ```
[root] #cd /opt/cisco/ipics/uninstaller
```
- Step 7** To view the files in the /uninstaller directory, enter the following command and press **Enter**:
- ```
[root] #ls -l
```
- Step 8** Locate the uninstaller file, **uninstall_ipics_x_x**, where the **x_x** variable represents the version of Cisco IPICS you are uninstalling.
- Step 9** To begin the uninstallation process, enter the following command and press **Enter**:
- ```
[root] #./uninstall_ipics_x_x -i console
```
- The uninstaller displays a caution that states that the uninstall procedure will permanently remove Cisco IPICS and will delete all backed up Cisco IPICS data and logs that are stored in the Cisco IPICS installation folder.
- Step 10** Take one of the following actions:
- If you want to cancel the procedure and return to the root prompt, press **Ctrl-C**.
  - If you want to continue with the uninstallation, press **Enter**.



If you press **Enter**, the uninstallation proceeds and the uninstaller displays information about the processes that it is shutting down and removing. See [Figure 4-4](#) for an example of the uninstallation information.

**Figure 4-4 Uninstallation Progress**

```

=====
Shutting down IPICS Server

IPICS Server is being shut down. This may take a moment...

=====
Shutting down Tomcat

Tomcat is being shut down. This may take a moment.....

=====
Uninstalling Database

The database is being uninstalled. This may take a moment.....
.....

```

144533

When the uninstaller finishes removing the Cisco IPICS files and folders, an Uninstall Complete message displays and informs you that the server is about to restart. See [Figure 4-5](#) for an example of the message.

**Figure 4-5 Uninstall Complete Message**

```

=====
Uninstall Complete

IPICS Server has been uninstalled.

Broadcast message from root (Mon Oct 17 20:07:29 2005):

 System rebooting
 The system is going DOWN for reboot in 1 minute!

```

144534

**Step 11** To close the SSH Tectia Client window, click **X**.

---



# Troubleshooting the Installation

---

This chapter provides information about basic troubleshooting tips and error messages that you may encounter during the installation of the Cisco Linux operating system or the Cisco IPICS server software.

This chapter includes the following sections:

- [Cisco IPICS Installation Issues, page 5-2](#)
- [Uninstalling CSA, page 5-7](#)



## Caution

Make sure that you only perform system date changes before you install the Cisco IPICS software. Cisco IPICS does not support any modification of the system date in the operating system after the Cisco IPICS software has been installed. Therefore, it is very important that you check your system date to ensure that it properly reflects your local date and time. If the system date is not properly set to your local date and time, you must adjust it before you install the Cisco IPICS software. If you try to change the system date and time after you install the software, you will invalidate your license and cause the system to become inoperable.

For information about setting the date and time as part of the operating system installation, see the [“Installing Cisco IPICS Server Software” section on page 2-24](#).

---

# Cisco IPICS Installation Issues

The issues that are described in this section may occur during or as a result of installing the Cisco Linux operating system or the Cisco IPICS server software.

This section includes the following topics:

- [No Ports Are Listed in the Network Device Control Menu, page 5-2](#)
- [Cannot Connect to the Server after Installation, page 5-3](#)
- [Authorization Error after Installation, page 5-4](#)
- [Error Displays When Performing Remote Installation, page 5-6](#)

## No Ports Are Listed in the Network Device Control Menu

**Problem** When you open the Network Device Control window to configure the Ethernet port, no ports are listed.

**Solution** In the “Installing the Cisco Linux Operating System” section on [page 2-3](#), you probably logged in (during [Step 8](#)) with the system user ID and password that you created (in the Cisco Linux setup, [Step 7](#)).

To continue with the installation, you must log out and then log back in as the root user. To return to the Network Device Control window as the root user, perform the following procedure:

### Procedure

- 
- Step 1** Close the current Network Device Control window by clicking **Close**.
  - Step 2** Before you can log in as root, you must log out as the system user. To log out, click the **Red Hat** menu and then choose **Log Out**.  
The Log Out window displays.
  - Step 3** Choose **Log Out** and then click **OK**.  
Cisco Linux logs you out and then displays a new login window.
  - Step 4** Enter **root** in the Username field and press **Enter**.
  - Step 5** Enter **cisco** in the Password field and press **Enter**.

- Step 6** Open a terminal window to enter commands by clicking the **Red Hat** icon on the Cisco Linux desktop and choosing **System Tools > Network Device Control**.  
The Network Device Control Menu displays and shows the Ethernet port(s) on the server.
- 

## Cannot Connect to the Server after Installation

**Problem** After you install Cisco IPICS, you enter the static IP address for the Cisco IPICS server into a browser and you cannot contact the server.

**Solution** The Tomcat service may not be running.

To troubleshoot this problem, perform the following procedure:

### Procedure

---

- Step 1** To log in to the Cisco Linux operating system on the Cisco IPICS server, enter **root** in the Username field of the Login window and press **Enter**.  
Cisco Linux displays a window with a password field.
- Step 2** Enter your root password and press **Enter**.  
The Cisco Linux desktop displays.
- Step 3** To verify that the static IP address, subnet mask and default gateway are properly configured, perform the following procedure:
- To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**
  - To send a signal to another server on the network, enter the following command:  
**ping <default gateway IP address>**  
where *default gateway IP address* represents the default gateway address for your network.
  - If the ping command is successful, log in to another server on the network and attempt to ping this Cisco IPICS server.

