



System upgrade planning

This chapter provides an overview of the upgrade process for contact center 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 the customer network.



Note

The following upgrade strategies are recommendations only, as no formal upgrade testing was done for the UC 9.0 system release.

- [Cisco Unified Communications System overview, page 1](#)
- [Release sets, page 3](#)
- [Upgrade roadmap, page 3](#)
- [Upgrade overview, page 5](#)
- [System upgrade strategies, page 9](#)
- [Interoperability and compatibility portals, page 15](#)

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 and contact center products including, but not limited, to the Cisco Unified Communications Manager, Cisco Unified Intelligent Contact Management Enterprise (Unified ICME), Cisco Unified Customer Voice Portal (Unified CVP), Cisco Unified Contact Center Enterprise (Unified CCE), Cisco Unified Contact Center Express (Unified CCX), Cisco Unified IP Integrated Voice Response (Unified IP IVR), Cisco Unified Intelligence Center (Unified Intelligence Center), Cisco MediaSense (MediaSense), Cisco Finesse (Finesse) and voice-capable gateways and routers.

Cisco contact center solutions allow you to move beyond today's contact center to a customer interaction network by creating a better customer experience, making customer-service agents more efficient and productive, improving contact center reporting, and extending the workforce with expert mobile and remote agents.

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 discussed for this Cisco Unified Communications System release addresses different upgrade paths and strategies, preparation for the upgrade operation, order of operations such as the sequence in which the contact center components should be upgraded, and other dependencies such as backward compatibility of software.

This chapter only provides information related to upgrading components that are present in the base release set that is to be upgraded.

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

- Components that are not part of the existing production network and are being newly added as a part of the target release. This information is available in the individual component documents.
- Individual standalone components such as Unified Communications Manager, Unified CCE, and Unified CVP. It only addresses the upgrade sequence and information of Cisco Unified Communications System components at a system-level.

See [System upgrade](#) for a list of URLs to component-specific release notes and installation and upgrade documents. When performing the actual component upgrades, see the product-specific upgrade documents for detailed information.

- Third-party co-resident applications (although they can 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. For information on how to replace a single server or an entire cluster for Cisco Unified Communications Manager Release 9.0(1), see:
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/install/8_6_1/cluster/clstr861.html
For information on supported Cisco 7800 Series Media Convergence Servers and Unified Computing System B-series servers, see:

http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/prod_brochure0900aecd8062a4f9.html

- Cisco Unified Communications on the Cisco Unified Computing System Solution Overview:
http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/ps5748/ps378/solution_overview_c22-597556.html

Related Topics

[Release sets, on page 3](#)

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 Communication System. A particular system release is also referred to as a release set.

A *base* release or release set is defined as the starting release set that is being upgraded. A *target* release or release set is defined as the ending release set to which the base release set is being upgraded.

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

- Base releases—Your environment may include one of the following base release sets:
 - Cisco Unified Communications System Release 8.5(1) —For detailed information about the deployment models and topologies developed to test this release set, see [Review Tested Deployment Models for Contact Center](#).
- Target release:
 - Cisco Unified Communications System Release 9.0(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 deployment models and topologies developed to test this release set, see [Review Tested Deployment Models for Contact Center](#).

For upgrade information on Cisco Unified Communications System Release 9.0(1) IP Telephony components, see: http://preview.cisco.com/en/US/docs/voice_ip_comm/uc_system/UC9.0.1/ipt_system_inst_upg/VTGS_BK_S3E53B1F_00_system-installation-and-upgrade-manual.pdf

Related Topics

[System upgrade strategies, on page 9](#)
[System upgrade preparation](#)

