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Use this guide to plan the installation of your Cisco Unified MeetingPlace Release 8.5 system.

Note: For scalability information, see [Scalability for Cisco Unified MeetingPlace Release 8.5](#).

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Advantages for Deploying Release 8.5

Release 8.5 offers multiple enhancements, including the following:

- Creation of multinode systems, available only with Cisco WebEx scheduling. Creating a multinode system enables your company to have a high-availability conferencing solution that can support up to 14,400 concurrent meeting attendees, in multiple meetings, worldwide.
- Multinode systems enable the creation of a geographically distributed, active-active system.

- Support Secure Real-time Transport Protocol (SRTP) for audio and video systems.
- Improved line echo cancellation and noise cancellation on Express Media Server (EMS).
- User-based licensing for hosting audio and video conferences.
- Installation of the Application Server, Web Server (Release 8.5.2 and later), and Cisco WebEx Node For MCS on virtual machines (with a VMware ESXi host on Cisco UCS B-Series Blade Servers and UCS C-Series Rack-Mount Servers).
- Customizations of user menus on a phone.
- Secure audio conferencing (TLS/SRTP) support on both EMS and HMS (Hardware Media Server).

Note: For a complete list of enhancements and feature changes for Release 8.5, see the *Release Notes* at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html.

Considerations in Cisco Unified MeetingPlace Release 8.5

- [Application Server](#)
- [Choosing Between the Hardware Media Server and the Express Media Server](#)
- [Cisco WebEx Node For MCS](#)
- [Directory Service](#)

Application Server

The Application Server acts as the master component that ties together the Cisco Unified MeetingPlace system. It is installed on a Cisco Media Convergence Server (MCS) or on a virtual machine on a Cisco UCS B Series or UCS C Series Server. The Application Server runs the Linux operating system and the IBM Informix Dynamic Server (IDS) database. It controls the media servers, and it communicates with your Cisco WebEx site for user profile creation as well as the relaying of real-time in-meeting controls. The Application Server provides all the integration points with Microsoft Outlook and Exchange calendaring.

Release 8.5 supports the creation of a multinode system, with Cisco WebEx driven User Management and Cisco WebEx scheduling of meetings. A multinode system comprises up to sixteen nodes (Application Servers), and may be separated into different geographical locations with the use of logical regions and sites. Each Application Server acts as a Meeting Director node, a Conferencing node, or both. For more details on this deployment, including sample deployments, see [Planning a Multinode Deployment](#).

Express Media Server or Hardware Media Server

The Cisco Unified MeetingPlace Media Servers provide audio and video conferencing functionality, and they come in two distinct options: Cisco Unified MeetingPlace Express Media Server (EMS) or Hardware Media Server (HMS).

The Express Media Server is a set of software modules, including an audio mixer and a video switcher, that is installed with, and resides on, each Application Server. The Express Media Server creates a single box, software-only solution for Cisco Unified MeetingPlace. The Express Media Server is based on the Cisco Unified MeetingPlace Express Video Telephony (VT) product.

All Cisco Unified MeetingPlace Release 8.5 systems include an Express Media Server, that is automatically installed as part of each Application Server.

A Hardware Media Server is a Cisco Unified MeetingPlace 3515 or 3545 outfitted with blades that are specific to the Cisco Unified MeetingPlace solution. There are audio blades and optionally video blades, both of which have on-board DSP resources to provide voice and video conferencing, respectively. The HMS is controlled by the Application Server through SIP API and Cisco Unified MeetingPlace Media Control protocols.

Multiple HMS can be deployed in a single location to achieve the capacity and high availability required.

Review the differences between the Express Media Server and the Hardware Media Server. See the [Choosing Between the Hardware Media Server and the Express Media Server](#).

Voice Quality Information for the Express Media Server

The Express Media Server operates in one of two audio modes: high capacity (HC) audio mode, or high quality (HQ) audio mode. HC audio mode allows the maximum number of concurrent users to connect to a MeetingPlace system, while HQ audio mode allows fewer concurrent users but supports more audio features.

In both HC and HQ audio modes:

- Optional video support for these codecs: H.263, and H.264 AVC levels 1.1, 1.3 and level 3.1.
- Automatic Gain Control (AGC) provided for all callers.
- Telephony user interface (TUI) functions that allow callers to raise and lower the volume of their own voices:
 - ◆ Pressing **#82** increases the volume at which other participants hear you.
 - ◆ Pressing **#83** decreases the volume at which other participants hear you.
- Jitter handling ? The Express Media Server has a 160-millisecond jitter buffer. Our tests show that packet delay variation greater than 80 milliseconds results in dropped packets. We recommend that you minimize the jitter in your network, especially for the audio streams that come in to Cisco Unified MeetingPlace. For example, implement the appropriate quality of service (QoS) policies with Differentiated Services Code Point (DSCP) markings.