If the ping command is not successful, troubleshoot the network connectivity with your network administrator.

**Step 4** Ensure that the Tomcat service is running by performing the following procedure:

- a. To check the status of the Tomcat service, in the terminal window you opened, enter the following command:

```
[root] #ps -ef | grep tomcat
```

If the Tomcat service is running properly, the grep command returns a process similar to the following example:

```
root 5270 1 2 11:30 ? 00:01:33
/opt/cisco/ipics/jre/bin/java -server -Xms64m -Xmx256m -DMP_DATA=
-Djava.security.auth.login.config=/opt/cisco/ipics/tomcat/
security/
.java.login.config
-Djava.security.auth.policy=/opt/cisco/ipics/tomcat/security/
.java.policy -Djava.util.logging.manager=org.apache.juli.
```

If the Tomcat service is not running, the response to the grep command is similar to the following example:

```
root 5773 5723 0 12:29 pts/1 00:00:00 grep tomcat
```

- b. Manually start the Tomcat service by entering the following command at the prompt:

```
[root] #/etc/init.d/ipics_tomcat start
```

If the start command is successful, Cisco Linux displays [OK].

If the start command returns an error, see the *Cisco IPICS Troubleshooting Guide*.

## Authorization Error after Installation

**Problem** After installing Cisco IPICS, you log in to the Administration Console and receive an authorization error.

**Solution** One of the following situations may have occurred:

- You may have entered an incorrect user name or password
- The Informix database may not have started

To check the database, perform the following procedure:

### Procedure

---

- Step 1** Before you check the database status, verify that you entered the correct user name and password, and that the Caps Lock setting is not on.
- Step 2** To log in to the Cisco Linux operating system on the Cisco IPICS server, enter **root** in the Username field of the Login window and press **Enter**.  
Cisco Linux displays a window with a password field.
- Step 3** Enter your root password and press **Enter**.  
The Cisco Linux desktop displays.
- Step 4** To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**.  
A terminal window displays.
- Step 5** Enter the following command at the prompt:  
**[root] #ps -ef | grep oninit**  
If the Informix database is not running, the response to the grep command is similar to the following example:  

```
root 5773 5723 0 12:29 pts/1 00:00:00 grep oninit
```
- Step 6** Manually start the Informix database by entering the following command at the prompt:  
**[root] #/etc/init.d/ipics\_db start**  
If the start command is successful, Cisco Linux displays [OK].  
If the start command returns an error, Refer to the [Cisco IPICS Troubleshooting Guide](#).
-

## Error Displays When Performing Remote Installation

**Problem** When you start the Cisco IPICS server software installation from an SSH Tectia Client window on a network PC, the installer displays an error similar to the following example:

### **Example 5-1 Remote Installation Error**

```
Invocation of this Java Application has caused an
InvocationTargetException. This application will now exit. (LAX)
```

Stack Trace:

```
java.awt.HeadlessException:
No X11 DISPLAY variable was set, but this program performed an
operation which requires it.
 at java.awt.GraphicsEnvironment.checkHeadless(Unknown Source)
 at java.awt.Window.<init>(Unknown Source)
 at java.awt.Frame.<init>(Unknown Source)
 at java.awt.Frame.<init>(Unknown Source)
 at javax.swing.JFrame.<init>(Unknown Source)
 at com.zerog.ia.installer.LifeCycleManager.f(DashoA8113)
 at com.zerog.ia.installer.LifeCycleManager.g(DashoA8113)
 at com.zerog.ia.installer.LifeCycleManager.a(DashoA8113)
 at com.zerog.ia.installer.Main.main(DashoA8113)
 at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
 at sun.reflect.NativeMethodAccessorImpl.invoke(Unknown Source)
 at sun.reflect.DelegatingMethodAccessorImpl.invoke(Unknown
Source)
 at java.lang.reflect.Method.invoke(Unknown Source)
 at com.zerog.lax.LAX.launch(DashoA8113)
 at com.zerog.lax.LAX.main(DashoA8113)
```

This Application has Unexpectedly Quit: Invocation of this Java Application has caused an InvocationTargetException. This application will now exit. (LAX)

**Solution** This error occurs when you invoke the installer file without the **-i console** argument. Ensure that you enter the following command:

```
[root] #./<name of installer file>.bin -i console
```




# Uninstalling CSA

There may be situations where you need to manually uninstall CSA. You perform the uninstallation from a Cisco Linux terminal on the Cisco IPICS server.

To remove CSA from the server, perform the following procedure:

## Procedure

---

- Step 1** Log in to the Cisco IPICS server with root privileges.  
The Cisco Linux desktop displays.
- Step 2** To open a terminal window, click the **Red Hat** menu and choose **System Tools > Terminal**  
A terminal window displays.
- Step 3** To uninstall CSA, enter the following command:  
`[root] #rpm -ev `rpm -qf /opt/CSCOcsa/bin/ciscosecd``
-  **Note** Be sure to use the back-quote key (`), located on the keyboard below the ~.
- Step 4** Restart the server by entering the following command:  
`[root] #reboot`
- 

If you decide to reinstall CSA, see the “[Manually Installing CSA](#)” section on page 2-46.

