



# Cisco TelePresence Server on Virtual Machine

## Installation Guide

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# Contents

<b>General information</b>	<b>3</b>
About the Cisco TelePresence Server on Virtual Machine	3
Licensing	3
Co-residency support	3
Related documents	3
Platform licensing comparison	4
<b>Prerequisites</b>	<b>6</b>
Recommended platform	6
CPU requirements	6
Other requirements	7
Specifications-based system minimum requirements	7
Before installing Cisco TelePresence Server on Virtual Machine	8
<b>Installing the TelePresence Server</b>	<b>9</b>
Configuring the VM host	9
Deploying OVA to host	9
<b>Configuring the TelePresence Server</b>	<b>13</b>
Task 1: Assign an IP address	13
Task 2: Log in to the Cisco TelePresence Server on Virtual Machine	13
Task 3: Apply license or feature keys	13
Task 4: (Optional) Configure DNS settings	14
<b>Configuring the TelePresence Server for administration by TelePresence Conductor</b>	<b>15</b>
Task 5: Create an administrator account for TelePresence Conductor	15
Task 6: Enable encryption and encrypted SIP (TLS)	16
Task 7: Configure SIP settings	17
<b>(Optional) Migrating the TelePresence Server to a new host</b>	<b>18</b>
<b>(Optional) Change the number of vCPUs</b>	<b>19</b>
<b>(Optional) Change the RAM allocation</b>	<b>20</b>
<b>Checking for updates</b>	<b>21</b>
Upgrade instructions	21
<b>Troubleshooting and technical support information</b>	<b>22</b>
Using the event log to help solve a problem	22
Getting more help	22
Checking VMware compatibility	22
VMware checklist	22
Analyzing the cause of VMware issues	23
Known sources of issues with Cisco TelePresence Server on Virtual Machine	23
VM Image Fails to Boot	23
Guest console in vSphere 5 fails to run on some Microsoft platforms	24
Raid Controller Synchronization	24
TelePresence Server Displays Different Serial Number/MAC address on Reboot	24
Collecting logs from the host	24
Restoring default configuration (factory reset)	24

# General information

## About the Cisco TelePresence Server on Virtual Machine

You can deploy the Cisco TelePresence Server on Virtual Machine on these platforms:

- 8 vCPUs (co-residency supported).
- 30 vCPUs (co-residency not supported). 30 vCPUs is supported on any server with 16 physical cores and hyperthreading enabled.
- high density deployment requiring the Multiparty Media 400v platform (co-residency not supported).

These deployments have different processing capacities and licensing requirements.

Cisco TelePresence Conductor is required to manage the Cisco TelePresence Server on Virtual Machine.

## Licensing

For software licensing information, refer to the [Cisco TelePresence Server datasheet](#).

For information on the open source software used in Cisco TelePresence on Virtual Machine, refer to the appropriate version of the Open Source documentation at

[http://www.cisco.com/en/US/products/ps11339/products\\_licensing\\_information\\_listing.html](http://www.cisco.com/en/US/products/ps11339/products_licensing_information_listing.html).

## Co-residency support

Co-residency with Cisco TelePresence Conductor is supported on 8 vCPU platforms.

The TelePresence Server can co-reside with other VMs occupying the same host, subject to the following conditions:

- No oversubscription of CPU. 1:1 allocation of vCPUs to physical cores must be used
- No oversubscription of RAM. 1:1 allocation of vRAM to physical memory
- Sharing disk storage subsystem is supported, subject to correct performance characteristics (latency, BW)

## Related documents

For information on configuring TelePresence Conductor for your deployment, refer to the appropriate TelePresence Conductor deployment guide on the [Conductor installation and configuration guides page](#).

- In networks where the TelePresence Conductor is trunked to Cisco Unified CM, refer to [Cisco TelePresence Conductor with Cisco Unified Communications Manager Deployment Guide, XC2.4, Unified CM 10.x](#).
- In networks where the TelePresence Conductor is trunked to Cisco VCS refer to [Cisco TelePresence Conductor with Cisco TelePresence Video Communication Server Deployment Guide, XC2.0, X6.0 and later](#).

## Platform licensing comparison

Table 1: TelePresence Server screen licenses per call for each call type

Call type description			Screen licenses required per call
Main video	Audio	Content	
-	Mono	-	1/52
360p30†	Mono	In main video	1/8
360p30†	Stereo	720p5	1/4
480p30	Stereo	In main video	1/4
480p30	Stereo	720p5	1/3
720p30	Stereo	720p5	1/2
720p30	Stereo	720p30	1
1080p30	Stereo	720p15	1
720p60	Stereo	720p15	1
1080p30	Stereo	720p30	1½
Three-screen 720p30	Multichannel	720p5	1½
Three-screen 720p30	Multichannel	720p30	2
1080p30	Stereo	1080p30	2
Dual-screen 1080p30	Stereo	720p30	2
Three-screen 1080p	Multichannel	720p30	3
Three-screen 1080p	Multichannel	1080p30	4
Four-screen 1080p	Stereo	1080p30	4

