



## **System Installation and Upgrade Manual for IP Telephony for Small and Medium Business**

Cisco Unified Communications System Release 7.0(1)

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## Preface

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## Overview

This document provides installation and upgrade information about the IP telephony components and configurations for small and medium business 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 7.0(1).
- Part 2: System Upgrade for IP Telephony—Describes the system-level procedures used to upgrade software and hardware components in the IP telephony environment from Cisco Unified Communications Systems Release 6.x to Cisco Unified Communications Release 7.0(1).

This document also includes related information about compatibility, and upgrade paths between releases. 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.

## 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 IP telephony environment, and different installation strategies.

Topic	Description
<a href="#">Chapter 2, “Preparing for Your System Installation.”</a>	Discusses the general approach for the installation of IP telephony 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 IP telephony 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.
<a href="#">Chapter 5, “Preparing for Your System Upgrade.”</a>	Discusses the general upgrade approach for the different IP telephony 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 IP telephony components configured in specific deployment models for Cisco Unified Communications Release 7.0(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 and contact center system applications for Cisco Unified Communications System Release 7.0(1) are:

- Cisco Unified Communications System for IP Telephony Enterprise and Midmarket Release 7.0(1) at:  
<http://www.cisco.com/iam/unified/ipt701/ENT/index.htm>
- Cisco Unified Communications System for IP Telephony Small and Medium Business Release 7.0(1) at:  
<http://www.cisco.com/iam/unified/ipt701/SMB/index.htm>
- Cisco Unified Communications System for Contact Center Release 7.0(1) at:  
<http://www.cisco.com/iam/unified/ipcc701/index.htm>

# Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, 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>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.





## **PART 1**

# **System Installation for IP Telephony for Small and Medium Business**





# CHAPTER 1

## Planning Your System Installation

---

This topic provides an overview of the installation processes for IP telephony 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 For Small and Medium Business](#)
- [Scope of this Installation Documentation](#)
- [System Installation Overview](#)
- [Component Installation Overview for Small Business](#)
- [System Installation Strategies for Small and Medium Businesses](#)
- [Interoperability and Compatibility Portals](#)



**Note**

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Many of the IP telephony 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 For Small and Medium Business

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, midmarket, and small and medium business topology models. The Cisco Unified Communications System testing process validates the interoperability of 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 call control and processing, conferencing, voice mail and messaging products, and voice-capable gateways and routers.

The Cisco Unified Communications System offers two solutions for small and medium businesses:

- Cisco Unified Communications 500 Series for Small Business (Unified Communications 500 Series) which is an integral component of Cisco Smart Business Communication System (SBCS) is suitable for small businesses having lesser than 50 users.
- Cisco offers Cisco Unified Communications Manager Express Solution on Cisco Integrated Services Router (ISR) for medium businesses having 50 to 250 users

## Cisco Unified Communications 500 Series for Small Business

Cisco Unified Communications 500 Series for Small Business (Unified Communications 500 Series) is an affordable integrated system that brings voice, data, video, and wireless networking to small businesses. Unified Communication 500 Series is an integral component of Smart Business Communication System for small businesses. Cisco IOS Software solution embedded in the Cisco Unified Communications 500 Series appliance provides Cisco Unified Communications Manager Express for call processing and Cisco Unity Express for voicemail, desktop messaging and Automated-Attendant services.

## Cisco Unified Communications Manager Express Solution for Medium Business

Cisco Unified Communications Manager Express Solution provides highest voice trunk densities, scalability and performance for IP Communications. Cisco Unified Communications Manager Express is a Cisco IOS Software solution that provides call processing for Cisco Unified IP phones. Simple to deploy, administer, and maintain, Cisco Unified Communications Express is a reliable, feature-rich telephony solution. Depending on the Integrated Services Router (ISR) you install, you can have up to 240 IP phones on your company network.

## 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 for small and medium businesses. This document provides installation information from a system perspective and only for the products that are part of Cisco Unified Communications System Release 7.0(1).

The Cisco Unified Communications IP telephony 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* deployment
- An installation, not an upgrade from previous software versions

Because of the variety of the options and the complexity of the procedures that are required to completely set up an IP telephony 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, server management, 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 IP telephony products:

- Product-specific installation documentation for all Cisco voice products is available at:  
<http://www.cisco.com/web/psa/products/index.html>
- List of URLs for component-specific installation and configuration documents for all IP telephony components in Cisco Unified Communications System Release 7.0(1) are available at:  
[http://www.cisco.com/iam/unified/ipt701/SMB/Component\\_Installation\\_and\\_Upgrade.htm](http://www.cisco.com/iam/unified/ipt701/SMB/Component_Installation_and_Upgrade.htm)

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

## System Installation Overview

This section includes the following sections:

- [Release Sets](#)
- [System Installation Roadmap for Small and Medium Business](#)
- [Component Installation Overview for Small Business](#)
- [Component Installation Overview for Medium Business](#)

## 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.

### Installed Base Release Sets

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 IP telephony environments:

- Cisco Unified Communications System Release Summary Matrix for IP telephony for small and medium business:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/unified/communications/system/versions/IPTSMBMatrix.html](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTSMBMatrix.html)

### Deployment Release Set

If you are dealing with a IP telephony deployment, be aware that certain features, applications, and components are part of the Cisco Unified Communications System 7.0(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 IP telephony environment, see [Component Installation Overview for Small Business](#) and [Component Installation Overview for Medium Business](#) sections.