For information about using CSA, see the Cisco Security Agent documentation at the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/vpn/ciscosec/csa/index.htm>





# Changing the Cisco Linux Root Password

---

You can change the password for the Cisco Linux root user, as needed, by performing the following procedure:



## Note

---

Your new password must be a minimum of six characters and cannot be based on a dictionary word.

---

## Procedure

---

- Step 1** Log in to the Cisco IPICS server with root privileges.  
The Cisco Linux desktop displays.
- Step 2** Open a terminal window by clicking the Red Hat menu and choosing **System Tools > Terminal**.  
A terminal window displays.
- Step 3** To temporarily disable the Cisco Linux restrictions for changing the root password, enter the following command:  
`[root] #sh /root/.security/unimmunize.sh`
- Step 4** To create a new root password, enter the following command:  
`[root] #passwd`  
Cisco Linux informs you that it is changing the password for the root user.
- Step 5** At the New Password prompt, enter a new root password and press **Enter**.

When you enter your password, no characters display for security reasons.

**Step 6** At the Retype New Password prompt, enter the new password again and press **Enter**.

**Step 7** Upon password confirmation, the system displays the following message:

```
passwd: all authentication tokens updated successfully.
```

**Step 8** To reenable the Cisco Linux restrictions for changing the root password, enter the following command:

```
[root] #sh /root/.security/immunize.sh
```

**Step 9** Close the terminal window by clicking **X**.

You are returned to the Linux desktop.

---



---

## A

- activated** A VTG state that indicates that the SIP (unicast) line or multicast line is fully operational. The PTT and volume indicators appear highlighted.
- activating** A VTG state that becomes effective when the Activate button is clicked. The Activate button appears highlighted while the other PMC buttons remain in an inactive state as the system attempts to activate and connect.
- activation button** This button toggles activate and deactivate functionality on the PMC. Click this button on the PMC to activate a channel (to call out); click it again to deactivate the channel.
- active virtual talk group** A virtual talk group (VTG) becomes active when Cisco IPICS commits global resources, such as a multicast address and any necessary dial-in peers, so that the participants in the VTG can communicate with each other.
- Administration Console** The graphical user interface (GUI) in the Cisco IPICS server software through which authorized Cisco IPICS users can manage and configure Cisco IPICS resources, events and VTGs.
- autonomous system** A radio system under one administrative control; also known as a management domain. This system is usually mapped to an agency.

---

## B

- backward compatibility** The ability of newer radio equipment to operate within an older system infrastructure or to directly intercommunicate with an older radio unit. The term usually applies to digital radios that are also capable of analog signal transmission.

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>bandwidth</b>    | The difference between the highest and lowest frequencies that are available for network signals. The term also describes the rated throughput capacity of a specific network medium or protocol. Bandwidth specifies the frequency range that is necessary to convey a signal measured in units of hertz (Hz). For example, voice signals typically require approximately 7 kHz of bandwidth and data traffic typically requires approximately 50 kHz of bandwidth. |
| <b>base station</b> | A land station in the land mobile radio service. In the personal communication service, the common name for all the radio equipment that is located at one fixed location and used for serving one or several calls.                                                                                                                                                                                                                                                 |

---

**C**

|                         |                                                                                                                                                                                                                                                   |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAI</b>              | common air interface. The standard for the digital wireless communications medium that is employed for P25-compliant radio systems and equipment. The standard for P25 Phase I incorporates Frequency Division Multiple Access (FDMA) technology. |
| <b>call delay</b>       | The delay that occurs when there is no idle channel or facility available to immediately process a call that arrives at an automatic switching device.                                                                                            |
| <b>call setup time</b>  | The time that is required to establish a circuit-switched call between users or terminals.                                                                                                                                                        |
| <b>carrier</b>          | A wave that is suitable for modulation by an information-bearing signal.                                                                                                                                                                          |
| <b>CAS</b>              | channel associated signaling. The transmission of signaling information within the voice channel. CAS signaling often is referred to as robbed-bit signaling because user bandwidth is being robbed by the network for other purposes.            |
| <b>channel</b>          | A communication path that is wide enough to permit a single RF transmission. Multiple channels can be multiplexed over a single cable in certain environments. <i>See</i> PTT channel.                                                            |
| <b>channel capacity</b> | The maximum possible information transfer rate through a channel, subject to specified constraints.                                                                                                                                               |
| <b>channel folder</b>   | A logical grouping of channels                                                                                                                                                                                                                    |

