



Introducing Cisco IPICS

Cisco IP Interoperability and Collaboration System (IPICS) provides voice interoperability among disparate systems. It offers an IP standards-based solution that interconnects voice channels, talk groups, and virtual talk groups, and that provides powerful and flexible management of personnel and media resources.

This chapter provides an overview of Cisco IPICS. It also introduces the Cisco IPICS Administration Console, which gives you complete control over Cisco IPICS operation and administration. Read this chapter if you are setting up Cisco IPICS for the first time or if you want to learn about the basic components and concepts of Cisco IPICS.



Tip

If you use Cisco IPICS only for communicating with other users and you do not require any introductory material, go to [Chapter 5, “Administration Console: User Tasks.”](#) That chapter describes how to log in to Cisco IPICS, download your Push-to-talk Management Center (PMC), set up push-to-talk (PTT) channels for the PMC and Cisco IP Phone, and complete your user profile

This chapter includes these sections:

- [Getting Started, page 1-2](#)—Provides a guide to the tasks that you perform when you set up Cisco IPICS
- [Cisco IPICS Overview, page 1-3](#)—Introduces the main hardware and software components of Cisco IPICS

- [Cisco IPICS Roles, page 1-7](#)—Explains the roles (user, system administrator, dispatcher, and operator) that a user of Cisco IPICS may have
- [Cisco IPICS Administration Console, page 1-8](#)—Describes how to access the Administration Console, the web interface that allows you to configure and monitor Cisco IPICS functions, access a variety of system tools, and perform many other administrative tasks

Getting Started

After you install Cisco IPICS, you perform a series of procedures in sequence to set up and configure Cisco IPICS for use. [Table 1-1](#) lists these procedures and provides references to more information about each one.

Use this information as a guide when you set up Cisco IPICS for the first time.

For information about installing Cisco IPICS, refer to *Cisco IPICS Server Installation Guide*.

Table 1-1 Overview of Getting Started with Cisco IPICS

Procedure	Reference	Checkoff
Become familiar with Cisco IPICS		
1. Learn about the hardware and software components that are part of Cisco IPICS	Cisco IPICS Overview, page 1-3	☐
2. Learn about the roles that Cisco IPICS users can have	Cisco IPICS Roles, page 1-7	☐
3. Learn about the Cisco IPICS Administration Console, including how to access this application	Cisco IPICS Administration Console, page 1-8	☐
Set Up and Configure Cisco IPICS		
1. Configure RMSs	See the “Managing the RMS” section on page 2-2	☐
2. Configure locations	See the “Managing Locations” section on page 2-38	☐
3. Configure the multicast pool	See the “Managing the Multicast Pool” section on page 2-30	☐

Table 1-1 Overview of Getting Started with Cisco IPICS (continued)

Procedure	Reference	Checkoff
4. Create push-to-talk channels	See the “Managing PTT Channels and Channel Groups” section on page 2-17	☐
5. Determine user roles and add users	See the “Managing Users and User Groups” section on page 3-3	☐
6. Create VTG templates	See the “Managing VTG Templates” section on page 4-8	☐
7. Ensure that the server is hosting the current version of the PMC	See the “Managing PMC Automatic Updates” section on page 2-48	☐
8. Create policies, which activate and deactivate virtual talk groups	See the “Managing Policies” section on page 4-26	☐
9. Create operational views, if needed	See Chapter 6, “Operational Views”	☐
10. Set up Cisco IP Phones, if needed	See Appendix B, “Setting Up and Using the Cisco IP Phone with Cisco IPICS”	☐