Upgrade roadmap

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

Procedure

- Step 1** Review your hardware and software requirements. For instance, 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. For instance, verify that the DVD ROM drive in the server where you plan to perform the upgrade tasks is operational before you start the upgrade process.
- Step 3** Ensure that you have backed up all configuration files prior to performing an upgrade of your system, in the event that your upgrade is unsuccessful and you need to restore your previous configuration. For information on backing up and restoring major contact center components, see: http://www.cisco.com/cisco/web/docs/iam/unified/ipcc861/Backing_Up_and_Restoring_Components.html.
- Step 4** If necessary, remove any engineering specials or service releases for components that are related to the previous base release version before upgrading to the target release version.
- Step 5** Access and download the license files required to upgrade (or newly install) and operate the appropriate software at: <http://www.cisco.com/go/license>.
- Step 6** Upgrade the existing network components from the base release set to the target release set.
- Note** The existing network should include components that are already supported by the base release set.
- Use the recommended upgrade strategies described in [System upgrade strategies](#), on page 9 to perform the upgrade. The upgrade strategies 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
 - Presence or absence of shared components among sites, for instance, a Unified ICME system that spans multiple clusters
- Step 7** Perform verification and validation testing in between upgrading components in multiple stages to ensure that the components in the network interoperate. For information on verifying and validating multistage upgrades and interoperability of components, see [Verifying Multistage System Upgrades in System upgrade](#)
- Note** Ensure that you have a comprehensive “backout” plan in the event of an upgrade failure.
- Step 8** Install any *new* components supported by the target release in the network and configure them.
- Step 9** Remove and/or replace any components from your network that are not part of the target release or have reached EOL (end-of-life) and/or EOS (end-of-sale). Follow proper procedures to uninstall these components.
- Note** See the EOS and EOL website for a list of recommended replacements at: http://www.cisco.com/en/US/products/prod_end_of_life.html. For Cisco EOS and EOL policy, see the information at: http://www.cisco.com/en/US/products/products_end-of-life_policy.html.
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Related Topics

- [Interoperability and compatibility portals](#), on page 15
- [Components in base release set](#), on page 5
- [New components and features in target release set](#), on page 7
- [Components not in target release set](#), on page 8

Upgrade overview

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

Components in base release set

The following table contains a listing of components that are part of the base release set that should be upgraded to Cisco Unified Communications System Release 9.0(1).

Table 1: Contact Center components in Cisco Unified communications system base release sets

Component	Release 8.5(1)
Cisco Unified Communications Manager	X
Cisco Unified SIP Proxy	X
Cisco Unified Intelligent Contact Management Enterprise and Cisco Unified Contact Center Enterprise	X
Cisco Unified Intelligent Contact Management Enterprise and Cisco Unified Contact Center Enterprise Operating System	X
Cisco Unified Contact Center Express	X
Cisco Unified IP IVR	X
Cisco Unified Contact Center Express/Unified IP IVR Operating System	X
Cisco Unified Customer Voice Portal	X
Cisco Unified Customer Voice Portal Operating System	X
Cisco Unified Intelligence Center	X
Cisco Finesse	X
Cisco MediaSense	X
Cisco SocialMiner	X
Cisco Unified Communications Manager IM and Presence Service (formerly Cisco Unified Presence) ¹	X
Cisco Unified SIP Proxy	X
Cisco Unity Connection	X

Component	Release 8.5(1)
Cisco IP Communicator	X
Cisco Unified Video Advantage	X
Cisco Unified IP Phones 7900 Series (7921G (Wireless), 7940, 7940G, 7960, 7960G, 7962, 7970, and 7970G)	X
Cisco Unified IP Phones 6900 Series (6911, 6921, 6941 6961, and 6945)	X
Cisco Unified IP Phones models 9951 and 9971	X
Cisco Unified IP Phones model 8961	X
Cisco Unified IP Phones models 8941, 8945	X
Cisco Adaptive Security Appliance (5520, 5540, 5580) Services	X
Cisco Adaptive Security Appliance 5500 AIP Security Services Module (IPS)	X
Cisco Works Management Center for Cisco Security Agents	X
Cisco Security Agent for Unified Communications Manager	X
Cisco Security Agent for Unified IP IVR	X
Cisco Security Agent for Unified Contact Center Express	X
Cisco Unified Operations Manager	X
Cisco IOS Mainline Release ²	X
Cisco 3825, 3845 (Unified CVP VXML, voice/data, H.323, SIP, MGCP, IOS-based Transcoders and Conference Bridges, and Cisco Unified Border Element gateways)	X
Cisco 3900 series routers	X
Cisco AS5400XM (Unified CVP VXML, voice, H.323, SIP and PSTN gateways)	X
Cisco Unified Border Element Enterprise Edition for Cisco ISR Series	X
Cisco VGD-1T3 Voice Gateway	X
RSVP Agent (on 38xx platforms)	X
Cisco 881 router	X
Cisco Catalyst 3750 (access switch)	X

Component	Release 8.5(1)
Cisco Catalyst 6506, 6509 (core switch, Supervisor 2)	X
Cisco Catalyst 6506, 6509 (Supervisor 720)	X

- ¹ For Cisco Unified Communications System Release 9.0, Cisco Unified Presence has been integrated into Cisco Unified Communications Manager and is now known as Cisco Unified Communications Manager IM and Presence Service (IM and Presence Service).
- ² IOS 15.2(3)T is not compatible with the 28xx and 38xxrouters. The option to stay on IOS 15.1(4)M may be available to maintain 28/38xx routers which will receive extended maintenance in accordance with IOS EOL and EOS policies.