Table 2: TelePresence Server conferencing capacity on various platforms

Screen licenses required per call	Maximum calls by hardware type (with licenses to provide 100% of capacity)								
	8 Cores VM MD	8 Cores VM HD	Media 310 or MCU 5310	30 vCPU / High Density VM †	Media 320 or MCU 5320	7010, MSE 8710 or MCU MSE 8510	Media 400v ‡ (30 vCPU) ‡‡	Biggest appliance cluster (two appliances)	Biggest blade cluster (four blades)
	4 screen licenses	5 screen licenses	6 screen licenses	10 screen licenses	12 screen licenses	12 screen licenses	18 screen licenses	24 screen licenses	48 screen licenses
1/52	200*	200*	200*	200*	200*	200*	200*	200*	200*
1/8	33	41	49	81	97	97	145	195	200*
1/4	16	20	24	40	48	48	72	97	195
1/3	12	15	18	30	36	36	54	73	146
1/2	8	10	12	20	24	24	36	48	97
1	4	5	6	10	12	12	18	24	48
1 1/2	2	3	4	6	8	8	12	16	32
2	2	2	3	5	6	6	9	12	24
3	1	1	2	3	4	4	6	8	16
4	1	1	1	2	3	3	4	6	12

\* 200 is the maximum number of calls that is possible on a TelePresence Server. Requires Cisco TelePresence Conductor XC2.3.

† Requires TelePresence Conductor XC2.2 or later.

‡ To achieve the maximum number of calls, Cisco TelePresence Server on Virtual Machine must be the only VM hosted on the Multiparty Media 400v or 30 vCPU / High Density VM. It cannot be co-resident with any other UC application (unlike the 8-core option that runs at 2.4GHz minimum and can be co-resident).

‡‡ Media 400v is configured with 30 vCPUs as per the High Density configuration but it has a higher capacity.

**Note:** The table above assumes that calls of one type are being used to reach these maximum values. To calculate the total number of licenses required for a variety of concurrent calls, sum the screen licenses required for each concurrent call.

# Prerequisites

## Recommended platform

Recommended hardware on which to run Cisco TelePresence Server on Virtual Machine:

- Cisco UCS C220 running the tested reference configuration (TRC#3) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#C220\\_M3S\\_.28SFF.29\\_TRC.233](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#C220_M3S_.28SFF.29_TRC.233)
- Cisco UCS C240 running the tested reference configuration (TRC#1) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#C240\\_M3S\\_.28SFF.29\\_TRC.231](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#C240_M3S_.28SFF.29_TRC.231)
- Cisco UCS C220 running the tested reference configuration (TRC#2) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#C220\\_M3S\\_.28SFF.29\\_TRC.232](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#C220_M3S_.28SFF.29_TRC.232)

**Note:** the Cisco UCS C220 TRC#2 platform does not support hyperthreading. This hardware configuration has 8 physical CPUs, so only the 8 vCPU configuration may be deployed on this platform as we do not support oversubscription of CPUs.

- Cisco Multiparty Media 400v, which is a Cisco UCS C220 with the following configuration:

Table 3: Cisco Multiparty Media 400v platform configuration

SKU	Description	Quantity
UCSC-C220-M3S	UCS C220 M3 SFF w/o CPU mem HDD PCIe PSU w/ rail kit	1
UCS-CPU-E52667B	3.30 GHz E5-2667 v2/130W 8C/25MB Cache/DDR3 1866MHz	2
UCS-MR-1X082RY-A	8GB DDR3-1600-MHz RDIMM/PC3-12800/dual rank/1.35v	8
A03-D300GA2	300GB 6Gb SAS 10K RPM SFF HDD/hot plug/drive sled mounted	2
UCSC-PSU-450W	450W power supply for C-series rack servers	2
UCSC-RAID-MZ-220	Cisco UCS RAID SAS 2008M-8i Mezz Card for C220 (0/10/10)	1
R2XX-RAID1	Enable RAID 1 Setting	1
N20-BBLKD	UCS 2.5 inch HDD blanking panel	6
UCSC-HS-C220M3	Heat Sink for UCS C220 M3 Rack Server	2
UCSC-PCIF-01F	Full height PCIe filler for C-Series	1
UCSC-PCIF-01H	Half height PCIe filler for UCS	1
UCSC-RAIL1	Rail Kit for C220 C22 C24 rack servers	1

**Note:** The Cisco Multiparty Media 400v requires Hypervisor version ESXi 5.5.

## CPU requirements

There are two deployment configurations for Cisco TelePresence Server on Virtual Machine: *8 Cores Cisco TelePresence Server* and *High Density Cisco TelePresence Server*.

The number of cores in the first option refers to the number of physical cores required, that is, the 8 Cores option requires 8 physical CPU cores (preferably with hyperthreading enabled, but not required). The TelePresence Server on Virtual Machine must have exclusive access to all the processing capacity provided by these physical cores, even when hyperthreading is enabled.

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**Note:** We recommend that you enable hyperthreading where possible as it gives the TelePresence Server a small performance advantage. Additionally, the TelePresence Server must have exclusive access to the stated number of physical cores and you may not share them with other virtual machines.

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The High Density deployment configuration uses 30 virtual CPUs to give a higher port count than the 8 Cores Virtual Machine. You can deploy it on servers with at least 16 physical CPU cores with Hyperthreading enabled. When you deploy it on the Multiparty Media 400v platform (3.3 GHz processor) the port count is increased further. This platform should be exclusively dedicated for the Cisco TelePresence Server on Virtual Machine.

