



## **System Installation and Upgrade for IP Telephony**

Cisco Unified Communications System Release 6.0(1)

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## Preface

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### Overview

This document provides installation and upgrade information about the IP telephony (IPT) components and configurations that have been tested and verified as a part of Cisco Unified Communications system testing. It consists of two parts:

- Part 1: System Installation for IP Telephony—Describes the system-level procedures used to install IPT components in Cisco Unified Communications System Release 6.0(1).
- Part 2: System Upgrade for IP Telephony—Describes the system-level procedures used to upgrade software and hardware components in the IPT environment from IP Communications Systems Release 4.4 and Cisco Unified Communications Release 5.0(2) and Release 5.1(1) to Cisco Unified Communications Release 6.0(1).

This document also includes related information about compatibility, upgrade paths between releases, and upgrade strategies for different sized network installations. It discusses the upgrade sequence for individual test sites emphasizing the order in which the components are to be upgraded and provides references to installation and upgrade documentation for individual components.



**Note**

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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### Audience

This document is intended for system administrators who are familiar with the various hardware and software components included in the Cisco Unified Communications System family of IP telephony products. Readers should have the technical and product knowledge to install, configure, manage, and troubleshoot the system described.

# Organization

This manual is organized as follows:

Topic	Description
Part 1: System Installation for IP Telephony	
<a href="#">Chapter 1, “Planning Your System Installation.”</a>	Provides an overview of the system installation, a list of components in a typical IPT environment, and different installation strategies.
<a href="#">Chapter 2, “Preparing for Your System Installation.”</a>	Discusses the general approach for the installation of IPT components, installation release set versions, and software dependencies and consideration
<a href="#">Chapter 3, “Performing Your System Installation.”</a>	Provides information about the installation order and process for all IPT components that are configured in specific deployment models.
Part 2: System Upgrade for IP Telephony	
<a href="#">Chapter 4, “Planning Your System Upgrade”</a>	Provides an overview of the system upgrade requirements, the targeted release versions involved in the upgrade process, and upgrade paths and strategies.
<a href="#">Chapter 5, “Preparing for Your System Upgrade.”</a>	Discusses the general upgrade approach for the different IPT components, upgrade release versions, and software compatibility considerations.
<a href="#">Chapter 6, “Performing Your System Upgrade.”</a>	Contains information on the upgrade order for all IPT components, including North America and EUEM, configured in specific deployment models for Cisco Unified Communications Release 6.0(1).

## Related Documentation

The Cisco Unified Communications solution provides a suite of interactive documentation that covers details about the system architecture and components, installation and upgrade information, troubleshooting, and related information. You can access this documentation at this URL:

<http://www.cisco.com/go/unified-techinfo>

This site provides a suite of interactive documentation that covers details of the system architecture and components, installation and upgrade information, troubleshooting, topology diagrams, and related information.

The sites specific to IP telephony or contact center system applications for Cisco Unified Communications System Release 6.0(1) are:

- Cisco Unified Communications System for IP Telephony Release 6.0(1) at:  
<http://www.cisco.com/iam/unified/ipt601/index.htm>

- Cisco Unified Communications System for Contact Center Release 6.0(1) at:  
<http://www.cisco.com/iam/unified/ipcc601/index.htm>

## Obtaining Documentation, Obtaining Support, and Security Guidelines

For information about obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>





## **PART 1**

### **System Installation for IP Telephony**





# CHAPTER 1

## Planning Your System Installation

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This topic provides an overview of the installation processes for IPT components. It describes the types of installations, provides an overview of the components that are included in the release sets, and describes various installation strategies.

This topic contains the following sections:

- [Cisco Unified Communications System Overview](#)
- [Scope of this Installation Documentation](#)
- [System Installation Overview](#)
- [Component Installation Overview](#)
- [System Installation Strategies](#)
- [Interoperability and Compatibility Portals](#)



### Note

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## Cisco Unified Communications System Overview

The Cisco Unified Communications System is a full-featured business communications system built into an intelligent IP network. It enables voice, data, and video communications for businesses of all sizes. The Cisco Unified Communications System is defined around commonly deployed enterprise topology models in North America and European and Emerging Markets (EUEM). The Cisco Unified Communications System testing process validates the interoperability of enterprise voice products to ensure that they work together as an integrated system.

Cisco Systems provides an integrated system to meet a wide variety of needs. It includes of communications products that are designed, developed, tested, documented, sold, and supported as one entity. This system is built upon IP telephony products, including Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager), Cisco MeetingPlace, and voice-capable gateways and routers.

# Scope of this Installation Documentation

The installation procedures that are described in this document are intended to provide a high-level guide to installing the Cisco Unified Communications System. This document provides installation information from a system perspective and only for the products that are part of Cisco Unified Communications System Release 6.0(1).

The Cisco Unified Communications IPT systems should meet the following basic characteristics and requirements:

- A deployment that is based on Cisco recommendations and guidelines for network design and architecture
- A new *greenfield* or a legacy system deployment
- An installation, not an upgrade from previous software versions



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**Note** If you have a legacy system with PBXs and other products that need to interoperate with the Cisco Unified Communications system, see the [Interoperability and Compatibility Portals](#) section for interoperability and integration information.

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Because of the variety of the options and the complexity of the procedures that are required to completely set up an IPT system, this document does not provide installation or configuration procedures for:

- Individual standalone components and the features of these components
- Third-party coresident applications, such as antivirus, security, and remote access
- Additional third-party off-board applications such as operator console, and billing and accounting
- Server replacement (hardware installation) for components

Refer to product-specific installation documents to perform the installation and configuration of the IPT products:

- Product-specific installation documentation for all Cisco voice products is available at: [http://www.cisco.com/en/US/products/sw/voicesw/tsd\\_products\\_support\\_category\\_home.html](http://www.cisco.com/en/US/products/sw/voicesw/tsd_products_support_category_home.html)
- List of URLs for component-specific installation and configuration documents for all IPT components in Cisco Unified Communications System Release 6.0(1) are available at: [http://www.cisco.com/iam/unified/ipt601/Component\\_Installation.htm](http://www.cisco.com/iam/unified/ipt601/Component_Installation.htm)

Also see the [Related Documentation](#) section in [Chapter 3, “Performing Your System Installation.”](#)

## System Installation Overview

This section includes the following sections:

- [Installation Types](#)
- [Release Sets](#)
- [System Installation Roadmap](#)
- [Component Installation Overview](#)

## Installation Types

When installing and creating an IPT environment, consider the following deployment types:

- Greenfield deployment—A completely new installation of the Cisco Unified Communicationssystem, using no existing equipment.
- Legacy deployment—A new installation the Cisco Unified Communicationssystem combined with existing legacy equipment, such as TDM PBXs and third-party adjuncts, which may require long-term co-existence and integration or eventual migration to the new installation.
- Installed base (*brownfield* deployment)—An existing Cisco Unified Communicationssystem, which requires an upgrade and migration from a previous system release to the current system release. For more information about upgrading an existing installed base, see the upgrade topics in this document.

**Note**

When performing upgrades, be aware of backward compatibility issues such as co-existence and interoperability with previous system release versions.

## Release Sets

A release set is defined as the combination of products, components, and software versions that were tested to work together as an integrated Cisco Unified Communications system. A particular system release is also referred to as a release set.

### Legacy Deployment and Installed Base Release Sets

If you are dealing with a legacy or brownfield deployment, be aware of interoperability issues between legacy and existing component versions and the Cisco Unified Communications System 6.0(1) component versions.

You can browse a previous system release set by product release version in a summary matrix. Use the following links if you are unfamiliar with the version content of release sets that deployed in IPT environments:

- Cisco Unified Communications System Release Summary Matrix for IP Telephony:  
<http://www.cisco.com/univercd/cc/td/doc/systems/unified/iptmtrix.htm>
- IP Communications System Test Release at:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/ip\\_tele/gblink/ipcmtrix.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/ip_tele/gblink/ipcmtrix.htm)

You can also see the [Interoperability and Compatibility Portals](#) section for information about support for legacy products and third-party product interoperability with Cisco IPT products.

### Greenfield Deployment Release Set

If you are dealing with a greenfield deployment, be aware that certain features, applications, and components are part of the Cisco Unified Communications System 6.0(1) family of products and have been tested and verified for interoperability and compatibility.

Based on your specific network design, you may choose to install all or some of these features, applications, and components. For a list of components that apply to a contact center environment, see the [Component Installation Overview](#) section.

For information about the Cisco Unified Communications System Release 6.0(1) IPT components and their software and firmware versions, see [Release Set Versions](#) in [Chapter 2, “Preparing for Your System Installation.”](#)

## System Installation Roadmap

[Table 1-1](#) provides an overview of the tasks that are performed in the installation of the Cisco Unified Communications System.

**Table 1-1 Overview of Installation Tasks**

	Task	Remarks
<b>Step 1</b>	Perform preinstallation tasks.	See the <a href="#">Before You Begin</a> section in <a href="#">Chapter 2, “Preparing for Your System Installation,”</a> and refer to the tasks that are described in the individual product installation documents.
<b>Step 2</b>	Install and cable the hardware.	—
<b>Step 3</b>	Install and configure the software for the components to enable functionality between the installed components.	See <a href="#">Chapter 3, “Performing Your System Installation.”</a>
<b>Step 4</b>	Initialize installed components and ensure that components are functional.	<ul style="list-style-type: none"> <li>• Applications at the system level (such as cold start, elapse time)</li> <li>• Each application at node level</li> </ul>
<b>Step 5</b>	Perform verification and validation testing to ensure that installed components interoperate	—
<b>Step 6</b>	Integrate Cisco and third-party or legacy and ensure interoperability.	See the <a href="#">Before You Begin</a> section in <a href="#">Chapter 2, “Preparing for Your System Installation,”</a> and refer to the tasks that are described in the individual product installation documents.
<b>Step 7</b>	Perform postinstallation tasks	See the <a href="#">Postinstallation Tasks</a> section in <a href="#">Chapter 3, “Performing Your System Installation.”</a>

## Component Installation Overview

The Cisco Unified Communications System IPT environment consists of these primary software components:

- Call processing—Unified Communications Manager, Unified Communications Manager Express, SRST, Cisco Unified Communications Manager Business Edition
- Communications—Cisco Emergency Responder, Cisco Customer Response Solutions
- Messaging—Cisco Unity and Cisco Unity Connection
- Instant Messaging and Presence—Cisco Unified Presence
- Conferencing—Cisco Unified MeetingPlace, Cisco Unified MeetingPlace Express, Cisco Unified Videoconferencing

- System Management—Cisco Unified Operations Manager, Cisco Unified Service Monitor, Cisco Unified Service Statistics Manager, Cisco Unified Provisioning Manager, LAN Management Solution

In addition, the following Cisco hardware and software products are required for a complete IPT deployment:

- Cisco Unified IP Phones
- Cisco gateways and gatekeepers
- Cisco LAN/WAN infrastructure and components
- Cisco security components

Table 1-2 provides an overview of primary components in the Cisco Unified Communications System Release 6.0(1) product family that can be installed and configured in contact center environments.

**Table 1-2 System Installation Overview for Cisco Unified Communications System IPT Components**

Component/Application/Feature	Purpose
<b>Communications Infrastructure and Wireless Components</b>	
Switches and routers.	Cisco switches and routers provide switching and intelligent routing services that can deliver voice, video, data and Internet access, wireless, and other applications. They can also provide high-speed connectivity between users, applications, and communications systems.
Gateways and gatekeepers.	Cisco gateways and gatekeepers are optimized for data, wireless, and IP communications. They support IP-to-IP connectivity between independent voice-over-IP (VoIP) networks and analog phone gateways using your existing phone equipment.
Firewall and security components.	Security components include firewall and policy enforcement services, antivirus software, and domain and web server hardening.  Firewall Services Module (FWSM) allows any port on the device to operate as a firewall port and integrates firewall security inside the network infrastructure.  Policy enforcement services can protect networks from unauthorized access. These services combine with VPN services to enable businesses to securely extend their networks to business partners, remote sites, and mobile workers.
Wireless components.	Wireless components provide for secure, scalable, cost-effective WLANs with real-time access to instant messaging, e-mail, and network resources.
System network management applications.	These applications provide the means to monitor, manage, and troubleshoot the Cisco Unified Communications system.  For example, Unified Operations Manager provides comprehensive monitoring and diagnostics for the entire system. It performs automatic discovery of the entire system and provides contextual diagnostics for rapid troubleshooting.
<b>Cisco Unified Communications Manager and Call Processing Devices</b>	
Cisco Unified Communications Manager.	Unified Communications Manager provides the call-processing functionality to Cisco Unified Communications IPT networks.
Cisco Unified Communications Manager Services.	There are a variety of services on the publisher, subscribers, and TFTP servers that are essential for call processing in the Unified Communications Manager cluster.

**Table 1-2** System Installation Overview for Cisco Unified Communications System IPT Components (continued)

Component/Application/Feature	Purpose
Cisco Unified IP Phones (SCCP and SIP).	Use methods such as auto-registration and the Bulk Administration Tool (BAT) to install and configure Unified IP Phones and to add them to the Unified Communications Manager database.
Install and configure Cisco IP Communicator.	IP Communicator is a software-based application that delivers enhanced telephony support through the PC. It is designed to meet diverse customer needs by serving as a supplemental telephone when traveling, a telecommuting device, or as a primary desktop telephone.
Conferencing applications.	Cisco Unified MeetingPlace provides intuitive interfaces for setting up, attending and managing meetings. Extensive voice, video using Cisco Unified Videoconferencing and web conferencing capabilities enable a range of meeting applications, including highly collaborative meetings, training sessions, and presentations.
Cisco Unified Communications Manager cluster (integration with switches, routers, gateways, gatekeepers, and Cisco Unified Communications Manager Telephony client	Install the Unified Communications Manager Telephony client on the CRS system to enable communication with the Unified Communications Manager cluster.
Cisco Unity or Cisco Unity Connection.	These applications combine voice messaging, integrated messaging, speech recognition capabilities, and call-routing rules.
Presence application.	Cisco Unified Presence links the various knowledge within each application to provide a ubiquitous and broad view of a defined user within the Cisco Unified Communications system.

## System Installation Strategies

This section describes the installation strategies that can be used for an IPT deployment. Details of individual components installations are not described unless additional information or clarification is required.

Installation of new networks in Cisco Unified Communications IPT environments (using new hardware) is supported via a *flash-cut* or a *shrink-and-grow* approach.

### Single-Stage installation Using New Hardware (for Greenfield Deployments)

A completely new network is built using the components and software versions in the current Cisco Unified Communications System release set. The new system becomes operational when it is turned on after the required software is installed and initial configuration is completed.

### Single-Stage installation Using New Hardware (for Legacy Deployments)

A new network using the components and software versions in the current Cisco Unified Communications System release set is built alongside the legacy network. The new network is staged and configured to support the production environment.

All users should be migrated from the existing legacy network to the new network in a single installation window using a flash-cut installation process. Because interoperability with the legacy system is not required, components of the legacy system do not need to be upgraded. After all users are moved to the newly installed system, the legacy system is decommissioned.

## Multistage Installation using New Hardware (for Legacy Deployments)

A new network using the components and software versions in the current Cisco Unified Communications System release set is built alongside the legacy network. The new network is staged and configured to support the production environment.

This strategy uses either a flash-cut or shrink-and-grow installation process or a combination of both to:

- Deploy all the applications in one installation window (flash-cut) or in several installation windows (shrink-and-grow).
- Migrate all the users in one installation window (flash-cut) or in multiple installation windows (shrink-and-grow).

After all users have been moved to the newly installed system, the legacy system is decommissioned.

## Multisite Phased Installation

For large enterprises with many sites, you can install one site at a time in multiple phases. Depending on whether it is a greenfield or legacy deployment, within each site, you can either employ the single-stage or multistage installation strategies described in this section.

## Interoperability and Compatibility Portals

For information about support for legacy products and third-party product interoperability with Cisco IPT products, see the Cisco Interoperability Portal at:

[www.cisco.com/go/interoperability](http://www.cisco.com/go/interoperability)

For detailed information about the compatibility with Unified Communications Manager and Cisco CRS, see the following sites:

- Cisco Unified Communications Compatibility Tool:  
<http://tools.cisco.com/ITDIT/vtgsca>
- *Cisco Unified Communications Manager Express and Cisco IOS Software Version Compatibility Matrix*:  
[http://www.cisco.com/en/US/products/sw/voicew/ps4625/prod\\_installation\\_guide09186a00805acf50.html](http://www.cisco.com/en/US/products/sw/voicew/ps4625/prod_installation_guide09186a00805acf50.html)
- *Cisco Response Solutions (CRS) Software and Hardware Compatibility Guide*:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/sw\\_ap\\_to/crscomtx.pdf](http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/crscomtx.pdf)
- Cisco IOS Software Version Compatibility Matrix:  
[http://www.cisco.com/en/US/products/sw/voicew/ps4625/prod\\_installation\\_guide09186a00805acf50.html](http://www.cisco.com/en/US/products/sw/voicew/ps4625/prod_installation_guide09186a00805acf50.html)
- Cisco Unified Communications System Release Summary Matrix for IPT:  
<http://www.cisco.com/univercd/cc/td/doc/systems/unified/iptmatrix.htm>

- IP Communications System Test Release at:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/ip\\_tele/gblink/ipcmatrix.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/ip_tele/gblink/ipcmatrix.htm)



## CHAPTER 2

# Preparing for Your System Installation

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This topic provides information that you should review before you install the Cisco Unified Communications System. It describes preinstallation tasks and the initial installation sequence. It also lists the components in the release set and provides information regarding the deployment of various components.

This topic contains the following sections:

- [Before You Begin](#)
- [System installation Approach](#)
- [Release Set Versions](#)
- [System Installation Dependencies](#)

**Note**

Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## Before You Begin

Before you install the Cisco Unified Communications system, make sure that you have performed the following activities, which are on the Cisco Systems product deployment and lifecycle model.

**Note**

See the Cisco Unified Communications System Technical Information Site at <http://www.cisco.com/go/unified-techinfo> for comprehensive system-level deployment and lifecycle model information.

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### Prepare and Plan Phase

- Review preinstallation planning guidelines from Steps to Success at: <http://www.cisco.com/web/partners/support/steps-to-success/index.html>.
- Understand the your business and technical requirements such as call flows, capacity and critical features, and incumbent dependencies.
- Consider integration issues for legacy and third-party products (see the [System Installation Overview](#) section in [Chapter 1, “Planning Your System Installation”](#)).
- Assess your services and support strategy for training and lifecycle support.

- Assess system passwords requirements and create a password synchronization and maintenance strategy.

### Design Phase

- Develop a high-level and low-level design, including product and component selections appropriate for your needs.
- Use the recommendations provided in the Cisco Solution Reference Network Design (SRND) documents at: <http://www.cisco.com/go/srnd>.
- Review system architecture and testing information for IPT systems at: <http://www.cisco.com/iam/unified/ipt601/index.htm>.



**Note** The results obtained from conducting the tasks in the prepare, plan, and design phases indicate which Cisco Unified Communications System components apply to your business requirements and should be part of your deployment.

### Implement Phase

- Confirm the design and special feature considerations developed during the design phase.
- Develop an implementation plan and a migration or integration strategy.



**Note** The implementation plan derived from the implement phase should drive the staging, phases, and deadlines of the system installation.

- Review preinstallation and planning documents, such as site surveys, equipment lists, and product-specific documents.
- Conduct hardware installation and verification tasks, such as:
  - Catalog and inventory equipment.
  - Rack mount equipment.
  - Complete cabling and other physical connectivity.
  - Verify that all units power up correctly.
  - Capture rack layout, cabling, port-specific details, and related information.
- Conduct software installation and verification tasks, such as:
  - Check that all required installation discs are available for each of the system components being installed.
  - Check that all the required installation discs for software applications, including third-party applications, are available.
  - Access and download the license files required to install and operate the appropriate software at: <http://www.cisco.com/go/license>.

## System installation Approach

After you perform preinstallation tasks, install each Cisco Unified Communications Manager (formerly known as Cisco Unified CallManager) cluster and its associated IPT components. Install each cluster one at a time, following the general sequence that is described in [Table 2-1](#).

The installation sequence of the IPT components should also be dictated by the following considerations:

- The relative importance of the service that these components provide. For example, basic phone service is considered to be of greater importance than supplementary services or voice messaging services.
- Integration and configuration of the system components to ensure interoperability.

**Table 2-1 System Installation General Sequence**

	Procedure	Remarks
<b>Step 1</b>	Install and configure network infrastructure, wireless, and security components.	These components should be installed first to ensure that the infrastructure is able to support the services that the Cisco Unified Communications System components required.
<b>Step 2</b>	Install the operating system on system servers and install and configure directory and network services.	Network services include LDAP, DNS, NTP, and DHCP servers.
<b>Step 3</b>	Install call processing components such as Unified Communications Manager clusters.	Make sure that you complete all initial setup and configuration procedures that are required.
<b>Step 4</b>	Install and configure the IPT components based on your requirements and the interdependencies of components.	See the <a href="#">System Installation Dependencies</a> section for related information.
<b>Step 5</b>	Install and configure network management tools and other third-party services and applications.	—
<b>Step 6</b>	Complete postinstallation tasks.	These tasks include system validation and verification.

