



Using VMware vSphere With Your System

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Using VMware vSphere

The virtual machines for your system are deployed with VMware vSphere. Cisco WebEx Meetings Server must be installed on VMware virtual machines, subject to the following constraints:

- Use VMware vSphere 5.0, 5.0 Update 1, 5.0 Update 2, 5.1, 5.1 Update 1, 5.5 or 6.0 (CWMS 2.6MR1 and higher).
Use VMware vSphere 5.5, 6.0, or 6.5.
Earlier releases of vSphere are not supported.
- Use VMware ESXi 5.0, 5.0 Update 1, 5.0 Update 2, 5.1, 5.1 Update 1, 5.5 or 6.0 (CWMS 2.6MR1 and higher).
Use of earlier ESXi releases results in confusing error messages about **unsupported hardware** that do not explicitly list the problem.
- Verify that the DNS server configured with the ESXi host can resolve the hostnames of the virtual machines that are deployed on that ESXi host.
- You must use VMware vCenter to manage the ESXi hosts on which the Cisco WebEx Meetings Server system is deployed.
- When powering down a virtual machine, always select **Power > Shut Down Guest** for each virtual machine. (Do not use the **Power Off** option.)

**Important**

VMware Tools for CWMS is automatically installed during system deployment and should not be upgraded manually. See docwiki.cisco.com/wiki/VMware_Tools for more information on VMware Tools.

**Note**

For details on supported VMware configurations, see the *Cisco WebEx Meetings Server Planning Guide and System Requirements*.

Configuring the ESXi Host to Use an NTP Server

Configure the ESXi host to use Network Time Protocol (NTP) for device clock synchronization and verify that the NTP servers are reachable. In a multi-data center environment, synchronization of the data center clocks is critical to maintaining the data sharing between data centers. For detailed instructions, see the VMware ESXi documentation.

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- Step 1** Using the vSphere client, select the ESXi host in the inventory panel.
 - Step 2** Select **Configuration > Time Configuration** in the Software section.
 - Step 3** Select **Properties**.
 - Step 4** Select **NTP Client Enabled**.
 - Step 5** Select **Options** to configure the NTP server settings.
We recommend that you select **Start and stop with host** to reduce the possibility of the ESXi host time becoming incorrect.
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Creating a Backup by Using VMware vCenter

Backups are traditional file systems that leverage VMware technology and SAN-based data transfer. VMware® Data Recovery creates backups of virtual machines without interrupting their use or the data and services they provide. Data Recovery uses a virtual machine appliance and a client plug-in to manage and restore backups. The backup appliance is provided in open virtualization format (OVF). The Data Recovery plug-in requires the VMware vSphere Client.

Data Recovery manages existing backups, removing backups as they become older. It also supports de-duplication to remove redundant data. Before doing any system-altering procedure, we recommend that you create a backup of each of the virtual machines by using VMware Data Recovery (available in VMware vSphere Release 5.0) or vSphere Data Protection (available in vSphere Release 5.1). (VMware Data Recovery/vSphere Data Protection is included with VMware vSphere, except in the vSphere Essentials Kit. See http://www.vmware.com/pdf/vdr_11_admin.pdf for more information.)

Backups can also be created by using a storage server. See [Adding an NFS or SSH Storage Server](#) for more information.

Virtual machine *snapshots* are *pictures* of your system at a specific point in time, and are not the same as backups. For performance reasons, we recommend that you use backups and keep your virtual machine backups in a storage location that is different from the physical drives that contain your virtual machines. For more information on snapshots and known performance issues, see [Taking a Snapshot by using VMware vCenter, on page 3](#).

Step 1

Turn on Maintenance Mode. See [Turning Maintenance Mode On or Off](#).

If the data center is part of a Multidata Center (MDC) system, in-progress meetings fail over to an active data center. The failover can cause a brief interruption in active meetings. See [About Maintenance Mode](#) for information. Turning on Maintenance Mode for all active data centers shuts down all conference functionality. No one can sign in to the WebEx site, schedule meetings, join meetings, or play meeting recordings.

Step 2

Follow the instructions in your VMware vSphere documentation and use VMware Data Recovery (called VMware vSphere Data Protection starting with vSphere Release 5.1) to create a backup of the system and each of your virtual machines.

For complete details on this backup, see the *VMware Data Recovery Administration Guide* or the *vSphere Data Protection Administration Guide*.

Note We recommend that you delete backups after a system-altering procedure is complete, you have tested the system, and you are satisfied with the results. Restoring a data center from old backups or snapshots might cause unexpected behavior.

Taking a Snapshot by using VMware vCenter

Virtual machine snapshots are used to quickly recover a virtual machine after a system-altering procedure. Snapshots are *pictures* of your system at a specific point in time, and are not the same as backups (see [Creating a Backup by Using VMware vCenter, on page 2](#)). If the original virtual machine disk file is lost, you cannot recover the virtual machine with the snapshot. We recommend that in addition to taking snapshots, that you backup your system.