For information about the Cisco Unified Communications System Release 7.0(1) IP telephony components for and their software and firmware versions, see [Release Set Versions](#) in [Chapter 2, “Preparing for Your System Installation.”](#)

## System Installation Roadmap for Small and Medium Business

[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 configure the network infrastructure.	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> </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 components 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 for Small Business

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

- Call processing— Unified Communications Manager Express
- Communications— Cisco Unified Contact Center Express
- Messaging—Cisco Unity Express
- Conferencing—Cisco Unified MeetingPlace Express
- Applications—Cisco IP Communicator, Cisco Unified CallConnector for MS Windows Client
- System Management—Cisco netManager Unified Communications

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

- Cisco Unified IP Phones and Cisco Unified IP Phones 500 Series

- Cisco Unified Communications 500 Series
- Cisco 521 Wireless Express Access Point, Cisco 526 Wireless Express Mobility Controller
- Catalyst Express 520 Switches
- Cisco 870 Series Integrated Services Routers
- 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 7.0(1) for small business that can be installed and configured in IP telephony environments.

**Table 1-2 System Installation Overview for Cisco Unified Communications System IP Telephony Components for Small Business**

Component/Application/Feature	Purpose
<b>Communications Infrastructure and Wireless Components</b>	
Appliance	<p>The Cisco Unified Communications 500 Series is the Unified Communications appliance that provides range of communications solutions in a single, unified package for small businesses.</p> <p>The Cisco Unified Communication 500 Series includes the support for communication devices, including Cisco Unified IP Phones, wireless handsets, and SIP phones. In addition, it includes Cisco Unified Communications Manager Express and Cisco Unity Express for call processing; security, firewall, and VPN capabilities; optional built-in wireless access point; and support for analog devices, such as a fax machine. It comes with 8, 16, 32, and 48 user configurations.</p>
Switches and routers.	<p>The Cisco Catalyst Express 520 Switch is a component of the Cisco Unified Communications 500 Series. The Cisco Catalyst Express 520 is a fixed-configuration, managed Ethernet switch that provides eight ports of 10/100 Power over Ethernet (PoE), optimized for integration with the Cisco Unified Communications 500 Series. This switch offers several features such as PoE, advanced network security, QOS and centralized management.</p> <p>Cisco 870 Series Integrated Services Routers for Home Office/Teleworker site.</p>
Firewall and security components.	Cisco Unified Communications 500 Series provides basic security with integrated firewall, remote access VPN and other Catalyst Integrated Security features.
Wireless components.	The Cisco Unified Communications 500 Series includes an optional, integrated wireless access point. This enables businesses to easily install a wireless network for a small office. Businesses needing more wireless coverage or support for more users will have to install additional WLAN access points and mobility controllers. Cisco Mobility Express includes WLAN access points and mobility controllers for deploying WIFI networks in businesses.
System network management applications.	Cisco netManager Unified Communications provide the means to monitor, manage, and troubleshoot the Cisco Unified Communications System.
<b>Cisco Unified Communications Manager and Call Processing Devices</b>	
Cisco Unified Communications Manager Express	Cisco Unified Communications Manager Express provides call-processing functionality for small businesses

**Table 1-2** System Installation Overview for Cisco Unified Communications System IP Telephony Components for Small Business

Component/Application/Feature	Purpose
Cisco Unified IP Phones and Cisco Unified IP Phones 500 Series	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 Express.
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.
Cisco Unified MeetingPlace Express	Cisco Unified MeetingPlace Express provides intuitive interfaces for setting up, attending and managing meetings.
Cisco Unified Contact Center Express	Unified Contact Center Express provides IP-based customer interaction solutions.
Cisco Unity Express	These applications combine voice messaging, integrated messaging, speech recognition capabilities, and call-routing rules.
Cisco Unified CallConnector for MS Windows Client	A desktop solution integrated with Cisco Unified Communications Manager Express that delivers easy-to-use call control features to end users.

## Component Installation Overview for Medium Business

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

- Call processing— Unified Communications Manager Express
- Communications— Cisco Unified Contact Center Express
- Messaging—Cisco Unity Express
- Conferencing—Cisco Unified MeetingPlace Express
- System Management—Cisco netManager Unified Communications
- Configuration Management—CiscoWorks Resource Manager Essentials

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

- Cisco Unified IP Phones
- Cisco Integrated Services Routers
- Cisco gateways and gatekeepers
- Cisco LAN/WAN infrastructure and components

Table 1-2 provides an overview of primary components in the Cisco Unified Communications System Release 7.0(1) for medium business that can be installed and configured in IP telephony environments.

**Table 1-3 System Installation Overview for Cisco Unified Communications System IP Telephony Components for Medium Business**

Component/Application/Feature	Purpose
<b>Communications Infrastructure and Wireless Components</b>	
Routers	Cisco 1800, 2800 and 3800 Series Integrated Services Routers (ISR) is designed meet the Unified Communications needs of small and medium business. Cisco Unified Communications Manager Express solution embedded in Cisco IOS® Software in the Cisco ISR provides call processing for Cisco IP Phones, including wired and cordless wireless LAN (WLAN) phones. In addition, it includes Cisco Unity Express solution for all-in-one data, voice processing, voicemail, and auto-attendant system.
Switches	Cisco switches provide switching 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	Cisco gateways 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.	Cisco Integrated Services Routers (ISR) provides basic security with integrated firewall, remote access VPN and other integrated security features.
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.	Cisco netManager Unified Communications provide the means to monitor, manage, and troubleshoot the Cisco Unified Communications System.
CiscoWorks Resource Manager Essentials	Is a browser-based interface streamlines the tasks associated with network administration.
<b>Cisco Unified Communications Manager and Call Processing Devices</b>	
Cisco Unified Communications Manager Express	Cisco Unified Communications Manager Express provides call-processing functionality for small and medium businesses
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.
Cisco IP Communicator	Cisco 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.
Cisco Unified MeetingPlace Express	Cisco Unified MeetingPlace Express provides intuitive interfaces for setting up, attending and managing meetings.
Cisco Unified Contact Center Express	Unified Contact Center Express provides IP-based customer interaction solutions.
Cisco Unity Express	These applications combine voice messaging, integrated messaging, speech recognition capabilities, and call-routing rules.

