



Introduction and Datacenter Topology For Your System

This chapter provides an introduction, a datacenter overview, and VMware vCenter requirements for your system.

- [Introducing Cisco WebEx Meetings Server, page 1](#)
- [Information for Cisco Unified MeetingPlace Customers, page 2](#)
- [General Concepts For Your System Deployment, page 2](#)
- [Deploying Your System in a Single Datacenter, page 3](#)
- [Using VMware vSphere With Your System, page 4](#)
- [Advantages of Deploying Your System on VMware vSphere, page 5](#)
- [Installing VMware vSphere ESXi and Configuring Storage, page 7](#)
- [Joining Meetings, page 8](#)

Introducing Cisco WebEx Meetings Server

Cisco Webex Meetings Server is a secure, fully virtualized, private cloud (on-premises) conferencing solution that combines audio, video, and web to reduce conferencing costs and extend your investments in Cisco Unified Communications.

Cisco WebEx Meetings Server addresses the needs of today's companies by presenting a comprehensive conferencing solution with all the tools needed for effective and engaging collaboration. It delivers an interactive and productive experience for users.

You can deploy and manage this conferencing solution in your private cloud, behind the firewall in your data center. It is designed for Cisco UCS servers and VMware vSphere. (For specific requirements, see the *Cisco WebEx Meetings Server System Requirements*.) It features a rapid virtual deployment and powerful tools for administrators to configure and manage the system and see key system metrics.

Like other Cisco WebEx products, it offers real-time collaboration tools, including document, application, and desktop sharing, annotation tools, full host control for effective meeting management, an integrated participant list with active talker, and video switching, recording and playback. This product utilizes high quality video, so the video sharing experience is crisp and clear.

In addition, mobile users can attend and participate in meetings. For supported devices, see the *Cisco WebEx Meetings Server System Requirements*.

Important Considerations For Your System

Note the following:

- Forward proxies—not recommended, though you may use forward proxies with restrictions.
For complete details, refer to the *Cisco WebEx Meetings Server Troubleshooting Guide*.
- Reverse proxies—only the Internet Reverse Proxy included with this product is supported.
- NAT—supported when it meets the requirements for this system.
For complete details, see [Using NAT With Your System](#).
- Multiple datacenters—only a deployment within a single datacenter is supported for this release.
For complete details, see [Deploying Your System in a Single Datacenter](#), on page 3.



Caution

If you disregard our recommendations and requirements when deploying your system, then you will not receive support from Cisco. Cisco is not responsible for any problems you may encounter as a result of not following our guidance.

New and Changed Features for Cisco WebEx Meetings Server

For a list of new and changed features, see the section titled "New and Changed Features for Cisco WebEx Meetings Server" in the *Release Notes for Cisco WebEx Meetings Server* at http://www.cisco.com/en/US/products/ps12732/prod_release_notes_list.html.

Information for Cisco Unified MeetingPlace Customers



Important

Because of architectural differences, there is no migration path (for existing user accounts, customizations, and meetings) from Cisco Unified MeetingPlace to Cisco WebEx Meetings Server. These are two distinct products.

You may ease the transition for your users by continuing to support both Cisco Unified MeetingPlace and Cisco WebEx Meetings Server for a period of time while encouraging your users to switch to the new system. To help with user training during this transition, Cisco provides training videos that may be accessed from the end user Help page.

General Concepts For Your System Deployment

System Sizes

- 50 concurrent users system

- Typically supports a company between 500 and 1000 employees
- Primary system (without HA) comprises an Admin virtual machine and an optional Internet Reverse Proxy (for public access)
- 250 concurrent users system
 - Typically supports a company between 2500 and 5000 employees
 - Primary system (without HA) comprises an Admin virtual machine, a Media virtual machine, and an optional Internet Reverse Proxy (for public access)
- 800 concurrent users system
 - Typically supports a company between 8000 and 16,000 employees
 - Primary system (without HA) comprises an Admin virtual machine, a Media virtual machine, and an optional Internet Reverse Proxy (for public access)
- 2000 concurrent users system
 - Typically supports a company between 20,000 and 40,000 employees
 - Primary system (without HA) comprises an Admin virtual machine, 3 Media virtual machines, 2 Web machines, and an optional Internet Reverse Proxy (for public access)

Terms Used During the Deployment

Field Name	Description
WebEx Site URL	Secure http URL for users to host and attend meetings.
WebEx Administration URL	Secure http URL for administrators to configure, monitor, and manage the system.
Public VIP	IP address for the WebEx site URL
Private VIP	• IP address for the Administration site URL • IP address for the WebEx site URL (for internal users only, if you have a split-horizon DNS).