Related Topics

[System upgrade preparation](#)

New components and features in target release set

Some components are new to the Cisco Unified Communications System Release 9.0(1) release set. You must install these new components and configure them into the network (rather than upgrade them).

New components when upgrading from Cisco Unified Communications System Release 8.5(1)

This section lists components that are new in the Release 9.0(1) release set when you upgrade from Release 8.5(1).

- Cisco Telepresence MCU MSE Series
<http://www.cisco.com/en/US/products/ps11340/index.html>
- Cisco TelePresence Content Server
<http://www.cisco.com/en/US/products/ps11347/index.html>
- Cisco Voice and Video Conferencing for ISR G2 Routers
<http://www.cisco.com/en/US/products/sw/voicesw/ps4952/index.html>
- Cisco Virtualization Experience Clients
http://www.cisco.com/en/US/products/ps11295/Products_Sub_Category_Home.html#~one
- Cisco TelePresence System EX60 and EX90
<http://www.cisco.com/en/US/products/ps11327/index.html>
- Cisco IP Video Phone E20
<http://www.cisco.com/en/US/products/ps11329/index.html>
- Enterprise License Manager
<http://www.cisco.com/en/US/products/ps7138/index.html>
- Cisco SRE 910 Service Module
http://www.cisco.com/en/US/products/ps10598/prod_module_series_home.html
- Cisco 2900 Series Integrated Services Router (ISR)

<http://www.cisco.com/en/US/products/ps10537/index.html>

- Cisco Unified Computing System B200 M2, C200 M2 and C210 M2 (Unified Communications Virtualization)

http://www.cisco.com/en/US/netsol/ns1067/networking_solutions_relevant_products.html

- Cisco Unified Computing System Express

<http://www.cisco.com/en/US/products/ps11273/index.html>

- Cisco ASR 1002 Router

<http://www.cisco.com/en/US/products/ps9436/index.html>

- Cisco Catalyst 6503 (WS-SUP720-3BXL)

<http://www.cisco.com/en/US/products/hw/switches/ps708/index.html>

- Cisco Catalyst 6506 (WS-SUP720-3BXL)

<http://www.cisco.com/en/US/products/hw/switches/ps708/index.html>

- Cisco Catalyst 3750 (WS-C3750E-24PD)

<http://www.cisco.com/en/US/products/ps7077/index.html>

- Cisco 891 Router

<http://www.cisco.com/en/US/products/ps10194/index.html>

Components not in target release set

The following deployment and components were removed from the Cisco Unified Communications System Release 9.0(1) release set (and previous release sets) in relation to the base release sets:

- Cisco 7206VXR(core/WAN router). Replaced with Cisco ASR 1002.<http://www.cisco.com/en/US/products/ps9436/index.html>
- Cisco Catalyst 6506,6509 (core switch, Supervisor 2). Replace with Cisco Catalyst 6503, 6506 (WS-SUP720-3BXL).<http://www.cisco.com/en/US/products/hw/switches/ps708/index.html>



Note

For a list of recommended replacements (if any) for components that are no longer supported or sold, see the EOS and EOL website at: http://www.cisco.com/en/US/products/prod_end_of_life.html. For Cisco EOS and EOL policy, see the information at:

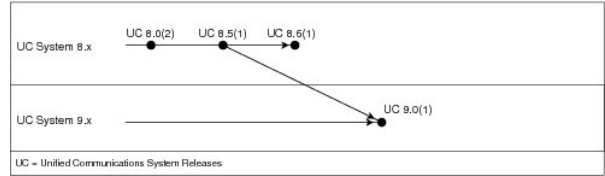
http://www.cisco.com/en/US/products/products_end-of-life_policy.html.

Upgrade paths to Cisco Unified Communications System Release 9.0(1)

The figure below illustrates the upgrade paths available for Cisco Unified Communications System

Release 9.0(1) in contact center environments – from Cisco Unified Communications System Release 8.5(1) to Cisco Unified Communications System Release 9.0(1).

Figure 1: Upgrade paths for Cisco Unified Communications System release



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.

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 one of two 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 as well as the restore process. This can prevent you from creating a truly parallel network, as two systems cannot exist on the same network with identical hostnames and IP addresses.

The above 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 only to interproduct versions, not to intraproduct versions. For instance, all Unified Communications Manager servers in the same cluster, or all servers that are part of the same Unified ICME system, will remain at the same software 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 \(hybrid system\)](#), on page 12

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 distributed Unified ICME system or a

Unified Communications Manager cluster using Clustering over the 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 5,000 seats) with a large number of components in the network.