For installation information on Cisco Unified Communications System Release 7.0(1) IP telephony for enterprise and midmarket components, see the following:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/UC7.0.1/ipt\\_system\\_inst\\_upg/suimt.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC7.0.1/ipt_system_inst_upg/suimt.pdf)

For installation information on Cisco Unified Communications System Release 7.0(1) contact center components, see the following:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/UC7.0.1/cc\\_system\\_inst\\_upg/siumc\\_701.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC7.0.1/cc_system_inst_upg/siumc_701.pdf)

## System Installation Strategies for Small and Medium Businesses

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

### 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.

### Multisite Installation

For businesses with many sites, you can install more than one site at a time. You can have multisite distributed call processing model for small and medium businesses.

## Interoperability and Compatibility Portals

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

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

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

- Cisco Unified Communications Compatibility Tool:  
<http://tools.cisco.com/ITDIT/vtgsca>
- *Cisco Unified Contact Center Express Software and Hardware Compatibility Guide*:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cust\\_contact/contact\\_center/crs/express\\_compatibility/matrix/crscomtx.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/crs/express_compatibility/matrix/crscomtx.pdf)
- *Cisco Unified 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 Summary Matrix for IP Telephony Small and Medium Business:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/unified/communications/system/versions/IPTSMBMatrix.html](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTSMBMatrix.html)



## 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 for Unified Communications System for Small Business](#)
- [System installation Approach for Unified Communications System for Medium Business](#)
- [Release Set Versions](#)
- [System Installation Dependencies](#)

## 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

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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.
  - Refer to the Single Site Unified Communications System Design Guide for small business at [http://www.cisco.com/web/partners/sell/smb/tools\\_and\\_resources/validated\\_commercial\\_solutions.html](http://www.cisco.com/web/partners/sell/smb/tools_and_resources/validated_commercial_solutions.html)
  - Refer to Cisco Unified Communications Manager Express Solution Reference Network Design Guide for medium business at [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cucme/srnd/design/guide/cmesrnd.html](http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/srnd/design/guide/cmesrnd.html)
- Review system architecture and testing information for IP telephony systems for small and medium business at: <http://www.cisco.com/iam/unified/ipt701/SMB/index.htm>




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**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.

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### Implement Phase

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




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

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- Review preinstallation and planning documents, such as site surveys, equipment lists, and product-specific documents.




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**Note** The preinstallation checklist for Cisco Smart Business Communication System for small business is at: [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/sbcs/smartdoc/sysetup2.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/sbcs/smartdoc/sysetup2.pdf)

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- 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.




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**Note** For information on setting up Cisco Unified Communications 500 Series for Small Business, see [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/sbcs/uc500/hardware/quick/guide/u500gsg2.html](http://www.cisco.com/en/US/docs/voice_ip_comm/sbcs/uc500/hardware/quick/guide/u500gsg2.html)

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- 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 for Unified Communications System for Small Business

After your perform preinstallation tasks, setup the Cisco Unified Communications 500 Series, install Cisco Unified Communications Manager Express and its associated IP telephony components. Install Unified Communications System for small business, following the general sequence that is described in [Table 2-1](#).

The installation sequence of the IP telephony 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 for Unified Communications System for Small Business*

	Procedure	Remarks
<b>Step 1</b>	Setup and configure Cisco Unified Communications 500 Series	For information on setting up Cisco Unified Communications 500 Series for Small Business, see <a href="http://www.cisco.com/en/US/docs/voice_ip_com/sbcs/uc500/hardware/quick/guide/u500gsg2.html">http://www.cisco.com/en/US/docs/voice_ip_com/sbcs/uc500/hardware/quick/guide/u500gsg2.html</a>
<b>Step 2</b>	Install and configure network infrastructure component	Install a Cisco Catalyst Express 520 for a Cisco Unified 500 Series
<b>Step 3</b>	Connect Interfaces to Cisco Unified Communications 500 Series	Connect Cisco Unified Communications 500 Series to a WAN, PSTN, and ISDN
<b>Step 4</b>	Configure wireless access point	Configure wireless access point and verify communication between the Unified IP Phones.
<b>Step 5</b>	Perform administrative tasks	Log Into Unified Communications Manager Express and Cisco Unity Express GUI and perform tasks such as adding or changing phones or voice mailboxes, creating individual phone user accounts, and managing AA scripts

**Table 2-1 System Installation General Sequence for Unified Communications System for Small Business**

	Procedure	Remarks
<b>Step 6</b>	Install and configure the IP telephony components based on your requirements and the interdependencies of components.	See the <a href="#">System Installation Dependencies</a> section for related information.
<b>Step 7</b>	Install and configure network management tools	—
<b>Step 8</b>	Complete postinstallation tasks.	These tasks include system validation and verification.  For more information on post-installation checklist for Cisco Smart Business Communication System for small business, see Post-Installation Checklist section in <a href="http://www.cisco.com/en/US/docs/voice_ip_com/sbcs/smartdoc/sysetup2.pdf">http://www.cisco.com/en/US/docs/voice_ip_com/sbcs/smartdoc/sysetup2.pdf</a>

## System installation Approach for Unified Communications System for Medium Business

After your perform preinstallation tasks, setup Cisco Integrated Services Router, install Cisco Unified Communications Manager Express and its associated IP telephony components. Install Unified Communications System for Medium Business, following the general sequence that is described in [Table 2-2](#).

