



CHAPTER 6

Operate

Introduction to Operating the System

To ensure that your network operates efficiently and reliably, your daily operations should consist of system and performance management practices. These practices include scheduled routine maintenance; keeping maintenance records; and maintaining up-to-date upgrade, troubleshooting, and recovery strategies.



Tip

You can navigate to any topic on this tab by using the tab navigation pane at the left of the content pane. This navigation pane contains the table of contents (TOC) for the active tab.

Before You Begin

User acceptance testing is completed and any problems that surfaced have been resolved. Users have been trained in using the new system.

Output of This Process

The Operate phase produces data that will inform the Optimize phase.

Major Tasks in This Process

- [Managing Your System](#)
- [Backing Up and Restoring Components](#)
- [Using Network Monitoring Tools](#)

Managing Your System

This topic provides a high-level summary of the ongoing tasks required for managing your system and the options for how these tasks can be performed. For detailed maintenance and operation guides for each component in your Cisco Unified Communications System, see the product documentation listed in [Component Resources Documentation for IP Telephony for Small and Medium Business](#).

System Management Tasks

Managing a Cisco Unified Communications System consists of performing the following activities:

- Integrating monitoring and management tools—Select, order, configure, integrate, and test a set of tools for monitoring and managing the Cisco Unified Communications System.
- Monitoring—Set thresholds, monitor events, and generate notifications when service-impacting events occur.
- Ticketing—Generate and track system trouble tickets for each event.
- Diagnosing incidents—Analyze and troubleshoot incidents to determine the cause.
- Resolving incidents—Define and execute an action plan which can include performing break and fix activities, applying software updates and patches, managing hardware replacements, and executing change management processes.
- Managing changes in the network—Define a change management process for performing moves, adds, changes, and disconnects (MACDs) for your Cisco Unified Communications System including network devices, phones/endpoints, software upgrades, voice- mail boxes, dial plan updates, security patches, OS applications, and voice applications.
- Archiving configurations—Back up device configurations daily and restore device configurations when necessary.
- Managing voice as a network service—Track, measure and resolve quality of service (QoS) issues such as jitter, delay, and dropped packets, and monitor service level agreements (SLAs) with service providers.
- Managing security posture—Detect, analyze, and address security events.
- Reporting—Define, develop, and generate performance, availability, event, and inventory reports.
- Backing up and restoring system components—Define backup methodologies and schedules, define a verification process for backups, secure storage of backups, and document backup processes.

System Management Options

There are two options for managing a Cisco Unified Communications System:

- Do It Yourself—In this model, you are responsible for managing the entire Cisco Unified Communications System. This approach requires developing business processes; integrating, provisioning and maintaining network management tools; and developing data and voice management skills and knowledge. Cisco offers tools as a means for monitoring your network; see [Using Network Monitoring Tools](#) for more information.
- Outtasking Hybrid Model—Using the [Cisco Lifecycle Services](#) approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your Cisco Unified Communications system's business value and return on investment. This approach includes two services that provide different levels of management:
 - [Cisco Unified Communications Essential Operate Service](#) combines Cisco award-winning maintenance support with basic voice applications monitoring and reporting.
 - [Cisco Unified Communications Remote Management Service](#) includes monitoring and reporting plus managing day-to-day system issues such logical moves, adds, changes, and disconnects; resolving incidents; performing configuration backups; and reporting.

For more information about the Cisco Unified Communications Essential Operate Service, Cisco Unified Communications Remote Management Service or other Cisco Unified Communications services, see <http://www.cisco.com/go/ipcservices> or contact your Cisco service account manager.

Backing Up and Restoring Components

This topic provides details on backup and restore for Cisco Unified Communications components. First and foremost, the backup of Cisco Unified Communications components needs to be incorporated into your corporate-wide backup operations. It is an important aspect of disaster recovery and is also essential before doing component upgrades. If you do not have a process in place, you must develop and document a backup and recovery management process. Some items to consider for this process are the following:

- Provide proper storage of operating system and Cisco Unified Communications application CDs.
- Define incremental and full backup methodologies and schedules, assign an owner for each Unified Communications component and database server.
- Define a verification process for backups:
 - Monitor backup logs on a daily basis for errors.
 - Periodically restore backup images to ensure validity.
- Secure onsite and offsite storage of backups.
- Develop well documented processes for system and configuration restoration.
- Ideally, provide central location(s) (for example, SFTP servers) for backup of data from all the Cisco Unified Communications components.

The following topics provide backup and restore details on a component basis along with links to the appropriate component documentation:

- [Cisco Unified Communications Manager Express](#)
- [Cisco Unified MeetingPlace Express](#)
- [Cisco Unity Express](#)

For additional information on backing up and restoring Unified Communications system components, as well as other system operations topics, see the documentation wiki (DocWiki) at http://docwiki.cisco.com/wiki/Unified_Communications_System_Operations.

Cisco Unified Communications Manager Express

Cisco Unified Communications Manager Express is an application that runs on Cisco IOS. Therefore, for backup and restore, the IOS facility for backup and restoring configuration data would be used. For more information, see specific documents in [Cisco Unified Communications Manager Express Documentation](#).

Cisco Unified MeetingPlace Express

Cisco Unified MeetingPlace Express uses a combination of L0, L1, and L2 backups and uses an Informix command called **ontape** for the backup mechanism.