**Example with 8 physical CPU cores and hyperthreading enabled:** You may deploy the 8 Cores option but not the High Density option. In this example, the 8 Cores TelePresence Server is using all 16 logical cores and you may not use any of them for other applications.

**Examples with 16 physical CPU cores and hyperthreading enabled:** You may deploy either the High Density option or the 8 Cores option. In the High Density case, you may not share the CPU capacity with other applications. In the 8 Cores case, you must dedicate half the CPU capacity (8 physical = 16 logical CPUs) to the TelePresence Server VM, but you can use the other half for other VMs.

## Other requirements

- VT is enabled in the BIOS before installing VMware ESXi.
- VMware version is ESXi 5.0 Update 1, ESXi 5.1, or ESXi 5.5.
- The VM host “Virtual Machine Startup/Shutdown” is configured to “Allow Virtual machines to start and stop automatically with the system”, and that the TelePresence Server on Virtual Machine has been moved to the Automatic startup section.
- Your UCS system is configured with RAID 5.
- Only one network interface is configured.

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**Note:** The Cisco Multiparty Media 400v requires Hypervisor version ESXi 5.5.

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## Specifications-based system minimum requirements

If using a specifications-based system, the requirements are:

- 2 x Intel Xeon processor E5-2600 series with 2.4GHz or faster processor.
- At least 12 GB RAM to be dedicated to Cisco TelePresence Server on Virtual Machine.
- At least 53 GB of local or SAN storage.
- IOPS (input/output operations per second) and storage performance must meet or exceed the following requirements:

Table 4: Storage performance requirements

Mean # IOPS	Mean read latency	Mean write latency	Peak read latency	Peak write latency
6	4ms	10ms	15ms	15ms

- 1 GigE NIC.
- The OVA is pre-configured to have 12GB of RAM, and 8 or 30 vCPUs.
- No oversubscription of resources is allowed, even if hyperthreading is enabled.
- VMware version is ESXi 5.0 Update 1, ESXi 5.1, or ESXi 5.5.
- VMware client to access Hypervisor directly or through Virtual Center to deploy the OVA.

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**Note:** The Cisco Multiparty Media 400v requires Hypervisor version ESXi 5.5.

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## Before installing Cisco TelePresence Server on Virtual Machine

Before deploying the Cisco TelePresence Server on Virtual Machine OVA, make sure your environment meets the following conditions:

- Your server is powered up.
- Your server is connected to the network.
- VMware is installed and running on your server.
- **Cisco\_ts\_VirtualMachine\_<version>.ova** is downloaded.



# Installing the TelePresence Server

This process guides you through installing the virtual machine (VM); it assumes that you are using vSphere client, but you could use vCenter.

## Configuring the VM host

Ensure that the VM host is configured with a valid NTP server – the same NTP server that will be specified in Cisco TelePresence Server on Virtual Machine.

1. Select the host.
2. Go to the **Configuration** tab.
3. Select **Time configuration**.
4. Select **Properties**.  
If the date and time were red on the previous page, then set the date and time manually to the current time.
5. Click **Options**.
6. Select **NTP Settings**.
7. Click **Add**.
8. Enter the IP address of the NTP server.
9. Click **OK**.
10. Select the **Restart NTP service to apply changes** check box.
11. Click OK.
12. Click OK.

## Deploying OVA to host

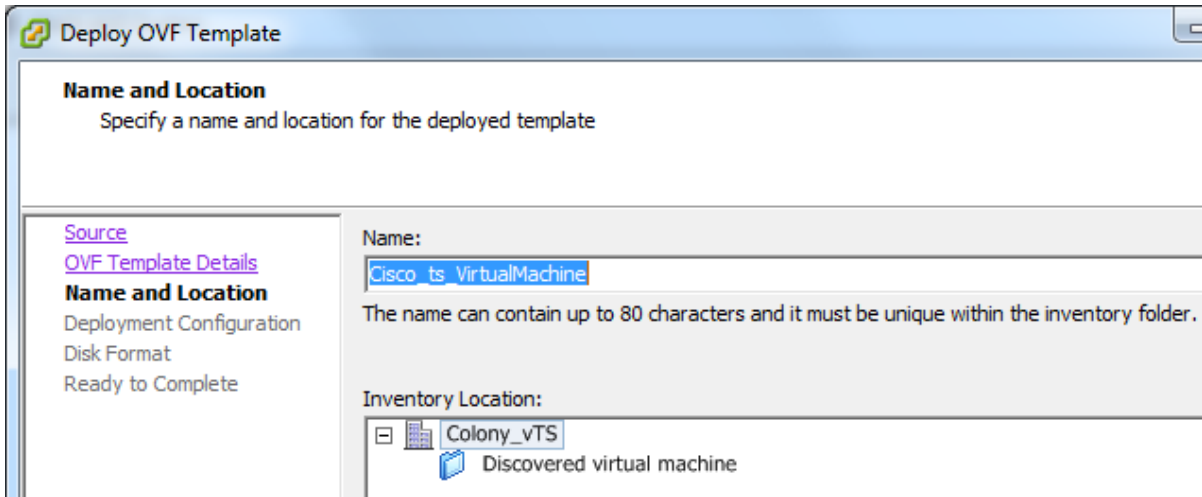
These instructions represent a typical installation; not all of the steps listed may be necessary, depending on your deployment environment. The Deploy OVF Template wizard dynamically changes to reflect the host configuration.