The installation sequence of the IP telephony 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 2-2 System Installation General Sequence for Unified Communications System for Medium Business**

	Procedure	Remarks
<b>Step 1</b>	Install and configure Cisco Integrated Services Router	
<b>Step 2</b>	Install and configure network infrastructure component	install and configure your Catalyst switch
<b>Step 3</b>	Connect Interfaces to Cisco Integrated Services Router	Connect Cisco Integrated Services Router to a WAN, PSTN, and ISDN

**Table 2-2 System Installation General Sequence for Unified Communications System for Medium Business**

	Procedure	Remarks
<b>Step 4</b>	Connect Devices to Cisco Integrated Services Router	Connect wireless access points, Cisco Unified IP phones, and other devices to Cisco Integrated Services Routers or Cisco Catalyst switches.  After connecting and configuring the devices, verify communication between the IP Phones.
<b>Step 5</b>	Install TFTP server on a PC and enable TFTP on the router	Trivial File Transfer Protocol (TFTP) must be enabled on the router to allow IP phones to download phone firmware files.
<b>Step 6</b>	Identify the Cisco IOS software installed on the router	Determine whether the Cisco IOS release supports the recommended Unified Communications Manager Express. Otherwise download and extract the recommended Cisco IOS IP Voice or higher image and reload the router with new software.
<b>Step 7</b>	Install and configure the IP telephony components based on your requirements and the interdependencies of components.	See the <a href="#">System Installation Dependencies</a> section for related information.
<b>Step 8</b>	Perform administrative tasks	Log Into Unified Communications Manager Express and Cisco Unity Express GUI and perform tasks such as adding or changing phones or voice mailboxes, creating individual phone user accounts.
<b>Step 9</b>	Install and configure network management tools	—
<b>Step 10</b>	Complete postinstallation tasks.	Perform the postinstallation tasks.

## Release Set Versions

This section lists the applications and components that are part of the Cisco Unified Communications System Release 7.0(1) family of products. These products have been tested and verified for interoperability and compatibility and are used in a greenfield deployment of an IP telephony system. Based on your network design, you may choose to install all or some of these applications and components.

[Table 2-3](#) lists the release versions of the Cisco Unified Communications System Release 7.0(1) components for small business that were used in the IP telephony test environment.

**Table 2-3 Software Release Versions in Cisco Unified Communications Release 7.0(1) for IP Telephony for Small Business**

Category	Component	Release Version
Call Control	Cisco Unified Communications Manager Express	7.0/IOS 12.4(20)T
Voice Mail and Unified Messaging	Cisco Unity Express	3.2(1)
Contact Center	Cisco Unified Contact Center Express <sup>1</sup>	7.0(1)SR1

**Table 2-3 Software Release Versions in Cisco Unified Communications Release 7.0(1) for IP Telephony for Small Business**

Category	Component	Release Version
Conferencing	Cisco Unified MeetingPlace Express <sup>2</sup>	2.0(3)
Endpoints and Clients	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G	Firmware 8.4.1
	Cisco Unified IP Phones 500 Series: Cisco Unified IP Phones 521G and 524G models	Firmware 8.4.1
	Cisco IP Communicator	2.1(3)
	Cisco Unified Video Advantage	2.1(1)
Applications	Cisco Unified CallConnector for MS Windows Client	1.4
Wireless	Cisco 521 Wireless Express Access Point	In built with Cisco Unified Communications 500 Series
Network Management	Cisco netManager Unified Communications	1.1
Communications Infrastructure	Cisco Unified Communications 500 Series for Small Business	12.4(20)T
	Cisco IOS Firewall	12.4(20)T1
	Cisco Catalyst Express 520 Series LAN Switches	In built with Cisco Unified Communications 500 Series

1. Cisco Unified Contact Center Express was not tested in the Cisco Unified Communications System Test environment for IP telephony for small business.
2. Cisco Unified MeetingPlace Express was not tested in the Cisco Unified Communications System Test environment for IP telephony for small business.

Table 2-4 lists the release versions of the Cisco Unified Communications System Release 7.0(1) components for medium business that were used in the IP telephony test environment.

**Table 2-4 Software Release Versions in Cisco Unified Communications Release 7.0(1) for IP Telephony for Medium Business**

Category	Component	Release Version
Call Control	Cisco Unified Communications Manager Express	7.0/IOS 12.4(20)T
Voice Mail and Unified Messaging	Cisco Unity Express	3.2(1)
Contact Center	Cisco Unified Contact Center Express <sup>1</sup>	7.0(1)SR1
Conferencing	Cisco Unified MeetingPlace Express	2.0(3)
Endpoints and Clients	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G	Firmware 8.4.1
	Cisco IP Communicator	2.1(3)
	Cisco Unified Video Advantage	2.1(1)
Configuration Management	CiscoWorks Resource Manager Essentials	4.0.5
Network Management	Cisco netManager Unified Communications	1.1

**Table 2-4** Software Release Versions in Cisco Unified Communications Release 7.0(1) for IP Telephony for Medium Business

Category	Component	Release Version
Communications Infrastructure	Cisco IOS Mainline Release <sup>2</sup>	12.4(18c)
	Cisco 3845 (IP-to-IP gateway)	12.4(20)T
	Cisco 3745 (gatekeeper) <sup>3</sup>	12.4(15)T7
	Cisco Integrated Services Router 1800, 3800, and 2800 series	12.4(20)T
	Cisco IOS Firewall	12.4(20)T1
	Cisco Unified Border Element	12.4(20)T
	Catalyst 3550, 3560, 3750 Switches	12.2(25)SEE4
	Cisco Catalyst 4503, 4506 (access switch)	12.2(25)SEE4
	Cisco Catalyst 6506, 6509 (voice access switch, Supervisor Engine 2/MSFC2)	Cat OS 8.6.3 /12.2.(18)SXF9
	Cisco Catalyst 6506, 6509 (core switch, Supervisor Engine 720)	12.2(18)SXF9 (native-mode)

1. Cisco Unified Contact Center Express was not tested in the Cisco Unified Communications System Test environment for IP telephony for small business.
2. IOS Mainline Release 12.4(18b) was used for additional basic PSTN functionality and load testing as part of regression testing conducted in IP telephony environments.
3. Cisco IOS Release 12.4(15)Tx is the last release supported on the 37xx Series; these components are not supported on Release 12.4(20)T.