## Release Set Versions

This section lists the applications and components that are part of the Cisco Unified Communications System Release 6.0(1) family of products. These products have been tested and verified for interoperability and compatibility and are used in a greenfield deployment of an IPT system. Based on your network design, you may choose to install all or some of these applications and components.

[Table 2-2](#) lists the release versions of the Cisco Unified Communications System Release 6.0(1) components that were used in the IPT test environment.

**Table 2-2** Software Release Versions in Cisco Unified Communications Release 6.0(1) for IP Telephony

Category	Component	Release Version
Call Control	Cisco Unified Communications Manager	6.0(1)
	Cisco Unified Communications Manager Business Edition	6.0(1)
	Cisco Unified Communications Manager Express	4.1/IOS 12.4(15)T, 4.2/IOS 12.4(11)XW21 <sup>1</sup>
	Cisco Unified Survivable Remote Site Telephony (SRST)	4.1/IOS 12.4(15)T
	Cisco Unified Presence	6.0(1)
	Cisco Unified Business Attendant Console and Unified Department Attendant Console	6.0
	Cisco Unified Communications 500 Series for Small Business	IOS 12.4(11)XW2
Contact Center	Cisco Customer Response Solutions (Cisco Unified Contact Center Express)	5.0(1)SR1
	Cisco Customer Response Solutions—Operating System	OS 2003.1.1SR4
Applications	Cisco Emergency Responder	2.0(1)
	Cisco Fax Server	9.0
	Cisco Unified Application Environment	2.4
	Cisco Unified PhoneProxy	1.0(2)

**Table 2-2 Software Release Versions in Cisco Unified Communications Release 6.0(1) for IP Telephony (continued)**

Category	Component	Release Version
Conferencing	Cisco Unified MeetingPlace—Operating System	OS 2003.1.1SR4
	Cisco Unified MeetingPlace Audio Server	6.0.0.25
	Cisco Unified MeetingPlace IP Gateway	5.3.1.8
	Cisco Unified MeetingPlace Web Conferencing	6.0.171.0
	Cisco Unified MeetingPlace Video Integration	5.4.107.0
	Cisco Unified MeetingPlace Video Administration Server	5.4.0.105
	Cisco Unified MeetingPlace for Outlook	6.0.14.0
	Cisco Unified MeetingPlace MeetingTime	6.0.0.23
	Cisco Unified MeetingPlace Jabber Integration	6.0.102.0
	Cisco Unified MeetingPlace Directory Services	5.4.104
	Cisco Unified MeetingPlace Express	2.0.1
	Cisco Unified Conferencing for TelePresence	1.1
	Cisco Unified Videoconferencing 3515 MCU <sup>2</sup>	5.1.0.0.24
	Cisco Unified Videoconferencing 3540 MCU	4.2.10
	Cisco Unified Videoconferencing Enhanced Media Processor (EMP) Module for 3540 MCU	4.2.8
	Cisco Unified Videoconferencing 3545 MCU	5.1.0.0.24
	Cisco Unified Videoconferencing Enhanced Media Processor (EMP) Module for 3545 MCU	5.1.0.0.27
	Cisco Unified Videoconferencing 3521, 3522 BRI Gateways <sup>2</sup>	5.0.0.0.22
	Cisco Unified Videoconferencing 3526, 3427, and 3545 PRI Gateways <sup>2</sup>	5.0.0.0.22
	Cisco Unified Videoconferencing 3540 PRI Gateway <sup>2</sup>	5.0.0.0.17
Voice Mail and Unified Messaging	Cisco Unity, Unity-CM TSP	5.0, 8.1(3)
	Cisco Unity—Microsoft Exchange	Microsoft Exchange 2003 SP2 (on Cisco Unity and partner Exchange servers) and Microsoft Exchange 2000SP3 or Exchange 2003SP2 (on other message store servers)
	Cisco Unity—IBM Lotus Domino <sup>2</sup>	7.0 with DUC 1.2.3
	Cisco Unity Connection	2.0(1)
	Cisco Unity Express	3.0(1)

Table 2-2 Software Release Versions in Cisco Unified Communications Release 6.0(1) for IP Telephony (continued)

Category	Component	Release Version
Endpoints and Clients	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G	Bundled with Unified Communications Manager
	Cisco IP Communicator	2.1
	Cisco Unified Personal Communicator	1.2(1)
	Cisco Unified Video Advantage	2.0(2)
Wireless	Cisco Aironet Access Point (AP) 1200G	12.3(8)JA
	Cisco Unified Mobility Advantage	3.0
	Cisco Unified Mobile Communicator	3.0
Security	Cisco Advance Security Appliance ASA 5500 Series	8.0(2)
	Cisco Catalyst 6500 Series Firewall Services Module (FWSM)	3.1.5
	Cisco Catalyst 6500 Series Intrusion Detection System (IDSM-2) Module	6.0(1)E1
	Cisco Intrusion Prevention System Appliance IPS-4200	6.0(1)E1
	Cisco NAC Appliance (Clean Access)	4.1.0.2
	Management Center for Cisco Security Agents	5.0.0.216
	Cisco Security Agent for Cisco Customer Response Solutions	5.0.0.216-3.0.4
	Cisco Security Agent for Cisco Unity	4.5.1.639-2.0.3
	Cisco Security Agent for Unified MeetingPlace	5.0.0.205-6.0.7
	Cisco Security Agent for Unified Communications Manager	Bundled with Unified Communications Manager
	Cisco Security Agent for Cisco Emergency Responder	Bundled with Cisco Emergency Responder
Network Management	Cisco Unified Operations Manager	2.0.1
	Cisco Unified Service Monitor	2.0.1
	Cisco netManager - Unified Communications	1.0 <sup>3</sup>
	Cisco Unified Service Statistics Manager	1.0 <sup>3</sup>
	Cisco Unified Provisioning Manager	1.1
	Cisco Monitor Manager	1.1
	Cisco Monitor Director	1.1
	Cisco Resource Management Essentials (RME)	4.0.5

**Table 2-2 Software Release Versions in Cisco Unified Communications Release 6.0(1) for IP Telephony (continued)**

Category	Component	Release Version
Communications Infrastructure	Cisco 1760 (voice/data gateway) <sup>2</sup>	12.4(15)T
	Cisco 2610XM, 2611XM, 2620XM, 2621XM, 2650XM, 2651XM, 2691 (router)	12.4(15)T1
	Cisco 2801, 2821, 2851, 3825, 3845 (router, voice/data gateway)	12.4(15)T
	Cisco 3745 (gatekeeper)	12.4(15)T
	Cisco 3745 (IP-to-IP gateway) <sup>2</sup>	12.4(15)T
	Cisco 3725, 3745 (voice/data gateway)	12.4(15)T
	Cisco 3725, 3745, 3825 (SRTP <sup>4</sup> and Secure SRST gateways)	12.4(15)T
	Cisco 7206 (voice/data gateway)	12.4(15)T
	Cisco Catalyst 3500 XL Series (access switch)	12.0(5)WC17
	Cisco Catalyst 3550 (access switch)	12.2(25)SEE3
	Cisco Catalyst 3560 (access switch)	12.2(25)SEE3
	Cisco Catalyst 3750 (data center switch)	12.2(25)SEE3
	Cisco Catalyst 4503 (access switch)	12.2(25)EWA8
	Cisco Catalyst 4506 (access switch) <sup>2</sup>	12.2(25)EWA8
	Cisco Catalyst 6506, 6509 (voice access switch, Supervisor Engine 2/MSFC2)	CatOS 8.5(8) / 12.2(18)SXF8
	Cisco Catalyst 6506, 6509 (core switch, Supervisor Engine 720)	12.2(18)SXF8 (native-mode)
	Cisco Catalyst Communications Media Module (CMM)	12.4(15)T
	Cisco Catalyst 6608, 6624 (voice gateway)	Bundled with Unified Communications Manager
	Cisco VG224 (analog voice gateway)	12.4(15)T
	Cisco VG248 (analog voice gateway)	1.3(2)
Cisco ATA 186,188 (analog telephony adaptor)	Bundled with Unified Communications Manager	
Third Party	McAfee Antivirus <sup>5</sup>	Enterprise 8.0.0 Patch Version: 11

1. Unified Communications Manager Express Release 4.2 and Cisco IOS Release 12.4(11)XW2 are required for interoperability with Unified Contact Center Express Release 5.0(1).
2. Tested in EUEM site models only during Cisco Unified Communications System Release 6.0(1) system testing.
3. Release pending.
4. SRTP supported for MGCP and H.323 gateways only (not on SIP gateways).
5. You can install third-party antivirus agents on Windows-based servers such as Cisco Customer Response Solutions (Unified Contact Center Express), Unified Operations Manager, Unified netManager - Unified Communications, Cisco Monitor Manager, Cisco Monitor Director, and Unified Provisioning Manager, but not on non-Windows appliances such as Unified Communications Manager and Unified Communications Manager Business Edition.

# System Installation Dependencies

The components within each release set are compatible with each other and will interoperate correctly. As you install individual components, the overall system may not be operational until all components have been installed or until initial configuration or setup is completed.



## CHAPTER 3

# Performing Your System Installation

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This topic provides guidance for the installation order components for a Cisco Unified Communications IPT deployment. This information is to be used with the information from the planning and design phases as input to the implementation plan. The implementation plan drives the staging, phases and deadlines of the system installation.

This document does not describe installation procedures for individual components. This information is included in the installation documents for the components. See the [Related Documentation](#) section for references to these documents.

This topic contains the following sections:

- [Deployment Models](#)
- [Installing Components](#)
- [Postinstallation Tasks](#)
- [Related Documentation](#)



### Note

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## Deployment Models

This section describes the general order of installation for each Cisco Unified Communications System deployment models. Because each model can include different components, compare these deployments to your deployment to best understand the installation process that is applicable in your environment.

The following sections provide the general installation sequence for the various IPT components in the different deployment models.

- [Single Site Model](#)
- [MultiSite Centralized with SRST Model](#)
- [Multisite WAN Distributed Model](#)
- [Clustering over the WAN Model](#)

For more detailed information about these IPT deployment models, see: [http://www.cisco.com/iam/unified/ipt601/Review\\_Tested\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt601/Review_Tested_Site_Models.htm)

Also see the following documents:

- *System Description: Cisco Unified Communications Release 6.0(1) at:*  
<http://www.cisco.com/univered/cc/td/doc/systems/unified/uc601/sysdesc/index.htm>
- Solution Reference Network Design (SRND) document for various IPT components are available at:  
[http://www.cisco.com/en/US/netsol/ns656/networking\\_solutions\\_program\\_home.html](http://www.cisco.com/en/US/netsol/ns656/networking_solutions_program_home.html)

After you determine the general installation sequence, use one of the installation strategies that is described in [Installing Components](#) to install your components.

## Single Site Model

A single-site deployment refers to any scenario in which voice gateways, phones, and call processing servers (Cisco Unified Communications Manager) are located at the same site and have no WAN connectivity between any Unified CCE software modules.

For a single site deployment, install components in the following order:

1. Core switches
2. Access switches
3. Firewalls
4. Cisco Wireless LAN Controller(s) and Access Points
5. NTP server, DHCP server, DNS server, LDAP server
6. Network management applications (Cisco Unified Provisioning Manager, Cisco Unified Operations Manager, Cisco Unified Service Monitor, and Cisco Unified Service Statistics Manager)
7. Cisco Unified Communications Manager, Cisco Unified IP Phones, Cisco IP Communicator



**Note**

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For Cisco Unified Communications Manager Business Edition, Cisco Unity Connection is installed with Cisco Unified Communications Manager as a co-resident application.

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8. Media resources (including music on hold, conference bridges)
9. Cisco IOS Gatekeeper
10. Voice and data gateways
11. Cisco Unity Connection and optional Voice Recognition Server
12. Cisco Unity components:
  - Windows Exchange 2000 or IBM Lotus Domino
  - Cisco Catalyst 6000 Gateway for Cisco Unity Bridge
  - Cisco Unity
13. Cisco MeetingPlace/Cisco MeetingPlace Express components
14. Cisco CRS, Cisco Unified IP Phone Agents
15. Cisco Unified Presence
16. Cisco Unified Personal Communicator
17. Cisco Unified Conferencing for TelePresence
18. Cisco Unified Application Environment
19. Cisco Unified Mobility Advantage

20. Cisco Unified Mobile Communicator
21. Cisco Unified Videoconferencing gateway and Multipoint Control Units (MCU)
22. CCP/H.323/H.320 video endpoints
23. Cisco applications co-resident on MCS servers
24. Third-party applications co-resident on MCS servers
25. Cisco and third-party applications on other servers

## MultiSite Centralized with SRST Model

A multisite centralized with SRST deployment refers to any scenario in which call processing servers (for example, Unified Communications Manager) are located at the same site, while any combination of voice gateways, and phones are located remotely across a WAN link or centrally.

For a multisite Centralized with SRST deployment, the central site should be installed first. To install the central site, follow the guidelines in the [Single Site Model](#) section. For each remote site, install components in the following order:

1. Access switches
2. Firewalls
3. Cisco Wireless LAN Controller(s) and Access Points
4. Cisco Unified Communications Manager Express or SRST router, Cisco Unified IP Phones, Cisco IP Communicator
5. Cisco Unified Videoconferencing gateway and Multipoint Control Units (MCU)
6. CCP/H.323/H.320 video endpoints

## Multisite WAN Distributed Model

In a multisite WAN distributed deployment model, each site has its own Unified Communications Manager cluster. However, as with the centralized call processing model, sites can be deployed with or without local voice gateways. Some deployments may contain a combination of distributed voice gateways (possibly for locally dialed calls) and centralized voice gateways (possibly for toll-free calls). The multisite distributed model includes several Unified Communications Manager cluster sites interconnected by ICT or H.323 trunks.

The installation of each site should be treated as a separate stage in the overall system installation.

To install each Unified Communications Manager site, follow the guidelines in the [Single Site Model](#) section.

For each remote site, install components in the following order:

1. Access Switches
2. Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Services Module (FWSM)
3. Cisco Aironet Access Point 1200
4. Cisco Unified Communications Manager Express or SRST router, Cisco Unified IP Phones, Cisco IP Communicator
5. Cisco Unified Videoconferencing gateway and Multipoint Control Units (MCU)

6. CCP/H.323/H.320 video endpoints

## Clustering over the WAN Model

In the clustering over the WAN model, the Unified Communications Manager cluster is distributed across several sites connected by a QoS-enabled WAN. This model provides the redundancy of the distributed model while offering the convenience of administering a single Unified Communications Manager cluster.

To install this model, install the central sites first, following the guidelines in the [Single Site Model](#) section for the central sites.



### Note

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Install clustered components in the same installation period and stage at each of the central sites.

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Next install remote sites. For each remote site, install components in the following order:

1. Access Switches
2. Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Services Module (FWSM)
3. Cisco Aironet Access Point 1200
4. Cisco Unified Communications Manager Express or SRST router, Cisco Unified IP Phones, Cisco IP Communicator
5. Cisco Unified Videoconferencing gateway and Multipoint Control Units (MCU)
6. CCP/H.323/H.320 video endpoints

## Installing Components

After you review the general installation sequence for the deployment model that you are installing, install your components based on the following installation strategies:

- [Single-Stage Installation](#)—Recommended for small single-site or multisite installations.
- [Multistage System Installation](#)—Recommended for medium or large single-site and medium multisite installations.
- [Multisite Migration](#)—To install large, multisite IPT installations to the Cisco Unified Communications System release set using the Multisite Migration Upgrade strategy, you can use either the Single-stage or Multistage System installation information that is provided in this section.

See [Chapter 1, “Planning Your System Installation”](#) for additional information and for the software release versions of the components in the release set.



### Note

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After you install the software and applications, be aware that you may also need to install client software such as Cisco IP Communicator on the client desktops.

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When you install each component, see the product-specific installation document for detailed information. See the [Related Documentation](#) section for a list of this documentation.

## Single-Stage Installation

The single-stage installation process is recommended for small single-site and multisite installations and can be performed in a single installation window.

Table 3-1 lists the recommended order in which to install components. See Chapter 1, “Planning Your System Installation” for the software release versions of these components.

**Table 3-1** Single-Stage Installation Order for IPT Components

Installation Order	Component
1	Switches and routers
2	Security components
3	Wireless components
4	Directory and network services
5	Call processing components
7	Gatekeepers and voice and data gateways
6	Media resources
8	Messaging components
9	Network management components
10	Cisco applications coresident on MCS servers
11	Third-party on-board agents on MCS servers <sup>1</sup>
12	Cisco and third-party applications on other servers

1. For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

## Multistage System Installation

A multistage system installation is the recommended approach for medium and large single-site and medium multisite installations. In this process, components are grouped for installation in several stages or installation windows. Within each installation window, there is a recommended order for installing each component.

The grouping of the components into the stages may vary depending on the size of the networks being upgraded. For smaller networks, several installation windows may be collapsed into a single installation window. Additional stages may be necessary for larger sites.

After each installation window and before initiating the next installation stage, we recommend that you verify that the operation of all basic and critical call types remains unaffected. We also recommend that you maintain a list of the components that have been installed and the ones yet to be installed.

Table 3-2 lists the recommended order in which to install components. See Chapter 1, “Planning Your System Installation” for the software release versions of these components.

**Table 3-2 Multi-Staged System Installation Order for IPT Components**

Stage	Component Groupings	Installation Order of Components in Each Stage
1	Switches and Routers	<ol style="list-style-type: none"> <li>1. Core Switches</li> <li>2. Access Switches</li> </ol>
2	Security components	<ol style="list-style-type: none"> <li>1. Cisco Catalyst 6500 Series Switch Firewall Services Module (FWSM)</li> <li>2. Cisco Adaptive Security Appliance (ASA) 5540 Services</li> </ol>
3	Wireless components	<ol style="list-style-type: none"> <li>1. Cisco Aironet Access Point 1240AG</li> </ol>
4	Directory and network services	<ol style="list-style-type: none"> <li>1. Domain Controllers (including Active Directory)</li> <li>2. LDAP Directory</li> <li>3. NTP Server</li> <li>4. DHCP Server</li> <li>5. DNS Server</li> <li>6. TFTP Server</li> </ol>
5	Call processing components	<ol style="list-style-type: none"> <li>1. Cisco Unified Communications Manager (includes ATA)</li> <li>2. Cisco Unity TSP</li> <li>3. Cisco Unified IP Phones</li> <li>4. Cisco IP Communicator</li> <li>5. Cisco Emergency Responder</li> <li>6. Cisco Catalyst 6500/6000 Gateway</li> <li>7. CRS<sup>1</sup> (IPCC Express)</li> </ol>
6	Gatekeepers and voice and data gateways	<ol style="list-style-type: none"> <li>1. IOS Gateways (SIP, MGCP, and H.323)</li> <li>2. Cisco Unified Customer Voice Portal VXML Gateway</li> <li>3. IOS Gatekeepers</li> </ol>
7	Media resources	<ol style="list-style-type: none"> <li>1. Conference bridges</li> <li>2. Transcoders</li> <li>3. Music-On-Hold servers</li> <li>4. Media termination points</li> <li>5. RSVP Agents</li> </ol>
8	Cisco MeetingPlace components	<ol style="list-style-type: none"> <li>1. Cisco MeetingPlace components</li> </ol>

**Table 3-2 Multi-Staged System Installation Order for IPT Components (continued)**

Stage	Component Groupings	Installation Order of Components in Each Stage
9	Cisco Unity components	<ol style="list-style-type: none"> <li>1. Cisco Unity components</li> <li>2. Cisco Unity Express</li> <li>3. Cisco Unity-IBM/Lotus Domino<sup>2</sup></li> <li>4. Microsoft Exchange Server</li> <li>5. Domain Controller (including Active Directory)</li> <li>6. Cisco Unity Connection</li> </ol>
10	Messaging components	<ol style="list-style-type: none"> <li>1. Cisco Unified Presence</li> </ol>
11	Telepresence component	<ol style="list-style-type: none"> <li>1. Cisco Unified Conferencing for TelePresence</li> </ol>
12	Cisco Unified Application Environment component	<ol style="list-style-type: none"> <li>1. Cisco Unified Application Environment</li> </ol>
13	Mobility components	<ol style="list-style-type: none"> <li>1. Cisco Unified Mobility Advantage</li> <li>2. Cisco Unified Mobile Communicator</li> </ol>
14	Video components	<ol style="list-style-type: none"> <li>1. SCCP/ H.323 /H.320<sup>3</sup> Video Endpoints</li> <li>2. IP/VC Gateway<sup>3</sup> and MCUs</li> <li>3. Cisco VT Advantage (Video PC Endpoint)</li> </ol>
15	Network management components	<ol style="list-style-type: none"> <li>1. Cisco Unified Operations Manager</li> </ol>
16	Cisco applications coresident on MCS servers	<ol style="list-style-type: none"> <li>1. Depends on the applications being upgraded</li> </ol>
17	Third-party on-board agents on MCS servers <sup>3</sup>	<ol style="list-style-type: none"> <li>1. Depends on the applications being upgraded</li> </ol>
18	Cisco and third-party applications on other servers	<ol style="list-style-type: none"> <li>1. Depends on the applications being upgraded</li> </ol>

1. CRS systems cannot be upgraded, they must be freshly installed in the same maintenance window in which Unified Communications Manager is upgraded.
2. Tested in EUEM (European & Emerging Markets) site models only during Cisco Unified Communications System testing.
3. For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

## Postinstallation Tasks

After you complete the tasks in the implement phase and instal the IPT components in the Cisco Unified Communications System release set, be aware of the following postinstallation phases and related tasks.