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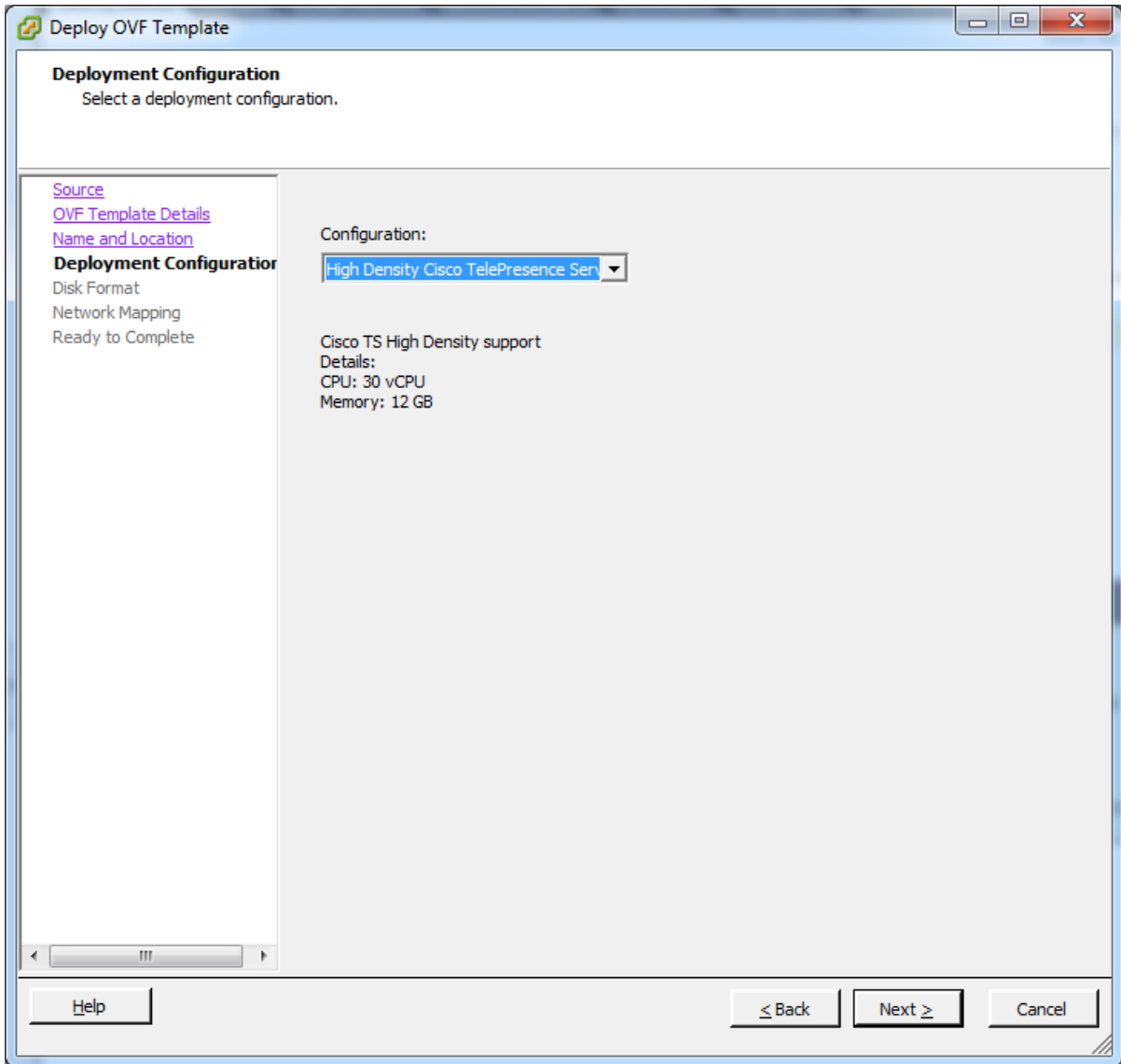
**Note:** The same process is used to deploy the 8 Cores or High Density option, except for the **Configuration** option on the **Deployment Configuration** screen of the wizard (step 7 below).