|                                  |                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>channel spacing</b>           | The distance from the center of one channel to the center of the next-adjacent-channel. Typically measured in kilohertz.                                                                                                                                                                                                                                       |
| <b>Cisco CallManager</b>         | The software-based call-processing component of the Cisco IP telephony solution. Cisco CallManager extends enterprise telephony features and functions to packet telephony network devices, such as Cisco IP Phones, media processing devices, VoIP gateways, and multimedia applications.                                                                     |
| <b>Cisco IPICS</b>               | Cisco IP Interoperability and Collaboration System. The Cisco IPICS system provides an IP standards-based solution for voice interoperability by interconnecting voice channels, talk groups, and VTGs to bridge communications amongst disparate systems.                                                                                                     |
| <b>Cisco IPICS server</b>        | Provides the core functionality of the Cisco IPICS system. The Cisco IPICS server software runs on the Linux operating system on selected Cisco Media Convergence Server (MCS) platforms. The server software includes an incident management framework administration GUI that enables dynamic resource management for users, channels, and VTGs.             |
| <b>Cisco IP Phone</b>            | A full-featured telephone that provides voice communication over an IP network. A user can participate in a PTT channel or VTG by using a Cisco IP Phone as a PTT device.                                                                                                                                                                                      |
| <b>Cisco Security Agent</b>      | Provides threat protection for server and desktop computing systems (endpoints) by identifying, preventing, and eliminating known and unknown security threats.                                                                                                                                                                                                |
| <b>CLI</b>                       | command-line interface. An interface that allows the user to interact with the operating system by entering commands and optional arguments.                                                                                                                                                                                                                   |
| <b>codec</b>                     | coder-decoder.<br><br>1. Integrated circuit device that typically uses pulse code modulation to transform analog signals into a digital bit stream and digital signals back into analog signals.<br><br>2. In Voice over IP, Voice over Frame Relay, and Voice over ATM, a DSP software algorithm that is used to compress/decompress speech or audio signals. |
| <b>conference of conferences</b> | A conference that consists of two or more VTGs.                                                                                                                                                                                                                                                                                                                |

|                                  |                                                                                                                                                                                                                   |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>conventional radio system</b> | A non-trunked system that is similar to telephone party-line in that the user determines availability by listening for an open channel.                                                                           |
| <b>COR</b>                       | carrier operated relay. A signal from a receiver that indicates that the receiver is receiving a signal and that the receiver is not squelched.                                                                   |
| <b>coverage</b>                  | In radio communications, the geographical area that is within the range of, or that is covered by, a wireless radio system to enable service for radio communications. Also referred to as service delivery area. |

---

**D**

|                                     |                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>delay time</b>                   | The sum of waiting time and service time in a queue.                                                                                                                                                                                                                                                                           |
| <b>decrypt</b>                      | Cryptographically restore ciphertext to the plaintext form it had before encryption.                                                                                                                                                                                                                                           |
| <b>decryption</b>                   | Reverse application of an encryption algorithm to encrypted data, thereby restoring that data to its original, unencrypted state.                                                                                                                                                                                              |
| <b>dial peer</b>                    | Addressable call endpoint. In Voice over IP, there are two kinds of dial peers: POTS and VoIP.                                                                                                                                                                                                                                 |
| <b>digital ID</b>                   | A numeric identifier that is chosen by a Cisco IPICS user and stored in the user profile. Cisco IPICS uses this ID and a numeric password to authenticate a Cisco IP Phone user.                                                                                                                                               |
| <b>digital modulation technique</b> | A technique for placing a digital data sequence on a carrier signal for subsequent transmission through a channel.                                                                                                                                                                                                             |
| <b>dispatcher</b>                   | The Cisco IPICS dispatcher is responsible for setting up the VTG templates, activating the VTGs to begin conferences, and adding and/or removing participants in VTG templates and active VTGs. The dispatcher also monitors the active VTGs and events, can mute and unmute users, as necessary, and sets up system policies. |



**DS0** digital service zero (0). Single timeslot on a DS1 (also known as T1) digital interface—that is, a 64-kbps, synchronous, full-duplex data channel, typically used for a single voice connection on a PBX.

**dynamic regrouping** A trunking system feature that allows multiple radios to be placed upon a specific talk group without manual manipulation of the programming of the radios. Dynamic regrouping is initiated through a system control console and transmitted to the radio via the trunking systems control channel.

---

## E

**E & M** recEive and transMit (or ear and mouth). The E&M interface provides voice signals from radio channels, which are then mapped to IP multicast or unicast. The E&M interface provides the most common form of analog trunking.

1. Trunking arrangement that is generally used for two-way switch-to-switch or switch-to-network connections. Cisco's analog E&M interface is an RJ-48 connector that allows connections to PBX trunk lines (tie lines). E&M also is available on E1 and T1 digital interfaces.

2. A type of signaling that is traditionally used in the telecommunications industry. Indicates the use of a handset that corresponds to the ear (receiving) and mouth (transmitting) component of a telephone.

**encipher** To convert plain text into an unintelligible form by using a cipher.

**encode** To modify information into the required transmission format.

**encryption** Application of a specific algorithm so as to alter the appearance of data and make it incomprehensible to unauthorized users.