In HC audio mode:

- Audio codecs supported: G.711 only
- Echo cancellation - no echo cancellation is applied to incoming voice streams. Therefore, you should enable echo cancellation in the gateways for the PSTN lines.

In HQ audio mode:

- Audio codecs supported: G.711, G.722, G.729
- Packet loss concealment (PLC) - PLC is not available for G.722, so occasional audio degradation may be heard on G.722 audio streams which undergo packet loss. If you cannot fix or tolerate the packet loss issues on those audio streams, then switch to a different codec, such as G.711.
- Noise cancellation - noise cancellation is applied to all incoming voice streams.

- Line echo cancellation - line echo cancellation is applied to incoming G.711 voice streams.

Cisco WebEx Node For MCS

Note: The Cisco WebEx Node For MCS described in this section is an optional component of the Cisco Unified MeetingPlace system. It is not to be confused with the Cisco WebEx Node for ASR and cannot be used for a WebEx SaaS implementation. For information on the Cisco WebEx Node for ASR, see http://www.cisco.com/en/US/prod/collateral/vpndevc/ps10128/ps10339/ps10353/data_sheet_c78-530577.html.

The Cisco WebEx Node For MCS is installed on a MCS or on a virtual machine on a VMware ESXi host. It hosts the web meeting room on-premise (internal meeting) and is responsible for connecting to the Cisco WebEx site via an SSL gateway, accepting client connections, and outdialing. For more information on internal and external meetings, see [Internal and External Meeting Definitions](#)

The Cisco WebEx Node For MCS does the following:

- Receives meeting data from meeting presenters and distributes the data to the other meeting participants.
- Aggregates internally generated traffic to minimize traffic on Internet link to Cisco WebEx site.
- Supports bandwidth aggregation for meeting data. It does not support bandwidth aggregation for VoIP and Video.
- Handles meeting control functions.
- Sends realtime status messages to the Webex Node Management system for realtime and historical reports on Webex Node activities.

Multiple Cisco WebEx Node For MCS may be provisioned in a system to increase capacity and provide for redundancy:

- Provisioning is in Cisco WebEx site and nodes themselves, transparent to Cisco Unified MeetingPlace server.
- Multiple nodes in same meeting will automatically cascade.
- Single set of Cisco WebEx Nodes For MCS may be shared between internal and external meetings.
- Internal meetings hosted on the WebEx Node for MCS support only Meeting Center meetings. Event Center and Training Center meeting traffic can be aggregated on the WebEx Node for MCS, but it can be designated only as an external meeting.
- Only external meetings can overflow to the WebEx Collaboration cloud. Meeting Center meetings can be scheduled as external by the schedulers.
- Internal Meeting Center meetings are decided when scheduling a meeting and there is no data sharing or automatic overflow to the WebEx Collaboration cloud.
- A maximum of four Cisco WebEx Nodes for MCS is supported for multinode deployments with Cisco WebEx scheduling.

The Cisco WebEx Node For MCS does not support proxy configuration, therefore, you must place it in a network that has outbound access to the Cisco WebEx site, but that is also accessible by all internal clients that will be using it.

For more information about the Cisco WebEx Node For MCS, see the "Limitations and Restrictions" section of the *Release Notes for Cisco Unified MeetingPlace Release 8.5* at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html.

Applicable to Meetings Scheduled as "Internal"

If users schedule a Meeting Center WebEx meeting as an "internal" meeting type, then all invitees must be on Enterprise network internal PCs (VPN or on network), in order to join this meeting type. No one outside that Enterprise is able to join. An internal meeting does not send any shared content to the WebEx Collaboration cloud but it does send status information to the WebEx Node Management system only. Because the Internal meeting type does not have a data sharing link to the WebEx Collaboration cloud, internal meetings cannot be recorded or WebEx HQ Video webcam mixing cannot be seen (all WebEx webcam video traffic is mixed in the WebEx Collaboration cloud only).

When an Enterprise network user (either directly on the network or on VPN into the network) clicks on a URL to join a meeting, the first browser window joins to the WebEx Site and receives a list of WebEx Nodes only for an "internal" meeting. The WebEx client does a ping to all the WebEx Nodes deployed internally behind the company firewalls only. The WebEx client picks the meeting server based on the ping response Round Trip Time (RTT) between the client and the type of the server which is classified as ?node?, and joins the shortest ping response RTT. Internal meetings automatically overflow to other Webex Nodes deployed in the network, so redundant Webex Nodes are highly recommended for resiliency for internal web meetings. Internal meetings are not allowed to overflow to the WebEx Collaboration cloud like "external" meetings.

Applicable to Meetings Scheduled as ?External?