The database backup file is physically located on the system disk, which is the same physical device on which the rest of the Cisco Unified MeetingPlace Express system exists. The system disk can contain up to three automatically-created L0 backups: the current L0, plus the previous one or two L0 backups. The L1 and L2 backups are also kept there. All of the older backups are removed from the system disk during the cleanup process.

For more information on the backup and restore of MeetingPlace Express data, see the [Configuration and Maintenance Guide for Cisco Unified MeetingPlace Express](#), “Maintaining the Cisco Unified MeetingPlace Express System” chapter.

Cisco Unity Express

The Cisco Unity Express voice mails can be backed up and restored using the CLI or GUI backup option. Cisco Unity Express backup and restore functions use an FTP server to store and retrieve data. Some recommended backup servers are FileZilla FTP server, GuildFTPd, Serv-U FTP server or Microsoft IIS FTP server.

For details on backing up Cisco Unity Express, see the [Cisco Unity Express Installation and Upgrade Guide](#).

Using Network Monitoring Tools

The Cisco Unified Communications Management Suite allows businesses to actively monitor their Cisco Unified Communications solution to discover potential problems, maintain quality and user satisfaction, and help minimize service downtime. The following network monitoring tools are available for IP telephony small and medium business deployments:

- [Cisco netManager - Unified Communications](#)

For more information about network monitoring, as well as other system operations topics, see the Cisco Unified Communications category on the documentation wiki (DocWiki) at http://docwiki.cisco.com/wiki/Cisco_Unified_Communications.

Cisco netManager - Unified Communications

Cisco netManager - Unified Communications provides easy-to-use monitoring and diagnostics for small or medium-sized deployments of Cisco Unified Communications systems up to 1000 phones or users. It monitors all components of small and medium-sized Cisco Unified Communications system, including the underlying IP transport infrastructure and third-party devices. Cisco netManager - Unified Communications features built-in rules and thresholds as well as automatic device identification and data collection to help enable easy setup and immediate monitoring of the managed network.

Cisco netManager - Unified Communications presents the current operational status of a Cisco Unified Communications system through service-level views of the network and provides contextual tools to view current alert status and historical information and to determine the service impacts of any outages. It continuously monitors the different elements of the system including Cisco Unified Communications Manager, Cisco Unified Communications Manager Business Edition, Cisco Unified Communications Manager Express, Cisco Unity systems, Cisco Unity Express, Cisco Unity Connection, Cisco Unified Contact Center Express, Cisco Unified Presence, and Cisco Unified MeetingPlace Express, as well as Cisco gateways, routers, and switches. For a complete list of devices that can be monitored, see the appropriate [Device Support Table for Cisco netManager - Unified Communications](#).

Cisco netManager - Unified Communications also monitors third-party devices in the network, such as servers, workstations, printers, and other networking devices and provides basic availability monitoring for each. It features an extensible monitoring framework through which coverage may be extended by adding different active monitors based on supported protocols such as HTTP, Simple Network Management Protocol (SNMP), or Windows Management Instrumentation (WMI), that help enable custom monitoring for both Cisco and third-party devices.

Other Cisco netManager - Unified Communications capabilities include:

- Visibility into network connectivity and related information by means of a real-time physical connectivity view that not only shows interconnections between different devices but also presents the current operational status of each of the devices and applications in the network.
- Up-to-date information about connectivity-related and registration-related outages affecting all IP phones (both SIP and SCCP-based phones) in the system, as well as additional contextual information to help locate and identify the IP phones.
- Tracking of Cisco Unified Communications devices and IP phone inventory, tracks IP phone status changes, and creates a variety of reports that conveniently summarize move, add, and change operations on IP phones in the network.
- Easy integration into customer monitoring and troubleshooting workflows by means of notification mechanisms such as SNMP traps, Short Message Service (SMS), and E-mails.
- Real-time reports and historical reports, including
 - Device and device group reports that focus on performance and availability.
 - Phone reports that provide IP phone inventory and status information for all IP phones in the deployment.
 - Performance reports for a selected device or device group.
 - Problem area reports that display alerts reported across the network across different data sources (such as SNMP traps, syslogs, event logs, performance errors, and top N outages).
 - Event historical reports of all events generated by Cisco netManager - Unified Communications for a specified device or device group.
 - General reports on application logs and user activity.
- Visibility into key performance metrics, such as CPU utilization, memory utilization, interface utilization (bandwidth), hard drive utilization, and ping availability, that aid in troubleshooting.

Because Cisco netManager - Unified Communications does not deploy any agent software on the devices being monitored, it is completely nondisruptive to system operations. For more information on Cisco netManager - Unified Communications, see the documentation available at:

http://www.cisco.com/en/US/products/ps7243/tsd_products_support_series_home.html

Additional Sites and Services

Steps to Success is a Cisco methodology that outlines the tasks required to complete a successful customer engagement. Registered users can visit the [Steps to Success](#) 📄 resource site for Cisco Unified Communications process flows.

Cisco Unified Communications Services is a Cisco service offering that provides engineering expertise and best practices.

- Registered users can visit the [Cisco Unified Communications Services](#) 📄 partner site.
- Nonregistered users can visit the [Cisco Unified Communications Services](#) site.