**event** An active VTG in the Cisco IPICS solution.

---

|                             |                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>F</b>                    |                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>FDM</b>                  | frequency-division multiplexing. Technique whereby information from multiple channels can be allocated bandwidth on a single wire based on frequency.                                                                                                                                                                                                                                    |
| <b>FDMA</b>                 | frequency-division multiple access. A channel access method in which different conversations are separated onto different frequencies. FDMA is employed in narrowest bandwidth and multiple-licensed channel operations.                                                                                                                                                                 |
| <b>FLEXIm</b>               | Cisco software that enforces licensing on certain systems; FLEXIm ensures that Cisco IPICS software will work only on the supported and licensed hardware.                                                                                                                                                                                                                               |
| <b>floor control</b>        | The standard mechanism for Push-to-Talk speaker arbitration.                                                                                                                                                                                                                                                                                                                             |
| <b>frame</b>                | A logical grouping of information sent as a data link layer unit over a transmission medium. Often refers to the header and the trailer, used for synchronization and error control, that surround the user data contained in the unit. The terms cell, datagram, message, packet, and segment also describe logical information groupings at various layers of the OSI reference model. |
| <b>frequency</b>            | For a periodic function, frequency represents the number of cycles or events per unit of time.                                                                                                                                                                                                                                                                                           |
| <b>frequency assignment</b> | Assignment that is given to a radio station to use a radio frequency or radio frequency channel under specified conditions.                                                                                                                                                                                                                                                              |
| <b>frequency hopping</b>    | The repeated switching of frequencies during radio transmission according to a specified algorithm, intended to minimize unauthorized interception or jamming of telecommunications.                                                                                                                                                                                                     |
| <b>frequency modulation</b> | Modulation technique in which signals of different frequencies represent different data values.                                                                                                                                                                                                                                                                                          |
| <b>frequency sharing</b>    | The assignment to or use of the same radio frequency by two or more stations that are separated geographically or that use the frequency at different times.                                                                                                                                                                                                                             |

---

**G**

**gateway** Device that performs an application-layer conversion of information from one protocol stack to another. In Cisco IPICS, the gateway component includes LMR gateways, which functionality is usually installed as an additional feature in a supported Cisco router. LMR gateways provide voice interoperability between radio and non-radio networks by bridging radio frequencies to IP multicast streams.

**GRE** generic routing encapsulation. Tunneling protocol that can encapsulate a wide variety of protocol packet types inside IP tunnels, creating a virtual point-to-point link to Cisco routers at remote points over an IP internetwork. By connecting multiprotocol subnetworks in a single-protocol backbone environment, IP tunneling that uses GRE allows network expansion across a single-protocol backbone environment. GRE is generally used to route multicast traffic between routers.

---

**H**

**H.323** Defines a common set of codecs, call setup and negotiating procedures, and basic data transport methods to allow dissimilar communication devices to communicate with each other by using a standardized communication protocol.

**high-band frequency** Refers to the higher frequency levels in the VHF band, typically 138-222 MHz.

**Hoot 'n' Holler (Hootie)** A communications system where the loudest and most recent talker or talkers are mixed into one multicast output stream. Also known as hootie, these networks provide “always on” multiuser conferences without requiring that users dial in to a conference.

## i

---

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>inactive VTG</b>                  | A VTG that is stored for use. The Cisco IPICS server stores inactive VTGs so that they can be automatically activated by a policy or manually activated by a dispatcher.                                                                                                                                                                                                                                                                                                                                                            |
| <b>incident management framework</b> | A software framework that includes an adaptable GUI to facilitate resources, such as users, radio channels, cameras, and sensor information, for delivery that is based upon policy or incident needs.                                                                                                                                                                                                                                                                                                                              |
| <b>interference</b>                  | The effect of unwanted energy due to one or a combination of emissions, radiation, or inductions upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information, which could be extracted in the absence of such unwanted energy.                                                                                                                                                                                                                             |
| <b>interoperability</b>              | The capability of equipment manufactured by different vendors to communicate with each other successfully over a network.                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>IPSec</b>                         | IP Security. A framework of open standards that provides data confidentiality, data integrity, and data authentication between participating peers. IPSec provides these security services at the IP layer. IPSec uses IKE to handle the negotiation of protocols and algorithms based on local policy and to generate the encryption and authentication keys to be used by IPSec. IPSec can protect one or more data flows between a pair of hosts, between a pair of security gateways, or between a security gateway and a host. |

---

K

|                        |                                                                                                                                                 |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>keepalive</b>       | A message that is sent by one network device to inform another network device that the virtual circuit between the two devices is still active. |
| <b>key</b>             | The parameter that defines an encryption code or method.                                                                                        |
| <b>kilohertz (kHz)</b> | A unit of frequency that denotes one thousand Hz.                                                                                               |

---

**L**

- latch** The PMC functionality that allows a Cisco IPICS user to lock in a PTT channel.
- linear modulation** A radio frequency transmission technique that provides the physical transport layer of a radio system. This technology is compatible in digital and analog system environments and supports channel bandwidths of 5 kHz to 50 kHz.
- LMR** Land Mobile Radio. A Land Mobile Radio (LMR) system is a collection of portable and stationary radio units that are designed to communicate with each other over predefined frequencies. They are deployed wherever organizations need to have instant communication between geographically dispersed and mobile personnel.
- location** In Cisco IPICS, location signifies reachability; meaning, channels or users who are associated with the same location can communicate with each other without additional network configuration. Location may refer to a physical or virtual location, as defined in the server.
- low-band frequency** Lower frequency levels in the VHF band, typically 25–50 MHz.