When an Enterprise network user (either directly on the network or on VPN into the network) clicks on a URL to join a meeting, the first browser window joins to the WebEx site and receives a list of WebEx Nodes and cloud servers. The WebEx client does a ping to all resources. The WebEx client picks the meeting server based on the ping response Round Trip Time (RTT) between the client and the type of the server which is classified as ?node? or ?DC?. DC is the WebEx Collaboration Cloud. If RTT to the node is less than 50 ms, then it will use the WebEx node with the fastest ping response. Otherwise, if RTT to the node and RTT to DC is the same, then the WebEx Node has higher priority than the ?DC? servers in the cloud, and the client browser is directed to the WebEx Node on premise. If multiple WebEx Nodes are deployed on premise, then the client to server RTT that is the fastest ping response will connect to that particular node. WebEx Global Distributed Meetings are utilized on the WebEx Node and in the WebEx Collaboration Cloud meetings, from anywhere in the world, to join all meeting attendees in the same meeting together.

The Cisco WebEx Node for MCS does not support proxy configuration. Therefore, you must place it in a network that has outbound access to the Cisco WebEx site, but that is also accessible by all internal clients that will be using it.

About Failover When Using the Cisco WebEx Node for MCS

If the Cisco WebEx Node for MCS that is hosting a meeting becomes unavailable, the next available Cisco WebEx Node for MCS automatically takes over. Any sharing and recordings will be stopped, and users will have to restart sharing and recording the meetings.

Automatic failover for the Cisco WebEx Node for MCS only applies to internal meetings in systems that have at least two Cisco WebEx Nodes installed. For external meetings, failover is handled by the Cisco WebEx collaboration cloud.

For more information about the Cisco WebEx Node for MCS and failover, see the online help in the administrator interface or the *Configuration Guide for Cisco Unified MeetingPlace Release 8.5* at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/products_installation_and_configuration_guides_list.html.

Directory Service

Although not new in Cisco Unified MeetingPlace Release 8.5, here is information about three features that are commonly misunderstood:

- [Directory Services](#)
- [Directory Service](#)

Directory Services

In Cisco Unified MeetingPlace Release 6.x, there was a component called MeetingPlace Directory Services (MPDS). This component was used to synchronize your directory server information with your Cisco Unified MeetingPlace Release 6.x system profiles. With Cisco Unified MeetingPlace Directory Services, you could easily integrate the information that is stored on your corporate directory server with your Cisco Unified MeetingPlace Release 6.x system. By using LDAP technology, Directory Services creates an all-inclusive meta-directory that combines and synchronizes Active Directory or Netscape/SunOne/iPlanet directory information with Cisco Unified MeetingPlace Release 6.x system information.

Directory Service

In Cisco Unified MeetingPlace Release 7.x and Release 8.x, there is a feature called Directory Service (note that the word service has no s at the end). This feature is not the same as the MeetingPlace Directory Services (MPDS) component that was used in Cisco Unified MeetingPlace Release 6.x.

Directory Service enables the system to populate and synchronize the Cisco Unified MeetingPlace user database with the Cisco Unified Communications Manager user database, which is typically integrated with an LDAP directory.

Note: Directory Service is not supported for new deployments with Cisco WebEx scheduling.

Specifically, Directory Service simplifies user profile administration in these ways:

- Imports user profiles from Cisco Unified Communications Manager to Cisco Unified MeetingPlace.
- Periodically updates the Cisco Unified MeetingPlace database with new or modified user entries in the Cisco Unified Communications Manager database.
- Periodically checks the Cisco Unified Communications Manager database for inactive user entries, and deletes those user profiles from the Cisco Unified MeetingPlace database.
- Enables the system to use AXL authentication to authenticate Cisco Unified MeetingPlace Directory Service users against the external directory.
- Supports fully encrypted LDAP integration when Secure LDAP (SLDAP) is enabled on Cisco Unified Communications Manager and the LDAP server.

Note: SSL for the Cisco Unified MeetingPlace Application Server is not required to support Secure LDAP integration. You must, however, make sure that the configured AXL URL begins with "https" instead of "http."

- Deleting Cisco Unified MeetingPlace user profiles does NOT delete or deactivate the corresponding user accounts on the Cisco WebEx site.

Related Information

- For more information about Directory Service, see the online help in the administrator interface or the *Configuration Guide for Cisco Unified MeetingPlace Release 8.5* at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/products_installation_and_configuration_guides_list.html
- For information about LDAP integration, see the Cisco Unified Communications Solution Reference Network Design (SRND) that applies to your version of Cisco Unified Communications Manager at http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_implementation_design_guides_list.html.

How to Plan Your Installation

To plan your installation, start by reading this guide. This will help you answer the questions which will determine how you install the system.