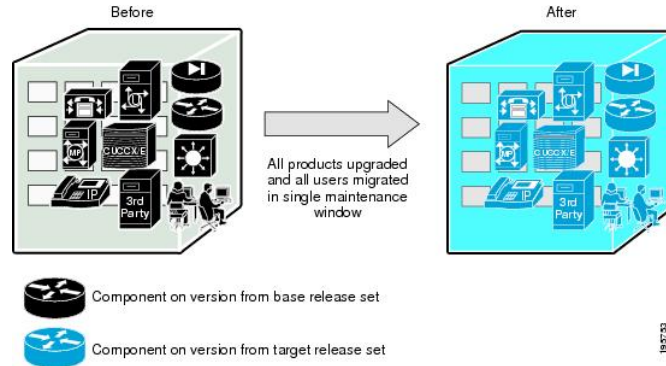
Single-stage upgrade using existing hardware

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. Because 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 customer sites and networks, because it has to be performed within a single maintenance window.

The following figure shows an example of the single maintenance window that is involved in the single-stage upgrade on existing hardware approach.

Figure 2: Single-stage upgrade using existing hardware



Single-stage upgrade using new hardware

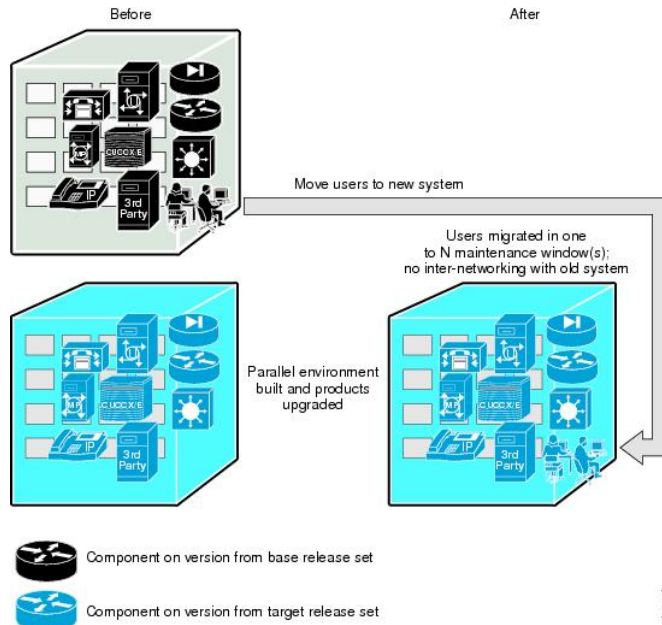
A parallel Cisco Unified Communications System network should be built using new hardware and prestaged with configuration to support the existing production network. All users can be then moved from the existing production network to the new network operating with the target release set software either 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 customer 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.

The following figure shows an example of the maintenance windows that are involved in the single-stage upgrade on new hardware approach.

Figure 3: Single-stage upgrade using new hardware



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.

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

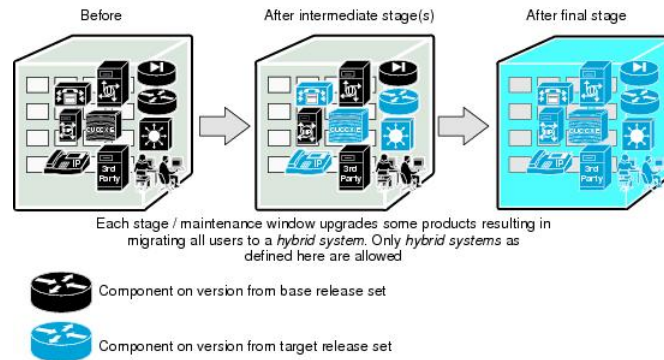
Before the staged upgrade is completed, the whole network exists in a partially upgraded state where some components have been upgraded to the target release set software and the remaining components are operating with the base release set software.

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.

The following figure shows an example of the maintenance windows that are involved in the multistage system upgrade on existing hardware approach.

Figure 4: Multistage system upgrade using existing hardware (hybrid system)



Related Topics

[System upgrade preparation](#)

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 the figure below. However, interworking will not be possible between these *pure* sites and *hybrid system* sites.