---

**M**

- megahertz (MHz)** A unit of frequency denoting one million Hz.
- modulation** The process, or result of the process, of varying a characteristic of a carrier in accordance with an information-bearing signal.
- multicast** Single packets that are copied by the network and sent to a specific subset of network addresses. Multicast refers to communications that are sent between a single sender and multiple recipients on a network.
- multicast address** A single address that may refer to multiple network devices.
- multicast address/port** Cisco IPICS uses this type of connection to enable the PMC to directly tune in to the multicast channel.

|                           |                                                                                                                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>multicast pool</b>     | Multicast IP addresses that are defined as part of a multicast pool. Cisco IPICS allocates a multicast address from this pool of resources when a dispatcher activates a VTG.                                                             |
| <b>multiplexing</b>       | The combination of two or more information channels on to a common transmission medium. In electrical communications, the two basic forms of multiplexing are time-division multiplexing (TDM) and frequency-division multiplexing (FDM). |
| <b>mute</b>               | This functionality that enables a dispatcher to mute a PMC user from talking or transmitting voice on one or more channels. The dispatcher can mute the microphone of the user or both the microphone and the speaker.                    |
| <b>mutual aid channel</b> | A national or regional channel that has been set aside for use only in mutual aid interoperability situations. Restrictions and guidelines governing usage usually apply.                                                                 |

---

## N

|                                                                  |                                                                                                                                                                                                                                         |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>narrowband channels</b>                                       | Channels that occupy less than 20 kHz.                                                                                                                                                                                                  |
| <b>National Public Safety Planning Advisory Committee</b>        | The committee that was established to conduct nationwide planning and allocation for the 821–824 MHz and 866–869 MHz bands.                                                                                                             |
| <b>National Telecommunication and Information Administration</b> | The United States executive branch agency that serves as the principal advisor to the president on telecommunications and information policies and that is responsible for managing the federal government’s use of the radio spectrum. |
| <b>network</b>                                                   | An interconnection of communications entities.                                                                                                                                                                                          |

- NAT** Network Address Translation. Provides a mechanism for translating addresses that are not globally unique into globally routable addresses for connection to the Internet.
- not activated** A VTG state that becomes effective when the Activate button is clicked a second time (to deactivate the channel) or if the connection terminates. No PMC buttons appear highlighted.

---

**O**

- offline mode** When the connection to the server goes offline, the PMC enters offline mode. Offline mode enables continuous communication during periods of server downtime. Using offline mode requires at least one successful login to the server.
- operator** The Cisco IPICS operator is responsible for setting up and managing users, configuring access privileges, and assigning user roles and ops views.
- ops view** operational view. A Cisco IPICS feature that provides the ability to organize users, user groups, channels, channel groups, VTGs, and policies into different user-definable views. While ops views are maintained separately by the Cisco IPICS system administrator, this functionality also allows multiple entities to use one Cisco IPICS server to enable resource sharing across multiple ops views, according to business need.
- OTAR** over-the-air re-keying. Provides the ability to update or modify over radio frequency the encryption keys that are programmed in a mobile or portable radio.

---

**P**

- packet** A logical grouping of information that includes a header that contains control information. Usually also includes user data.

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>packet switching</b> | The process of routing and transferring data by using addressed packets so that a channel is occupied during the transmission of the packet only. Upon completion of the transmission, the channel is made available for the transfer of other traffic.                                                                                                                                                                                                                                                                                                                            |
| <b>PIM</b>              | Protocol Independent Multicast. Multicast routing architecture that allows the addition of IP multicast routing on existing IP networks. PIM is unicast routing protocol independent and can be operated in two modes: PIM dense mode and PIM sparse mode.                                                                                                                                                                                                                                                                                                                         |
| <b>PIM dense mode</b>   | One of the two PIM operational modes. PIM dense mode is data-driven and resembles typical multicast routing protocols. Packets are forwarded on all outgoing interfaces until pruning and truncation occurs. In dense mode, receivers are densely populated, and it is assumed that the downstream networks want to receive and will probably use the datagrams that are forwarded to them. The cost of using dense mode is its default flooding behavior. Sometimes called dense mode PIM or PIM DM.                                                                              |
| <b>PIM sparse mode</b>  | One of the two PIM operational modes. PIM sparse mode tries to constrain data distribution so that a minimal number of routers in the network receive it. Packets are sent only if they are explicitly requested at the RP (rendezvous point). In sparse mode, receivers are widely distributed, and the assumption is that downstream networks will not necessarily use the datagrams that are sent to them. The cost of using sparse mode is its reliance on the periodic refreshing of explicit join messages and its need for RPs. Sometimes called sparse mode PIM or PIM SM. |
| <b>PMC</b>              | Push-to-Talk Management Center. A standalone PC-based software application that simulates a handheld radio to enable PTT functionality for PC users. This application enables Cisco IPICS PMC end-users, dispatch personnel, and administrators to participate in one or more VTGs at the same time.                                                                                                                                                                                                                                                                               |
| <b>PMC ID</b>           | The unique ID that the Cisco IPICS server generates for each PMC to track requests between the PMC and the server and to verify and manage concurrent PMC usage for licensing requirements.                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>policy</b>           | An association of events or triggers to an action. Policies can include a set sequence of actions, such as activating VTGs.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