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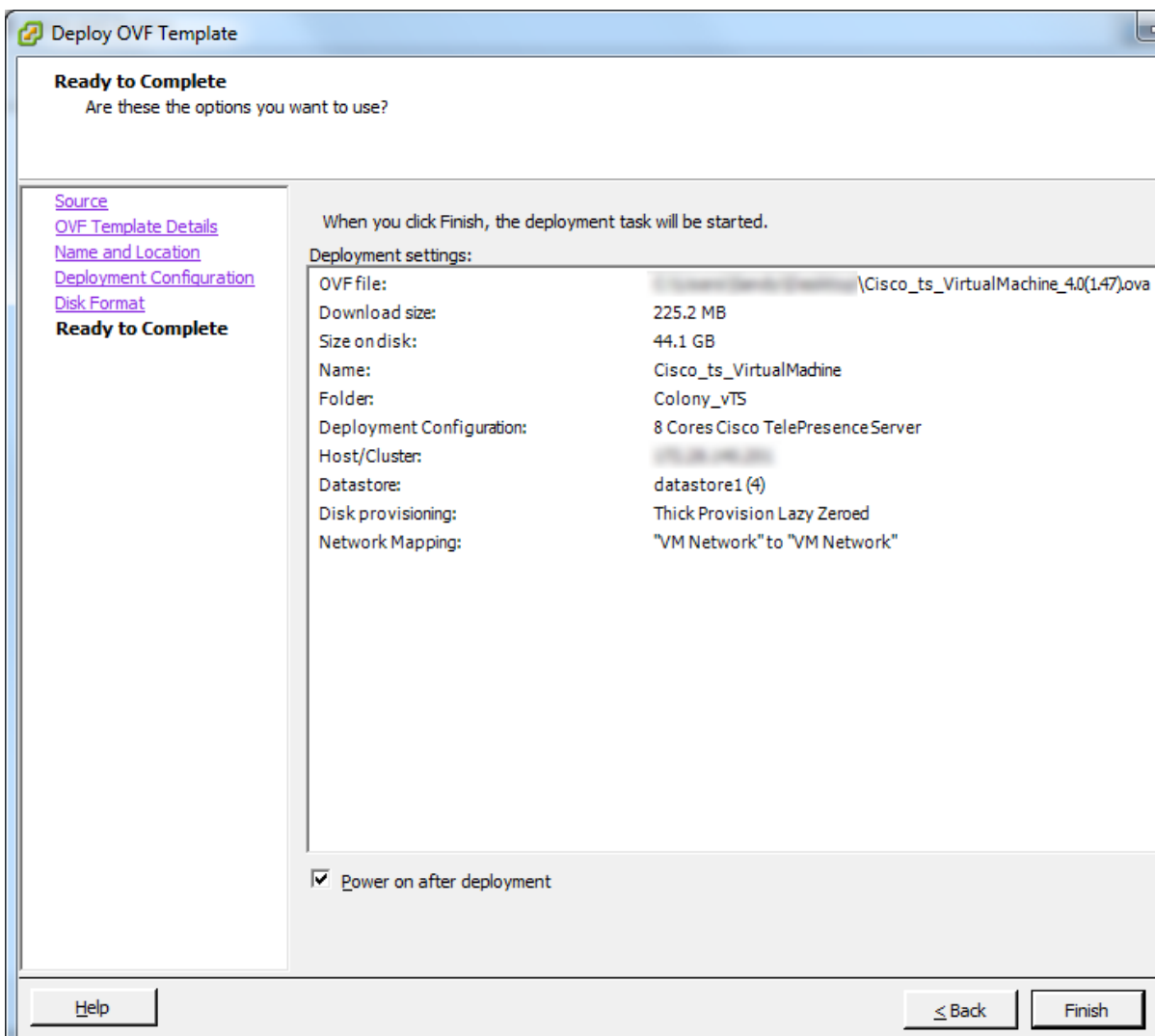
1. Log in to vSphere to access the ESXi Host.
2. Select **File > Deploy OVF Template**.
3. Click **Browse**, find the location of the **.ova** file, click **Open** and then click **Next**.
4. On the **OVF Template Details** page, click **Next**.
5. If an **End User License Agreement** page appears, read the EULA, click **Accept** and then click **Next**.
6. On the **Name and Location** page, enter a **Name** for this Cisco TelePresence Server on Virtual Machine guest, for example "Cisco\_ts\_VirtualMachine", and select the **Inventory Location** where the virtual machine will reside.



7. On the **Deployment Configuration** page, for an 8 vCPU virtual machine select *8 Cores Cisco TelePresence Server* or for 28 High Density port capacity, select *High Density Cisco TelePresence Server* and then click **Next**.



8. On the **Host / Cluster** page, select which host or cluster will run the deployed virtual machine and click **Next**.
9. On the **Resource Pool** page, select the resource pool in which you want to run the deployed virtual machine and click **Next**.
10. On the **Storage** page, select the datastore onto which the TelePresence Server files will be deployed and then click **Next**.
11. On the **Disk Format** page, select **Thick Provision Lazy Zeroed** and click **Next**.  
Thin Provision is not supported as VM performance may degrade during resizing of a partition.
12. On the **Network Mapping** page, select the network mapping that applies to your infrastructure and then click **Next** (default is *VM Network*).
13. On the **Ready to Complete** page, confirm the deployment settings.
14. Select the **Power on after deployment** check box.



15. Click **Finish**.

A progress indicator shows the deployment progress. When it has finished, the TelePresence Server is deployed as a guest on the VM Host.

# Configuring the TelePresence Server

## Task 1: Assign an IP address

1. Open the TelePresence Server's console in one of the following ways:
  - Select the VM guest, eg. "Cisco\_ts\_VirtualMachine", and then select the **Console** tab
  - Right-click the VM guest and select **Open Console** from the context menu
 The VM guest will take some time to boot, create its second hard disk partition, and then reboot before displaying the TelePresence Server console. The console is ready for input when you see the **TS:>** prompt.

```
DSP watcher is 5143
DSP log
validating image, please wait...
image validation complete
Warning: normal_pt 60
120814.621 SYSTEM : Info : Cisco TelePresence Server on Virtual Machine with 8 v
CPUs 4.0(1shell initshell init.47) (Build 13.2(1.47)) starting
IDSP:2IDSP starting
Serial: 0BB67F93
120814.621 CONFIGURATION : Event logging to serial console now disabled
TS:> _
```

2. Enter the command **help static**
3. Enter a **static** command, using the syntax described in the console help, to configure a static IP address.  
For example, **static 192.168.1.2 255.255.255.0 192.168.1.1** assigns the address 192.168.1.2 to the TelePresence Server, with subnet mask 255.255.255.0 and default gateway 192.168.1.1.
4. Restart the TelePresence Server.