Deploying Your System in a Single Datacenter

The current system design, with an optional HA system, is designed for a single data center deployment.

The HA system comprises redundant virtual machines for each virtual machine type in your deployment. For example:

- A primary 50 user system comprises an Admin virtual machine and an Internet Reverse Proxy (for public access). If you add a HA system, the combined 50 user system comprises two Admin virtual machines and two Internet Reverse Proxy virtual machines.

- A primary 250 or 800 user system comprises an Admin virtual machine, a Media virtual machine, and an Internet Reverse Proxy (for public access). If you add a HA system, the combined 250 or 800 user system comprises two Admin virtual machines, two Media virtual machines, and two Internet Reverse Proxy virtual machines.
- A primary 2000 user system comprises an Admin virtual machine, three Media virtual machines, two Web virtual machines, and an Internet Reverse Proxy (for public access). If you add a HA system, the combined 2000 user system comprises two Admin virtual machines, four (three plus one redundant) Media virtual machines, three (two plus one redundant) Web virtual machines, and two Internet Reverse Proxy virtual machines.

**Important**

The addition of an HA system does not increase the total system capacity. Whether you deploy an 800 user system with or without HA, the total system capacity remains the same; the maximum number of simultaneous audio connections is 800.

**Note**

For a description of each type of virtual machine, see [Virtual Machines In Your System](#).

In an HA system, the public VIP address and private VIP address are shared with the primary system. (The public VIP address and the private VIP address are different and are not shared.) When one virtual machine is down, the other virtual machine uses the same VIP address. Because of this behavior, a virtual machine failure is almost completely transparent to end users (as meetings will continue), without placing unusual demands on the DNS infrastructure. However, a shared VIP address can only be implemented on a single network segment or VLAN. From our experience, splitting a VLAN across two datacenters creates a variety of problems.

We require highly available connectivity between the internal virtual machines, greatly reducing the problem of distinguishing between a virtual machine failure and a network failure. Allowing a split network may result in split meetings and conflicting database updates. It is more practical to construct a true highly available network segment within a single datacenter than between two datacenters.

Cisco believes the best way to build a fault tolerant system is when most system components operate as “all active”. However, certain key components, notably the database service, are “active/standby”. Web servers and media components in the “HA system” are dependent on the “primary system” components. Any latency or interruption on that connection results in delays for end users, particularly when scheduling or joining meetings. Latency between media service components directly increases audio and video latency for some users during meetings. (For Cisco WebEx Meetings Server, 4 ms of network latency is acceptable between the internal virtual machines. For more details, see [Virtual Machine Layout in Your Network](#).)

Using VMware vSphere With Your System

VMware vSphere

**Important**

This product only installs on a VMware vSphere virtualization platform. (For complete details on VMware requirements, see the *Cisco WebEx Meetings Server System Requirements*).

**Restriction**

Cisco mandates the deployment of the product in a single datacenter only. Except for the smallest configuration, all installations deploy multiple virtual machines.

- To save you time, Cisco recommends standard Cisco UCS servers with specific configurations of hardware and VMware products.
- However, Cisco WebEx Meetings Server is designed to work on any equivalent Cisco UCS Server that meets or exceeds these specifications.

For complete details on the hardware and VMware requirements, see the *Cisco WebEx Meetings Server System Requirements*.

- You must purchase VMware vSphere 5.0, 5.0 Update 1, or 5.1 for use as the hypervisor platform for Cisco WebEx Meetings Server by completing one of the following:
 - Buy vSphere directly from Cisco on the GPL (Global Price List). Cisco is an approved VMware partner and distributor.

This is convenient for those who "want everything from a single vendor".
 - Purchase vSphere directly from VMware, through enterprise agreements you have directly with VMware.