### Note

See the Cisco Unified Communications System Technical Information Site at <http://www.cisco.com/go/unified-techinfo> for comprehensive system-level deployment and lifecycle model information.

### Operate Phase

Ensure that the newly installed IPT system is fully operational by performing tasks that include the following:

- Manage the newly installed network by conducting:
  - Fault and performance management at the platform level—Use the Real-Time Monitoring Tool (RTMT), which is a client application, to monitor CPU, memory, disk space, processes, and critical services.

- Network management at the system level—Use Unified Operations Manager to perform SNMP/HTTP polling, track device and inventory status, and monitor logical relationships and physical connectivity in the network.
- Conduct Day 1 operations (cutover to customer) tasks such as:
  - Train administrators to support end-users to use the newly installed IPT system.
  - Provide documentation including as-builts, equipment inventory lists, topology diagrams, unique design or feature considerations, and others.
  - Explain the engagement process with Technical Assistance Center (TAC) support and the tasks to perform prior to contacting TAC.
- Conduct Day 2 operations (post-cutover) tasks such as:
  - Enforce security with the appropriate antivirus security software, where applicable.
  - Provision for system password synchronization and maintenance.
  - Implement data backup and restore. For more information, see Backing up and Restoring Components at: [http://www.cisco.com/iam/unified/ipt601/Backing\\_Up\\_and\\_Restoring\\_Components.htm](http://www.cisco.com/iam/unified/ipt601/Backing_Up_and_Restoring_Components.htm)
  - Plan for release set management and system and security patches updates.

#### Optimize Phase

During this phase, perform system optimizations tasks such as:

- Tune and resize the network for better performance.
- Perform configuration cleanup procedures such as deleting user IDs that are no longer in use.
- Set trace logs and reporting levels to ensure optimal performance.

## Related Documentation

The following sections list compatibility guides and installation documentation for Cisco Unified Communications System components:

- [Compatibility Guides](#)
- [Component Release Notes and Installation and Upgrade Documents](#)

## Compatibility Guides

The following documentation provides information about compatibility of components:

- Cisco Unified Communications Compatibility Tool:  
<http://tools.cisco.com/ITDIT/vtgsc>
- *Cisco Unity and the Software on Subscriber Workstations*:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cuclientmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cuclientmtx.html)
- *SCCP Compatibility Matrix: Cisco Unity, the Cisco Unity-CM TSP, Cisco Communications Manager, and Cisco Communications Manager Express*:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cutspmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cutspmtx.html)

- *SIP Trunk Compatibility Matrix: Cisco Unity, Cisco Communications Manager, and Cisco Communications Manager Express:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cusiptrunkmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cusiptrunkmtx.html)
- *Cisco Response Solutions (CRS) Software and Hardware Compatibility Guide:*  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/sw\\_ap\\_to/crscomtx.pdf](http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/crscomtx.pdf)
- *Cisco Communications Manager Express and Cisco IOS Software Version Compatibility Matrix:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucme/requirements/guide/33matrix.htm](http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/requirements/guide/33matrix.htm)

## Component Release Notes and Installation and Upgrade Documents

Table 3-3 lists provides references to release notes and installation and upgrade documents for components. These URLs link to web pages that list various release versions of these documents. Review the appropriate documents based on the release versions of the components in your base and target release sets.

**Table 3-3** *Component-Specific Release Notes and Installation and Upgrade Documents*

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified Communications Manager	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_installation_guides_list.html</a>
Cisco Unity	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_installation_guides_list.html</a>
Cisco Unity Express	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_installation_guides_list.html</a>
Cisco Unified MeetingPlace	<a href="http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html</a>
Cisco Unified MeetingPlace Express	<a href="http://www.cisco.com/en/US/products/ps6533/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6533/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6533/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6533/prod_installation_guides_list.html</a>
Cisco Unified Conferencing for TelePresence	<a href="http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html">http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html</a>	<a href="http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html">http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html</a>
Cisco IP/VC 3500 Series Videoconferencing	<a href="http://www.cisco.com/en/US/products/hw/video/ps1870/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/video/ps1870/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html</a>
Cisco Unified Video Advantage	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_installation_guides_list.html</a>
Cisco Unity Connection	<a href="http://www.cisco.com/en/US/products/ps6509/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6509/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6509/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6509/prod_installation_guides_list.html</a>

**Table 3-3** Component-Specific Release Notes and Installation and Upgrade Documents (continued)

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified IP Phone 7900 Series	<a href="http://www.cisco.com/en/US/products/hw/phones/ps379/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/phones/ps379/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html</a>
Cisco Unified Operations Manager	<a href="http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6535/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6535/prod_installation_guides_list.html</a>
Cisco Unified Presence	<a href="http://www.cisco.com/en/US/products/ps6837/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/ps6837/tsd_products_support_install_and_upgrade.html</a>	<a href="http://www.cisco.com/en/US/products/ps6837/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6837/prod_release_notes_list.html</a>
Cisco Unified Service Monitor	<a href="http://www.cisco.com/en/US/products/ps6536/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6536/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6536/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/ps6536/tsd_products_support_install_and_upgrade.html</a>
Cisco IP Communicator	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5475/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5475/prod_release_notes_list.html</a>	—
CRS (Cisco Unified Contact Center Express)	<a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html</a>
Cisco Emergency Responder	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps842/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps842/prod_release_notes_list.html</a>	—
Cisco Unified Survivable Remote Site Telephony	—	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2169/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2169/prod_installation_guides_list.html</a>
Cisco 3700 Series Voice Gateways/Gatekeepers	<a href="http://www.cisco.com/en/US/products/hw/routers/ps282/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/routers/ps282/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/routers/ps282/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/routers/ps282/prod_installation_guides_list.html</a>
Cisco Catalyst 3550 Series Access Switches	<a href="http://www.cisco.com/en/US/products/hw/switches/ps646/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps646/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps646/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps646/prod_installation_guides_list.html</a>
Cisco Catalyst 6500 Series Switches	<a href="http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html</a>
Cisco IOS Software Release 12.4 T	<a href="http://www.cisco.com/en/US/products/ps6441/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6441/prod_release_notes_list.html</a>	—



## **PART 2**

### **System Upgrade for IP Telephony**





## CHAPTER 4

# Planning Your System Upgrade

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This topic provides an overview of the upgrade process for IPT components, the software releases that are involved in the upgrade process, and the different upgrade strategies that can be used based on the size of your network.

This topic contains the following sections:

- [Cisco Unified Communications System Overview](#)
- [Release Sets](#)
- [Upgrade Roadmap](#)
- [Upgrade Overview](#)
- [System Upgrade Paths](#)
- [System Upgrade Strategies](#)



**Note**

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## Cisco Unified Communications System Overview

The Cisco Unified Communications System is a full-featured business communications system built into an intelligent IP network. It enables voice, data, and video communications for businesses of all sizes. The Cisco Unified Communications System is defined around commonly deployed enterprise topology models in North America and European & Emerging Markets (EUEM).

Cisco Systems provides an integrated system to meet customer needs. The system contains a number of communications products that are designed, developed, tested, documented, sold, and supported as one entity. This system is built upon individual IP telephony products, including Cisco Unified Communications Manager (Unified Communications Manager), Cisco Unified Communications Manager Express, Cisco Unity, Cisco Unity Express, Cisco Customer Response Solutions (CRS), and voice-capable gateways and routers.

Cisco Unified Communications System testing is a process for specifying (designing) and validating the interoperability of enterprise voice products to ensure that they work together as an integrated system.

## Scope of this Upgrade Documentation

The upgrade process that is discussed in this document addresses upgrade strategies, preparations for the upgrade operation, order of operations such as the sequence in which the IPT components should be upgraded, and other dependencies such as backward compatibility of software.

This topic provides information that is related to upgrading components that are present in the base release sets that are to be upgraded. See [Release Sets](#) for more information.

This topic does not provide installation, upgrade, or backup procedures for:

- Components that are not part of the existing production network and are that are being newly added as a part of the next release. This information is available in the documentation for those components.
- Individual standalone components such as Unified Communications Manager and Cisco Unity. It only addresses the upgrade procedures of Cisco Unified Communications System components at the system level.
- Third-party coresident applications (although these applications may be used during the upgrade and backup process) such as:
  - Antivirus
  - Security
  - Server management
  - Remote access
- Additional third-party off-board applications such as:
  - Operator console
  - VoIP recording
  - Billing and accounting
- Server replacement (hardware upgrade) for components. See the documentation for individual components for this information.

## Release Sets

A release set is the combination of products, components, and software versions that were tested to work together as an integrated Cisco Unified Communications system. A particular system release is also referred to as a release set.

A *base* release or release set is the release set that is being upgraded. A *target* release or release set is the release set to which the base release set is being upgraded.

The systems that are involved in the upgrade and that are discussed in this document include:

- Base releases—Your environment may include one of the following base release sets:
  - IP Communications Systems Test Release 4.4 —For detailed information about the deployment models and topologies that were developed to test this release set, see the following documents, which are available at this URL:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/ip\\_tele/gblink/system/gbtst4x/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/ip_tele/gblink/system/gbtst4x/index.htm)
  - Systems Test Architecture Reference Manual for IPCC Enterprise*
  - Systems Test Architecture Reference Manual for North America IPT*

–*Systems Test Architecture Reference Manual for EMEA IPT*

- Cisco Unified Communications System Release 5.0(2)—For detailed information about the IPT deployment models and topologies developed to test this release set, see [Review Tested Site Models for IP telephony](#).
- Cisco Unified Communications System Release 5.1(1) —For detailed information about the IPT deployment models and topologies that were developed to test this release set, see [Review Tested Site Models for IP telephony](#).
- Target release:
  - Cisco Unified Communications System Release 6.0(1)—The new software release set that is the goal of the upgrade process, regardless of your base release set. For detailed information about the IPT deployment models and topologies that were developed to test this release set, see [Review Tested Site Models for IP telephony](#).

For detailed information about the software versions of the components in the base and target release sets, see [Chapter 5, “Preparing for Your System Upgrade.”](#)

## Upgrade Roadmap

This section provides a summary of the high-level upgrade tasks:

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**Step 1** Review your hardware and software requirements.

For example, verify that the deployed hardware configurations and operating system support the target release and are ready for an upgrade.

For a list of supported MCS servers for Unified Communications Manager 5.x and later, see the Cisco Unified Communications Manager Server Upgrade Program at:

[http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod\\_brochure0900aecd8062a4f9.html](http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html)




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**Note** Unified Communications Manager 5.x releases support only MCS servers with a *-EVR* or *-IPC* suffix. They do not support servers with *ECS* appended to the model number.

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**Step 2** Perform all required hardware equipment checks.

For example, verify that the DVD ROM drive in the server on which you plan to perform the upgrade tasks is operational before you start the upgrade process.

**Step 3** Upgrade the *existing* network components from the base release set to the target release set. For a list of existing components, see [Table 4-1](#).




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**Note** The existing network should include components that are already supported by one of the base release sets.

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Use the recommended upgrade paths defined in the [System Upgrade Paths](#) section and the upgrade strategies described in the [System Upgrade Strategies](#) section to perform the upgrade. The upgrade paths and strategies that you select should depend on a number of factors, such as:

- Base release set currently deployed in your network
- Size of the network and number of sites

- Topology of the network

**Step 4** Install and configure *new* components that are supported by the target release.

See the individual component installation and configuration documents that are listed in [New Components and Features in Target Release Set](#).

**Step 5** Remove or replace any components from your network that are not part of the target release or that have reached end-of-life (EOL) or end-of-sale (EOS).

Follow proper procedures to uninstall these components. For a list of these components, see [Components Not in Target Release Set](#).



**Note** See the EOS/EOL website for a list of recommended replacements at: [http://www.cisco.com/en/US/products/prod\\_end\\_of\\_life.html](http://www.cisco.com/en/US/products/prod_end_of_life.html). For Cisco EOS/EOL policy, see the information at: [http://www.cisco.com/en/US/products/products\\_end-of-life\\_policy.html](http://www.cisco.com/en/US/products/products_end-of-life_policy.html).

## Upgrade Overview

This section lists the components that are included in the base release sets that are involved in the upgrade process, the components that have to be newly installed for the target release set, and the components that must be uninstalled because they are not part of the target release set.

This section includes these topics:

- [Existing Components in Base Release Sets](#)
- [New Components and Features in Target Release Set](#)
- [Components Not in Target Release Set](#)

## Existing Components in Base Release Sets

[Table 4-1](#) lists the components that are part of the base release sets that are being upgraded to Cisco Unified Communications System Release 6.0(1).



**Note** A dash (—) indicates a product that was not tested, either because it was unavailable or because it was not part of the release set.

**Table 4-1** IPT Components in Base Release Sets

Component	IP Communications Systems Test Release 4.4	Cisco Unified Communications System Release 5.0(2)	Cisco Unified Communications System Release 5.1(1)
Cisco Unified Communications Manager	X	X	X
Cisco Customer Response Solutions (Cisco Unified Contact Center Express)	X	X	X

Table 4-1 IPT Components in Base Release Sets (continued)

Component	IP Communications Systems Test Release 4.4	Cisco Unified Communications System Release 5.0(2)	Cisco Unified Communications System Release 5.1(1)
Cisco Emergency Responder	X	X	X
Cisco Unified Presence		X	X
Cisco Unity, TSP	X	X	X
Cisco Unity, Microsoft Exchange	X	X	X
Cisco Unity, IBM Lotus Domino	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Cisco Unity Bridge	X	—	—
Cisco Unified MeetingPlace	X	—	—
Cisco Unified MeetingPlace Audio Server	—	X	X
Cisco Unified MeetingPlace IP Gateway	—	X	X
Cisco Unified MeetingPlace Web Conferencing	—	X	X
Cisco Unified MeetingPlace Gateway SIM	—	X	X
Cisco Unified MeetingPlace Video Integration	—	X	X
Cisco Unified MeetingPlace for Outlook	—	X	X
Cisco Unified MeetingPlace MeetingTime	—	X	X
Cisco Unified Communications Manager Express	X	X	X
Cisco Unity Express	X	X	X
Cisco Unity Connection	X	X	X
Cisco Unified MeetingPlace Express	X	X	X
Cisco Unified Survivable Remote Site Telephony (SRST)	X	X	X
Cisco Unified Videoconferencing 3511 Multipoint Control Unit (MCU)	X <sup>1</sup>	X	—
Cisco Unified Videoconferencing 3515 MCU	—	—	X <sup>1</sup>
Cisco Unified Videoconferencing 3540 MCU	—	X	X
Cisco Unified Videoconferencing 3545 MCU	—		X
Cisco Unified Videoconferencing Enhanced Media Processor (EMP) Module	—	X	X
Cisco Unified Videoconferencing 3521 BRI Gateway	X <sup>1</sup>	X <sup>1</sup>	X
Cisco Unified Videoconferencing 3526 PRI Gateway	X <sup>1</sup>	X <sup>1</sup>	X
Cisco 1751 (voice/data gateway)	X	—	—
Cisco 1760 (voice/data gateway)	X	X	X
Cisco 2610XM, 2611XM, 2620XM, 2621XM, 2650XM, 2651XM, 2691 (router)	X <sup>2</sup>	X	X
Cisco 2801, 2821, 2851, 3825, 3845 (router, voice/data gateway)	X	X	X
Cisco 3660 (voice/data gateway)	X	—	—
Cisco 3725 (gatekeeper)	X <sup>1</sup>	—	—

Table 4-1 IPT Components in Base Release Sets (continued)

Component	IP Communications Systems Test Release 4.4	Cisco Unified Communications System Release 5.0(2)	Cisco Unified Communications System Release 5.1(1)
Cisco 3745 (gatekeeper)	X	X	X
Cisco 3745 (IP-to-IP Gateway)	—	—	X <sup>1</sup>
Cisco 3725, 3745 (voice/data gateway)	X	X	X
Cisco 3725, 3745, 3825 (SRTP and Secure SRST gateways)	X	X <sup>3</sup>	X <sup>3</sup>
Cisco 7206 (voice/data gateway)	X	X	X
Cisco Catalyst 3550 (access switch)	X	X	X
Cisco Catalyst 3560 (access switch)	X	X	X
Cisco Catalyst 3500 XL Series (access switch)	X	—	X
Cisco Catalyst 3750 (data center switch)	X	X	X
Cisco Catalyst 4506 (access switch)	X	X <sup>1</sup>	X
Cisco Catalyst 6506, 6509 (Supervisor Engine 2/MSFC2)	X	X	—
Cisco Catalyst 6506, 6509 (Supervisor Engine 32)	X	—	—
Cisco Catalyst 6506, 6509 (Supervisor Engine 720)	X	X <sup>1</sup>	X
Cisco Catalyst Communications Media Module (CMM)	X	X	X
Cisco Catalyst 6500 Series Firewall Services Module (FWSM)	X	X	X
Cisco Catalyst 6608, 6624 (voice gateway)	X	X	X
Cisco Catalyst Express 500	X	—	—
Cisco VG224 (analog voice gateway)	X	X	X
Cisco VG248 (analog voice gateway)	X	X	X
Cisco ATA 186, 188	X <sup>4</sup>	X	X
Cisco Security Agent—Unified Communications Manager	X	X	X
Cisco Security Agent—Cisco Emergency Responder	X	X	X
Cisco Security Agent—Cisco Customer Response Solutions	X	X	X
Cisco Security Agent—Cisco Unity	X	X	X
Cisco Security Agent Policy—Cisco Personal Assistant	X	—	—
Cisco Security Agent Management Center	X	—	—
CiscoWorks Management Center for Cisco Security Agent	—	—	X
Cisco Fax Server	—	X	X
Cisco PIX 535 Security Appliance	X	X	X
Cisco SIP Proxy Server		X	X
Cisco Unified Mobility Manager	X	X	X
Cisco Unified Operations Manager (formerly CiscoWorks ITEM)	X	X	X
Cisco Unified Service Monitor	X		X
Cisco Resource Management Essentials (RME)	—	X	X

Table 4-1 IPT Components in Base Release Sets (continued)

Component	IP Communications Systems Test Release 4.4	Cisco Unified Communications System Release 5.0(2)	Cisco Unified Communications System Release 5.1(1)
Cisco Unified IP Phone 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7935, 7940G, 7941G, 7960G, 7961G, 7970G, 7971G, 7985G <sup>5</sup>	X	X	X
Cisco Aironet Access Point (AP) 1200G	X	X	X
Wireless Access Point 1100	—	X	X
Cisco IP Communicator	X	X	X
Cisco Unified Personal Communicator		X	X
Cisco Unified Video Advantage	X	X	X
Cisco Personal Assistant	X	—	—

1. Tested in EUEM site models only.
2. Cisco 2621XM not tested in EUEM site models.
3. SRTP supported for MGCP gateways only, not on H.323 or SIP gateways.
4. Cisco ATA 186 not tested in EUEM site models.
5. Cisco Unified IP Phone 7985G not included in IP Communications Systems Test Release 4.4 or Cisco Unified Communications System Release 5.0(2).

## New Components and Features in Target Release Set

Some components are new to the Cisco Unified Communications System Release 6.0(1) release set. You must install these new components and configure them in the network (instead of upgrading them). New components include:

- Cisco Unified Communications Manager Business Edition
- Cisco Unified Business Attendant Console
- Cisco Unified Phone Proxy
- Cisco Unified Conferencing for TelePresence
- Cisco Advance Security Appliance ASA 5500 Series
- Cisco Intrusion Prevention System Appliance IPS-4200
- Cisco Unified Service Statistics Manager

## New Components when Upgrading from IP Communications Systems Release 4.4

This section lists components that will be new in your Release 6.0(1) release set when you upgrade from Release 4.4. For information about installing and configuring these components, see the documentation for each component at the URL shown:

- Cisco Unified Videoconferencing 3540 MCU:  
[http://www.cisco.com/en/US/products/hw/video/ps1870/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html)
- Cisco Unified Videoconferencing 3545 MCU:  
[http://www.cisco.com/en/US/products/hw/video/ps1870/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html)

- Cisco Unified Personal Communicator:  
[http://www.cisco.com/en/US/products/ps6844/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6844/prod_installation_guides_list.html)
- Cisco Unified Communications Manager Business Edition:  
[http://www.cisco.com/en/US/products/ps7273/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7273/prod_installation_guides_list.html)
- Cisco Unified Provisioning Manager:  
[http://www.cisco.com/en/US/products/ps7125/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7125/prod_installation_guides_list.html)
- Cisco Unified Service Statistics Manager:  
<http://www.cisco.com/en/US/products/ps7285/index.html>
- Cisco netManager Unified Communications:  
<http://www.cisco.com/univercd/cc/td/doc/systems/unified/uc601/notready.htm>
- Cisco Unified Phone Proxy:  
[http://www.cisco.com/en/US/products/ps7057/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7057/prod_installation_guides_list.html)
- Cisco Unified Conferencing for TelePresence  
[http://www.cisco.com/en/US/products/ps7266/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html)
- Cisco Unified IP Phone 7931G/7942G/7962G/7945G/6965G/7975G:  
[http://www.cisco.com/en/US/products/hw/phones/ps379/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html)
- Cisco Unified Application Environment  
[http://www.cisco.com/en/US/products/ps7058/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7058/tsd_products_support_series_home.html)
- Cisco Adaptive Security Appliance:  
[http://www.cisco.com/en/US/products/ps6120/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6120/prod_installation_guides_list.html)
- Cisco Security Monitoring, Analysis, and Response System:  
[http://www.cisco.com/en/US/products/ps6241/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6241/prod_installation_guides_list.html)

## New Components when Upgrading from Cisco Unified Communications System Release 5.0(2)

This section lists components that will be new in your Release 6.0(1) release set when you upgrade from Release 5.0(2). For information about installing and configuring these components, see the documentation for each component at the URL shown.