## Task 2: Log in to the Cisco TelePresence Server on Virtual Machine

To log in to the web interface of the device:

1. Use your browser to navigate to the IP address or hostname of the unit.
2. Enter the user name **admin** with no password, and click **Log in**.  
The **Status** page is displayed.

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**Note:** We recommend that you change the admin account to use a password as soon as possible. To do that, go to **Configuration > Change password**.

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## Task 3: Apply license or feature keys

Repeat the following procedure for your license key and any feature keys you wish to install. The procedure is license key specific but is exactly the same for feature keys.

1. Go to **Configuration > Upgrade**.
2. Locate the **Feature management** area.

3. Type the license key exactly as you received it, including any dashes.
4. Click **Add key**.  
The key is verified against the device serial number, and then appears in the "License keys" list in the web interface.
5. Keep a record of the license key in case you need it again. For example, if you get locked out of the device and do not have a configuration backup. (Keys are stored in the configuration.xml file, but the file does not contain the names of the keys.)

## Task 4: (Optional) Configure DNS settings

1. Go to **Network > DNS**.
2. Enter a **Host name** if required.
3. Add the details of your **Name server(s)**.
4. Click **Update DNS configuration**.

# Configuring the TelePresence Server for administration by TelePresence Conductor

## Task 5: Create an administrator account for TelePresence Conductor

For the TelePresence Conductor to communicate with the TelePresence Server it must use credentials for a user that has administrator rights. We recommend that you create a dedicated administrator level user for this task.

1. Go to the web interface of the TelePresence Server you want to configure and log in as an administrator.
2. Go to **User > Add New User**.
3. Enter the following in the relevant fields:

<b>User ID</b>	Enter a username for the TelePresence Conductor to use.
<b>Name</b>	Enter a name for this user.
<b>Password</b>	Enter a password for the TelePresence Conductor to use.
<b>Access rights</b>	Select <i>Administrator</i> .

**Add new user**
You are here: [Users](#) > [Add new user](#)

User ⌵

User ID	<input type="text" value="conductoradmin"/>
Name	<input type="text" value="Admin for Conductor"/>
Password	<input type="password" value="••••••••"/>
Re-enter password	<input type="password" value="••••••••"/>
Access rights	<input style="border: none; border-bottom: 1px solid #ccc; width: 100%;" type="text" value="Administrator"/> <span style="float: right;">⌵</span>
<input type="button" value="Add user"/>	

4. Click **Add user**.

## Task 6: Enable encryption and encrypted SIP (TLS)

To verify that the *Encryption* key is installed or to install the key, perform the following tasks:

1. Go to **Configuration > Upgrade**.
2. Go to the **Feature management** section and verify that the **Encryption** key is installed. If the key is not installed, enter the key into the **Add key** field and click **Add key**.

The screenshot shows the 'Feature management' section of a configuration interface. It includes a table for 'Feature keys' with columns for 'Virtual Machine activation' and 'Encryption'. The 'Encryption' column shows a key and a 'remove' link. Below this is a section for 'License keys' with a table for 'TS screen licenses x 8'. At the bottom, there is an 'Add key' section with a text input field and an 'Add key' button.

To verify that TLS is enabled on the TelePresence Server:

1. Go to **Network > Services**.
2. Ensure that **Encrypted SIP (TLS)** is checked.
3. Ensure that **SIP (TCP)** and **SIP (UDP)** are not checked.
4. Ensure that **HTTPS** is enabled on port 443.

		Port A
<b>TCP service</b>		
IPv4		
HTTP	<input checked="" type="checkbox"/>	80
HTTPS	<input checked="" type="checkbox"/>	443
SIP (TCP)	<input type="checkbox"/>	5060
Encrypted SIP (TLS)	<input checked="" type="checkbox"/>	5061

		Port A
<b>UDP service</b>		
IPv4		
SIP (UDP)	<input type="checkbox"/>	5060

<b>Ephemeral Port Range</b>	
Minimum	49152
Maximum	65535

**Apply changes**

5. Click **Apply changes**.



## Task 7: Configure SIP settings

1. Go to **Configuration > SIP Settings**.
2. Enter the following values into the relevant fields:

<b>Outbound call configuration</b>	Select <i>Call direct</i> from the drop-down list.
<b>Outbound address</b>	Leave blank.
<b>Outbound domain</b>	Leave blank.
<b>Username</b>	Leave blank.
<b>Password</b>	Leave blank.
<b>Outbound transport</b>	Select <i>TLS</i> from the drop-down list.
<b>Advertise Dual IPv4/IPv6</b>	Leave as <i>Disabled</i> , unless your deployment uses both IP addressing schemes.
<b>Negotiate SRTP using SDES</b>	Select <i>For Secure Transport (TLS) only</i> from the drop-down list.
<b>Use local certificate for outgoing connections and registrations</b>	Check the box. This checkbox is not on all TelePresence Server models: it only appears on the 7010 and MSE 8710 models.