Advantages of Deploying Your System on VMware vSphere

This section explains why VMware vSphere and vCenter are integral to using this Cisco WebEx product and lists some considerations.

Deployment of the System

- This product is packaged as a VMware vSphere compatible OVA virtual appliance and not as a collection of software packages on a DVD. You must have vCenter to deploy the OVA or the product will not install.
- By packaging it as a virtual appliance we enable rapid deployment; in some cases in under an hour.
- To facilitate rapid installations with the OVA virtual appliance, you can select automatic system deployment for most system sizes. Simply provide vCenter credentials and we will deploy all the virtual machines for your system without manual intervention. This innovation will minimize your labor costs and time.

**Note**

The OVA template creates two virtual NICs for each virtual machine. However, only the Admin virtual machines uses both virtual NICs. For all other Cisco WebEx Meetings Server virtual machines, only one virtual NIC is used and the other one is disconnected.

- Cisco WebEx Meetings Server requires customers to run VMware ESXi or the corresponding VMware ESXi installable Cisco ISO Image. Both these editions contain the necessary drivers required to support the Cisco UCS Servers that are required by Cisco WebEx Meetings Server. For more information, see http://www.cisco.com/en/US/docs/unified_computing/ucs/release/notes/OL_26617.pdf.

Easy Recovery From System Errors

- By using VMware Data Recovery, you have the ability to revert system-impacting changes rapidly, if the change does not meet your expectations. This helps prevent the system from going down with possibly a painful system redeployment.

vSphere Considerations

Note the following considerations:

- You may move your virtual machine to another ESXi host. However, you must retain the layout of the virtual machines on the ESXi host. In other words, if you plan to move a Media virtual machine that is co-resident with a Web virtual machine, then you must either move it to a separate ESXi host (where it is the only virtual machine) or move it to an ESXi host that already has a Web virtual machine.



Note

Your destination ESXi host must conform to the same system requirements as the source ESXi host.

The following VMware features are not supported with Cisco WebEx Meetings Server:

- Although you may move your virtual machines, you may not do so using either VMotion or Storage VMotion, as they are not supported in this release.
- VMware Distributed Resource Schedule (DRS) is not supported.
- vSphere High Availability (HA) is not supported.
- vSphere clustering and resource sharing are not supported.

vSphere Best Practices For This Product

- Cisco recommends against using virtual machine snapshots. If you decide to use snapshots, then after confirming your system changes, either commit the snapshots or remove them as soon as possible. Keeping a snapshot for any period of time will result in severe performance degradation.
- For SAN environments, deploy disk images to a SAN with high IOPS numbers.
For an 800 user system, the average IOPS for an OVA deployment is 506 (max IOPS is 855) for the Admin virtual machine and 475 (max IOPS is 652) for a Media virtual machine. Once these virtual machines are created and powered on, then you can enter the case-sensitive URL and continue the system deployment in a web browser. The average IOPS for a primary system is 108 (max IOPS is 1558) and 163 (max IOPS is 1736) for a secondary system.
- Make sure there's enough free space on your SAN. Snapshots are stored on the same SAN.
- Deploy a 10GB network for the quickest deployment and bandwidth for future growth.
- Keep all virtual machines managed by the same vCenter. This allows for an easier recovery should you need to recover your system.

For more information on network bandwidth, see [Network Bandwidth Requirements](#).

vCenter Server Requirements

In addition to vSphere, vCenter Server is also required.

- To deploy this virtual appliance, you must also use vCenter to deploy and manage the virtual machines in your system. This product will not work without vCenter Server.
- Cisco recommends backups and snapshots of the system ahead of important system-impacting operations. Creating backups permits you to roll back the changes in case the update does not meet your expectation. You may automate backups and snapshots using vCenter.
- Although the vSphere Standard Edition is required for a 50 or 250 user system, you may consider the alternative of purchasing the vSphere Essentials Plus kit. However, the vSphere Essentials Plus kit is useful primarily for budget-conscious customers deploying the 50 user system and does not provide several advanced capabilities that typical enterprise customers require. Consult with your VMware representative for the most cost effective way to meet the system requirements.

vSphere Edition For the 800 and 2000 User Systems

- The 800 and 2000 user systems comprise virtual machines that require between 30 and 40 vCPUs. These virtual machines use these vCPUs to perform very compute intensive tasks such as SSL encoding or decoding, mixing audio streams, and so on.