## 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. This section provides information on Engineer Specials and patch files required for Cisco Unified Communications System Release 7.0(1).





## CHAPTER 3

# Performing Your System Installation

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This topic provides guidance for the installation order components for a Cisco Unified Communications IP telephony deployment for small and medium business. 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](#)
- [Postinstallation Tasks](#)
- [Related Documentation](#)



### Note

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Many of the IP telephony 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 for small and medium business. 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 IP telephony components for the following deployment models.

- [IP Telephony Small Business Model](#)
- [IP Telephony Medium Business Model](#)

## IP Telephony Small Business Model

This sections provide the general installation sequence for the various IP telephony components in the small business deployment model.

- [Single Site Model](#)

For more detailed information about these IP telephony deployment models, see: [http://www.cisco.com/iam/unified/ipt701/SMB/Review\\_Tested\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt701/SMB/Review_Tested_Site_Models.htm)

Also see the following documents:

- *System Description: Cisco Unified Communications Release 7.0(1) at:* [http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/UC7.0.1/system\\_description/SD.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC7.0.1/system_description/SD.pdf)
- Solution Reference Network Design (SRND) document for various IP telephony 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 [Postinstallation Tasks](#) 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 Express) are located at the same site and have no WAN connectivity between any software modules.

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

1. Cisco Unified Communications 500 Series
2. Core and access switches (Catalyst Express 500 Series Switches)
3. Cisco Unified Communications Manager Express, Cisco Unified IP Phones,
4. Cisco Unity Express
5. Network management applications (Cisco netManager Unified Communications)
6. Cisco Unified MeetingPlace Express
7. Cisco Unified CallConnector for MS Windows Client

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

- Cisco Unified IP Phones
- Cisco Unified IP Phones 500 Series
- Cisco IP Communicator
- Cisco LAN/WAN infrastructure and components

## IP Telephony Medium Business Model

This section provides the general installation sequence for the various IP telephony components in the medium business deployment models.

- [Single Site Model](#)
- [Multisite Implementation with Distributed Call Processing](#)

For more detailed information about these IP telephony deployment models, see: [http://www.cisco.com/iam/unified/ipt701/SMB/Review\\_Tested\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt701/SMB/Review_Tested_Site_Models.htm)

## 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 software modules.

For a medium business deployment, install components in the following order:

1. Cisco Integrated Services Router
2. Core Switches
3. CiscoWorks Resource Manager Essentials
4. Network management application (Cisco netManager Unified Communications)
5. Cisco Unified Communications Manager Express, Cisco Unified IP Phones, Cisco IP Communicator
6. Cisco Unity Express

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

- Cisco Unified IP Phones
- Cisco LAN/WAN infrastructure and components

## Multisite Implementation with Distributed Call Processing

The multisite model is suitable for medium business operations with main site and remote site. Call processing is distributed between the main site and remote site.

For the main site, install components in the following order:

1. Cisco Integrated Services Router
2. Core switches
3. Gateway
4. CiscoWorks Resource Manager Essentials
5. Network management application (Cisco netManager Unified Communications)
6. Cisco Unified Communications Manager Express

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

- Cisco Unified IP Phones
- Cisco IP Communicator

For the remote site, install components in the following order

1. Integrated Services Router
2. Core Switches
3. Cisco Unified Communications Manager Express, Cisco Unified IP Phones, Cisco IP Communicator

# Postinstallation Tasks

After you complete the tasks in the implement phase and install the IP telephony 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/en/US/docs/voice\\_ip\\_comm/uc\\_system/unified/communications/system/ucstart.htm](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/ucstart.htm) for comprehensive system-level deployment and lifecycle model information.

**Operate Phase**

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

- Manage the newly installed network by conducting:
  - Network management at the system level using Cisco netManager Unified Communications
- Conduct Day 1 operations (cutover to customer) tasks such as:
  - Train administrators to support end-users to use the newly installed IP telephony 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/ipt701/SMB/Backing\\_Up\\_and\\_Restoring\\_Components.htm](http://www.cisco.com/iam/unified/ipt701/SMB/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 Unified Contact Center Express Software and Hardware Compatibility Guide*:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cust\\_contact/contact\\_center/crs/express\\_compatibility/matrix/crscomtx.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/crs/express_compatibility/matrix/crscomtx.pdf)
- *Cisco Unified Communications Manager Express and Cisco IOS Software Version Compatibility Matrix*:  
[http://www.cisco.com/en/US/products/sw/voicesw/ps4625/prod\\_installation\\_guide09186a00805acf50.html](http://www.cisco.com/en/US/products/sw/voicesw/ps4625/prod_installation_guide09186a00805acf50.html)
- Cisco Unified Communications System Release Summary Matrix for IP Telephony Small and Medium Business:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/unified/communications/system/versions/IPTSMBMatrix.html](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTSMBMatrix.html)

## Component Release Notes and Installation and Upgrade Documents

Table 3-1 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 3-1** *Component-Specific Release Notes and Installation and Upgrade Documents*

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified Communications 500 Series for Small Business	<a href="http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html</a>
Cisco Unified Communications Manager Express	—	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps4625/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/sw/voicesw/ps4625/tsd_products_support_install_and_upgrade.html</a>
Cisco Unity Express	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5520/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 Video Advantage	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5662/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>