The screenshot shows the SIP configuration page with the following settings:

- Outbound call configuration: Call direct
- Outbound address: (empty field)
- Outbound domain: (empty field)
- Username: (empty field)
- Password: (empty field)
- Outbound transport: TLS
- Advertise Dual IPv4/IPv6: Disabled
- Negotiate SRTP using SDES: For secure transports (TLS) only

An **Apply changes** button is located at the bottom of the configuration area.

3. Click **Apply changes**.

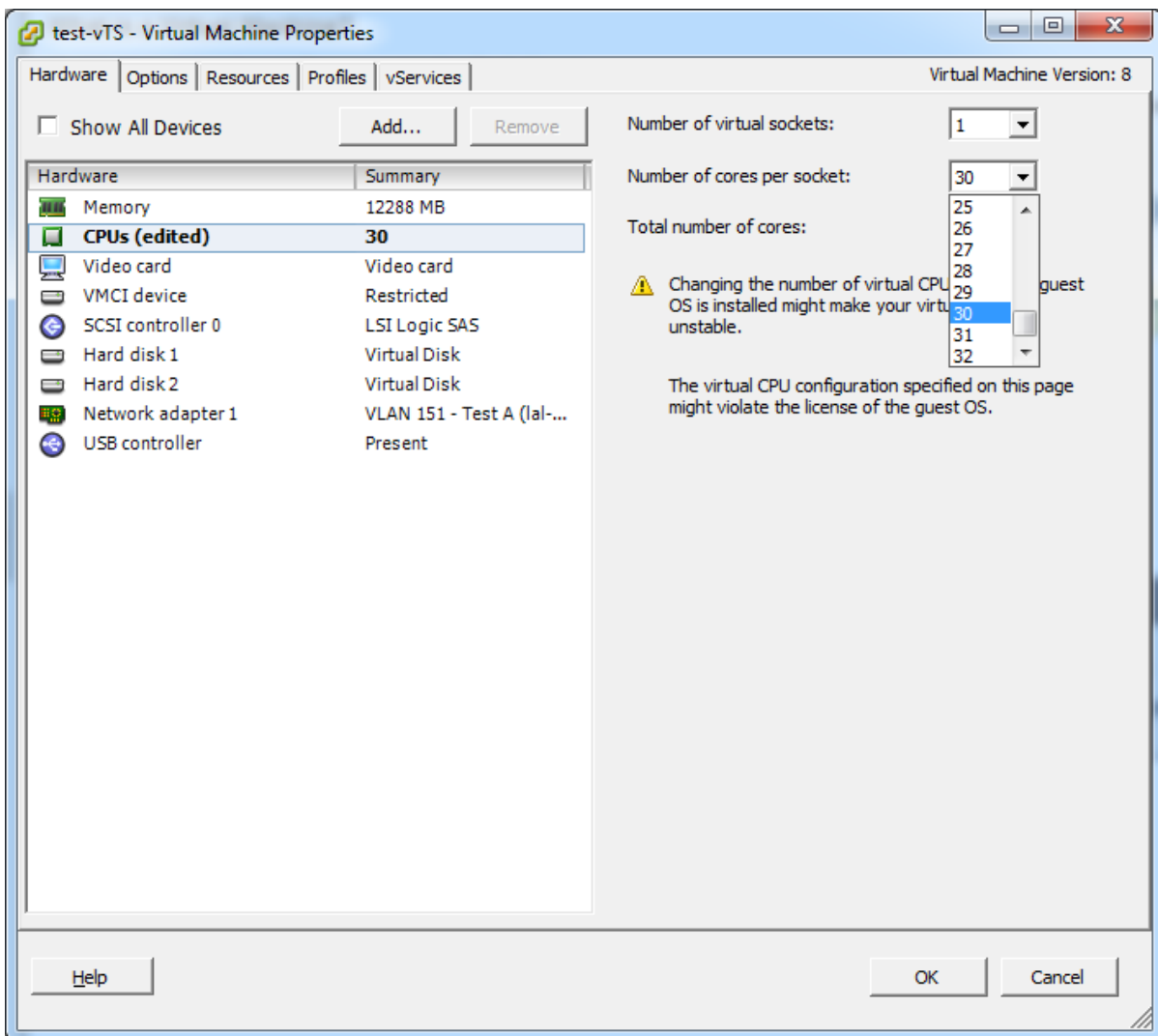
## **(Optional) Migrating the TelePresence Server to a new host**

vMotion has been tested and TelePresence Server will move (migrate) successfully. If you need to move TelePresence Server to a new host you must perform a host migration via vMotion.

We recommend that a vMotion move is carried out when there is low conference activity on the TelePresence Server.

