Overview of Cisco IPICS

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

This chapter provides an overview of the tasks that you need to perform to set up Cisco IPICS. It also introduces components to help familiarize you with Cisco IPICS.

This chapter includes the following sections:

Related Documentation

For additional information about the Cisco IPICS server and the PMC application, refer to the following documents:

- *Cisco IPICS Server Administration Guide, Release 2.0(1)*
- *Cisco IPICS Server Quick Start Reference Card, Release 2.0(1)*

- *Cisco IPICS Server Installation and Upgrade Guide, Release 2.0(1)*
- *Cisco IPICS Server Quick Start Installation Reference Card, Release 2.0(1)*
- *Cisco IPICS PMC Installation and User Guide, Release 2.0(1)*
- *Cisco IPICS PMC Quick Start Reference Card, Release 2.0(1)*
- *Cisco IPICS PMC Debug Reference Quick Start Guide, Release 2.0(1)*
- *Cisco IPICS Command Line Interface, Release 2.0(1)*
- *Cisco IPICS Troubleshooting Guide, Release 2.0(1)*
- *Release Notes for Cisco IPICS Release 2.0(1)*
- *Cisco IPICS 2.0(1) Resources Card (Documentation Locator)*
- *Solution Reference Network Design (SRND) for Cisco IPICS Release 1.0(2)*
- *Cisco IPICS Compatibility Matrix*

To access the full Cisco IPICS documentation suite, refer to the following URL:

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

Getting Started

After installing Cisco IPICS, you perform a series of procedures in sequence to set up and configure Cisco IPICS.

For more detailed information about installing the Cisco IPICS operating system and Cisco IPICS server software, refer to the *Cisco IPICS Server Installation and Upgrade Guide, Release 2.0(1).*

Table 1-1 provides an overview of the sequential procedures that you need to perform to set up and configure Cisco IPICS, with references to sections in this document that provide additional information. You can use this information as a guide when setting up Cisco IPICS for the first time.

For information about logging in to Cisco IPICS, see the "Logging In to and Out of Cisco IPICS" section on page 2-3.

Table 1-1 Set Up and Configure Cisco IPICS

Procedure	References
Become Familiar with Cisco IPICS	
1. Learn about the hardware and software components that are part of Cisco IPICS	Cisco IPICS Components, page 1-4 Refer to the *Cisco IPICS Server Administration Guide, Release 2.0(1)* for detailed configuration and management information.
2. Learn about the roles that Cisco IPICS users can have	See the "Operator Tasks" section on page 2-18. Refer to the *Cisco IPICS Server Administration Guide* for detailed information.
3. Learn about the Cisco IPICS Administration Console, including how to access this application	Cisco IPICS Administration Console, page 1-6 See the "Logging In to and Out of Cisco IPICS" section on page 2-3
Set Up and Configure Cisco IPICS	
1. Configure the RMS component	See the "System Administrator Tasks" section on page 2-13, the "Managing the RMS" section on page 3-1, and the "Understanding Locations" section on page 2-4. Refer to the *Cisco IPICS Server Administration Guide* for detailed configuration and management information.
2. Configure locations	
3. Configure the multicast pool	
4. Create push-to-talk (PTT) channels	
5. Determine user roles and add users and user groups	See the "Operator Tasks" section on page 2-18. Refer to the *Cisco IPICS Server Administration Guide* for detailed information.

Table 1-1 Set Up and Configure Cisco IPICS

Procedure	References
6. Create VTG templates	See the "Dispatcher Tasks" section on page 2-18 and the "Understanding VTGs" section on page 2-6. Refer to the *Cisco IPICS Server Administration Guide* for more detailed information.
7. Install the PMC installer and upload the current PMC version package.	See the "System Administrator Tasks" section on page 2-13"Managing the Cisco IPICS PMC" section on page 3-10. Refer to the *Cisco IPICS Server Administration Guide* for more detailed information.
8. Configure the Cisco IPICS policy engine, if needed	See the "Managing and Using the Cisco IPICS Policy Engine" section on page 3-3. Refer to the *Cisco IPICS Server Administration Guide* for detailed information.
9. Create operational views (ops views), if needed	See the "System Administrator Tasks" section on page 2-13, the "Understanding Ops Views" section on page 2-7, and the "Using Cisco Unified IP Phones with Cisco IPICS" section on page 3-13. Refer to the *Cisco IPICS Server Administration Guide* for detailed information.
10. Set up Cisco Unified IP Phones, if needed	