- Cisco Unified Videoconferencing 3545 MCU:  
[http://www.cisco.com/en/US/products/hw/video/ps1870/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html)
- Cisco 1751 (voice/data gateway)  
[http://www.cisco.com/en/US/products/hw/routers/ps221/tsd\\_products\\_support\\_install\\_and\\_upgrade.html](http://www.cisco.com/en/US/products/hw/routers/ps221/tsd_products_support_install_and_upgrade.html)
- Cisco Catalyst 3500 XL Series (access switch)  
[http://www.cisco.com/en/US/products/hw/switches/ps637/tsd\\_products\\_support\\_install\\_and\\_upgrade.html](http://www.cisco.com/en/US/products/hw/switches/ps637/tsd_products_support_install_and_upgrade.html)
- Cisco Unified Communications Manager Business Edition  
[http://www.cisco.com/en/US/products/ps7273/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7273/prod_installation_guides_list.html)
- Cisco Unified Provisioning Manager  
[http://www.cisco.com/en/US/products/ps7125/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7125/prod_installation_guides_list.html)
- Cisco Unified Service Statistics Manager  
<http://www.cisco.com/en/US/products/ps7285/index.html>
- Cisco netManager Unified Communications  
<http://www.cisco.com/univercd/cc/td/doc/systems/unified/uc601/notready.htm>

- Cisco Unified Phone Proxy  
[http://www.cisco.com/en/US/products/ps7057/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7057/prod_installation_guides_list.html)
- Cisco Unified Conferencing for TelePresence  
[http://www.cisco.com/en/US/products/ps7266/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html)
- Cisco Unified IP Phone 7931G/7942/7962/7945/6965/7975  
[http://www.cisco.com/en/US/products/hw/phones/ps379/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html)
- Cisco Unified Application Environment  
[http://www.cisco.com/en/US/products/ps7058/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7058/tsd_products_support_series_home.html)
- Cisco Adaptive Security Appliance:  
[http://www.cisco.com/en/US/products/ps6120/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6120/prod_installation_guides_list.html)
- Cisco Security Monitoring, Analysis, and Response System:  
[http://www.cisco.com/en/US/products/ps6241/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6241/prod_installation_guides_list.html)
- Cisco Remote Monitoring Suite  
[http://www.cisco.com/en/US/products/sw/custcosw/ps2068/tsd\\_products\\_support\\_maintain\\_and\\_operate.html](http://www.cisco.com/en/US/products/sw/custcosw/ps2068/tsd_products_support_maintain_and_operate.html)

## New Components when Upgrading from Cisco Unified Communications System Release 5.1(1)

This section lists components that will be new in your Release 6.0(1) release set when you upgrade from Release 5.1(1). For information about installing and configuring these components, see the documentation for each component at the URL shown.

- Cisco 1751 (voice/data gateway)  
[http://www.cisco.com/en/US/products/hw/routers/ps221/tsd\\_products\\_support\\_install\\_and\\_upgrade.html](http://www.cisco.com/en/US/products/hw/routers/ps221/tsd_products_support_install_and_upgrade.html)
- Cisco Unified Communications Manager Business Edition  
[http://www.cisco.com/en/US/products/ps7273/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7273/prod_installation_guides_list.html)
- Cisco Unified Provisioning Manager  
[http://www.cisco.com/en/US/products/ps7125/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7125/prod_installation_guides_list.html)
- Cisco Unified Service Statistics Manager  
<http://www.cisco.com/en/US/products/ps7285/index.html>
- Cisco netManager Unified Communications  
<http://www.cisco.com/univercd/cc/td/doc/systems/unified/uc601/notready.htm>
- Cisco Unified Phone Proxy  
[http://www.cisco.com/en/US/products/ps7057/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps7057/prod_installation_guides_list.html)
- Cisco Unified Conferencing for TelePresence  
[http://www.cisco.com/en/US/products/ps7266/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html)
- Cisco Unified IP Phone 7931G/7942/7962/7945/6965/7975  
[http://www.cisco.com/en/US/products/hw/phones/ps379/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html)
- Cisco Unified Application Environment  
[http://www.cisco.com/en/US/products/ps7058/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/ps7058/tsd_products_support_series_home.html)
- Cisco Adaptive Security Appliance:  
[http://www.cisco.com/en/US/products/ps6120/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6120/prod_installation_guides_list.html)
- Cisco Security Monitoring, Analysis, and Response System:  
[http://www.cisco.com/en/US/products/ps6241/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps6241/prod_installation_guides_list.html)

## Components Not in Target Release Set

The following components should be removed or replaced with appropriate new components because they are no longer supported in the target release.

- Cisco Unity Bridge
- Cisco Unified Videoconferencing 3511 MCU—Cisco Unified Videoconferencing 3515 MCU
- Cisco Unified Videoconferencing 3521 BRI Gateway—Cisco Unified Videoconferencing Gateway 3522 (ISDN BRI)
- Cisco Unified Videoconferencing 3526 PRI Gateway—Cisco Unified Videoconferencing Gateway 3527 (ISDN PRI)
- Cisco Catalyst 6506, 6509 (Supervisor Engine 32)
- Cisco Catalyst Express 500
- Cisco Fax Server
- Cisco SIP Proxy Server
- Cisco Unified Mobility Manager—Included as part of Cisco Unified Communications Manager 6.0(1).
- Cisco Personal Assistant—Replaced with Cisco Unity



### Note

See the EOS/EOL website for a list of recommended replacements (if any) for the above components: [http://www.cisco.com/en/US/products/prod\\_end\\_of\\_life.html](http://www.cisco.com/en/US/products/prod_end_of_life.html). For Cisco EOS/EOL policy, see the information at: [http://www.cisco.com/en/US/products/products\\_end-of-life\\_policy.html](http://www.cisco.com/en/US/products/products_end-of-life_policy.html).

## System Upgrade Paths

This section provides the general information that required to migrate from a common starting point to the latest Cisco Unified Communications System releases. System releases include the following types of releases:

- Major release—Marks the beginning of a major new release version. This release type typically is based on a major release of at least one of these components: Cisco Unified Call Manager, Cisco Unity, Cisco Unified MeetingPlace, Cisco Customer Response Solutions.
- Minor release—Adds features and fixes to an existing major release. This release type can consist of revisions to existing components and new versions of components.
- Maintenance release—Contains bug fixes for one or more of the components. This release type is based on an existing major or minor release.

## Upgrading from IPC Systems Test Release Sets

If you plan to upgrade from an IPC Systems Test release set to the Cisco Unified Communications System release set, be aware of the following possible upgrade paths.



### Note

You can access a complete listing of all the IPC Systems Test releases at: [http://www.cisco.com/univercd/cc/td/doc/product/voice/ip\\_tele/gblink/ipcmatrix.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/ip_tele/gblink/ipcmatrix.htm)

- Major IPC System Test to Minor IPC System Test. For example, System Test 4.0 to 4.1 (indicated by horizontal arrow in Figure 4-1).
- Minor IPC System Test to Minor IPC System Test. For example, System Test 4.1 to 4.2. (indicated by horizontal arrow in Figure 4-1)
- Minor IPC Systems Test to Major Cisco Unified Communications System. For example, from System Test 4.1 to Unified Communications 5.0. (indicated by vertical arrow in Figure 4-1)
- Minor IPC Systems Test to Minor Cisco Unified Communications System. For example, from System Test 4.2 to Unified Communications 5.1(1). (indicated by vertical arrow in Figure 4-1)

See Figure 4-1 for a representation of the above upgrade paths.



**Note**

The horizontal arrows represent the upgrade paths within an individual release. The vertical arrows indicate the upgrade paths from one release to the next.

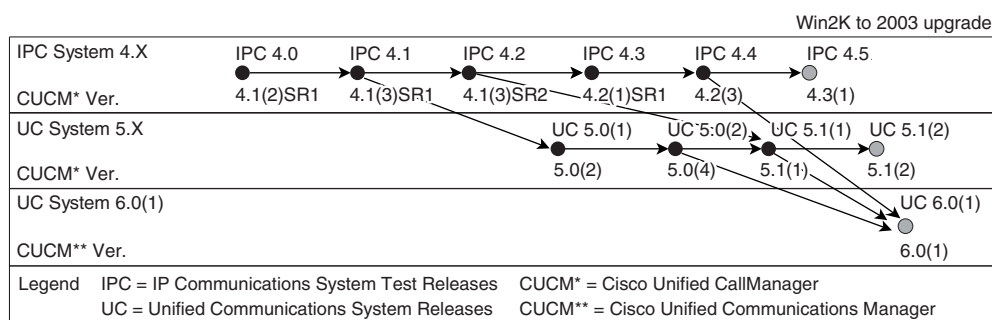
## Upgrading from Cisco Unified Communications System Release Sets

If you plan to upgrade from an Cisco Unified Communications System release set, be aware of the following possible upgrade paths:

- Major Cisco Unified Communications System to minor Cisco Unified Communications System
- Major Cisco Unified Communications System or minor Cisco Unified Communications System to Cisco Unified Communications System maintenance release. For example, Cisco Unified Communications System Release 5.0 to Release 5.0(2).
- Cisco Unified Communications System maintenance release to minor Cisco Unified Communications System. For example, Cisco Unified Communications System Release 5.0(2) to Release 6.0(1).

See Figure 4-1 for a representation of some of the upgrade paths.

**Figure 4-1 Upgrade Paths for IPC Systems Test and Cisco Unified Communications System Releases**



## Upgrade Paths to Cisco Unified Communications System Release 6.0(1)

The following upgrade paths are available in Cisco Unified Communications System Release 6.0(1) for IP telephony environments:

- Minor IP Communications Systems Release 4.4 to major Cisco Unified Communications System Release 6.0(1)
- Maintenance release Cisco Unified Communications System Release 5.0(2) to major Cisco Unified Communications System Release 6.0(1)
- Maintenance release Cisco Unified Communications System Release 5.1(1) to major Cisco Unified Communications System Release 6.0(1)



### Note

We recommend using IP Communications Systems Release 4.4 and Cisco Unified Communications System Release 5.1(1) as your starting releases for the upgrade to Cisco Unified Communications System Release 6.0(1).

## System Upgrade Strategies

This section discusses the upgrade strategies for all components in the target release deployment scenarios. Details of individual components upgrades are not described unless additional information or clarification is required.

The following upgrade strategies are available for use when upgrading to the target release:

- Single-stage upgrade using existing hardware (flash-cut)—All components in the network start at the base release set and all components can be upgraded to the target release set within a single maintenance window.
- Single-stage upgrade using new hardware (either flash-cut or shrink-and-grow)—A parallel network should be built using new hardware and prestaged with configuration to support the existing production network.

All users can then be moved from the existing production network to the new network in either of these ways:

- In a single maintenance window using a flash-cut upgrade process
- In several maintenance windows using a shrink-and-grow upgrade process (where a single maintenance window is used to implement the new release versions on the new hardware, but multiple windows are used to migrate the users)



### Note

We recommend that you do not use backup and restore procedures to perform the prestaged configuration on the parallel network. In many applications, you are required to use the same hostname and IP address for the backup and the restore process. This approach can prevent you from creating a truly parallel network, as two systems cannot exist on the same network with identical hostnames and IP addresses. However, there are exceptions. For example, when upgrading a Unified Communications Manager system from IP Communications System Test 4.x release set to Cisco Unified Communications System 6.0(1), the Data Migration Assistant (DMA) allows you to use a different hostname and IP address when doing the prestaged configuration on the parallel network.

The upgrade strategies involving the single-stage upgrade approach are appropriate for small sites (fewer than 300 seats) with a smaller number of components in the network.

- Multistage system upgrade using existing hardware (hybrid system)—The components in individual sites can be upgraded from the base release set software to the target release set software in stages, during separate maintenance windows.

At the completion of each intermediate stage, the network within each site exists as a *hybrid system* with a mix of the following:

- Some components are operating on the base release set
- Other upgraded components are operating on the target release set

**Note**

*Hybrid system* refers to interproduct versions, not to intraproduct versions. For example, all Unified Communications Manager servers in the same cluster will remain at the same software release version.

The multistage system upgrade approach is recommended for medium-to-large sites (ranging from 301 to 1,499 seats for medium and 1,500 to 4,999 seats for large) with a greater number of components in the network.

- Multisite migration (via hybrid network with release set interworking)—Components are upgraded from the base release set software to the target release set software on a site-by-site basis during separate maintenance windows.

At the completion of each maintenance window, a *hybrid network* exists within the multiple sites with a mix of the following:

- Sites whose components are operating on the base release set
- Sites whose components are operating on the target release set
- Sites whose components are a hybrid system as described in [Multistage System Upgrade Using Existing Hardware \(Hybrid System\)](#)

This model assumes that sites may be upgraded independently. However, with the multisite migration strategy, you must account for distributed applications with shared components among sites. For example, if you have deployed a Cisco Emergency Responder supporting multiple Unified Communications Manager clusters, Centralized TFTP clusters, or a Unified Communications Manager cluster using Clustering-over-WAN (CoW), then these sites must be upgraded concurrently.

Users can be moved in stages from the existing production network to the new network operating on the target release set software.

The multisite migration strategy is recommended for large multisite environments (more than 5000 seats) with a large number of components in the network.

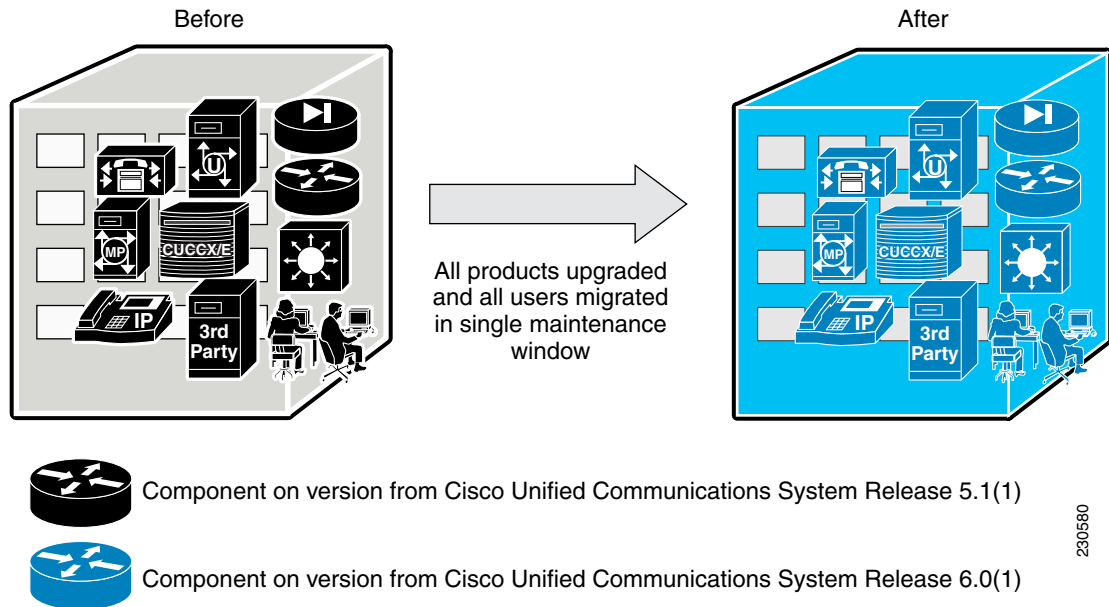
## Single-Stage Upgrade Using Existing Hardware

All components in the network start at the base release set and all components are upgraded to the target release set software within a single maintenance window. Since all components are upgraded within a single maintenance window, interoperability is not required between the base and target release sets.

The single-stage upgrade on existing hardware approach is typically not recommended for large sites and networks, since it has to be performed within a single maintenance window.

Figure 4-2 shows an example of the single maintenance window that is involved in the single-stage upgrade on existing hardware approach.

**Figure 4-2 Single-Stage Upgrade Using Existing Hardware**



## Single-Stage Upgrade Using New Hardware

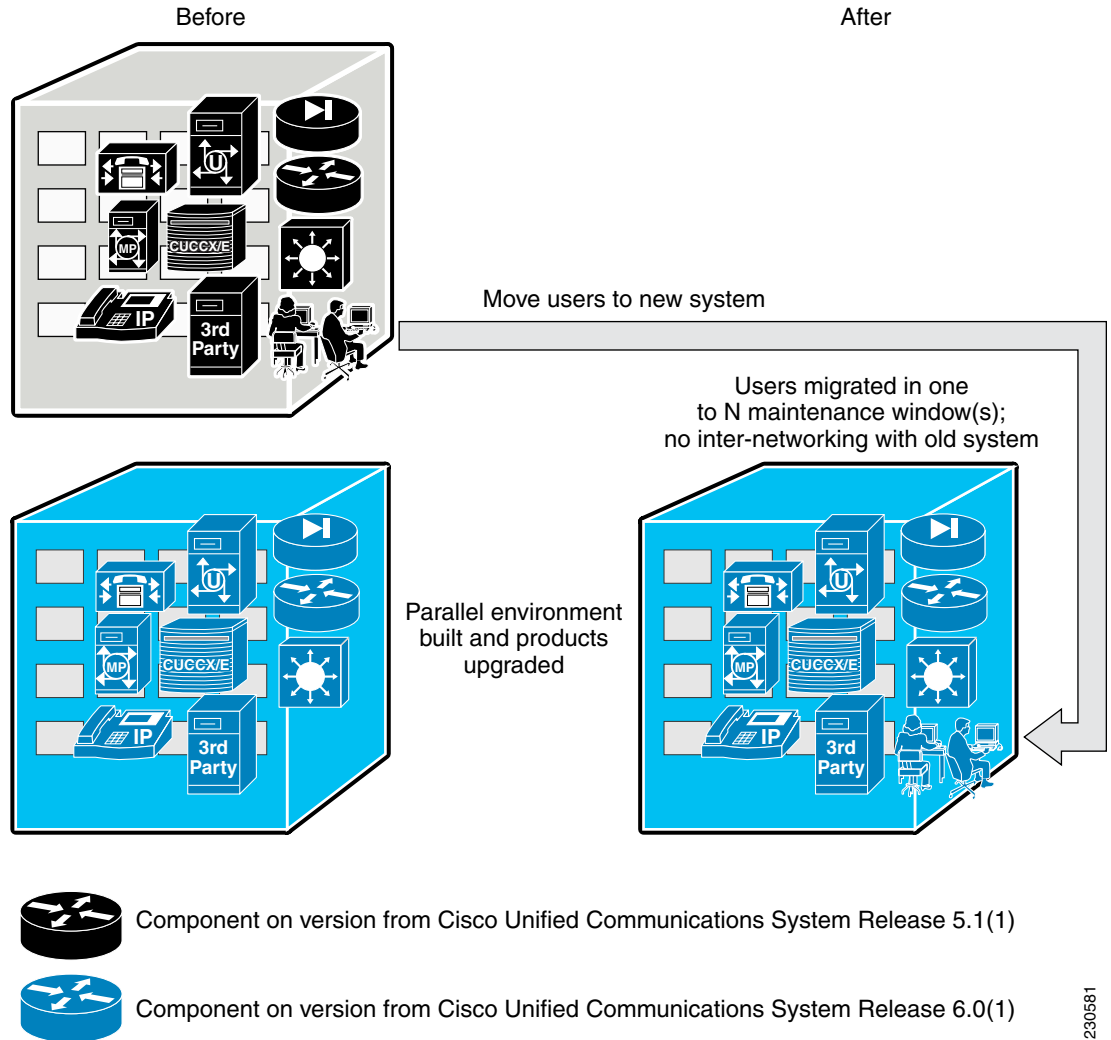
A parallel Cisco Unified Communications System network should be built using new hardware and prestaged with configuration to support the existing production network. All users can be then moved from the existing production network to the new network operating with the target release set software either in a single maintenance window (using flash-cut) or in several maintenance windows (using shrink-and-grow).