Snapshots are stored on the physical drives containing your virtual machines. If you do not delete these snapshots in a timely manner, end users might experience degraded audio and video due to a known issue that affects virtual machine performance. Therefore, we recommend that you use backups and keep your virtual machine backups in a storage location that is different from the physical drives that contain your virtual machines. Also, snapshots can be used for updates, but for system upgrades we recommend that you delete all snapshots and backup the original system before performing an upgrade.

For more information on this known issue with VMware snapshots, go to the VMware web site and read the white paper, *Best Practices for Running VMware vSphere on Network Attached Storage*. You can also search the VMware KnowledgeBase for **snapshot impact performance** for additional information.

Before doing most system-altering procedures, we recommend that you backup the system (especially when performing an upgrade or expansion) and take a snapshot (when performing an update) of each of the virtual machines. You can backup your system by using VMware Data Recovery (VMware vSphere Data Protection) starting with vSphere Release 5.1 or take a snapshot of each virtual machine. (VMware Data Recovery/vSphere Data Protection is included with VMware vSphere, except in the vSphere Essentials Kit.)

Be sure to read the preparation section for the specific procedure. We list specific considerations for each procedure.

We recommend you keep snapshots no longer than 24 hours. If you want to keep them longer, we recommend that you create a backup instead. For more information on VMware Data Recovery (VMware vSphere Data Protection starting with vSphere Release 5.1) see [Creating a Backup by Using VMware vCenter](#), on page 2.

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- Step 1** Sign in to Site Administration.
In a Multidata Center system, the DNS determines which data center Dashboard appears. Use this Dashboard to manage all the data centers in this system.
- Step 2** Turn on Maintenance Mode. See [Turning Maintenance Mode On or Off](#).
If the data center is part of a Multidata Center (MDC) system, in-progress meetings fail over to an active data center. The failover can cause a brief interruption in active meetings. See [About Maintenance Mode](#) for information. Turning on Maintenance Mode for all active data centers shuts down all conference functionality. No one can sign in to the WebEx site, schedule meetings, join meetings, or play meeting recordings.
- Step 3** On VMware vCenter, select **Power > Shut Down Guest** for each of the virtual machines.
- Step 4** Select **Snapshot > Take Snapshot** for each virtual machine.
- Step 5** Enter a name for the snapshot and select **OK**.
Label the snapshot for each virtual machine with the same prefix, for example, `August_20`, so you know that these snapshots were done at the same time.
- Step 6** Turn off Maintenance Mode.
When you turn off Maintenance Mode, the system determines whether a restart or a reboot is required, and displays the appropriate message. A restart takes approximated 3 to 5 minutes and a reboot takes approximately 30 minutes. If the data center is part of a Multidata Center (MDC) system, you are redirected to the global admin URL. The DNS resolution policy determines which data center you see. If Key Regeneration is enabled, taking one data center out of Maintenance Mode automatically takes all data centers in the system out of Maintenance Mode.
See [Turning Maintenance Mode On or Off](#).
Meeting service on the data center is restored.
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What to Do Next

- Test your system to confirm that it is successful.
- If you must revert to a snapshot, be sure the snapshot for each virtual machine was taken at the same time. Powering on a system with mismatched snapshots might result in database corruption.

Removing a Snapshot

Removal of snapshots while the system is active causes performance issues. To avoid a reduction of system performance, take the system offline before removing snapshots.

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- Step 1** Sign in to Site Administration.
In a Multidata Center system, the DNS determines which data center Dashboard appears. Use this Dashboard to manage all the data centers in this system.

- Step 2** Turn on Maintenance Mode. See [Turning Maintenance Mode On or Off](#).
Turning on Maintenance Mode on all active data centers shuts down conferencing activity and prevents users from signing in to the WebEx site, scheduling meetings, joining meetings, or playing meeting recordings. If this data center is part of a Multi-data Center (MDC) system and another data center is active, in-progress meetings will fail over to the active data center. This might cause a brief interruption in active meetings. See [About Maintenance Mode](#) for information about which system tasks require Maintenance Mode to be turned on.
- Step 3** In the VMware vCenter, select **VM > Power > Shut Down Guest** on each of the virtual machines in the data center. For complete details on using vSphere, see the VMware ESXi and vCenter Server documentation.
- Step 4** To remove the snapshots for all the VMs, right-click **VM > Snapshot > Snapshot Manager**.
- Step 5** Select the snapshot and select **Delete**.
- Step 6** Select **Yes** to confirm this action.
- Step 7** Turn off Maintenance Mode.
When you turn off Maintenance Mode, the system determines whether a restart or a reboot is required, and displays the appropriate message. A restart takes approximated 3 to 5 minutes and a reboot takes approximately 30 minutes. If the data center is part of a Multidata Center (MDC) system, you are redirected to the global admin URL. The DNS resolution policy determines which data center you see. If Key Regeneration is enabled, taking one data center out of Maintenance Mode automatically takes all data centers in the system out of Maintenance Mode.
See [Turning Maintenance Mode On or Off](#).
Meeting service on the data center is restored.
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Attaching an Existing VMDK File to a New Virtual Machine

How to attach a Virtual Machine Disk (VMDK) from an existing Administration virtual machine to a new Administration virtual machine by using VMware vCenter when you expand or upgrade your system. (The system data stored on Hard disk 4 of the Admin virtual machine is reused.)