**Table 3-1** *Component-Specific Release Notes and Installation and Upgrade Documents (continued)*

<b>Components</b>	<b>Release Notes</b>	<b>Installation and Upgrade Documents</b>
Cisco IP Phone 500 Series	<a href="http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.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>	—
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 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 IOS Software Release 12.4(20)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>	—
Cisco 3800 Integrated Services Router	<a href="http://www.cisco.com/en/US/products/ps5855/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5855/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps5855/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5855/prod_installation_guides_list.html</a>
Cisco 2800 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/ps5854/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5854/prod_installation_guides_list.html</a>
Cisco 870 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/hw/routers/ps380/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/routers/ps380/prod_installation_guides_list.html</a>
Cisco 1861 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/ps5853/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5853/prod_installation_guides_list.html</a>
Cisco Catalyst 500 series Switch	—	<a href="http://www.cisco.com/en/US/products/ps6545/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6545/prod_installation_guides_list.html</a>
Cisco Catalyst 3560 series Switch	<a href="http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_installation_guides_list.html</a>



## **PART 2**

# **System Upgrade for IP Telephony for Small and Medium Business**





## CHAPTER 4

# Planning Your System Upgrade

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This topic provides an overview of the upgrade process for IP telephony 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](#)



### Note

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Many of the IP telephony 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, midmarket, and small and medium business topology models. The Cisco Unified Communications System testing process validates the interoperability of 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 call control and processing, conferencing, voice mail and messaging products, and voice-capable gateways and routers.

The Cisco Unified Communications System offers two solutions for small and medium businesses:

- Cisco Unified Communications 500 Series for Small Business (Cisco Unified 500 Series) which is an integral component of Cisco Smart Business Communication System is suitable for small businesses having lesser than 50 users.
- Cisco offers Cisco Unified Communications Manager Express Solution on Cisco Integrated Services Router for medium businesses having 50 to 250 users

## Cisco Unified Communications 500 Series for Small Business

Cisco Unified Communications 500 Series for Small Business (Unified Communications 500 Series) is an affordable integrated system that brings voice, data, video, and wireless networking to small businesses. Unified Communication 500 Series is an integral component of Cisco Smart Business Communication System for small businesses. Cisco IOS Software solution embedded in the Cisco Unified Communications 500 Series appliance provides Cisco Unified Communications Manager Express for call processing and Cisco Unity Express for voicemail, desktop messaging and Automated-Attendant services.

## Cisco Unified Communications Manager Express Solution for Medium Business

Cisco Unified Communications Manager Express Solution provides highest voice trunk densities, scalability and performance for IP Communications. Cisco Unified Communications Manager Express is a Cisco IOS Software solution that provides call processing for Cisco Unified IP phones. Simple to deploy, administer, and maintain, Cisco Unified Communications Express is a reliable, feature-rich telephony solution. Depending on the Cisco Integrated Services Router you install, you can have up to 240 IP phones on your company network.

## 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 IP telephony 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 Express and Cisco Unity Express. 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:
  - Security
  - Server management
  - Remote access
- Additional third-party off-board applications such as:
  - Operator console
  - 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:

- Cisco Unified Communications System Release 6.0(1)—For detailed information about the IP telephony deployment models and topologies that are developed to test this release set, see [Review Tested Site Models for IP Telephony](#).



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**Note** Cisco Unified Communications Manager Express 4.1/ IOS 12.4(15)T is part of the Cisco Unified Communications System Release 6.0(1) set.

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- Cisco Unified Communications System Release 6.1(1)—For detailed information about the IP telephony deployment models and topologies that are developed to test this release set, see [Review Tested Site Models for IP Telephony](#).



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**Note** Cisco Unified Communications Manager Express 4.1/ IOS 12.4(15)T and 4.2/IOS 12.4(11)XW5 are part of the Cisco Unified Communications System Release 6.1(1) set.

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- Target release:
  - Cisco Unified Communications System Release 7.0(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 IP telephony deployment models and topologies that were developed to test this release set, see [Review Tested Site Models for IP Telephony](#).

You can directly upgrade to Cisco Unified Communications Manager Express 7.0/12.4(20)T from the following versions for Cisco Unified Communications Manager Express/IOS:

- Cisco Unified Communications Manager Express 4.0(2)/IOS 12.4(11)T3
- Cisco Unified Communications Manager Express 4.0(2)/IOS 12.4(11)T2
- Cisco Unified Communications Manager Express 4.0(2)/IOS 12.4(11)T
- Cisco Unified Communications Manager Express 3.4(0)/IOS 12.4(6)T1
- Cisco Unified Communications Manager Express 3.4(0)/IOS 12.4(6)T



**Note**

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The above Cisco Unified Communications Manager Express versions are not part of Unified Communications System.

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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.”](#)

For installation information on Cisco Unified Communications System Release 7.0(1) IP telephony Enterprise and Midmarket components, see the following:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/UC7.0.1/ipt\\_system\\_inst\\_upg/suimt.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC7.0.1/ipt_system_inst_upg/suimt.pdf)

For installation information on Cisco Unified Communications System Release 7.0(1) Contact Center com-

ponents, see the following:

[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/UC7.0.1/cc\\_system\\_inst\\_upg/siumc\\_701.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC7.0.1/cc_system_inst_upg/siumc_701.pdf)

## Upgrade Roadmap

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

- 
- 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.
- Step 2** Perform all required hardware equipment checks.
- Step 3** Upgrade the *existing* network components from the base release set to the target release set.
- Step 4** The existing network should include components that are already supported by one of the base release sets.
- Use the recommended upgrade paths defined to perform the upgrade.
- Install and configure *new* components that are supported by the target release.
- 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).
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## 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 IP telephony 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 upgrade the components of the Cisco Unified Communications System solution for small business in the following order:

1. Infrastructure components, including Catalyst 500 series switch, 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 500 Series, Cisco Unified Communications Manager Express
3. Cisco Unity Express
4. Cisco MeetingPlace Express component
5. Application clients including Cisco Unified Video Advantage and others
6. Remove obsolete or end-of-life components.