|                           |                                                                                                                                                                                                                                                           |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>policy channel</b>     | A channel that can be set up by the dispatcher and configured as a designated channel; that is, a channel that is always open to enable your interaction with the dispatcher.                                                                             |
| <b>portalization</b>      | A web programming paradigm for customizing the interface and functionality of a client application.                                                                                                                                                       |
| <b>protocol</b>           | A set of unique rules that specify a sequence of actions that are necessary to perform a communications function.                                                                                                                                         |
| <b>PTT</b>                | Push-to-talk. A signal to a radio transmitter that causes the transmission of radio frequency energy.                                                                                                                                                     |
| <b>PTT channel</b>        | A channel consists of a single unidirectional or bidirectional path for sending and/or receiving signals. In the Cisco IPICS solution, a channel represents one LMR gateway port that maps to a conventional radio physical radio frequency (RF) channel. |
| <b>PTT channel button</b> | The button on the PMC that you click with your mouse, or push, and hold to talk. You can use the latch functionality on this button to talk on one or more channels at the same time.                                                                     |
| <b>PTT channel group</b>  | A logical grouping of available PTT channels that can be used for categorization.                                                                                                                                                                         |

---

## Q

|                      |                                                                                                                                                                                                            |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>QoS</b>           | quality of service. A measurement of performance for a transmission system, including transmission quality and service availability.                                                                       |
| <b>queue</b>         | Represents a set of items that are arranged in sequence. Queues are used to store events occurring at random times and to service them according to a prescribed discipline that may be fixed or adaptive. |
| <b>queuing delay</b> | In a radio communication system, the queuing delay specifies the time between the completion of signaling by the call originator and the arrival of a permission to transmit to the call originator.       |

---

**R**

- radio channel** Represents an assigned band of frequencies sufficient for radio communication. The bandwidth of a radio channel depends upon the type of transmission and its frequency tolerance.
- radio equipment** Any equipment or interconnected system or subsystem of equipment (both transmission and reception) that is used to communicate over a distance by modulating and radiating electromagnetic waves in space without artificial guide. This equipment does not include microwave, satellite, or cellular telephone equipment.
- receive indicator** The indicator on the PMC that blinks green when traffic is being received.
- remote connection** Cisco IPICS uses this type of connection to provide SIP-based trunking into the RMS component, which is directly tuned into the multicast channel.
- RF** radio frequency. Any frequency within the electromagnetic spectrum that is normally associated with radio wave propagation. RF generally refers to wireless communications with frequencies below 300 GHz.
- RF repeater** An analog device that amplifies an input signal regardless of its nature (analog or digital). Also, a digital device that amplifies, reshapes, retimes, or performs a combination of any of these functions on a digital input signal for retransmission.
- RMS** router media service. Component that enables the Cisco IPICS PMC to remotely attach to a VTG. It also provides support for remotely attaching (combining) two or more VTGs through its loopback functionality. The RMS mixes multicast channels in support of VTGs and it mixes remote PMC SIP-based (unicast) connections to a multicast channel or VTG. The RMS can be installed as a stand-alone component (RMS router) or as an additional feature that is installed in the LMR gateway.
- RTP** Real-Time Transport Protocol. Commonly used with IP networks to provide end-to-end network transport functions for applications transmitting real-time data, such as audio, video, or simulation data, over multicast or unicast network services.

---

**S**

|                              |                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>scanning</b>              | A subscriber unit feature that automatically allows a radio to change channels or talk groups to enable a user to listen to conversations that are occurring on different channels or talk groups.                                                                                                                                                     |
| <b>SDM</b>                   | Security Device Manager. A web-based integrated router application, provides a user-friendly GUI for configuring security features in Cisco routers. Cisco IPICS uses SDM to configure voice ports and LMR functions on LMR gateways.                                                                                                                  |
| <b>secure flag</b>           | A PTT channel indicator that identifies a channel as a secure PTT channel.                                                                                                                                                                                                                                                                             |
| <b>service delivery area</b> | <i>See coverage.</i>                                                                                                                                                                                                                                                                                                                                   |
| <b>signal</b>                | The detectable transmitted energy that carries information from a transmitter to a receiver.                                                                                                                                                                                                                                                           |
| <b>skin</b>                  | Skins form the appearance of the PMC. In Cisco IPICS, skins are customizable and available in various options, including 4-channel and 8-channel mouse and touch screen formats.                                                                                                                                                                       |
| <b>speaker arbitration</b>   | The procedure that is used to determine the active audio stream in a Push-to-Talk system.                                                                                                                                                                                                                                                              |
| <b>spectrum</b>              | The usable radio frequencies in the electromagnetic distribution. The following frequencies have been allocated to the public safety community:<br><br>High HF 25–29.99 MHz<br>Low VHF 30–50 MHz<br>High VHF 150–174 MHz<br>Low UHF 406.1–420/450–470 MHz<br>UHF TV Sharing 470–512 MHz<br>700 MHz 764–776/794–806 MHz<br>800 MHz 806–824/851–869 MHz. |
| <b>squelch</b>               | An electric circuit that stops input to a radio receiver when the signal being received is too weak to be anything but noise.                                                                                                                                                                                                                          |

|                             |                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>stored VTG</b>           | Also referred to as inactive VTG.                                                                                                                                                                                                                                                                                                                                        |
| <b>subscriber unit</b>      | A mobile or portable radio unit that is used in a radio system.                                                                                                                                                                                                                                                                                                          |
| <b>system administrator</b> | The Cisco IPICS system administrator is responsible for installing and setting up Cisco IPICS resources, such as servers, routers, multicast addresses, locations, and PTT channels. The system administrator also creates ops views, manages the Cisco IPICS licenses and PMC versions, and monitors the status of the system and its users via the activity log files. |
| <b>system architecture</b>  | The design principles, physical structure, and functional organization of a land mobile radio system. Architectures may include single site, multi-site, simulcast, multicast, or voting receiver systems.                                                                                                                                                               |