Cisco IPICS Components

You can deploy Cisco IPICS in a variety of configurations. Your configuration depends on the types of communications devices that users employ, the media types that are used and your interoperability requirements. A Cisco IPICS deployment includes the following hardware and software components:

- Cisco IPICS server—The Cisco IPICS server software runs on the Cisco Linux operating system and performs the following functions:
  - Hosts the Administration Console
  - Hosts the Cisco IPICS policy engine
  - Provides Cisco IPICS authentication and security services
  - Stores data that is required for operation
  - Enables integration with various media resources, such as router media services (RMS) components, PMC clients, and Cisco Unified IP Phones
- Push-to-Talk Management Center (PMC)—The PMC is a PTT audio application that is used by end-users, dispatch personnel, and administrators. The PMC runs on the Microsoft Windows 2000 and Windows XP operating systems.
- LMR gateways—Gateways provide radio network interoperability by using the Cisco IOS Hoot 'n' Holler feature. The LMR gateway provides a bridge between radio frequencies and IP multicast streams.
- RMS—The RMS provides the following functionality:
  - 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 VTG
  - Support for unicast M1:U12:M2 connection trunks
- Networking components—Networking components include switches, routers, firewalls, mobile access routers, and wireless points and bridges
- Cisco Unified CallManager functionality—Cisco Unified CallManager, or a Cisco router that is running a supported version of Cisco IOS, enables selected Cisco Unified IP Phone models to participate in channels and VTGs. These applications can also serve as the SIP provider for the Cisco IPICS policy engine.
- Audio clients—Audio clients are devices through which users participate in channels or VTGs. They include PMC clients, LMR gateways, and various models of the Cisco Unified IP Phone.

For more detailed information about Cisco IPICS components, refer to the *Cisco IPICS Server Administration Guide* and the *Cisco IPICS PMC Installation and User Guide, Release 2.0(1)*.

Cisco IPICS Administration Console

The Cisco IPICS server includes the Administration Console, which is a web-based graphical user interface (GUI) that you use to perform various functions in Cisco IPICS. You use the Administration Console to perform and manage Cisco IPICS activities, depending on your Cisco IPICS role. For information about the functionality that is included in the Administration Console, see the "Identifying Items in the Administration Console" section on page 1-6.

Identifying Items in the Administration Console

The Cisco IPICS Administration Console contains several information drawers and tabs. The drawers that display correspond to the Cisco IPICS roles that have been assigned to you. Therefore, depending on your role, you may not see all of the drawers in the Administration Console.

To access the various windows in the Administration Console, click the applicable drawers in the Server and Policy Engine tabs that display along the left side of the Administration Console. When you click the arrow to the left of a drawer, the drawer expands to display the windows that are available in that drawer.

Table 1-2 and Table 1-3 describe the drawers and windows that you can access in the Server and Policy Engine tabs to perform Cisco IPICS functions.

Table 1-2 Server Tab in the Administration Console

Tab	Description
Server	The server tab contains the following drawers that you can access, depending on your user roles: • Home—Users can access the windows in this drawer to manage personal data, including resource associations, and to download the PMC. • VTG Management—Dispatchers can access the windows in this drawer to manage VTGs and events such as notifications and dial-outs. • User Management—Operators can access the windows in this drawer to manage users and user groups. • Configuration—System administrators can access the windows in this drawer to configure various components, such as channels, ops views, and RMS components. • Administration—System administrators and ops view administrators can access the windows in this drawer to manage functions such as license and database management. • PMC Management—System administrators can access the windows in this drawer to manage PMC customizations. • Serviceability—System administrators can access the windows in this drawer to monitor system status.

Table 1-3 Policy Engine Tab in the Administration Console

Tab	Description
Policy Engine	The policy engine tab contains the following drawers: • Policy Management—Users can access this drawer to manage Cisco IPICS policies. • Dial Engine—Users access this drawer to manage the dial engine, which enables the telephony user interface (TUI) and its associated features. Tasks that can be performed in the dial engine include managing dial-in/dial-out functions, monitoring system status and logs, and managing system and custom scripts and prompts. **Note** Any Cisco IPICS user can access this tab, but some activities that are available from this drawer require that you be assigned certain Cisco IPICS roles. For more information about the required roles and for detailed information about the functionality of the Administration Console, refer to the *Cisco IPICS Server Administration Guide*.