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

The upgrade the components of the Cisco Unified Communications System solution for medium business in the following order:

1. Infrastructure components, including Catalyst 3560 switch, 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 Integrated Services Router, Cisco Unified Communications Manager Express
3. Cisco Unity Express
4. Cisco MeetingPlace Express component
5. Application clients including Cisco Unified Video Advantage and others
6. Remove obsolete or end-of-life components.

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 IP telephony 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.

## 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.

## Upgrade Release Versions

This section provides information the component release versions of the base and target release sets.

## Cisco Unified Communications System Release 6.x and Release 7.0(1) Software Release Sets for Small Business

Table 5-1 lists the software versions for the IP telephony components in the Cisco Unified Communications System Release 6.x and Release 7.0(1) release sets.

**Table 5-1** IP Telephony Components in Cisco Unified Communications System Release 6.x and Release 7.0(1) Release Sets

Cisco Unified Communications System Component Name	Release 6.0(1) Release Set	Release 6.1(1) Release Set	Release 7.0(1) Release Set
Cisco Unified Communications 500 Series for Small Business	IOS 12.4(11)XW2	IOS 12.4(11)XW4	12.4(20)T
Cisco Unified Communications Manager Express	4.1 / 12.4(15)T	4.1 / 12.4(15)T3 4.2 / 12.4(11)XW5	7.0/12.4(20)T
Cisco Unified Contact Center Express <sup>1</sup>	5.0(1)SR1	5.0(2)	7.0(1)SR1
Cisco Unity Express	3.0(1)	3.1(1)	3.2(1)
Cisco Unified MeetingPlace Express <sup>2</sup>	2.0	2.0(2)	2.0(3)
Cisco netManager Unified Communications	1.0	1.0	1.1
Cisco Unified IP Phones	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	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G
Cisco Unified IP Phones 500 Series:	—	—	Cisco Unified IP Phones 521G and 524G models
Cisco IP Communicator	2.1	2.1	2.1(3)
Cisco Unified CallConnector for MS Windows Client	—	—	1.4

1. Cisco Unified Contact Center Express was not tested in the Cisco Unified Communications System Test environment for IP telephony for small business.
2. Cisco Unified MeetingPlace Express was not tested in the Cisco Unified Communications System Test environment for IP telephony fo small business.

## Cisco Unified Communications System Release 6.x and Release 7.0(1) Software Release Sets for Medium Business

Table 5-1 lists the software versions for the IP telephony components in the Cisco Unified Communications System Release 6.x and Release 7.0(1) release sets.

**Table 5-2** *IP Telephony Components in Cisco Unified Communications System Release 6.x and Release 7.0(1) Release Sets*

Cisco Unified Communications System Component Name	Release 6.0(1) Release Set	Release 6.1(1) Release Set	Release 7.0(1) Release Set
Cisco Unified Communications Manager Express	4.1 / 12.4(15)T	4.1 / 12.4(15)T3 4.2 / 12.4(11)XW5	7.0/12.4(20)T
Cisco Unified Contact Center Express <sup>1</sup>	5.0(1)SR1	5.0(2)	7.0(1)SR1
Cisco Unity Express	3.0(1)	3.1(1)	3.2(1)
Cisco Unified MeetingPlace Express	2.0	2.0(2)	2.0(3)
Cisco Resource Management Essentials (RME)	4.0.5	4.0.5	4.0.5
Cisco IOS Mainline Release <sup>2</sup>	—	—	12.4(18c)
Cisco 3845 (IP-to-IP gateway)	IOS 12.4(15)T	IOS 12.4(15)T3	12.4(20)T
Cisco 3745 (gatekeeper) <sup>3</sup>	IOS 12.4(15)T	IOS 12.4(15)T3	12.4(15)T7
Cisco Integrated Services Router 1800, 3800, and 2800 series	IOS 12.4(15)T	12.4(15)T3	12.4(20)T
Cisco Integrated Services Router IOS FW	12.4(15)T	12.4(15)T3	12.4(20)T1
Cisco netManager Unified Communications	1.0	1.0	1.1
Cisco Unified Border Element	12.4(15)T	12.4(11)XW3	12.4(20)T
Catalyst 3550, 3560, 3750 Switches	12.2(25)SEE3	12.2(25)SEE3	12.2(25)SEE4
Cisco Catalyst 4503, 4506 (access switch)	12.2(25)EWA8	12.2(25)EWA8	12.2(25)SEE4
Cisco Unified IP Phones	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	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G	Cisco Unified IP Phones models 7902G, 7905G, 7906G, 7911G, 7912G, 7920, 7921G, 7931G, 7935, 7936, 7937G, 7940G, 7941G, 7942G, 7945G, 7960G, 7961G, 7962G, 7965G, 7970G, 7971G, 7975G, 7985G
Cisco IP Communicator	2.1	2.1	2.1(3)

1. Cisco Unified Contact Center Express was not tested in the Cisco Unified Communications System Test environment for IP telephony for small business.
2. IOS Mainline Release 12.4(18b) was used for additional basic PSTN functionality and load testing as part of regression testing conducted in IP Telephony environments.
3. Cisco IOS Release 12.4(15)Tx is the last release supported on the Cisco 37xx Series; these components are not supported on Release 12.4(20)T.







## CHAPTER 6

# Performing Your System Upgrade

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This topic discusses in detail the upgrade sequence for all of the IP telephony components for small and medium business that are configured in various deployment models for Cisco Unified Communications System Release 7.0(1).

Upgrade procedures for individual IP telephony 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:

- [IP Telephony Deployment Models](#)
- [Related Documentation](#)

## IP Telephony Deployment Models

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

The following IP telephony site models were tested in the Cisco Unified Communications System test environment:

- [IP Telephony Small Business Model](#)
- [IP Telephony Medium Business Model](#)

## IP Telephony Small Business Model

This sections provide the upgrade procedure for the various IP telephony components in the small business deployment models.