Cisco IPICS Overview

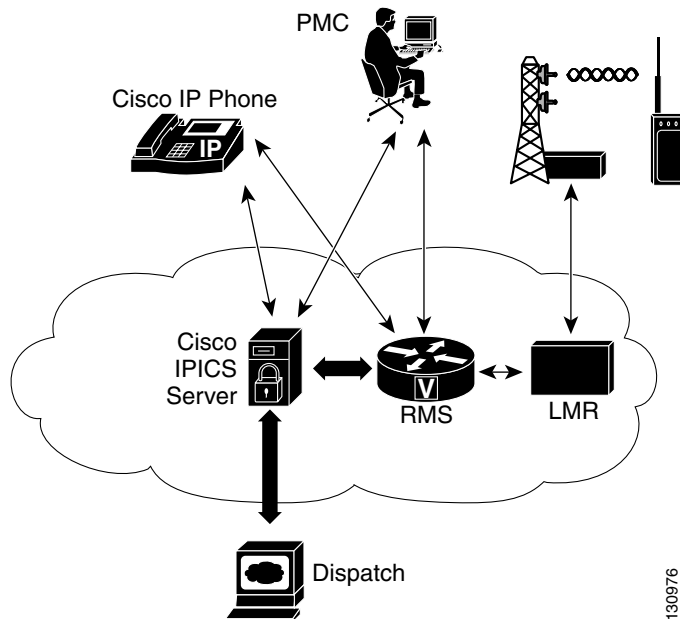
Cisco IPICS can be deployed in a variety of configurations. Your configuration will depend on the types of communications devices that users will employ, the media types that will be used, your interoperability requirements, and so on. A Cisco IPICS deployment will include various hardware and software components to provide the functionality that you require, including some or all of the following:

- [Cisco IPICS Server, page 1-5](#)—Provides the core functionality of the Cisco IPICS system
- [Push-to-Talk Management Center, page 1-5](#)—Standalone PC-based software application that provides push-to-talk (PTT) functionality for end-users, dispatch personnel, and administrators
- [LMR Gateways, page 1-6](#)—Provide radio network interoperability and application integration

- [RMS, page 1-6](#)—Enables a PMC to remotely attach to a VTG or channel, enables channels to be brought together in VTGs, and performs other mixing functions
- [Networking Components, page 1-7](#)—Include switches, routers, firewalls, mobile access routers, and wireless access points and bridges
- [Cisco CallManager Functionality and Voice over IP Services, page 1-7](#)—Provide voice interoperability between radio and non-radio networks
- [Audio Clients, page 1-7](#)—Devices such as LMRs and Cisco IP Phones that let users participate in VTGs

Figure 1-1 illustrates a typical Cisco IPICS deployment.

Figure 1-1 Cisco IPICS Components in a Typical Deployment



Cisco IPICS Server

Every Cisco IPICS deployment includes a Cisco IPICS server, which is the center of all Cisco IPICS activity. The Cisco IPICS server software runs on the Cisco Linux operating system. It performs the following functions:

- Hosts the Administration Console, which gives you control over operation and administration of Cisco IPICS
- Provides Cisco IPICS authentication and security services
- Stores data that is required for operation
- Enables integration with various media resources, such as RMSs, PMCs, and Cisco IP Phones
- Hosts the Policy Engine, which provides a set of rules for selected operations of Cisco IPICS

Push-to-Talk Management Center

The Push-to-Talk Management Center (PMC) is a PC-based software application that enables end-users, dispatch personnel, and administrators to participate, via an IP network, in one or more talk groups or VTGs at the same time. The PMC acts as a land mobile radio (LMR) or push-to-talk (PTT) audio application. Through an intuitive interface, the PMC application lets users monitor and participate in one or multiple PTT channels or VTGs at the same time.

The PMC runs on Microsoft Windows 2000 and Windows XP operating systems.

You install the PMC application on your PC after downloading the software from the Cisco IPICS server. For more information, see the [“Downloading the PMC” section on page 5-6](#). After you install the application the first time, Cisco IPICS automatically upgrades your PMC with new versions when they become available.

The Cisco IPICS operator sets up user access to the PMC. The operator also assigns specific PTT channels that PMC users can monitor and use to participate in conferences with other Cisco IPICS users.

[Figure 1-2](#) shows an example of the PMC application user interface. You can change the look of the PMC user interface by choosing another Cisco-provided or custom skin, as explained in *Cisco IPICS PMC Installation and User Guide*.

Figure 1-2 4-channel PMC

LMR Gateways

Gateways provide radio network interoperability using the Cisco IOS Hoot 'n' Holler feature. They provide a bridge between radio frequencies and IP multicast streams. The LMR gateway functionality is often installed as an additional feature in a router.