**Note**

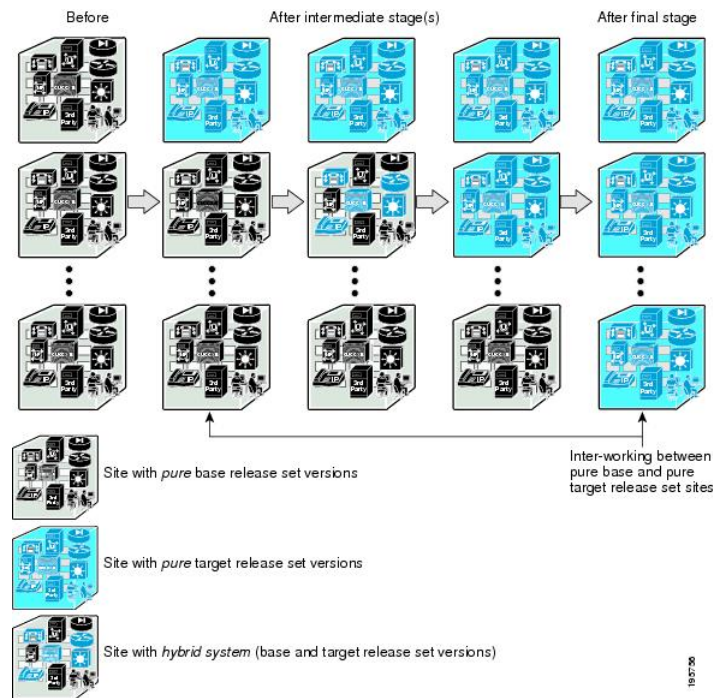
A component that is common to multiple sites, such as a shared Unified ICME system, may impact the interoperability itself, the order in which sites may be upgraded, or which sites must be upgraded concurrently.

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, are able to communicate with each other.

The following figure shows an example of the maintenance windows that are involved in the multisite migration approach.

Figure 5: Multisite migration



The following table provides a summary of the preceding upgrade strategies.

Table 2: Summary of upgrade strategies

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

Related Topics

[System upgrade preparation](#)

Interoperability and compatibility portals

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

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

For software and hardware compatibility and interoperability information about Unified Communications Manager, Unified Contact Center Enterprise, Unified IP IVR and other Cisco Unified Communications contact center products, see the following sites:

- Cisco Unified Communications Compatibility Tool:

<http://tools.cisco.com/ITDIT/vtgsca>

- Cisco Unified Communications Manager (CallManager) Compatibility Information:
http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_device_support_tables_list.html
- Hardware and Software Compatibility Information for Cisco Unified Presence Release 9.0(1):
http://www.cisco.com/en/US/products/ps6837/products_device_support_tables_list.html
- Cisco Unified Contact Center Enterprise (Unified CCE) Software Compatibility Guide:
http://docwiki.cisco.com/wiki/Compatibility_Matrix_for_Unified_CCE
- Hardware and System Software Specification (Bill of Materials) for Cisco Unified ICM/ Contact Center Enterprise & Hosted:
http://www.cisco.com/en/US/docs/voice_ip_comm/cust_contact/contact_center/icm_enterprise/icm_enterprise_9_0_1/reference/guide/_ICM9.0_BOM.pdf
- Cisco Unified Contact Center Express (Cisco Unified CCX) 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
- Hardware and System Software Specification for Cisco Unified Customer Voice Portal (Unified CVP), Release 9.0(1)
http://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_technical_reference_list.html
- Cisco 7800 Series Media Convergence Servers:
<http://www.cisco.com/en/US/products/hw/voiceapp/ps378/index.html>
- Hardware and Software Interoperability Matrix for Unified Computing System (UCS) B-series Servers:
http://www.cisco.com/en/US/docs/unified_computing/ucs/interoperability/matrix/hw_sw_interop_matrix_seriesB_111.pdf
- Hardware and Software Interoperability Matrix for Unified Computing System (UCS) C-series Servers:
http://www.cisco.com/en/US/docs/unified_computing/ucs/interoperability/matrix/hw_sw_interop_matrix_seriesC_101.pdf
- Cisco Unified Communications Manager Server Support Matrix:
http://www.cisco.com/en/US/products/hw/voiceapp/ps378/prod_brochure0900aecd8062a4f9.html
- Cisco Unified Communications Virtualization (including links to UCS hardware information):
<http://www.cisco.com/go/uc-virtualized>
- Cisco Unified Communications System Release Summary Matrix for Contact Center:
http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/unified/communications/system/versions/CCMtrix.html
- IP Communications System Test Release Matrix:
http://www.cisco.com/en/US/docs/voice_ip_comm/uc_system/GB_resources/ipcmatrix.htm