The single-stage upgrade on new hardware approach is not recommended for large sites and networks for the following reasons:

- The upgrade cannot be performed within a single maintenance window.
- The expense of a complete new parallel network is significant.

Figure 4-3 shows an example of the maintenance windows that are involved in the single-stage upgrade on new hardware approach.

Figure 4-3 Single-Stage Upgrade Using New Hardware



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## Multistage System Upgrade Using Existing Hardware (Hybrid System)

Individual components and/or sites can be upgraded in stages, from the base release set software to the target release set software, during separate maintenance windows. At the completion of each intermediate stage, the individual site exists as a *hybrid system* with a mix of the following:

- Some components operating on the base release set software
- Other upgraded components operating on the target release set software

The multistage system upgrade on existing hardware is the recommended approach for medium-to-large networks. In this case, individual components within a single site and/or individual sites in a multisite environment are progressively upgraded over the span of several days or weekends.

This type of staging is required because:

- Sufficient time may not be available (maintenance window) to take the system out of service for the complete upgrade of all the components involved.
- You must test existing functionality following the upgrade.
- You must test new functionality following the upgrade.

You can view a staged upgrade as a series of maintenance windows separated by intermaintenance window intervals. During each maintenance window, one or more components of the system or a subset of the components is upgraded.

Businesses typically have a maintenance window during which service disruptions are likely to cause minimal disruption and affect only a limited number of users, for example, during the night or during a weekend.

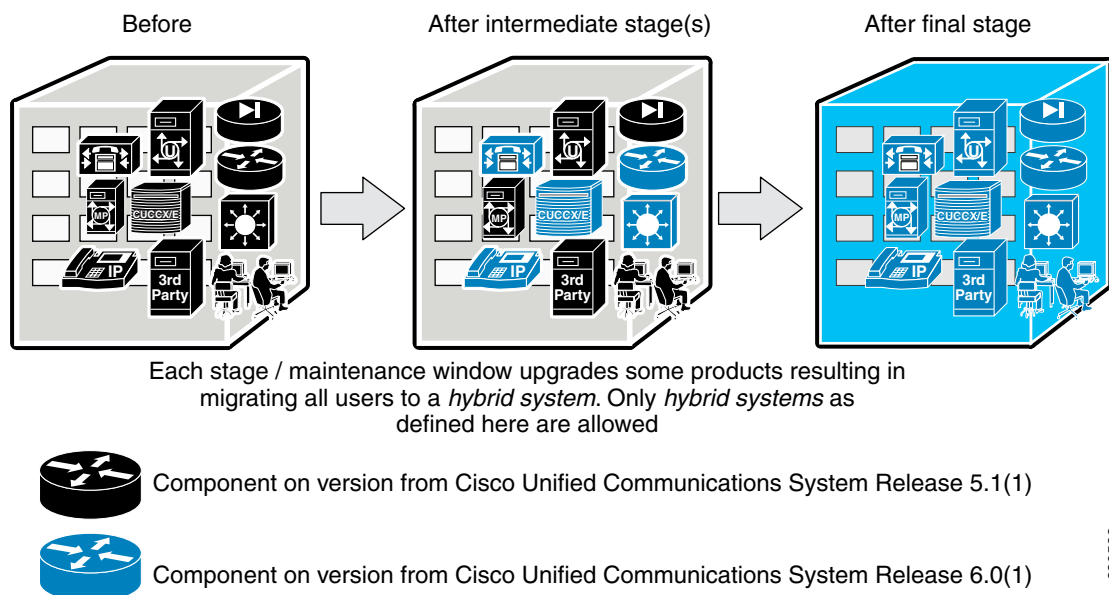
Before the staged upgrade is completed, the whole network exists in a partially upgraded state where some components have been upgraded to the target release set software and the remaining components are operating with the base release set software.

Backward compatibility of the components is critical during the staged upgrade, so that target release set components are able to interoperate with the base release set components. If any component is not backward compatible, this can potentially result in prolonged periods of service outage spanning several maintenance windows (possibly several weeks).

Therefore, during multistage upgrades, it is mandatory to have interoperability between the base and target release set software versions. For more information about software and backward compatibility considerations, see [Chapter 5, “Preparing for Your System Upgrade.”](#)

[Figure 4-4](#) shows an example of the maintenance windows that are involved in the multistage system upgrade on existing hardware approach.

**Figure 4-4 Multistage System Upgrade Using Existing Hardware (Hybrid System)**



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## Multisite Migration (Hybrid Network)

Components are upgraded from the base release set to the target release set on a site-by-site basis during separate maintenance windows.

At the completion of each maintenance window, a *hybrid network* will exist across multiple sites. Within each site, either a single-stage or multistage system upgrade strategy can be used to upgrade that particular site's components from the base to the target release set.

Interworking can be expected among sites with *pure* base release set versions and sites with *pure* target release set versions as shown in [Figure 4-5](#). However, interworking will not be possible between these *pure* sites and *hybrid system* sites. For more information about software and backward compatibility considerations, see [Chapter 5, "Preparing for Your System Upgrade."](#)



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**Note**

A component that is common to multiple sites, such as a shared Cisco Emergency Responder, may affect the interoperability itself, the order in which sites may be upgraded, or which sites must be upgraded concurrently.

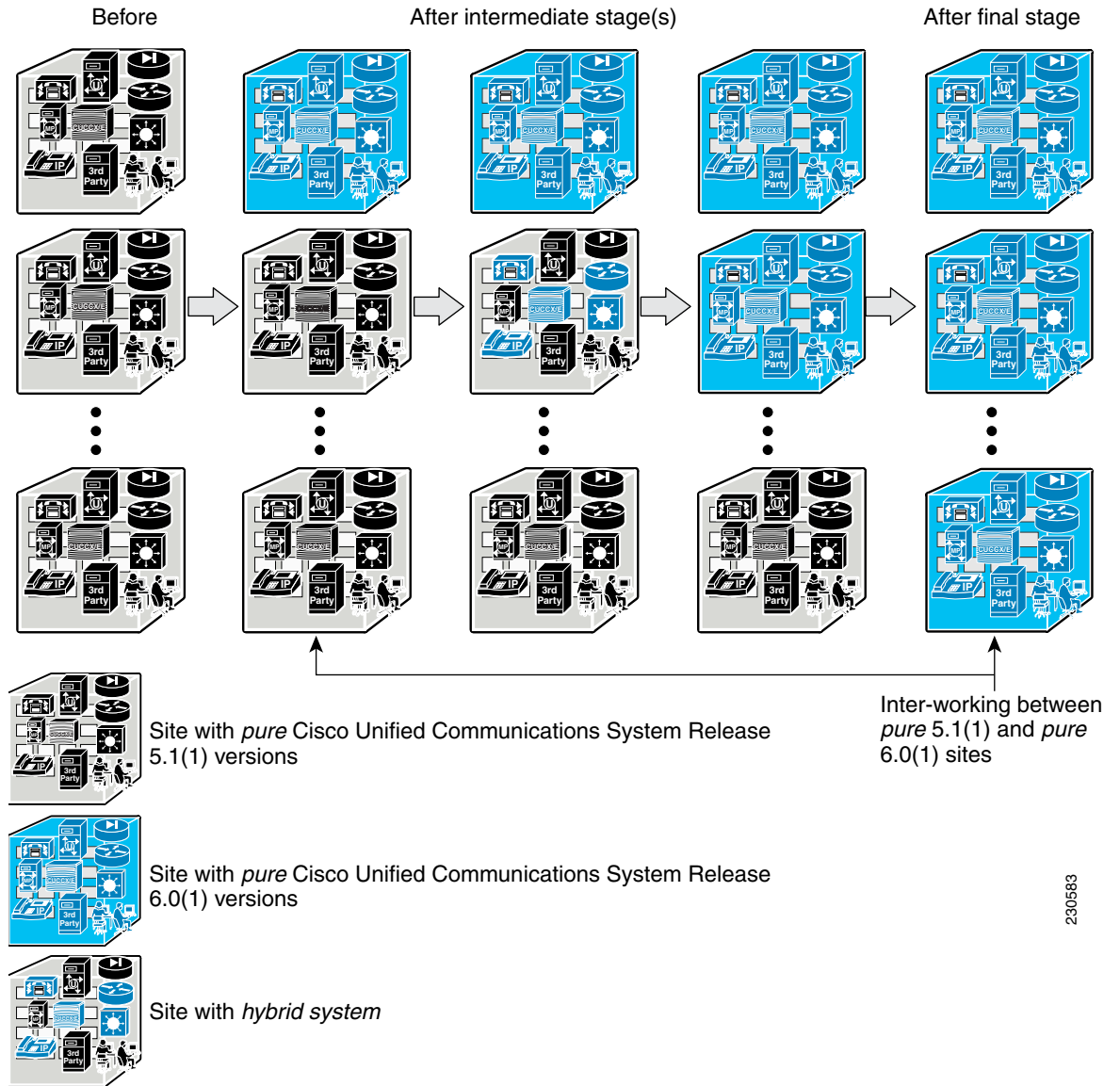
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Users can be moved in stages from the existing production network to the new network operating with the target release set software. The number of users on the existing base network will shrink while the number on the target network will grow correspondingly.

This migration process can span several weeks and, sometime months, if necessary. During this upgrade approach, it is essential that the two networks, existing and new, be able to communicate with each other.

Figure 4-5 shows an example of the maintenance windows that are involved in the multisite migration approach.

Figure 4-5 Multisite Migration



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Table 4-2 provides a summary of the upgrade strategies.

**Table 4-2 Summary of Upgrade Strategies**

	<b>Single-Stage Upgrade</b>	<b>Multistage System Upgrade</b>	<b>Multisite Migration Upgrade</b>
<b>Type of deployment</b>	<ul style="list-style-type: none"> <li>• Small single-site</li> <li>• Small multisite (fewer than 300 seats)</li> </ul>	<ul style="list-style-type: none"> <li>• Medium single-site</li> <li>• Medium multisite (301–1,499 seats)</li> <li>• Large single-site (1,500–4,999 seats)</li> </ul>	<ul style="list-style-type: none"> <li>• Large multisite (5,000 or more seats)</li> </ul>
<b>Maintenance window (MW)</b>	1	Multiple	Multiple
<b>Interoperability between releases at component level</b>	Not required	Required	Required
<b>Interoperability between releases at site level</b>	Not required	<ul style="list-style-type: none"> <li>• Medium single-site— Not required</li> <li>• Large single-site— Not required</li> <li>• Medium multisite— Required</li> </ul>	Required
<b>User migration</b>	Complete in one stage	Partial until final stage	Partial until final stage
<b>Upgrade time</b>	One time slot, for example, during a weekend maintenance window	Several days to weeks	Several weeks to months





## CHAPTER 5

# Preparing for Your System Upgrade

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This topic discusses information to be aware of before performing actual upgrade process, such as the general upgrade approach for the different components, upgrade release versions of components involved in the upgrade, and release version compatibility.

This topic contains the following sections:

- [System Upgrade Approach](#)
- [System Upgrade Dependencies](#)
- [Upgrade Release Versions](#)



### Note

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## System Upgrade Approach

The general approach is to upgrade each Cisco Unified Communications Manager cluster and its associated IPT components one at a time before upgrading the next cluster.

For each cluster, upgrade the components of the Cisco Unified Communications System solution in the following order:

1. Infrastructure components, including Catalyst 6500/6000 switches, routers, and security components. These components should be upgraded first to ensure that the infrastructure is able to support the services required by Cisco Unified Communications System components.
2. Call processing components, such as Cisco Unified Communications Manager Express and Unified Communications Manager clusters
3. PSTN Gateways
4. Cisco gatekeepers (for multisite distributed deployment models)
5. Application servers including Cisco Unity components (Security applications are not included)
6. Application clients including Cisco Unified Video Advantage and others.

See [Chapter 6, “Performing Your System Upgrade”](#) for detailed information about the order in which components have to be upgraded.

The upgrade sequence of the IPT components should be dictated by the following considerations:

- The criticality of the service that these components provide. For example, basic phone service is considered to be of greater importance than supplementary services or voice messaging services.
- Backward compatibility of the software releases of these components.

The [Upgrade Release Versions](#) section describes, for each base release set, whether components need to be upgraded before or after upgrading Unified Communications Manager, or if the upgrade order does not matter.

## System Upgrade Dependencies

Components within each release set are compatible with each other and will interoperate correctly. For example, components in a specific base release set are compatible with each other and will interoperate, and components in the target release set are compatible with each other and will interoperate.

The order of operations also needs to take into account the affect of backward compatibility or incompatibility, especially for Multistage System and Multisite Migration upgrades, where each stage (or maintenance window) upgrades only some of the components in the release set. Additional backward compatibility information is provided later in this section.

As you upgrade individual components of the integrated system, the overall system may operate in a state of degraded service when some components have been upgraded to the next release level and do not interoperate with components that are still at the previous release level.

Components that are upgraded first should interoperate with other components that are still at the previous release level. For example, Unified Communications Manager is upgraded before the gateways. Therefore, Unified Communications Manager, when at the next release level, must interoperate with the gateways that have not been upgraded and are still at the previous release level. For additional compatibility information, see the [Upgrade Release Versions](#) section.

## Cisco Unified Communications Manager Upgrade and Compatibility Considerations

Because Cisco Communications Manager is upgraded early in the upgrade sequence, it must be compatible with other components running Cisco Unified Communications software release versions.

### Upgrading from Cisco Unified Communications Manager Release 4.x to Cisco Unified Communications Manager Release 6.0(1)

Be aware of the following constraints regarding Cisco Unified Communications Manager when you upgrade from IPC Systems Test Release 4.2 to Cisco Unified Communications System Release 6.0(1):

- When you upgrade your servers from the Cisco IP Telephony Operating System, upgrade all your systems to Win2000.4.4a and to the latest service releases.



#### Note

We make this recommendation because it can take significant time to roll back to the Windows-based Cisco Unified Communications Manager 4.x version if the upgrade process encounters a problem.

- Only software that is approved by Cisco Systems can be uploaded and processed by the system installer. Third-party or Windows-based software applications that you may have been using with a previous Unified Communications Manager 4.x version cannot be installed or used with the current Unified Communications Manager 6.0(1) release version.
- Before you perform an upgrade, we recommend that you back up the Unified Communications Manager and Call Data Record (CDR) database to an external network directory using the Backup and Restore System (BARS). This practice will prevent any loss of data if the upgrade fails.
- If Unified Communications Manager clusters are set up in a 1:1 redundancy model, downtime during upgrade can be kept to a minimum. You can do this by load-balancing device registrations across primary and backup subscribers. This way if either subscriber server fails or is taken down for maintenance, only half of the devices will have to failover to the remaining subscriber, but will ensure that all devices can remain in service.
- CRS 4.0(4)SR1 does not support Unified Communications Manager 6.0(1) and CRS 5.0 does not support Unified Communications Manager 4.2(3). To avoid a long service outage you must perform a fresh install of the Cisco CRS system in the same maintenance window *after* upgrading Unified Communications Manager and its components.
- Unified MobilityManager functionality has been ported as native Unified Communications Manager 6.0(1) functionality and standalone Unified MobilityManager is not supported with Unified Communications Manager 6.0(1). To migrate Unified MobilityManager data to Unified Communications Manager 6.0(1) Integrated Mobility, upgrade standalone Unified MobilityManager to release 1.2(5). Then export data using the Feature Data option from the Export Menu. Exported data can be imported to Unified Communications Manager 6.0(1) using BAT after upgrading to Unified Communications Manager 6.0(1).
- For Cisco IP Communicator 2.1(x), the following features are supported:
  - SIP functionality
  - Unified IP Phones 8.0(4) phone features
- Cisco Unified MeetingPlace Video Integration supports both:
  - Cisco Unified Videoconferencing MCU 3540 4.x versions, which do not provide the cascading MCUs (virtual) feature that enables the use of multiple EMPs in a single meeting.
  - Cisco Unified Videoconferencing MCU 3545 5.x versions, which provide the virtual MCU feature.

If you do not require the virtual MCU feature, you do not need to upgrade your hardware and software to the Cisco Unified Videoconferencing MCU 3545 5.x version.



**Note** Supported MCU hardware platforms and versions are listed at:  
[http://www.cisco.com/en/US/prod/collateral/video/ps7190/ps1870/ps6963/product\\_data\\_sheet0900aecd804bbfc0.html](http://www.cisco.com/en/US/prod/collateral/video/ps7190/ps1870/ps6963/product_data_sheet0900aecd804bbfc0.html)

- When you upgrade the Unified Communications Manager servers, note that the Unified IP Phone software is upgraded automatically to the version included with Unified Communications Manager.

## Upgrading from Cisco Unified Communications Manager 5.x to Cisco Unified Communications Manager Release 6.0(1)

Be aware of the following constraints regarding Cisco Unified Communications Manager when you upgrade from Cisco Unified Communications System Release 5.0(2) or Release 5.1(1) to Release 6.0(1):

- For Unified Communications Manager, you must perform all software installations and upgrades using the Software Upgrade Menu Options. Only software approved by Cisco Systems can be uploaded and processed by the system installer.
- Before you perform an upgrade, we recommend that you back up the Unified Communications Manager and CDR Analysis and Reporting (CAR) database to an external network directory using the Disaster Recovery Framework. This practice prevents any loss of data if the upgrade fails.
- If Unified Communications Manager clusters are set up in a 1:1 redundancy model, downtime during upgrade can be kept to a minimum by load-balancing device registrations across the first node (primary) and backup subsequent nodes (subscribers). This way, if either the subsequent node server fails or is taken down for maintenance, only half of the devices fail over to the remaining subsequent nodes, but all devices remain in service.
- Both CRS 5.0(1) and the Windows 2003 Server operating system must be newly installed, but a migration path exists for migrating data. You must install the CRS system *after* upgrading Unified Communications Manager and its components.
- When you upgrade Unified Communications Manager clusters, the first node should always be upgraded first. Before rebooting the first node after its upgrade, upgrade all the subsequent nodes simultaneously, without rebooting them.

After all nodes in the cluster are upgraded, take these actions in the order shown:

1. Reboot and switch versions to Unified Communications Manager 6.0(1) on the first node and wait until that node is initialized and fully operational.
2. Install the upgrade license and any other licenses that are required.
3. Reboot and switch versions to Unified Communications Manager 5.1(1). Perform this procedure on the TFTP and Music-On-Hold (MOH) servers first.
4. Wait until the TFTP servers fully build their configuration files.
5. Reboot and switch versions to Unified Communications Manager 6.0(1) on the subsequent backup and call processing servers and wait until these servers are fully initialized.
6. Complete the upgrade by rebooting and switching versions to Unified Communications Manager 6.0(1) on the remaining active call processing servers in the cluster.



### Note

For additional details about recommended upgrade procedures, see the “Call Processing” chapter in *Cisco Unified Communications SRND based on Cisco Unified Communications Manager 6.x*:

[www.cisco.com/go/srnd](http://www.cisco.com/go/srnd)

- When you upgrade the Unified Communications Manager servers, note that the Unified IP Phone software is also automatically upgraded to the version included with Unified Communications Manager.
- For Cisco IP Communicator 2.01(x), the following features are supported:
  - SIP functionality

- Unified IP Phones 8.0(4) phone features
- In a mixed Cisco Communications Manager and Unified Communications Manager environment (where clusters are running 4.x and 5.x versions) with Cisco Emergency Responder clustering, you must upgrade Cisco Emergency Responder 2.0.
- Cisco Unified MeetingPlace Video Integration supports:
  - Cisco Unified Videoconferencing MCU 3540 4.x releases, which do not provide the cascading MCU (virtual) feature that enables the use of multiple EMPs in a single meeting.
  - Cisco Unified Videoconferencing MCU 3545 5.x releases, which provide the virtual MCU feature.

If you do not require the virtual MCU feature, you do not need to upgrade your hardware and software to the Cisco Unified Videoconferencing MCU 3545 5.x release.



**Note** Supported MCU hardware platforms and versions are listed at:  
[http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod\\_brochure0900aecd8062a4f9.html](http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html)

- If your voice messaging system is running Cisco Unity Release 4.2 and TSP 8.1(3), the following phones or combinations of phones are supported:
  - With SIP trunk integration—Cisco Unity supports only SIP Phones with the Unified Communications Manager phone system.
  - With SCCP integration—Cisco Unity supports:
    - Only SCCP Phones for the Unified Communications Manager phone extensions.
    - Both SCCP and SIP Phones for the Unified Communications Manager extensions with or without a media termination point (MTP) on the Cisco Unified Communications Manager server.

## Customer Response Solutions Considerations

For CRS 5.0, be aware of the following:

- CRS is implemented as a standalone server.
- CRS 5.0 supports only an upgrade from CRS 4.5(x).
- You cannot upgrade to CRS 5.0 from CRS Releases 3.1, 3.5 or 4.0. Only a fresh install of CRS 5.0 is supported. As a result, CRS 5.0 does not support data migration of configuration, scripts, and agent information from CRS Releases 3.1, 3.5, or 4.0. You must manually rebuild existing configurations and CRS scripts on the freshly installed CRS 5.0 server.