RMS

A router media service (RMS) provides a variety of functions for Cisco IPICS, including:

- Support through its loopback function for combining two or more VTGs
- Mixing of multicast channels to support VTGs

- Mixing of remote PMC unicast connections to a multicast channel or a VTG
- Support for unicast M1:U12:M2 connection trunks

Networking Components

Networking Components include switches, routers, firewalls, mobile access routers, and wireless access points and bridges.

Cisco CallManager Functionality and Voice over IP Services

Cisco CallManager and VoIP services enable selected Cisco IP Phone models to participate in channels and VTGs.

Audio Clients

Audio clients are devices through which users participate in VTGs. They include LMRs and the Cisco IP Phone models 7960G and 7970G.

Cisco IPICS Roles

Every person who uses Cisco IPICS is assigned one or more roles. Roles define what Cisco IPICS features a user can access and what functions that user can perform. In this way, roles help provide system security.

[Table 1-2](#) describes the Cisco IPICS roles.

Table 1-2 Cisco IPICS Roles

Role	Description	Reference
User	Has the ability to maintain personal information, download the PMC client application, and specify communication preferences that are used to configure audio devices. Each Cisco IPICS user is assigned the user role. The user may have additional roles	See Chapter 5, “Administration Console: User Tasks.”
System administrator	Responsible for installing and setting up Cisco IPICS resources, such as servers, routers, multicast addresses, locations, and PTT channels. 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.	See Chapter 2, “Administration Console: System Administrator Tasks.”
Operator	Responsible for setting up and managing users, granting access to Cisco IPICS and the PMC, and assigning user channels, roles and operational views (ops views).	See Chapter 3, “Administration Console: Operator Tasks.”
Dispatcher	Responsible for setting up system policies and setting up VTG templates, activating VTGs to begin conferences, and adding or removing participants in VTG templates and active VTGs. Also monitors active VTGs and events and can mute and unmute users, as necessary.	See Chapter 4, “Administration Console: Dispatcher Tasks.”

Cisco IPICS Administration Console

The Cisco IPICS server provides a web-based application called the Administration Console. You use the Administration Console to manage Cisco IPICS activities. A user uses the Administration Console to maintain personal information and update the PMC. A system administrator and operator use the Administration Console to set up system resources and participants. A dispatcher uses the Administration Console to view and manage active and stored VTGs.

This section includes these topics.

- [Browser Guidelines, page 1-9](#)
- [Accessing the Administration Console, page 1-10](#)
- [Exiting the Administration Console, page 1-13](#)
- [Entering Required Information in Administration Console Windows, page 1-13](#)
- [Getting Help in the Administration Console, page 1-14](#)
- [Administration Console Timeout, page 1-14](#)

Browser Guidelines

When you access the Cisco IPICS Administration Console by using a browser, follow these guidelines:

- Windows in the Administration Console do not refresh automatically. As a best practice, make sure that you update your browser window often and before you perform any server administration functions to ensure that you are working with the most current information. If you attempt to perform an administration update in a window that does not display the most current data, the update will not succeed and Cisco IPICS will display an error. If this situation occurs, update your browser window and retry the operation.
- To ensure that a current window displays the most up-to-date information, refresh it by clicking the button or tab that you used to display it. Cisco IPICS does not support the use of the browser **Refresh** button to refresh a window in the Administration Console.
- The Cisco IPICS Administration Console uses browser pop-up windows for certain functionality. If you have any browser pop-up blocker software installed on your machine, you may be prevented from performing certain actions. To ensure that you are not blocked from performing administration tasks, disable any pop-up blocker software that is installed on your machine before you use the Administration Console.
- Cisco IPICS does not support the use of more than one browser session at a time, on the same machine, for accessing the Administration Console. If you use multiple browser sessions to access the Administration Console, you may

experience unexpected results. To ensure proper server operational behavior, do not open more than one browser session at a time on the same machine for Administration Console functions.

- To avoid browser-related memory issues, exit your browser and then restart it after prolonged use of the Cisco IPICS Administration Console.