Caution

Make a copy of the Hard disk 4 base VMDK file and copy that file to the virtual machine folder of the Admin virtual machine in the upgraded or expanded system. If you simply attach Hard disk 4, the data is still stored in the virtual machine folder of the old Admin virtual machine. If you accidentally delete the existing Admin virtual machine in the vCenter inventory, the current system loses access to Hard disk 4.

Be sure to copy the original base VMDK file for Hard disk 4, and not a snapshot of this VMDK file.

If you are using Direct-attached storage (DAS), migrate the VMDK to a logical unit number (LUN) where the new Admin virtual machine can access it.

**Note**

We refer to the Admin virtual machine before the system-altering procedure as the *current* Admin virtual machine. The Admin virtual machine following expansion or upgrade, is named the *upgrade* Admin virtual machine.

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- Step 1** Navigate the inventory in VMware vCenter and find the current Admin virtual machine for your system.
- Step 2** Right-click the virtual machine name and select **Edit Settings...**
The **Virtual Machine Properties** window is displayed.
- Step 3** Select the **Hardware** tab, then select **Hard disk 4**.
- Step 4** For future reference, copy and paste into another document, the **Disk File** location.
This specifies the location of the VMDK in VMware vCenter.

The string is similar to [EMC-LUN10-RAID5] webex-sysA-admin/webex-sysA-admin_3.vmdk. If you have previously upgraded your system, the filename does not follow the naming convention of the existing virtual machine.
- Step 5** Write down the storage location for Hard disk 4 and the virtual machine folder name.
The folder name string is similar to [EMC-LUN8-RAID5] webex-sysB-admin.
- Step 6** Close the **Edit Settings...** window without making any changes.
- Step 7** Change the vCenter view into the Datastore and Datastore Cluster view. Select **View > Inventory > Datastores and Datastore Clusters**.
- Step 8** Select the storage location where the current Admin virtual machine is located (from Step 5) and select **Browse this datastore**.
- Step 9** Select the storage location where your upgraded (for the expanded or upgraded system) Admin virtual machine is located and select **Browse this datastore**.
- Step 10** Arrange the two datastore browser windows (for the current and expanded or upgraded Admin virtual machine) side-by-side so that you can see both Admin virtual machine folders.
- Step 11** Open both virtual machine folders and copy the VMDK from the current Admin virtual machine folder to the updated Admin virtual machine folder.
- In the current Admin virtual machine folder, locate the VMDK that is associated with Hard disk 4. Refer to the file location you wrote down in Step 4 to confirm accuracy.
 - Right-click on the file and select **Copy**.
 - Right-click inside the upgraded Admin virtual machine folder and select **Paste**. When the paste operation is completed, close both datastore windows.
 - Return the vCenter view to a list of hosts and clusters by selecting **View > Inventory > Hosts and Clusters**.
- Step 12** Navigate the inventory in VMware vCenter and find the expanded or upgraded Admin virtual machine for your system.
- Step 13** Right-click the expanded or updated virtual machine name and select **Edit Settings...**
The **Virtual Machine Properties** window is displayed.
- Step 14** Select the **Hardware** tab, then select **Hard disk 4**.
- Step 15** Select **Remove**.
This action does not remove the virtual disk immediately. Instead, the existing virtual disk is scheduled for removal.
- Step 16** Select **Add**.

The **Add Hardware** wizard is displayed.

- Step 17** Select **Hard Disk**, then **Next**.
- Step 18** Select **Use an existing virtual disk**, then **Next**.
- Step 19** Select **Browse**, and navigate to the datastore where the expanded or upgraded Admin virtual machine is located. Navigate to the new Admin virtual machine folder. Double-click this folder, then select the virtual disk you copied over in Step 11. Select **OK**.
- Step 20** In the **Virtual Device Node** drop-down list select **SCSI (0:3)**, then select **Next**.
- Step 21** Review your changes and if they are correct, select **Finish**. Otherwise, select **Back** and fix any errors. Once the wizard is complete, a new disk marked for addition in the Hardware tab is shown.
- Step 22** Commit both the Add and Remove operations by selecting **OK**.
- Step 23** View this virtual machine reconfiguration task in the VMware vCenter **Recent Tasks** pane to ensure that there are no errors.
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