For complete information on vCPU requirements, see the *Cisco WebEx Meetings Server System Requirements*.

- At minimum, you must purchase the vSphere 5.0 Enterprise Plus edition or the vSphere 5.1 Enterprise edition, as the lower-end vSphere editions do not support the number of required vCPUs.

Installing VMware vSphere ESXi and Configuring Storage

Cisco WebEx Meetings Server is a software-based solution. It is not a combination hardware/software package. You have choices on how to purchase and provision your hardware platforms as long as the hardware meets or exceeds CPU, memory, and storage requirements.

You may deploy Cisco WebEx Meetings Server on Cisco UCS Servers that meet our minimum specifications. Or you may choose to deploy this product on newer and higher-end UCS Servers that exceed our minimum specifications.

Multiple RAID controller and network options are available. You may choose to use SAN storage instead of local RAID. We do not provide details about every sort of storage configuration that you may choose.

However, since Cisco WebEx Meetings Server is deployed on Cisco UCS Servers, refer to the *Cisco UCS Servers RAID Guide* at http://www.cisco.com/en/US/docs/unified_computing/ucs/c/sw/raid/configuration/guide/RAID_GUIDE.html.

- To install VMware vSphere ESXi on a UCS B-Series Back Server, see http://www.cisco.com/en/US/docs/unified_computing/ucs/os-install-guides/vmware/b_B-Series_VMware_Install.html.
- To install VMware vSphere ESXi on a UCS C-Series Rack Server, see http://www.cisco.com/en/US/docs/unified_computing/ucs/os-install-guides/vmware/b_C-Series_VMware_Install.html.

Setting the Write Cache on a RAID Controller

For optimal system performance you should check the Default Write setting on your RAID controller. You can set Default Write to three settings: *Write Back with BBU*, *Write Through*, or *Always Write Back*. Some guidelines for selecting the appropriate setting for Default Write on your Cisco UCS Servers are:

- **Write Back with BBU** - use this setting if you have installed a battery backup unit on your RAID controller. In the event of a system power loss, the battery backup unit preserves the content of the controller cache memory.

In the event that the battery backup unit fails or goes offline to a re-learn cycle, the Write Back with BBU setting automatically fails back to **Write Through** cache. Without a working battery backup unit, the Write Through setting is safer although you may notice performance degradation on the I/O subsystem of the host machine.
- **Write Through** - use this setting and enable the cache explicitly (using the Disk Cache option) if you need to remove the battery backup unit for repairs. This setting should give you better but not optimal performance. After you replace the faulty battery, you can safely return the Default Write setting to Write Back with BBU mode.
- **Always Write Back** - use this setting if the host that houses your RAID controller is connected to an uninterruptible power supply unit.

Joining Meetings

End user experience with Cisco WebEx Meetings Server is of a web site that users access to schedule and join meetings. This web site includes real-time conferencing elements that facilitate online meetings. Users can join meetings through a browser or through a client on their desktops.

For complete details on the end user experience, sign in to the WebEx site and select **Help**.

Windows Users

The following assumes that a user has Windows Administrator privileges on their PC sufficient to allow them to join WebEx meetings. If this is not true, system administrators can push the WebEx Meetings application client to a user by using desktop management software such as IBM Tivoli. See [Downloading and Mass Deploying Applications](#).

- Microsoft Internet Explorer users can install an ActiveX control or Java plug-in, download the WebEx Meetings application installer, or run the application in a temporary system folder (such as TFS). The first time the user joins a meeting, the client software is downloaded and automatically installed.
- Google Chrome and Mozilla Firefox users can install a Java plug-in, download the WebEx Meetings application, or run the application in a temporary system folder. The client software is downloaded and automatically installed the first time the user joins a meeting.

It is not necessary to change any of the ActiveX, Java plug-in, WebEx Meetings application installer, or TFS settings.

Mac Users

- If Java is enabled (Java is turned off by default in Mac OS X Lion (version 10.7) and OS X Mountain Lion (version 10.8), the client software is downloaded and automatically installed the first time the user joins a meeting.

- If Java is disabled, the user can download and install the WebEx Meetings application.