Accessing the Administration Console

After you install Cisco IPICS, you can access the Administration Console from any computer that meets these requirements:

- Has IP connectivity to the Cisco IPICS server
- Running either of these operating systems:
 - Windows 2000 SP4 or higher
 - Windows XP SP2 or higher
- Running Internet Explorer version 6.0.2 or higher

To access the Cisco IPICS Administration Console, perform these steps:

Procedure

Step 1 Start Internet Explorer and enter the IP address or the host name of the server on which Cisco IPICS is running.

The Authentication window displays.

Step 2 In the Authentication window, take one of these actions:

- If you are accessing Cisco IPICS for the first time, enter these Cisco IPICS default login credentials:
 - User Name: **ipics**
 - Password: **cisco123**
- If you have been configured as a Cisco IPICS user, enter your user name and password in the User Name and Password fields.

User names and passwords are case-sensitive, so make sure to enter them exactly as they are configured.

**Note**

To help maintain the security of your Cisco IPICS system, change the default Cisco IPICS login credentials, and change your user name and password regularly.

Step 3 Click **Log In**.

The User Details window displays, as shown in [Figure 1-3](#). This example shows tabs for each of the Cisco IPICS user roles. The tabs that appear in your window will correspond to your roles, so you may not see all four tabs in your window.

Figure 1-3 *User Details Window*

Cisco Systems Cisco IPICS Administration Console - 1.0(1) You are logged in as: user1 Logout Help

System Administrator Operator Dispatcher **User**

Maintain Profile | PMC Download

Edit User Details

User Name:* user1 First Name:* 01 Last Name:* User Password:* ***** Confirm Password:* ***** Digit ID: 4321 Digit Password: **** Confirm Digit Password: **** Address: Address (cont): City: State/Province: Country: US Zip/Postal Code: E-mail: Default Location:* Central	IPICS Status: Enabled Associated Default User Channels: East Fire East Ambulance East Police User VTGs: Executive Briefing - Idle Communication Preference: 1: IP Phone or PMC 2: Select... PMC Attributes PMC Status: Default
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Roles: **User**
Dispatcher
Operator
System Administrator

Save Cancel

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You can perform a variety of activities in the User Details window. [Table 1-3](#) describes these activities.

Table 1-3 User Details Window Activities

Activity	Reference
Update your user information	See the “Managing Your User Profile” section on page 5-2
Access the Download PMC window (when the User tab is selected)	See the “Downloading the PMC” section on page 5-6
Choose a tab to access additional windows for its corresponding role (if you have a role other than user)	See the appropriate chapter: • Chapter 2, “Administration Console: System Administrator Tasks” • Chapter 3, “Administration Console: Operator Tasks” • Chapter 4, “Administration Console: Dispatcher Tasks” • Chapter 5, “Administration Console: User Tasks”
Obtain online help	See the “Getting Help in the Administration Console” section on page 1-14
Log out and exit from the Administration Console	See the “Exiting the Administration Console” section on page 1-13

Exiting the Administration Console

You can exit the Administration Console from any window within the application. To do so, follow these steps:

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- Step 1** Click **Logout** in any Administration Console window.
 - Step 2** Click **OK** in the pop-up window that prompts you to confirm that you want to log out.
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Entering Required Information in Administration Console Windows

Many of the Administration Console windows let you enter a variety of information. You might enter information by typing in fields, choosing from drop-down lists, checking check boxes, or clicking radio buttons, depending on the window.

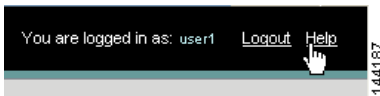
An asterisk (*) next to a field, drop-down list, check box, or radio button indicates required information. You must provide this information before you can save your changes and exit the window.

Getting Help in the Administration Console

You can access the Cisco IPICS help system from any window in the Administration Console. The help system provides online access to the information that is in this *Cisco IPICS Server Administration Guide*.

To access Cisco IPICS online help, click **Help** in any Administration Console window, as shown in [Figure 1-4](#).

Figure 1-4 Accessing Cisco IPICS Help



Administration Console Timeout

For increased system security, the Administration Console will time out after 30 minutes of non use. In this situation, the current Administration Console window remains displayed, but Cisco IPICS will prompt you to log back in when you attempt to perform a function. To log back in, enter your user name and password, and then click **Log In**.