---

**T**

|                    |                                                                                                                                                                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>T1</b>          | Digital WAN carrier facility. T1 transmits DS-1-formatted data at 1.544 Mbps through the telephone-switching network, using alternate mark inversion (AMI) or binary 8 zero suppression (B8ZS) coding.                                                                               |
| <b>T1 loopback</b> | Allows mapping from multicast to unicast so that unicast phone calls can be patched into an LMR or into other multicast audio streams. A loopback is composed of two of the available T1 interfaces.                                                                                 |
| <b>talk group</b>  | A subgroup of radio users who share a common functional responsibility and, under normal circumstances, only coordinate actions among themselves and do not require radio interface with other subgroups.                                                                            |
| <b>TCP</b>         | Transmission Control Protocol. A connection-oriented transport layer protocol that provides reliable full-duplex data transmission. TCP is part of the TCP/IP protocol stack.                                                                                                        |
| <b>TDMA</b>        | time division multiple access. Type of multiplexing where two or more channels of information are transmitted over the same link by allocating a different time interval (“slot” or “slice”) for the transmission of each channel; that is, the channels take turns to use the link. |

|                              |                                                                                                                                                                                                                                                                        |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>terminal</b>              | A device capable of sending, receiving, or sending and receiving information over a communications channel.                                                                                                                                                            |
| <b>throughput</b>            | The number of bits, characters, or blocks passing through a data communications system, or a portion of that system.                                                                                                                                                   |
| <b>TIA/EIA-102 standards</b> | A joint effort between government and industry to develop voice and data technical standards for the next generation of public safety radios.                                                                                                                          |
| <b>tone control</b>          | The process of sending a 2175 Hz inband tone with voice transmission to control receiving radios remotely. An inband tone can be used to control functions such as frequency selection and channel monitoring.                                                         |
| <b>transmit indicator</b>    | The indicator on the PMC that blinks red when traffic is being transmitted.                                                                                                                                                                                            |
| <b>trunk</b>                 | A physical and logical connection between two switches across which network traffic travels. In telephony, a trunk is a phone line between two central offices (COs) or between a CO and a PBX.                                                                        |
| <b>trunked (system)</b>      | Systems with full feature sets in which all aspects of radio operation, including RF channel selection and access, are centrally managed.                                                                                                                              |
| <b>trunked radio system</b>  | Integrates multiple channel pairs into a single system. When a user wants to transmit a message, the trunked system automatically selects a currently unused channel pair and assigns it to the user, decreasing the probability of having to wait for a free channel. |

---

## U

**user** The Cisco IPICS user may set up personal login information, download the PMC application, customize the PMC skin, and specify communication preferences that are used to configure audio devices. By using a predefined user ID and profile, the user can participate in PTT channels and VTGs by using the PMC or a supported Cisco IP Phone model. Users may have one or more Cisco IPICS roles, such as system administrator, operator or dispatcher.

**unicast** Specifies point-to-point transmission, or a message sent to a single network destination.

---

## V

**VAD** Voice Activity Detection. When VAD is enabled on a voice port or on a dial peer, only audible speech is transmitted over the network. When VAD is enabled on Cisco IPICS, the PMC only sends voice traffic when it detects your voice.

**virtual channel** A virtual channel is similar to a channel but a radio system may not be attached. By creating a virtual channel, participants who do not use physical handheld radios to call into a VTG become enabled by using the PMC application or Cisco IP Phone 7960 or Cisco IP Phone 7970.

**voice interoperability** Voice interoperability enables disparate equipment and networks to successfully communicate with each other.

**VoIP** Voice over Internet Protocol. By digitalizing and packetizing voice streams, VoIP provides the capability to carry voice calls over an IP network with POTS-like functionality, reliability, and voice quality.

**volume indicator** The volume indicator on the PMC that shows the current volume level on the channel in a graphical format.

**volume up/down buttons** The buttons on the PMC that let you control the volume level.

|                     |                                                                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>VOX</b>          | Voice-operated transmit. A keying relay that is actuated by sound or voice energy above a certain threshold and sensed by a connected acousto-electric transducer. VOX uses voice energy to key a transmitter, eliminating the need for push-to-talk operation. |
| <b>VTG</b>          | virtual talk group. A VTG can contain any combination of channels, channel groups, users, and user groups. A VTG can also contain other VTGs.                                                                                                                   |
| <b>VTG template</b> | Before becoming active, a VTG is in an inactive state as a VTG template. The server stores VTG templates so that they can be automatically activated by a policy or manually activated by a dispatcher. Also known as a preconfigured VTG.                      |

---

## W

|                         |                                                                    |
|-------------------------|--------------------------------------------------------------------|
| <b>wavelength</b>       | The representation of a signal as a plot of amplitude versus time. |
| <b>wideband channel</b> | Channels that occupy more than 20 kHz.                             |







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