- [Questions to Answer](#)
- [Determining Which Deployments to Use for Your System](#)
- [Determining How Many Licenses Your System Needs](#)
- [Determining How Many Licenses Your System Needs](#)
- [Determining if Your System Needs to be Configured for Failover](#)
- [Educating your Organization](#)

Note: Be sure to read the *Release Notes* for complete information about your selected deployment at http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html.

Questions to Answer

Before you can start installing your new system, you need to answer the following questions:

- How many users will your system serve?
- Will your system host audio meetings, video meetings, web meetings, or a combination?
- For video deployments, which type of video endpoints do you use?
- Which e-mail system will you use for meeting notifications (if any)?
- Which instant messaging system will you use (if any)?
- Are you re-using any components from a Cisco Unified MeetingPlace Release 8.0, 7.0, 6.0, or Cisco Unified MeetingPlace Express system?
- Are you planning to expand your system in the future (by adding additional nodes)?

Answering those questions will determine the following:

- A multinode system provides active-active redundancy, 14,400 ports (enabling larger meetings), worldwide system deployment (multiple geographic locations), single number access to conferences, and so on.
- The type of servers you need. For example, should you use a hardware? Or do you want to install on a virtual machine on a Cisco UCS B or C Series Server? (Installation of the Application Server and Cisco WebEx Node For MCS is supported on virtual machines.)
- Should you use a Hardware Media Server or an Express Media Server?
- How many of each hardware server?

- How many licenses? (Release 8.5 licenses are different from previous releases; legacy Cisco Unified MeetingPlace licenses are not supported in Release 8.5.)
- Which software components to install.
- Which integrations to install.
- If you need to configure your system for active/active resiliency.

Determining Which Deployments to Use for Your System

To determine	Read this section
If you should deploy a multinode system	Planning a Multinode Deployment
Which audio deployment to use	Choosing an Audio Without Video Deployment for Cisco Unified MeetingPlace Release 8.5
Which video deployment to use	Choosing an Audio and Video Deployment for Cisco Unified MeetingPlace Release 8.5
Which web deployment to use	Choosing a WebEx Deployment for Cisco Unified MeetingPlace Release 8.5

Determining How Many Licenses Your System Needs

To determine	Read this section
If you have the correct licenses	Licenses for your Cisco Unified MeetingPlace System
The capacity of your system	Planning the Capacity of your Cisco Unified MeetingPlace System

Determining the Hardware to Use for Your System

To determine	Read this section
Which hardware components you need	How to Determine the Type of Hardware for Your System
Which integrations you want on your system	Recommendations for Selecting the Integrations and Associated Hardware for Your System
Whether to use a Hardware Media Server or an Express Media Server	Choosing an Audio and Video Deployment for Cisco Unified MeetingPlace Release 8.5

Determining if Your System Needs to be Configured for Failover

To determine	Read this section
If your deployment will need to use failover for the Application Server or for the Express Media Server	About Failover Options for the Application Server
If your deployment will need to use failover for the Hardware Media Server	About Failover Options for the Hardware Media Server
If your deployment will need active-active redundancy per region and per site	Planning a Multinode Deployment

Educating your Organization

For information about the rapid adoption plan and how to communicate and educate your organization about the Cisco Unified MeetingPlace Release 8.5 system, see [Introducing Cisco Unified MeetingPlace to Your Organization using the Rapid Adoption Plan](#).

For More Information

For more information about the Cisco Unified MeetingPlace Release 8.5 system, see the following:

- *System Requirements for Cisco Unified MeetingPlace Release 8.5:*
[http://docwiki.cisco.com/wiki/Cisco Unified MeetingPlace Release 8.5 -- System Requirements for Cisco U](http://docwiki.cisco.com/wiki/Cisco_Unified_MeetingPlace_Release_8.5_--_System_Requirements_for_Cisco_U)
- *Compatibility Matrix for Cisco Unified MeetingPlace Release 8.5:*
[http://docwiki.cisco.com/wiki/Cisco Unified MeetingPlace Release 8.5 -- Compatibility Matrix for Cisco U](http://docwiki.cisco.com/wiki/Cisco_Unified_MeetingPlace_Release_8.5_--_Compatibility_Matrix_for_Cisco_U)
- *System Requirements Network Document (SRND) for Cisco Unified Communications:*
http://www.cisco.com/en/US/partner/docs/voice_ip_comm/cucm/srnd/8x/uc8x.html
- *Installation and Upgrade Guide for Cisco Unified MeetingPlace Release 8.5:*
http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_installation_guides_list.html
- *Release Notes for Cisco Unified MeetingPlace Release 8.5:*
http://www.cisco.com/en/US/products/sw/ps5664/ps5669/prod_release_notes_list.html
- Online help in the administrator interface or the *Configuration Guide for Cisco Unified MeetingPlace Release 8.5* at
http://www.cisco.com/en/US/products/sw/ps5664/ps5669/products_installation_and_configuration_guides_list.htm