Detailed information about IP telephony deployments and site models that are tested for the target release is available at [http://www.cisco.com/iam/unified/ipt701/SMB/Review\\_Tested\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt701/SMB/Review_Tested_Site_Models.htm)

The following deployment model is tested in the Cisco Unified Communications System IP telephony test environment:

- [Single-Site 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.

## Single-Site Model

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

1. Infrastructure components such as Catalyst Express 500 Series Switches
2. Cisco IOS version and Cisco Unified Communications Manager Express
3. Cisco Unified IP Phones, Cisco Unified IP Phones 500 Series, Cisco IP Communicator
4. Cisco Unity Express
5. Network management application (Cisco netManager Unified Communications)
6. Cisco MeetingPlace Express
7. Cisco Unified Video Advantage
8. Cisco Unified CallConnector for MS Windows Client

## IP Telephony Medium Business Model

This section provides the upgrade procedures for the various IP telephony components in the medium business

deployment models.

- [Single Site Model](#)
- [Multisite Implementation with Distributed Call Processing](#)

For more detailed information about these IP telephony deployment models, see: [http://www.cisco.com/iam/unified/ipt701/SMB/Review\\_Tested\\_Site\\_Models.htm](http://www.cisco.com/iam/unified/ipt701/SMB/Review_Tested_Site_Models.htm)

### 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 Communications software modules.

1. Infrastructure components such as Catalyst 3560 Switch, Cisco 2821 router
2. Integrated Services Router IOS version and Cisco Unified Communications Manager Express
3. Cisco Unified IP Phones, Cisco IP Communicator, Cisco Analog Telephone Adaptor 186
4. Cisco Unity Express
5. Network management application (Cisco netManager Unified Communications)

### Multisite Implementation with Distributed Call Processing

The Multisite model is suitable for medium business operations with main site and remote site. Call processing is distributed between the main site and remote site.

For the main site, install components in the following order:

1. Infrastructure components such as Catalyst 3560 Switch, Cisco 2821 router
2. Integrated Services Router IOS version and Cisco Unified Communications Manager Express

3. Cisco Unified IP Phones, Cisco IP Communicator, Cisco Analog Telephone Adaptor 186
4. Cisco Unity Express
5. Network management application (Cisco netManager Unified Communications)

For the remote site, upgrade components in the following order

1. Core Switch
1. Integrated Services Router IOS version and Cisco Unified Communications Manager Express
2. Cisco Unified IP Phones, Cisco IP Communicator

## 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 Unified Contact Center Express Software and Hardware Compatibility Guide*:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/cust\\_contact/contact\\_center/crs/express\\_compatibility/matrix/crscomtx.pdf](http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/crs/express_compatibility/matrix/crscomtx.pdf)
- *Cisco Communications Manager Express and Cisco IOS Software Version Compatibility Matrix*:  
[http://www.cisco.com/en/US/products/sw/voicesw/ps4625/prod\\_installation\\_guide09186a00805acf50.html](http://www.cisco.com/en/US/products/sw/voicesw/ps4625/prod_installation_guide09186a00805acf50.html)
- Cisco Unified Communications System Release Summary Matrix for IP Telephony for Small and Medium Business:  
[http://www.cisco.com/en/US/docs/voice\\_ip\\_comm/uc\\_system/unified/communications/system/versions/IPTSMBMatrix.html](http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/IPTSMBMatrix.html)

## Component Release Notes and Installation and Upgrade Documents

Table 6-1 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 6-1** Component-Specific Release Notes and Installation and Upgrade Documents

Components	Release Notes	Installation and Upgrade Documents
Cisco Unified Communications 500 Series for Small Business	<a href="http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html</a>
Cisco Unified Communications Manager Express	—	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps4625/tsd_products_support_install_and_upgrade.html">http://www.cisco.com/en/US/products/sw/voicesw/ps4625/tsd_products_support_install_and_upgrade.html</a>
Cisco Unity Express	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5520/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5520/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 Video Advantage	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5662/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps5662/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 IP Phone 500 series	<a href="http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps7293/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps7293/prod_installation_guides_list.html</a>
Cisco IP Communicator	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps5475/prod_release_notes_list.html">http://www.cisco.com/en/US/products/sw/voicesw/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 Unified Survivable Remote Site Telephony	—	<a href="http://www.cisco.com/en/US/products/sw/voicesw/ps2169/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/sw/voicesw/ps2169/prod_installation_guides_list.html</a>
Cisco IOS Software Release 12.4(20)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>	—
Cisco 3800 Integrated Services Router	<a href="http://www.cisco.com/en/US/products/ps5855/prod_release_notes_list.html">http://www.cisco.com/en/US/products/ps5855/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/ps5855/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5855/prod_installation_guides_list.html</a>
Cisco 2800 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/ps5854/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5854/prod_installation_guides_list.html</a>
Cisco 870 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/hw/routers/ps380/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/routers/ps380/prod_installation_guides_list.html</a>
Cisco 1861 Integrated Services Router	—	<a href="http://www.cisco.com/en/US/products/ps5853/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps5853/prod_installation_guides_list.html</a>

**Table 6-1** *Component-Specific Release Notes and Installation and Upgrade Documents (continued)*

<b>Components</b>	<b>Release Notes</b>	<b>Installation and Upgrade Documents</b>
Cisco Catalyst 500 series Switch	—	<a href="http://www.cisco.com/en/US/products/ps6545/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/ps6545/prod_installation_guides_list.html</a>
Cisco Catalyst 3560 series Switch	<a href="http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_release_notes_list.html">http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_release_notes_list.html</a>	<a href="http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_installation_guides_list.html">http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_installation_guides_list.html</a>





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