## Cisco Unified IP Phones Considerations

When you upgrade Unified Communications Manager servers, note that the Unified IP Phone firmware also is upgraded automatically to the version included with the Unified Communications Manager

For more detailed information about SIP Unified IP Phones and the differences between features on the SCCP and SIP phones, see the following documentation:

- Cisco 7900 Series IP Phones Maintain and Operate Guides:  
[http://www.cisco.com/en/US/products/hw/phones/ps379/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/phones/ps379/prod_maintenance_guides_list.html)

- Cisco 7900 Series IP Phones End-User Guides:  
[http://www.cisco.com/en/US/products/hw/phones/ps379/products\\_user\\_guide\\_list.html](http://www.cisco.com/en/US/products/hw/phones/ps379/products_user_guide_list.html)
- “IP Telephony Endpoints” chapter in *Cisco Unified Communications SRND based on Cisco Unified Communications Manager 6.x*:  
[www.cisco.com/go/srnd](http://www.cisco.com/go/srnd)

## Backward Compatibility Issues

In Multistage System upgrade scenarios, you may have to consider additional issues such as backward compatibility across components.

A version of one component is backward compatible with a previous version of another component when service functionality and behavior are maintained between the two component versions. Backward compatibility between two components or applications may limit the order of upgrade of the components and cause service outage during upgrades.

If two components are upgraded during separate maintenance windows, as in the Multistage System or Multisite Migration upgrade scenarios, the whole system exists in a partially upgraded state in the interval between the two maintenance windows.

The service capability during the period between maintenance windows depends on backward compatibility between the two components, as discussed in this section. If the two components are not backward compatible, service outages occur in the interval between the two maintenance windows.

Some backward compatibility situations that are described in [Backward Compatibility Scenarios](#) may occur during the upgrade process. For more information, see the component compatibility matrices that are listed in [Compatibility Guides](#).

## Backward Compatibility Scenarios

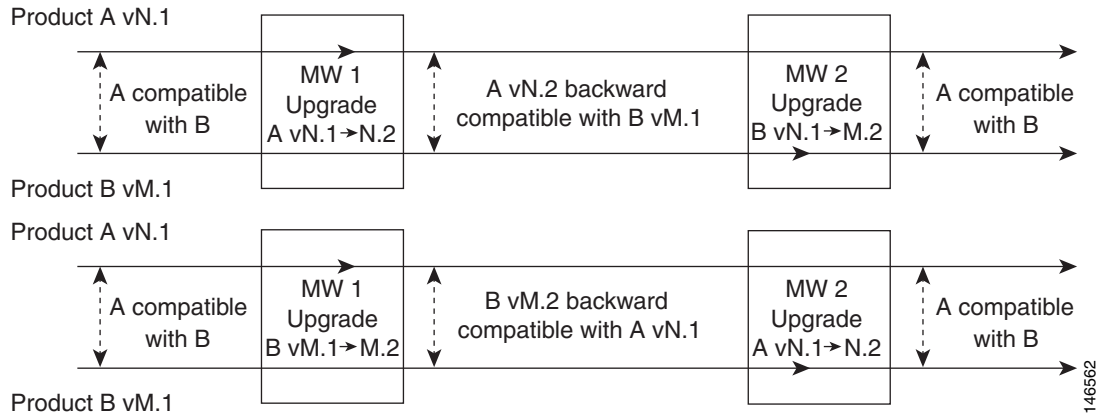
This section describes the various backward compatibility scenarios.

### Both New Versions are Backward Compatible

It is possible for versions of two components to each be backward compatible with the previous version of the other component, for example Unified MeetingPlace and Unified Communications Manager. In this case, there is no backward compatibility restriction on the order of upgrades. Either component may be upgraded first and will be able to interoperate with the other component as illustrated in [Figure 5-1](#).

You can perform the upgrade for these components across multiple maintenance windows. This type of upgrade is described in the Multistage System and Multisite Migration upgrade approaches in [Chapter 4](#), “[Planning Your System Upgrade](#).”

**Figure 5-1 Both New Release Versions Are Backward Compatible**



**Only One New Version is Backward Compatible**

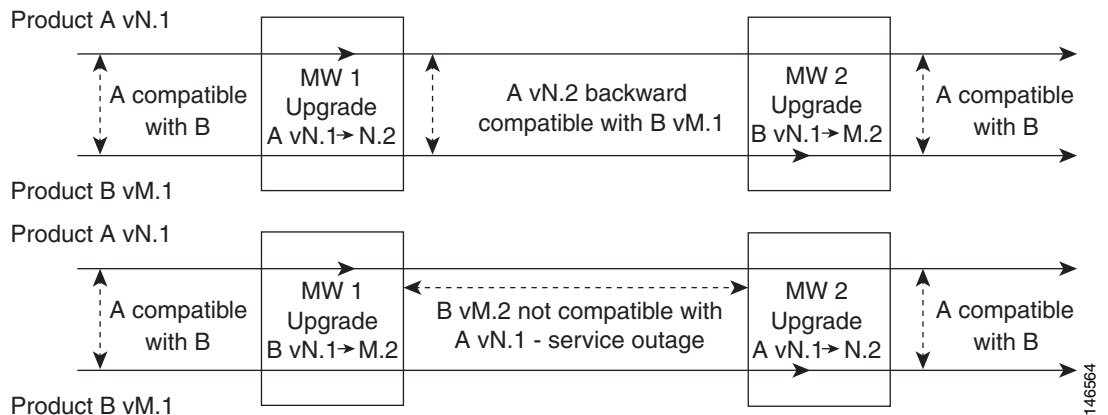
It is possible that only one of the new versions is backward compatible with the previous version of the other component. There are no components that fit this model.

In this case, the component that is backward compatible should be upgraded first to avoid a service outage during the upgrade, as illustrated in Figure 5-2.

For example, because Unified MobilityManager 1.1(1) does not support Unified Communications Manager 6.0(1), the upgrade from Unified MobilityManager 1.1(1) to 1.2(3) must be performed *after* the upgrade from Cisco Communications Manager 4.1(3) to Unified Communications Manager 6.0(1).

You should perform the upgrade for these components across two separate maintenance windows. This type of upgrade is described in the Multistage System and Multisite Migration upgrade approaches in Chapter 4, “Planning Your System Upgrade.”

**Figure 5-2 One New Release Version is Backward Compatible**



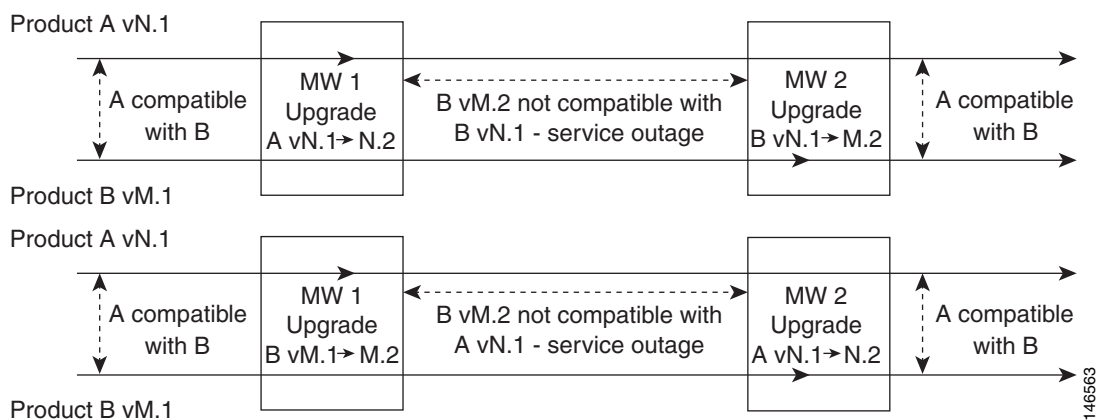
## Neither New Version is Backward Compatible

It is possible that neither of the new versions is backward compatible with the previous version of the other component, as with CRS and Unified Communications Manager.

In this case, a service outage exists from the time the first product is upgraded until the second component is upgraded, as shown in [Figure 5-3](#).

For example, CRS 4.0(2) does not support Unified Communications Manager 6.0(1) and CRS 5.0(1) does not support Cisco Communications Manager 4.x. Because neither component is backward compatible with the other, both components must be upgraded in the same maintenance window to avoid a service outage. This upgrade is described in the Single-Stage upgrade approach in [Chapter 4](#), “[Planning Your System Upgrade](#).”

**Figure 5-3** Neither New Release Version is Backward Compatible



## Upgrade Release Versions

The tables in this section list the component release versions of the base and target release sets and provide additional compatibility and upgrade sequence information in relation to Unified Communications Manager 6.0(1).

The tables include this information:

- Column 1—IPT components involved in the upgrade process.
- Column 2—Release versions of components in the base release set.
- Column 3—Release versions of components in the target release set.
- Column 4—Whether the contact center component in the base release set is compatible with the version of Unified Communications Manager in the target release.
- Column 5—Upgrade order for the contact center component in relation to Unified Communications Manager. “Any” means that the component can be upgraded either before or after upgrading Unified Communications Manager.

## Release 4.4 Release and Release 6.0(1) Software Release Sets

Table 5-1 lists the software versions for IPT components in the IPC Systems Test Release 4.4 and Cisco Unified Communications Release 6.0(1) release sets.

**Table 5-1** IPT Components in Cisco Unified Communications System Release 4.4 and Release 6.0(1) Release Sets

Cisco Unified Communications System Component Name	Release 4.4 Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Communications Manager	4.2(3)	6.0(1)	Yes <sup>1</sup>	—
Cisco Unified Communications Manager—Cisco IP Telephony Operating System	2000.4.4a SR5	Bundled with Unified Communications Manager	—	—
Cisco Customer Response Solutions (Cisco Unified Contact Center Express)	4.0(4) SR1	5.0(1)SR1	No	Perform a fresh install of CRS in the same maintenance window as Unified Communications Manager after upgrading Unified Communications Manager
Cisco Customer Response Solutions (IPCC Express)—Cisco IP Telephony Operating System	2000.4.4a SR5	OS 2003.1.1SR4	—	—
Cisco Emergency Responder	1.3(1a)	2.0(1)	Yes	After Unified Communications Manager
Cisco Unified Presence	Not used	6.0(1)	—	After Unified Communications Manager
Cisco Unity, Unity CM-TSP	4.2.1 / 8.1(3)	5.0, 8.1(3)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager  Upgrade Unity after Unified Communications Manager

**Table 5-1** *IPT Components in Cisco Unified Communications System Release 4.4 and Release 6.0(1) Release Sets (continued)*

<b>Cisco Unified Communications System Component Name</b>	<b>Release 4.4 Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco Unity, Microsoft Exchange	Microsoft Exchange 2000 SP4 and Microsoft Exchange 2003 SP2	Microsoft Exchange 2003 SP2 (on Cisco Unity and partner Exchange servers) and Microsoft Exchange 2000SP3 or Exchange 2003SP2 (on other message store servers)	—	Part of Unity upgrade
Cisco Unity, IBM / Lotus Domino <sup>2</sup>	7.0 with DUC 1.2.3	7.0 with DUC 1.2.3	Yes	Part of Unity upgrade
Cisco Unity Bridge	3.1(1)	Not used <sup>3</sup>	—	—
Cisco Unity Bridge operating system	Win2003	Not used	—	—
Cisco Unity Express	2.3(1)	3.0(1)	Yes	After Unified Communications Manager
Cisco Unity Connection	1.2(1)	2.0(1)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager  Upgrade Unity after Unified Communications Manager
Cisco Unified MeetingPlace Express	1.1(2)	2.0.1	Yes	Any
Cisco Unified MeetingPlace	5.3	6.0	Yes	Any
Cisco Unified Conferencing for TelePresence	Not used	1.1	Yes	Fresh install after Unified Communications Manager upgrade
Cisco Unified Communications Manager Express	3.3 / IOS 12.4(7b)	4.1/IOS 12.4(15)T, 4.2/IOS 12.4(11)XW21 <sup>4</sup>	Yes	Any
Cisco Unified Survivable Remote Site Telephony (SRST)	3.3 / 12.4(7b)	4.1 / IOS 12.4(15)T	Yes	Any

**Table 5-1 IPT Components in Cisco Unified Communications System Release 4.4 and Release 6.0(1) Release Sets (continued)**

Cisco Unified Communications System Component Name	Release 4.4 Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Videoconferencing Multipoint Control Unit (MCU) 3511 with integrated Enhanced Media Processor (EMP) <sup>2</sup>	MCU 4.1.9 / EMP 3.1.2	Not used	—	—
Cisco Unified Videoconferencing Gateway 3521 (ISDN BRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any
Cisco Unified Videoconferencing Gateway 3526 (ISDN PRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any
Cisco 1751 (voice/data gateway)	12.4(7b)	12.4T P16	—	—
Cisco 1760 (voice/data gateway)	12.4(7b)	12.4T P16	—	—
Cisco Unified Videoconferencing MCU 3540	4.0.31	4.2.10	Yes	Any
Cisco Unified Videoconferencing MCU 3545	Not used	5.1.0.0.24	—	New install after Unified Communications Manager upgrade
Cisco 2610XM, 2611XM, 2620XM, 2621XM, 2650XM, 2651XM, 2691 (router)	12.4(7b)	12.4(15)T1	Yes	Any
Cisco 2801, 2821, 2851, 3825, 3845 (router, voice/data gateway)	12.4(7b)	12.4(15)T	Yes	Any
Cisco 3660 (voice/data gateway)	12.4(7b)	Not used	—	—
Cisco 3725 (gatekeeper)	12.4(7b)	Not used	—	—
Cisco 3745 (gatekeeper)	12.4(7b)	12.4(15)T	Yes	Any
Cisco 3725, 3745 (voice/data gateway)	12.4(7b)	12.4(15)T	Yes	Any
Cisco 3725, 3745, 3825 (SRTP and Secure SRST gateways)	12.4(7b) / Advanced Enterprise Services package	12.4(15)T	Yes	Any
Cisco 7206VXR (voice/data gateway)	12.4(7b)	12.4(15)T	Yes	Any
Cisco Catalyst 3500XL (access switch)	12.0(5)WC13	12.0(5)WC17	Yes	Any
Cisco Catalyst 3550 (access switch)	12.1(25)SEC2	12.2(25)SEE3	Yes	Any
Cisco Catalyst 3560 (access switch)	12.2(25)SEE1	12.2(254)SEE3	Yes	Any
Cisco Catalyst 3750 (data center switch)	12.2(25)SEE1	12.2(25)SEE3	Yes	Any
Cisco Catalyst 4506 (access switch)	12.2(25)EWA5	12.2(25)EWA8	Yes	Any
Cisco Catalyst 6506, 6509 (voice access switch, Supervisor 2 / MSFC2)	CatOS 8.5(4) / 12.2(18)SXF4	CatOS 8.5(8) / 12.2(18)SXF8	Yes	Any
Cisco Catalyst 6506, 6509 (core switch, Supervisor 720)	12.2(18)SXF4	12.2(18)SXF8 (native-mode)	Yes	Any

**Table 5-1** ***IPT Components in Cisco Unified Communications System Release 4.4 and Release 6.0(1) Release Sets (continued)***

<b>Cisco Unified Communications System Component Name</b>	<b>Release 4.4 Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco Catalyst Communication Media Module (CMM)	12.4(7b)	12.4(15)T	Yes	Any
Cisco Catalyst Firewall Service Module (FWSM)	3.1(3)	3.1.5	Yes	Any
Cisco Catalyst 6608, 6624 (voice gateway)	Included with Cisco Communications Manager	Bundled with Cisco Unified Communications Manager	—	—
Cisco Catalyst Express 500	12.2.25FY	Not used	—	—
Cisco VG224 (analog voice gateway)	12.4(7b)	12.4(15)T	Yes	Any
Cisco VG248 (analog voice gateway)	1.3(1) ES8.2	1.3(2)	Yes	Any
Cisco ATA 186, 188 (analog telephony adapter)	3.2(3)	Bundled with Unified Communications Manager	—	—
Cisco Security Agent—Unified Communications Manager	4.5.1.655 / 2.0(5)	Bundled with Unified Communications Manager	—	—
Cisco Security Agent—Cisco Emergency Responder	4.5.1.655 / 2.0(5)	Bundled with Cisco Emergency Responder	—	—
Cisco Security Agent—Cisco Customer Response Solutions	4.5.1.655 / 2.0(5)	5.0.0.216-3.0.4	—	—
Cisco Security Agent—Cisco Unity	4.5.1.639 / 2.0(3)	4.5.1.639-2.0.3	—	—
Cisco Unified Mobility	1.2(1)	Bundled with Unified Communications Manager	—	—
Cisco Unified Operations Manager	1.1	2.0.1	No	Before or during Unified Communications Manager upgrade stage
Cisco Unified Service Monitor	1.0	2.0.1 <sup>5</sup>	No	Before or during Unified Communications Manager upgrade stage

**Table 5-1** IPT Components in Cisco Unified Communications System Release 4.4 and Release 6.0(1) Release Sets (continued)

Cisco Unified Communications System Component Name	Release 4.4 Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Provisioning Manager	Not used	1.1 <sup>5</sup>	—	New install after Unified Communications Manager upgrade
Cisco Unified Service Statistic Manager	Not used	1.0	—	New install after Unified Communications Manager upgrade
Cisco Resource Management Essentials (RME)	Not used	4.0.5	—	Any
Cisco Unified IP Phones	Included with Cisco Communications Manager	Bundled with Cisco Unified Communications Manager	—	—
Cisco Unified Application Environment	Not used	2.4	Yes	New install
Cisco Aironet Access Point (AP) 1200G	12.3(4)JA	12.3(8)JA	Yes	Any
Cisco IP Communicator	2.0(1a)	3.0	Yes	Any
Cisco Unified Personal Communicator	Not used	1.2(1)	—	New install after Unified Communications Manager and CUPS
Security Monitoring, Analysis, and Response System	Not Used	Not used	—	—
Cisco Unified Application Environment	Not used	2.4	—	New install
Cisco Unified Video Advantage	2.0(2)	2.0(2)	Yes	Any
McAfee Antivirus	Enterprise 7.1.0 Engine 4.4.00	Enterprise 8.0.0 Patch Version: 11	—	—

1. Applies to Multisite Distributed deployment and only for H.323 Intercluster Trunk (features supported by ICT).
2. Tested in EUEM site models only.
3. “Not used” denotes components that were not tested in the specific test environment due to a number of reasons including, but not limited to, lack of availability, end-of-life, or not being a test requirement for that release set.
4. Unified Communications Manager Express Release 4.2 and Cisco IOS Release 12.4(11)XW2 are required for interoperability with Unified Contact Center Express Release 5.0(1).
5. Release Pending.

## Release 5.0(2) and Release 6.0(1) Software Release Sets

Table 5-2 lists the software versions for the IPT components in the Cisco Unified Communications System Release 5.0(2) and Release 6.0(1) release sets.