Cisco IPICS Server Usage Guidelines

Be aware of the following tips and guidelines when you use the Cisco IPICS server:

- Cisco IPICS provides support for various user roles, including system administrator, ops view administrator, operator, dispatcher, and user. The functionality that may be performed is dependent on the specific user role.
- For increased system security, the Administration Console times out after 30 minutes of non use. In this situation, the current Administration Console window remains displayed, but Cisco IPICS prompts you to log back in when you attempt to perform a function. To log back in, enter your user name and password; then click **Log In**. To exit the Administration Console, click **Logout** in any Administration Console window.

- Server login passwords are case-sensitive, so be sure to enter them exactly as they are configured in the server.
- Access to the Cisco IPICS server online help system is available from various windows in the Administration Console. To access the server online help, click the **Help** link in any Administration Console window.
- To view information about the version of Cisco IPICS that you are using, click **About** in the Administration Console.
- Many of the Administration Console windows allow you to modify the appearance of the results by specifying search criteria and reformatting the results based on rows per window.
  - Depending on the window, you may be able to search, or filter, your results based on resources, locations, roles, and ops views.
  - You enter your search criteria in the Filter field and click **Go**.
  - When you search on a character string, Cisco IPICS returns all results that begin with the character string that you specify.
  - To clear the search criteria, click **Clear Filter**.
  - To modify the number of rows that display, choose from the Rows per page drop-down list box that displays at the top of the window; then, click **Go**.
  - To navigate between results windows, click the arrows that display at the bottom of the window.
- Many of the resources in Cisco IPICS, such as channels, users, and VTGs, display in lists in the Administration Console. These lists include check boxes that you can check to select the individual resources to perform certain functions. Some of these resource lists provide a check box that appears at the top of the list that enables you to select all resources at one time.
- Many of the Administration Console windows include drop-down list boxes, some of which become available only after you perform certain functions. If you do not perform the required function, the drop-down list box displays as dimmed to indicate that it is not available for use.
- An asterisk (*) that displays next to a field, drop-down list box, or check box, in the Administration Console indicates required information. You must provide this information before you can save changes and exit the window.

- Most windows contain a Save button and a Cancel button. The Save button saves any changes that you make in a window; clicking this button may close the window automatically. The Cancel button cancels any changes that you have made.
- For some resources, separate detailed windows display in which you can take the following actions:
  - To move an item from one list to another list, click the item to highlight it and then click > or <, or double-click the item.
  - To move several items from one list to another list at one time, Shift-click or Ctrl-click to select the items and then click > or <.
  - To move all items from one list to another list at one time, click >> or <<.
- To expand a collapsed list, click the arrow that displays to the left of the list.
- The Cisco IPICS server contains the associated connection configuration, which correlates to its locations, to determine how the PMC users should connect. Cisco IPICS provides connection support for both multicast and unicast communications. Make sure that users are aware of the appropriate location information to use when they log in to Cisco IPICS.
- Cisco IPICS includes the following two predefined locations:
  - ALL—This location signifies no network boundaries; that is, a channel that is designated with the ALL location means that there are no network boundaries within the Cisco IPICS deployment for that associated multicast address.
  - REMOTE—This location is available only to PMC users. When a PMC user chooses the REMOTE location, connectivity is established with the appropriate RMS via a SIP-based unicast connection for each channel or VTG that has been assigned to the user.

    For more information about locations, see the "Understanding Locations" section on page 2-4.
- Users who are in the same multicast domain are also in the same Cisco IPICS location.
- When configuring IP multicast addresses, Cisco strongly recommends that you configure IP multicast addresses that are only in the 239.192.0.0 to 239.251.255.255 range. This address range is part of the Administratively Scoped Block, as specified by RFC 3171, and is intended for use in a local

domain. As such, this address range is less likely to cause an addressing conflict in an existing multicast domain. For more detailed information, refer to the e *Cisco IPICS Server Administration Guide*.

- Cisco IPICS does not support the use of multiple Cisco IPICS servers for the same RMS component because each server must have the use of resources on a corresponding RMS for proper functionality.
- Cisco IPICS provides support for more than one RMS component in the same location.
- When you configure your RMS component, make sure that you perform all of the configuration procedures that are documented in the e *Cisco IPICS Server Administration Guide*.
- Be aware of the number of participants in a conference and their type of connection to avoid resource contention.
- If you see a VTG become active or inactive unexpectedly, it could be because of a policy that is associated to the VTG. For more information about VTGs and ops views, refer to the *Cisco IPICS Server Administration Guide*.