**Table 5-2** *IPT Components in Cisco Unified Communications System Release 5.0(2) and Release 6.0(1) Release Sets*

Cisco Unified Communications System Component Name	Release 5.0(2) Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Communications Manager	5.0(4)	6.0(1)	Yes <sup>1</sup>	—
Cisco Unified Communications Manager - Cisco IP Telephony Operating System	Included with Unified Communications Manager	Bundled with Unified Communications Manager	—	—
Cisco Customer Response Solutions (Cisco Unified Contact Center Express)	4.5(2)	5.0(1)SR1	Yes	
Cisco Customer Response Solutions (IPCC Express), Cisco IP Telephony Operating System	2000.4.2 SR8	OS 2003.1.1SR4	—	—
Cisco Emergency Responder	1.3(1a)	2.0(1)	Yes	After Unified Communications Manager
Cisco Unified Presence	1.0(1)	6.0(1)	Yes	Any
Cisco Unity, Unity CM-TSP	4.2(1) ES9, 8.1(2)	5.0, 8.1(3)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager  Upgrade Unity after Unified Communications Manager
Cisco Unity, Microsoft Exchange	Microsoft Exchange 2000 SP4 and Microsoft Exchange 2003 SP2	Microsoft Exchange 2003 SP2 (on Cisco Unity and partner Exchange servers) and Microsoft Exchange 2000SP3 or Exchange 2003SP2 (on other message store servers)	—	Part of Unity upgrade
Cisco Unity, IBM / Lotus Domino <sup>2</sup>	6.5 with DUC 1.2.3	7.0 with DUC 1.2.3	—	Part of Unity upgrade

**Table 5-2 IPT Components in Cisco Unified Communications System Release 5.0(2) and Release 6.0(1) Release Sets (continued)**

Cisco Unified Communications System Component Name	Release 5.0(2) Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unity Express	2.2.2	3.0(1)	No	After Unified Communications Manager (see the <a href="#">“Cisco Unified Communications Manager Upgrade and Compatibility Considerations”</a> section on page 5-2 for related information)
Cisco Unity Connection	1.1(1)SR1 ES30 (for SIP integration), 1.1(1)SR1 (for SCCP only integration) TSP 8.1.2	2.0(1)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager  Upgrade Unity after Unified Communications Manager
Cisco Unified MeetingPlace Express	1.1(2)	2.0.1	Yes	Any
Cisco Unified MeetingPlace	5.3	6.0	Yes	Any
Cisco Unified Conferencing for TelePresence	Not used	1.1	Yes	Fresh install after Unified Communications Manager upgrade
Cisco Unified Communications Manager Express	3.4(0) / IOS 12.4(6)T	4.1/IOS 12.4(15)T, 4.2/IOS 12.4(11)XW21 <sup>3</sup>	Yes	Any
Cisco Unified Survivable Remote Site Telephony (SRST)	3.4(0) / IOS 12.4(6)T	4.1 / IOS 12.4(15)T	Yes	Any
Cisco Unified Videoconferencing Multipoint Control Unit (MCU) 3511 and Embedded Media Process (EMP) <sup>2</sup>	MCU 4.2.9 / EMP 4.1.8 and 4.2.8.1	Not used <sup>4</sup>	—	—
Cisco Unified Videoconferencing Gateway 3521 (ISDN BRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any
Cisco Unified Videoconferencing Gateway 3526 (ISDN PRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any
Cisco 1760 (voice/data gateway)	12.4(7b)	12.4T P16	—	—

**Table 5-2** ***IPT Components in Cisco Unified Communications System Release 5.0(2) and Release 6.0(1) Release Sets (continued)***

<b>Cisco Unified Communications System Component Name</b>	<b>Release 5.0(2) Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco Unified Videoconferencing MCU 3540	4.2.10	4.2.10	Yes	Any
Cisco Unified Videoconferencing MCU 3545	Not used	5.1.0.0.24	—	New install
Cisco 2610XM, 2611XM, 2620XM, 2621XM, 2650XM, 2651XM, 2691 (router)	12.4(6)T	12.4(15)T1	Yes	Any
Cisco 2801, 2821, 2851, 3825, 3845 (router, voice/data gateway)	12.4(6)T	12.4(15)T	Yes	Any
Cisco 3745 (gatekeeper)	12.4(6)T	12.4(15)T	Yes	Any
Cisco 3725, 3745 (voice/data gateway)	12.4(6)T	12.4(15)T	Yes	Any
Cisco 3725, 3745, 3825 (SRTP and Secure SRST gateways)	12.4(6)T	12.4(15)T	Yes	Any
Cisco 7206 (voice/data gateway)	12.4(6)T	12.4(15)T	Yes	Any
Cisco Catalyst 3500XL (access switch)	12.0(5)WC15	12.0(5)WC17	Yes	Any
Cisco Catalyst 3550 (access switch)	12.2(25)SEC2	12.2(25)SEE3	Yes	Any
Cisco Catalyst 3560 (access switch)	12.2(254)SE1 - 3560	12.2(254)SEE3	Yes	Any
Cisco Catalyst 3750 (data center switch)	12.2(25)SEC2	12.2(25)SEE3	Yes	Any
Cisco Catalyst 4506 (access switch)	12.2(20)EWA (3.86)	12.2(25)EWA8	Yes	Any
Cisco Catalyst 6506, 6509 (voice access switch, Supervisor 2 / MSFC2)	CatOS 8.5(2) / 12.2(18)SXF3	CatOS 8.5(6) / 12.2(18)SXF8	Yes	Any
Cisco Catalyst 6506, 6509 (core switch, Supervisor 720)	12.2(18)SXF3 (native-mode)	12.2(18)SXF8 (native-mode)	Yes	Any
Cisco Catalyst Communication Media Module (CMM)	12.4(6)T	12.4(15)T	Yes	Any
Cisco Catalyst Firewall Service Module (FWSM)	3.1(3)	3.1(5)	Yes	Any
Cisco Catalyst 6608, 6624 (voice gateway)	Bundled with Cisco Unified Communications Manager	Bundled with Cisco Unified Communications Manager	Yes	Any
Cisco VG224 (analog voice gateway)	12.4(6)T	12.4(15)T	Yes	Any
Cisco VG248 (analog voice gateway)	1.3(1) ES8.2	1.3(2)	Yes	Any
Cisco ATA 186, 188 (analog telephony adapter)	Bundled with Unified Communications Manager	Bundled with Unified Communications Manager	—	—

**Table 5-2 IPT Components in Cisco Unified Communications System Release 5.0(2) and Release 6.0(1) Release Sets (continued)**

<b>Cisco Unified Communications System Component Name</b>	<b>Release 5.0(2) Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco Security Agent—Unified Communications Manager	4.5.1(652.1)	Bundled with Unified Communications Manager	—	—
Cisco Security Agent—Cisco Emergency Responder	4.5.1-639-2.0.4	Bundled with Cisco Emergency Responder	—	—
Cisco Security Agent—Cisco Customer Response Solutions	4.5.1-639-2.0.4	5.0.0.216-3.0.4	—	—
Cisco Security Agent—Cisco Unity	4.5.1-639-2.0.3	4.5.1.639-2.0.3	—	—
Adaptive Security Appliance	7.2	8.0(2)	Yes	Any
Cisco Unified Mobility	1.2(1)	Bundled with Unified Communications Manager	—	—
Cisco Unified Operations Manager	1.1	2.0.1	Yes	Any
Cisco Unified Service Monitor	Not used	2.0.1	Yes	Any
Cisco Unified Provisioning Manager	Not used	1.1 <sup>5</sup>	—	New install after Unified Communications Manager upgrade
Cisco Unified Service Statistics Manager	Not used	1.0 <sup>5</sup>	—	New install after Unified Communications Manager upgrade
Cisco Resource Management Essentials (RME)	4.0.3	4.05	Yes	Any
Cisco Unified IP Phones	Bundled with Cisco Unified Communications Manager	Bundled with Cisco Unified Communications Manager	—	—
Cisco Unified Application Environment	Not used	2.4	Yes	New install
Cisco Aironet Access Point (AP) 1200G	12.3(8)JA	12.3(8)JA	Yes	Any
Cisco IP Communicator	2.0(1a)	3.0	Yes	Any
Cisco Unified Personal Communicator	1.1(1)	1.2(1)	Yes	Any
Cisco Unified Application Environment	Not used	2.4	—	New install
Cisco Unified Video Advantage	2.0(1a)	2.0(2)	Yes	Any
McAfee Antivirus	Enterprise 8.0.0 Patch version: 11	Enterprise 8.0.0 Patch version: 11	Yes	any

1. Applies to Multisite distributed.
2. Tested in EUEM site models only.
3. Unified Communications Manager Express Release 4.2 and Cisco IOS Release 12.4(11)XW2 are required for interoperability with Unified Contact Center Express Release 5.0(1).
4. “Not used” denotes components that were not tested in the specific test environment due to a number of reasons including, but not limited to, lack of availability, end-of-life, or not being a test requirement for that release set.
5. Release Pending.

## Release 5.1(1) and Release 6.0(1) Software Release Sets

Table 5-3 lists the software versions for the IPT components in the Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) release sets.

**Table 5-3** IPT Components in Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) Release Sets

Cisco Unified Communications System Component Name	Release 5.1(1) Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Communications Manager	5.1(1)	6.0(1)	Yes <sup>1</sup>	—
Cisco Unified Communications Manager, Cisco IP Telephony Operating System	Bundled with Unified Communications Manager	Bundled with Unified Communications Manager	—	—
Cisco Customer Response Solutions (Cisco Unified Contact Center Express)	4.5(2)SR1	5.0(1)SR1	Yes	After Unified Communications Manager
Cisco Customer Response Solutions (IPCC Express), Cisco IP Telephony Operating System	2000.4.3a SR3	OS 2003.1.1SR4	—	—
Cisco Emergency Responder	1.3(1a)	2.0(1)	Yes	After Unified Communications Manager
Cisco Unified Presence	1.0(3)	6.0(1)	Yes	Any
Cisco Unity, Unity CM-TSP	4.2(1) ES27, 8.1(2)	5.0, 8.1(3)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager Upgrade Unity after Unified Communications Manager

**Table 5-3 IPT Components in Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) Release Sets (continued)**

Cisco Unified Communications System Component Name	Release 5.1(1) Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unity, Microsoft Exchange	Microsoft Exchange 2000 SP4 and Microsoft Exchange 2003 SP2	Microsoft Exchange 2003 SP2 (on Cisco Unity and partner Exchange servers) and Microsoft Exchange 2000SP3 or Exchange 2003SP2 (on other message store servers)	—	Part of Unity upgrade
Cisco Unity, IBM / Lotus Domino <sup>2</sup>	6.5 with DUC 1.2.3	7.0 with DUC 1.2.3	—	Part of Unity upgrade
Cisco Unity Express	2.3(3)	3.0(1)	—	—
Cisco Unity Connection	1.2(1) (for SIP and SCCP integration)	2.0(1)	Yes	Upgrade Unity TSP at the same time as Unified Communications Manager  Upgrade Unity after Unified Communications Manager
Cisco Unified MeetingPlace Express	1.2(1)	2.0.1	Yes	Any
Cisco Unified MeetingPlace	5.4	6.0	Yes	Any
Cisco Unified Conferencing for TelePresence	Not used	1.1	Yes	Fresh install after Unified Communications Manager upgrade
Cisco Unified Communications Manager Express	4.0(1) / IOS 12.4(9)T	4.1/IOS 12.4(15)T, 4.2/IOS 12.4(11)XW21 <sup>3</sup>	Yes	Any
Cisco Unified Survivable Remote Site Telephony (SRST)	4.0(1) / IOS 12.4(9)T	4.1 / IOS 12.4(15)T	Yes	Any
Cisco Unified Videoconferencing Multipoint Control Unit (MCU) 3511 with Enhanced Media Processor (EMP) <sup>2</sup>	MCU 4.2.10 / EMP 4.2.8 and 4.2.8.1	Not used <sup>4</sup>	—	—
Cisco Unified Videoconferencing Gateway 3521 (ISDN BRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any

**Table 5-3 IPT Components in Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) Release Sets (continued)**

Cisco Unified Communications System Component Name	Release 5.1(1) Release Set	Release 6.0(1) Release Set	Compatible with Unified Communications Manager 6.0(1)?	Upgrade Order (in relation to Unified Communications Manager)
Cisco Unified Videoconferencing Gateway 3526 (ISDN PRI) <sup>2</sup>	4.0.0.40	5.0.0.0.22	Yes	Any
Cisco 1760 (voice/data gateway)	12.4(9)T	12.4T P16	Yes	Any
Cisco Unified Videoconferencing MCU 3540	4.2.10	4.2.10	Yes	Any
Cisco Unified Videoconferencing MCU 3545	5.0.0.0.58	5.1.0.0.24	Yes	Any
Cisco 2610XM, 2611XM, 2620XM, 2621XM, 2650XM, 2651XM, 2691 (router)	12.4(9)T	12.4(15)T1	Yes	Any
Cisco 2801, 2821, 2851, 3825, 3845 (router, voice/data gateway)	12.4(9)T	12.4(15)T	Yes	Any
Cisco 3745 (gatekeeper)	12.4(9)T	12.4(15)T	Yes	Any
Cisco 3725, 3745 (voice/data gateway)	12.4(9)T	12.4(15)T	Yes	Any
Cisco 3725, 3745, 3825 (SRTP and Secure SRST gateways)	12.4(9)T	12.4(15)T	Yes	Any
Cisco 7206 (voice/data gateway)	12.4(9)T	12.4(15)T	Yes	Any
Cisco Catalyst 3500XL (access switch)	12.0(5)WC15	12.0(5)WC17	Yes	Any
Cisco Catalyst 3550 (access switch)	12.2(25)SEE1	12.2(25)SEE3	Yes	Any
Cisco Catalyst 3560 (access switch)	12.2(25r)SE1 - 3560	12.2(254)SEE3	Yes	Any
Cisco Catalyst 3750 (data center switch)	12.2(25)SEE1	12.2(25)SEE3	Yes	Any
Cisco Catalyst 4506 (access switch)	12.2(25)EWA6	12.2(25)EWA8	Yes	Any
Cisco Catalyst 6506, 6509 (voice access switch, Supervisor 2 / MSFC2)	CatOS 8.5(5) / 12.2(18)SXF4	CatOS 8.5(8) / 12.2(18)SXF8	Yes	Any
Cisco Catalyst 6506, 6509 (core switch, Supervisor 720)	12.2(18)SXF4 (native-mode)	12.2(18)SXF8 (native-mode)	Yes	Any
Cisco Catalyst Communication Media Module (CMM)	12.4(9)T	12.4(15)T	Yes	Any
Cisco Catalyst Firewall Service Module (FWSM)	3.1(4)	3.1(5)	Yes	Any
Cisco Catalyst 6608, 6624 (voice gateway)	Bundled with Cisco Unified Communications Manager	Bundled with Cisco Unified Communications Manager	Yes	Any
Cisco VG224 (analog voice gateway)	12.4(9)T	12.4(15)T	Yes	Any
Cisco VG248 (analog voice gateway)	1.3(1) ES8.2	1.3(2)	Yes	Any

**Table 5-3 IPT Components in Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) Release Sets (continued)**

<b>Cisco Unified Communications System Component Name</b>	<b>Release 5.1(1) Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco ATA 186, 188 (analog telephony adapter)	Bundled with Unified Communications Manager	Bundled with Unified Communications Manager	—	—
Cisco Security Agent—Unified Communications Manager	4.5.1.655 / 2.0(5)	Bundled with Unified Communications Manager		
Cisco Security Agent—Cisco Emergency Responder	5.0.0-1.8.7	Bundled with Cisco Emergency Responder	—	—
Cisco Security Agent—Cisco Customer Response Solutions	4.5.1.639-2.0.3	5.0.0.205-3.0.4	—	—
Cisco Security Agent—Cisco Unity	4.5.1.639-2.0.3	4.5.1.639-2.0.3	—	—
Adaptive Security Appliance	7.2	8.0(2)	Yes	Any
Cisco Unified Mobility	1.2(2)	Integrated with Unified Communications Manager	—	—
Cisco Unified Operations Manager	2.0(1)	2.0.1	Yes	Any
Cisco Unified Service Monitor	1.0	2.0.1	Yes	Any
Cisco Unified Provisioning Manager	Not used	1.1 <sup>5</sup>	—	New install after Unified Communications Manager upgrade
Cisco Unified Service Statistics Manager	Not used	1.0 <sup>5</sup>	—	New install after Unified Communications Manager upgrade
Cisco Resource Management Essentials (RME)	4.0.3	4.0.5	Yes	Any
Cisco Unified IP Phones	Bundled with Cisco Unified Communications Manager	Bundled with Cisco Unified Communications Manager	—	—
Cisco Aironet Access Point (AP) 1200G	12.3(8)JA2	12.3(8)JA	Yes	Any
Cisco IP Communicator	2.0.2	3.0	Yes	Any
Cisco Unified Personal Communicator	1.1(2)	1.2(1)	Yes	Any
Cisco Unified Application Environment	Not used	2.4	Yes	Any

**Table 5-3** *IPT Components in Cisco Unified Communications System Release 5.1(1) and Release 6.0(1) Release Sets (continued)*

<b>Cisco Unified Communications System Component Name</b>	<b>Release 5.1(1) Release Set</b>	<b>Release 6.0(1) Release Set</b>	<b>Compatible with Unified Communications Manager 6.0(1)?</b>	<b>Upgrade Order (in relation to Unified Communications Manager)</b>
Cisco Unified Video Advantage	2.0(2)	2.0(2)	Yes	Any
McAfee Antivirus	Enterprise 8.0.0 Patch version: 11	Enterprise 8.0.0 Patch version: 11	Yes	any

1. Applies to Multisite distributed.
2. Tested in EUEM site models only.
3. Unified Communications Manager Express Release 4.2 and Cisco IOS Release 12.4(11)XW2 are required for interoperability with Unified Contact Center Express Release 5.0(1).
4. “Not used” denotes components that were not tested in the specific test environment due to a number of reasons including, but not limited to, lack of availability, end-of-life, or not being a test requirement for that release set.
5. Release Pending.



# CHAPTER 6

## Performing Your System Upgrade

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This topic discusses in detail the upgrade sequence for all of the IP telephony (IPT) components that are configured in various deployment models for Cisco Unified Communications System Release 6.0(1).

Upgrade procedures for individual IPT components are not described in this document because they are available in individual component upgrade documents. See the [Related Documentation](#) section topic for the appropriate upgrade documents and their URLs.

This topic contains the following sections:

- [IPT Deployment Models](#)
- [Upgrading IPT Components](#)
- [Related Documentation](#)



### Note

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Many of the IPT component names have changed as part of Cisco Unified Communications System releases. The latest product names are used in this document, even when referencing products from previous releases.

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## IPT Deployment Models

The upgrade procedures in this document are tailored for each deployment model in the IPT test environment, because each site includes different components.

Detailed information about IPT deployments and site models that are tested for the target release is available at [http://www.cisco.com/iam/unified/ipt601/Review\\_Testing\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt601/Review_Testing_Site_Models.htm)

The following deployment models were tested in the Cisco Unified Communications System IPT test environment:

- [Single-Site Model](#)
- [Multisite Centralized with SRST Model](#)
- [Multisite WAN Distributed Model](#)
- [Clustering Over the WAN Model](#)
- Choose the deployment model that best matches your deployment to best understand the upgrade process that applies to your environment. The following sections provide the general upgrade sequence for the components in the each deployment model and provide other detailed upgrade procedures.

After you determine the general upgrade sequence, use one of the upgrade strategies that is described in [Upgrading IPT Components](#) to upgrade your components.

## Single-Site Model

In the IPT single-site deployment model, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM).
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor.




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**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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3. Cisco Unified Communications Manager (Cisco Unified IP Phones and Cisco IP Communicator are upgraded at the same time)
4. CRS (Unified Contact Center Express)
5. Cisco Unified Presence




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**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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6. Cisco Emergency Responder and Music On Hold
7. Analog Phone Gateways (VG224, VG248)
8. PSTN Gateways (IOS, Communications Media Module)
9. Gatekeepers
10. Cisco MeetingPlace components and Cisco Unified MeetingPlace Express




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**Note** Cisco Unified MeetingPlace Express does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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11. Cisco Unity components and Cisco Unity Connection
12. Video and Wireless components
13. Cisco Unified Personal Communicator




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**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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14. Cisco applications coresident on Media Convergence Servers (MCSs) (such as Cisco Security Agent, JTAPI software)
15. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))




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**Note** For Unified Communications Manager Release 5.1(1), co-residency of third-party applications are not supported and therefore must be installed on a separate MCS server.

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16. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP video endpoints)

## Multisite Centralized with SRST Model

You must first upgrade central sites followed by the remote SRST sites in the multisite centralized model.

In each central site, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM)
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor.




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**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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3. Cisco Unified Communications Manager (Cisco Unified IP Phones and Cisco IP Communicator are upgraded at the same time)
4. CRS (Unified Contact Center Express)
5. Cisco Unified Presence




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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6. Cisco Emergency Responder and Music On Hold
7. Intercluster trunk (ICT) gateways
8. Analog Phone Gateways (VG224, VG248)
9. PSTN Gateways (IOS, Communications Media Module)
10. Gatekeepers
11. Cisco MeetingPlace components and Cisco Unified MeetingPlace Express




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**Note** Cisco Unified MeetingPlace Express does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

12. Cisco Unity components and Cisco Unity Connection
13. Video and Wireless components
14. Cisco Unified Personal Communicator




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

15. Cisco applications co-resident on Media Convergence servers (MCSs) (such as Cisco Security Agent, JTAPI software)
16. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))




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**Note** For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

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17. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP Video endpoints)

In each remote site, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM)
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor




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**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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3. Analog Voice Gateways (VG224, VG248)
4. PSTN Gateways (IOS, Communications Media Module)
5. Cisco Unified IP Phones (upgraded with the Cisco Unified Communications Manager clusters)
6. Cisco applications co-resident on MCSs (such as Cisco Security Agent, JTAPI software)
7. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))




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**Note** For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

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8. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP video endpoints)

## Multisite WAN Distributed Model

The multisite distributed model includes several Cisco Unified Communications Manager cluster sites interconnected by ICT or H.323 trunks.

You should treat the upgrade of each site as a separate stage in the overall upgrade process.

Upgrade the components within each site in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM)
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor.




---

**Note** Does not apply if you are updating from System IP Communications Systems Test Release 4.4 .

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3. Cisco Unified Communications Manager (Cisco Unified IP Phones and Cisco IP Communicator are upgraded at the same time)

4. CRS (Unified Contact Center Express)
5. Cisco Unified Presence



---

**Note** Does not apply if you are updating from System IP Communications Systems Test Release 4.4 .

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6. Cisco Unified Communications Manager Express.



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**Note** Does not apply if you are updating from Cisco Unified Communications System Release 5.0(2) or Cisco Unified Communications System Release 5.1(1) .

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7. Cisco Emergency Responder and Music On Hold
8. Analog Phone Gateways (VG224, VG248)
9. PSTN Gateways (IOS, Communications Media Module)
10. Gatekeepers
11. Cisco MeetingPlace components and Cisco Unified MeetingPlace Express



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**Note** Cisco Unified MeetingPlace Express does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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12. Cisco Unity components and Cisco Unity Connection
13. Video and Wireless components
14. Cisco Unified Personal Communicator



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**Note** Does not apply if you are updating from System IP Communications Systems Test Release 4.4 .

---

15. Cisco applications co-resident on MCSs (such as Cisco Security Agent, JTAPI software)
16. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))



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**Note** For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

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17. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP video endpoints)

## Clustering Over the WAN Model

In the IPT clustering over the WAN model, upgrade the components in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM).
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor.




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

3. Cisco Unified Communications Manager (Cisco Unified IP Phones and Cisco IP Communicator are upgraded at the same time)
4. CRS (Unified Contact Center Express)
5. Cisco Unified Presence




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

6. Cisco Emergency Responder and Music On Hold
7. Analog Phone Gateways (VG224, VG248)
8. PSTN Gateways (IOS, Communications Media Module)
9. Gatekeepers
10. Cisco MeetingPlace components and Cisco Unified MeetingPlace Express




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**Note** Cisco Unified MeetingPlace Express does not apply if you are updating from IP Communications Systems Test Release 4.4 .

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11. Cisco Unity components and Cisco Unity Connection
12. Video and Wireless components
13. Cisco Unified Personal Communicator




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

14. Cisco applications coresident on Media Convergence Servers (MCSs) (such as Cisco Security Agent, JTAPI software)
15. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))




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**Note** For Unified Communications Manager Release 5.1(1), co-residency of third-party applications are not supported and therefore must be installed on a separate MCS server.

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16. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP video endpoints)

If there are any remote sites, upgrade the components in those sites in the following order:

1. Infrastructure components including Catalyst 6500/6000 switches, routers and security components such as Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM)
2. Network management tools such as Cisco Unified Operations Manager and Cisco Unified Service Monitor.




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

3. Cisco Unified Communications Manager (Cisco Unified IP Phones and Cisco IP Communicator are upgraded at the same time)
4. CRS (Unified Contact Center Express)
5. Cisco Unified Presence




---

**Note** Does not apply 8if you are updating from IP Communications Systems Test Release 4.4 .

---

6. Cisco Emergency Responder and Music On Hold
7. Intercluster trunk (ICT) gateways
8. Analog Phone Gateways (VG224, VG248)
9. PSTN Gateways (IOS, Communications Media Module)
10. Gatekeepers
11. Cisco MeetingPlace components and Cisco Unified MeetingPlace Express




---

**Note** Cisco Unified MeetingPlace Express does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

12. Cisco Unity components and Cisco Unity Connection
13. Video and Wireless components
14. Cisco Unified Personal Communicator




---

**Note** Does not apply if you are updating from IP Communications Systems Test Release 4.4 .

---

15. Cisco applications co-resident on Media Convergence servers (MCSs) (such as Cisco Security Agent, JTAPI software)
16. Third-party on-board agents on MCS servers (such as antivirus, Backup agent, Management agent (SNMP))




---

**Note** For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

---

17. Cisco and third-party adjunct applications or endpoints on other servers (such as MIND CTI, SCCP Video endpoints)

# Upgrading IPT Components

This section describes the following upgrade strategies for contact center components:

- [Single-Stage Upgrade](#)—Recommended for small single-site or multisite installations.
- [Multistage System Upgrade](#)—Recommended for medium or large single-site and medium multisite installations.
- [Multisite Migration](#)—To upgrade large, multisite IPT installations to the Cisco Unified Communications System release set using the Multisite Migration Upgrade strategy, you can use either the Single-Stage or Multistage System upgrade procedures listed in this section.

See [Chapter 4, “Planning Your System Upgrade”](#) for detailed information about these upgrade strategies and see [Chapter 5, “Preparing for Your System Upgrade”](#) for the software release versions of the components involved in the upgrade. For more information about the number of seats in these various types of sites, see [Table 4-2](#) in [Chapter 4, “Planning Your System Upgrade.”](#)

The upgrade paths that are available for upgrading IPT components are defined in [System Upgrade Paths](#) in [Chapter 4, “Planning Your System Upgrade”](#)

When performing the upgrade of each component, see the product-specific upgrade document for detailed information. See the [Related Documentation](#) section for a list of URLs for component-specific release notes and installation and upgrade documents.

## Single-Stage Upgrade

The single-stage upgrade process is recommended for small single-site and small multisite installations. This upgrade process can be performed in a single maintenance window, which allows you to upgrade components in a relatively short time and with no loss of functionality.

See [Chapter 5, “Preparing for Your System Upgrade,”](#) for the software release versions of the components involved in the upgrade. Based on your environment and the base release set deployed in your network, upgrade the components in the order listed in [Table 6-1](#).

**Table 6-1** Single-Stage Upgrade Order for IPT Components

Component to Upgrade	Release 4.4 Release Set	Release 5.0(2) Release Set	Release 5.1(1) Release Set
Cisco Catalyst 6506 (core switch)	1	1	1
Cisco Catalyst 6509/3524 <sup>1</sup> (access switch)	2	2	2
Cisco Resource Management Essentials	—	3	3
Cisco Adaptive Security Appliance and Cisco Catalyst Firewall Service Module (FWSM)	3	4	4
Cisco Unified Operations Manager and Cisco Unified Service Monitor	—	5	5
Cisco Unified Communications Manager cluster (Cisco Unified IP Phones, Cisco Catalyst 6500/6000 Gateways, Cisco IP Communicator, and Cisco ATA186/188 analog telephony adapters are upgraded with cluster)	4	6	6
Cisco Unified Communications Manager Express	5	7	7
CRS (Unified Contact Center Express)	6	8	8

**Table 6-1** Single-Stage Upgrade Order for IPT Components (continued)

Component to Upgrade	Release 4.4 Release Set	Release 5.0(2) Release Set	Release 5.1(1) Release Set
Cisco Unified Presence	—	9	9
Cisco Emergency Responder	7	10	10
Cisco IOS Gateway	8	11	11
Cisco Communications Media Module	9	12	12
Cisco VG248 (analog phone gateway)	10	13	13
Cisco VG244 (analog phone gateway)	11	14	14
Cisco IOS Gatekeeper	12	15	15
Cisco Unified MeetingPlace components	13	16	16
Cisco Unified Personal Communicator	—	17	17
Cisco Unified MeetingPlace Express	—	18	18
Cisco Unity components and Cisco Unity Connection	14	19	19
Cisco Unity-IBM/Lotus Domino <sup>1</sup>	15	20	20
Windows Exchange 2000	16	21	21
Domain Controller (including Active Directory)	17	22	22
SCCP/ H.323/ H.320 <sup>1</sup> Video Endpoints	18	23	23
Cisco Unified Videoconferencing Gateway <sup>1</sup> and Cisco Unified Videoconferencing System MCUs	19	24	24
Cisco Unified VideoAdvantage (Video PC Endpoint)	20	25	25
Cisco Aironet Access Point 1200	21	26	26
Cisco Unified Personal Communicator	—	27	27
Cisco applications co-resident on MCS servers	22	28	28
Third-party on-board agents on MCS servers <sup>2</sup>	23	29	29
Cisco and third-party applications on other servers	24	30	30

1. Tested in EUEM (European & Emerging Markets) site models only during Cisco Unified Communications System testing.

2. For Unified Communications Manager Release 6.0(1), third-party on-board agents must be installed on a separate MCS server.

## Multistage System Upgrade

A Multistage System upgrade is the recommended approach for medium and large single-site and medium multisite installations. In this upgrade process, components are grouped for upgrading in several stages or maintenance windows. Within each maintenance window, there is a recommended order for upgrading each component.

The grouping of the components into the stages may vary depending on the size of the networks being upgraded. For smaller networks, several maintenance windows may be collapsed into a single maintenance window. Additional stages may be necessary for larger sites.

After each maintenance window and before initiating the next upgrade stage, we recommend that you verify that the operation of all basic and critical call types remains unaffected. We also recommend that you maintain a list of the components that have been upgraded and the ones yet to be upgraded.

See Chapter 5, “Preparing for Your System Upgrade,” for the software release versions of the components involved in the upgrade. Based on your environment and the base release set deployed in your network, upgrade the components in the order listed in Table 6-2.

**Table 6-2 Multistage System Upgrade Order for IPT Components**

Stage	Upgrade Order for IPT Components		
	Release 4.4	Release 5.0(2)	Release 5.1(1)
1	<ol style="list-style-type: none"> <li>1. Core Switch</li> <li>2. Access Switch</li> <li>3. Cisco Secure PIX Firewall</li> <li>4. Cisco Catalyst Firewall Service Module (FWSM)</li> </ol>	<ol style="list-style-type: none"> <li>1. Core Switch</li> <li>2. Access Switch</li> <li>3. Cisco Resource Management Essentials</li> <li>4. Cisco Unified Operations Manager</li> <li>5. Cisco Unified Service Monitor</li> <li>6. Cisco Secure PIX Firewall</li> <li>7. Cisco Catalyst Firewall Service Module (FWSM)</li> </ol>	<ol style="list-style-type: none"> <li>1. Core Switch</li> <li>2. Access Switch</li> <li>3. Cisco Secure PIX Firewall</li> <li>4. Cisco Catalyst Firewall Service Module (FWSM)</li> </ol>
2	<ol style="list-style-type: none"> <li>1. Cisco Unified Communications Manager (includes ATA and Unified MobilityManager)</li> <li>2. Cisco Unified Communications Manager Express</li> <li>3. Cisco Unity TSP</li> <li>4. Cisco Unified IP Phones</li> <li>5. Cisco IP Communicator</li> <li>6. Cisco Emergency Responder</li> <li>7. Music On Hold</li> <li>8. Cisco Catalyst 6500/6000 Gateway</li> <li>9. CRS<sup>1</sup> (Cisco Unified Contact Center Express)</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unified Communications Manager (includes ATA and Unified MobilityManager)</li> <li>2. Cisco Unified Communications Manager Express</li> <li>3. Cisco Unity TSP</li> <li>4. Cisco Unified IP Phones</li> <li>5. Cisco IP Communicator</li> <li>6. Cisco Emergency Responder</li> <li>7. Music On Hold</li> <li>8. Cisco Catalyst 6500/6000 Gateway</li> <li>9. CRS (Cisco Unified Contact Center Express)</li> <li>10. Cisco Unified Presence</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unified Communications Manager (includes ATA and Unified MobilityManager)</li> <li>2. Cisco Unified Communications Manager Express</li> <li>3. Cisco Unity TSP</li> <li>4. Cisco Unified IP Phones</li> <li>5. Cisco IP Communicator</li> <li>6. Cisco Emergency Responder</li> <li>7. Music On Hold</li> <li>8. Cisco Catalyst 6500/6000 Gateway</li> <li>9. CRS<sup>1</sup> (Cisco Unified Contact Center Express)</li> <li>10. Cisco Unified Presence<sup>2</sup></li> </ol>
3	<ol style="list-style-type: none"> <li>1. IOS Gateway (MGCP)</li> <li>2. IOS Gateway (H.323)</li> <li>3. Cisco VG248 (analog voice gateway)</li> <li>4. Cisco VG244 (analog voice gateway)</li> <li>5. PSTN Gateway (Communications Media Module)</li> <li>6. IOS Gatekeeper</li> </ol>	<ol style="list-style-type: none"> <li>1. IOS Gateway (MGCP)</li> <li>2. IOS Gateway (H.323)</li> <li>3. Cisco VG248 Analog Phone Gateway</li> <li>4. Cisco VG244 Analog Phone Gateway</li> <li>5. PSTN Gateway (Cisco Communications Media Module)</li> <li>6. IOS Gatekeeper</li> </ol>	<ol style="list-style-type: none"> <li>1. IOS Gateway (MGCP)</li> <li>2. IOS Gateway (H.323)</li> <li>3. Cisco VG248 (analog voice gateway)</li> <li>4. Cisco VG244 (analog voice gateway)</li> <li>5. PSTN Gateway (Communications Media Module)</li> <li>6. IOS Gatekeeper</li> </ol>

Table 6-2 Multistage System Upgrade Order for IPT Components (continued)

Upgrade Order for IPT Components			
Stage	Release 4.4	Release 5.0(2)	Release 5.1(1)
4	<ol style="list-style-type: none"> <li>1. Cisco MeetingPlace components</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unified MeetingPlace</li> <li>2. Cisco Unified MeetingPlace Express</li> <li>3. Cisco Unified MeetingPlace Audio Server</li> <li>4. Cisco Unified MeetingPlace IP Gateway</li> <li>5. Cisco Unified MeetingPlace Web Conferencing</li> <li>6. Cisco Unified MeetingPlace Gateway SIM</li> <li>7. Cisco Unified MeetingPlace Video Integration</li> <li>8. Cisco Unified MeetingPlace for Outlook</li> </ol> <p><b>Note</b> Cisco Unified Videoconferencing System 3545 should be installed in this stage after upgrading Cisco Unified MeetingPlace.</p>	<ol style="list-style-type: none"> <li>1. Cisco MeetingPlace components</li> </ol>
5	<ol style="list-style-type: none"> <li>1. Cisco Unity components</li> <li>2. Cisco Unity Express</li> <li>3. Cisco Unity, IBM/Lotus Domino<sup>3</sup></li> <li>4. Windows Exchange 2000</li> <li>5. Domain Controller (including Active Directory)</li> <li>6. Cisco Unity Connection</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unity</li> <li>2. Cisco Unity Express</li> <li>3. Cisco Unity-IBM/Lotus Domino<sup>3</sup></li> <li>4. Windows Exchange 2000/2003</li> <li>5. Domain Controller</li> <li>6. Cisco Unity Connection</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unity components</li> <li>2. Cisco Unity Express</li> <li>3. Cisco Unity, IBM/Lotus Domino<sup>3</sup></li> <li>4. Windows Exchange 2000</li> <li>5. Domain Controller (including Active Directory)</li> <li>6. Cisco Catalyst 6000 Gateway for Cisco Unity</li> <li>7. Cisco Unity Connection</li> </ol>

Table 6-2 Multistage System Upgrade Order for IPT Components (continued)

Stage	Upgrade Order for IPT Components		
	Release 4.4	Release 5.0(2)	Release 5.1(1)
6	<ol style="list-style-type: none"> <li>1. SCCP/ H.323 /H.320<sup>3</sup> Video Endpoints</li> <li>2. IP/VC Gateway<sup>3</sup> and MCUs</li> <li>3. Cisco VT Advantage (Video PC Endpoint)</li> <li>4. Cisco Aironet Access Point 1200</li> </ol>	<ol style="list-style-type: none"> <li>1. SCCP/ H.323/ H.320<sup>2</sup> Video Endpoints</li> <li>2. Cisco Unified Videoconferencing Gateway<sup>2</sup> and Cisco Unified Videoconferencing System MCUs</li> <li>3. Cisco Unified Video Advantage (Video PC Endpoint)</li> <li>4. Cisco Aironet Access Point 1200</li> <li>5. Cisco Unified Personal Communicator</li> </ol>	<ol style="list-style-type: none"> <li>1. Cisco Unified Personal Communicator<sup>2</sup></li> <li>2. SCCP/ H.323 /H.320<sup>3</sup> Video Endpoints</li> <li>3. IP/VC Gateway<sup>3</sup> and MCUs</li> <li>4. Cisco VT Advantage (Video PC Endpoint)</li> <li>5. Cisco Aironet Access Point 1200</li> </ol>
7	Cisco applications co-resident on servers: upgrade order depends on the applications being upgraded	Cisco applications co-resident on servers: upgrade order depends on the applications being upgraded	Cisco applications co-resident on servers: upgrade order depends on the applications being upgraded
8	Third-party on-board agents on MCS servers: upgrade order depends on the applications being upgraded	Third-party on-board agents on MCS servers: upgrade order depends on the applications being upgraded	Third-party on-board agents on MCS servers: upgrade order depends on the applications being upgraded

1. CRS systems cannot be upgraded, they must be freshly installed in the same maintenance window in which the Cisco Unified Communications Manager is upgraded.
2. New product—requires installation.
3. Tested in EUEM (European & Emerging Markets) site models only during Cisco Unified Communications System testing.

## Related Documentation

The following sections list compatibility guides and installation documentation for Cisco Unified Communications System components:

- [Compatibility Guides](#)
- [Component Release Notes and Installation and Upgrade Documentation](#)

## Compatibility Guides

The following documentation provides information about compatibility of components:

- *Cisco Unity and the Software on Subscriber Workstations:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cuclientmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cuclientmtx.html)
- *SCCP Compatibility Matrix: Cisco Unity, the Cisco Unity-CM TSP, Cisco Communications Manager, and Cisco Communications Manager Express:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cutspmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cutspmtx.html)

- *SIP Trunk Compatibility Matrix: Cisco Unity, Cisco Communications Manager, and Cisco Communications Manager Express:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/unity/compatibility/matrix/cusiptrunkmtx.html](http://www.cisco.com/en/US/docs/voice_ip_comm/unity/compatibility/matrix/cusiptrunkmtx.html)
- *Cisco Response Solutions (CRS) Software and Hardware Compatibility Guide:*  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/sw\\_ap\\_to/crscomtx.pdf](http://www.cisco.com/univercd/cc/td/doc/product/voice/sw_ap_to/crscomtx.pdf)
- *Cisco Communications Manager Express and Cisco IOS Software Version Compatibility Matrix:*  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucme/requirements/guide/33matrix.htm](http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/requirements/guide/33matrix.htm)
- Cisco Unified Communications System Release Compatibility and Summary Matrixes  
<http://www.cisco.com/go/unified-techinfo>
- Cisco Unified Communications Compatibility Tool  
<http://tools.cisco.com/ITDIT/vtgsca>

## Component Release Notes and Installation and Upgrade Documentation

Table 6-3 lists provides references to release notes and installation and upgrade documents for components. These URLs link to web pages that list various release versions of these documents. Review the appropriate documents based on the release versions of the components in your base and target release sets.

**Table 6-3** Component-Specific Release Notes and Installation and Upgrade Documents

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified Communications Manager	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps556/prod_installation_guides_list.html</a>
Cisco Unity	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2237/prod_installation_guides_list.html</a>
Cisco Unity Express	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5520/prod_installation_guides_list.html</a>
Cisco Unified MeetingPlace	<a href="http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html</a>
Cisco Unified MeetingPlace Express	<a href="http://www.cisco.com/en/US/products/ps6533/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6533/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6533/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6533/prod_installation_guides_list.html</a>
Cisco Unified Conferencing for TelePresence	<a href="http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html">http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html</a>	<a href="http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html">http://www.cisco.com/en/US/products/ps7266/tsd_products_support_series_home.html</a>
Cisco IP/VC 3500 Series Videoconferencing	<a href="http://www.cisco.com/en/US/products/hw/video/ps1870/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/video/ps1870/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/video/ps1870/prod_installation_guides_list.html</a>
Cisco Unified Video Advantage	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5662/prod_installation_guides_list.html</a>

**Table 6-3** *Component-Specific Release Notes and Installation and Upgrade Documents (continued)*

<b>Components</b>	<b>Release Notes</b>	<b>Installation and Upgrade Documents</b>
Cisco Unity Connection	<a href="http://www.cisco.com/en/US/products/ps6509/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6509/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6509/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6509/prod_installation_guides_list.html</a>
Cisco Unified IP Phone 7900 Series	<a href="http://www.cisco.com/en/US/products/hw/phones/ps379/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/phones/ps379/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/phones/ps379/prod_installation_guides_list.html</a>
Cisco Unified Operations Manager	<a href="http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6535/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6535/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6535/prod_installation_guides_list.html</a>
Cisco Unified Presence	<a href="http://www.cisco.com/en/US/products/ps6837/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/ps6837/tsd_products_support_install_and_upgrade.html</a>	<a href="http://www.cisco.com/en/US/products/ps6837/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6837/prod_release_notes_list.html</a>
Cisco Unified Service Monitor	<a href="http://www.cisco.com/en/US/products/ps6536/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6536/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps6536/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/ps6536/tsd_products_support_install_and_upgrade.html</a>
Cisco IP Communicator	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps5475/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps5475/prod_release_notes_list.html</a>	—
CRS (Cisco Unified Contact Center Express)	<a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html</a>
Cisco Emergency Responder	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps842/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps842/prod_release_notes_list.html</a>	—
Cisco Unified Survivable Remote Site Telephony	—	<a href="http://www.cisco.com/en/US/products/sw/voicew/ps2169/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicew/ps2169/prod_installation_guides_list.html</a>
Cisco 3700 Series Voice Gateways/Gatekeepers	<a href="http://www.cisco.com/en/US/products/hw/routers/ps282/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/routers/ps282/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/routers/ps282/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/routers/ps282/prod_installation_guides_list.html</a>
Cisco Catalyst 3550 Series Access Switches	<a href="http://www.cisco.com/en/US/products/hw/switches/ps646/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps646/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps646/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps646/prod_installation_guides_list.html</a>
Cisco Catalyst 6500 Series Switches	<a href="http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps708/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps708/prod_installation_guides_list.html</a>
Cisco IOS Software Release 12.4 T	<a href="http://www.cisco.com/en/US/products/ps6441/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps6441/prod_release_notes_list.html</a>	—

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