## (Optional) Change the number of vCPUs

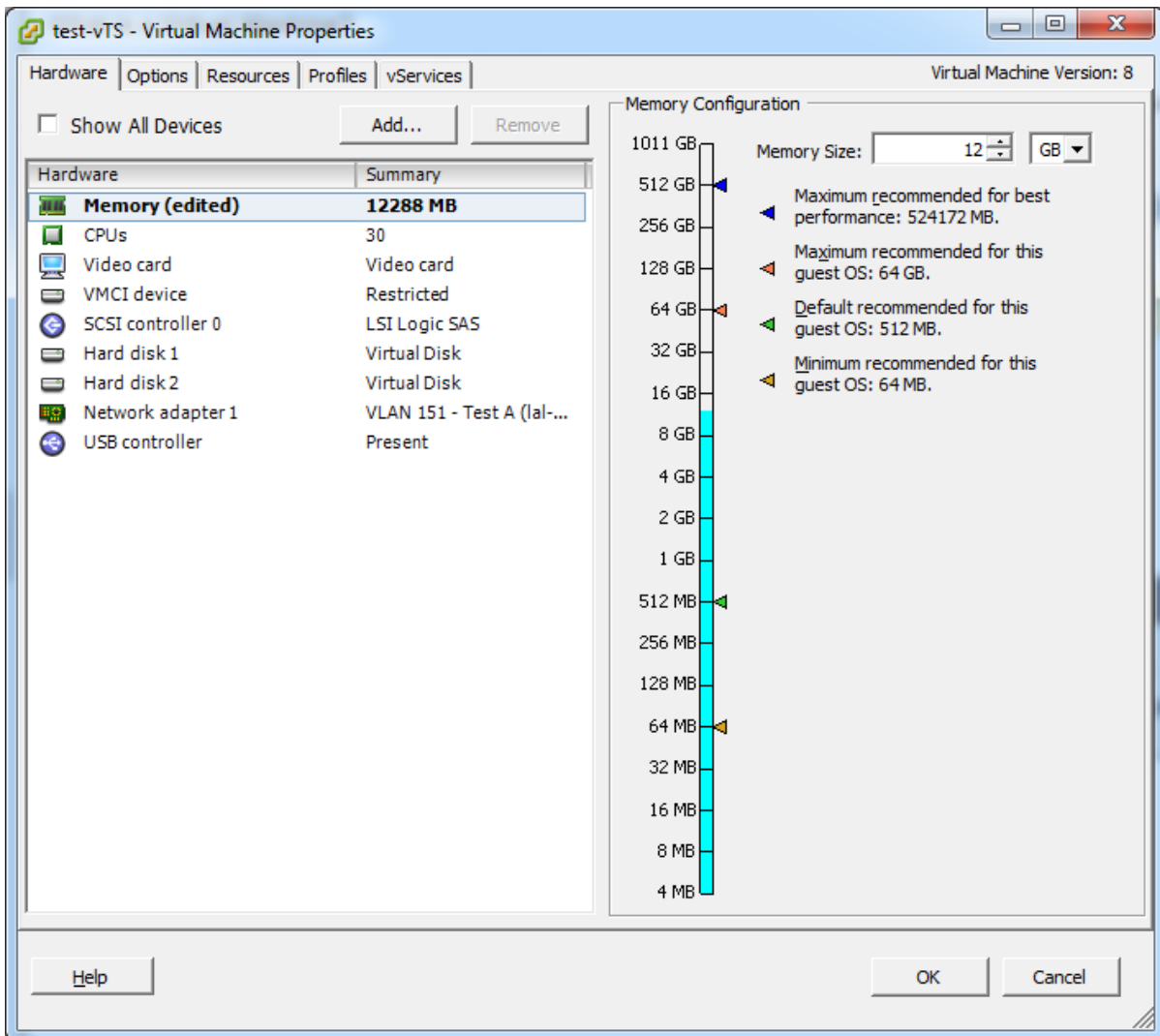
1. Open your VMware client and access the ESXi host.
2. Right-click the TelePresence Server virtual machine and select **Power > Power Off**.
3. Right-click the TelePresence Server virtual machine and select **Edit Settings....**
4. On the **Hardware** tab, click **CPUs**.
5. From the **Number of cores per socket** list, select the required number of virtual CPUs (vCPUs).



6. Click **OK**.
7. Right-click the TelePresence Server virtual machine and select **Power > Power On**.

## (Optional) Change the RAM allocation

1. Open your VMware client and access the ESXi host.
2. Right-click the TelePresence Server virtual machine and select **Power > Power Off**.
3. Right-click the TelePresence Server virtual machine and select **Edit Settings....**
4. On the **Hardware** tab, click **Memory**.
5. In the **Memory Size** field, select the required amount of memory; the minimum requirement is 12 GB.



**Note:** 12 GB vRAM should map to 12 GB physical RAM since oversubscription is not supported.

6. Click **OK**.
7. Right-click the TelePresence Server virtual machine and select **Power > Power On**.

## Checking for updates

It is a good idea to regularly check for updates to the device's main software image on the Cisco web site. This section describes how to upgrade the device using the web interface.

To check for, and download, updates:

1. Log in to the web interface and go to **Status > Status**.
2. Make a note of the software version that is currently installed.
3. Go to the support section of the web site and check if a more recent release is available.

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**Note:** the upgrade file for Cisco TelePresence Server on Virtual Machine has a **.tgz** extension, while the original install file has a **.ova** extension

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4. If a more recent release is available, download it and save it locally.

## Upgrade instructions

1. In a web browser, navigate to the web interface of the device.
2. Sign in as an administrator.  
The username is *admin* and there is no password on a new unit.
3. Go to **Configuration > Upgrade**.
4. In the **Main software image** section, locate the **New image file** field. Browse to and select the new image file.
5. Click **Upload software image**.  
The web browser uploads the file to the device, which may take a few minutes.

---

**Note:** Do not browse away from the **Upgrade** page, or refresh the page, during the upload process – this will cause the upload to fail.

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A pop-up window displays to show upload progress. When complete, close the message. The web browser refreshes automatically and displays the message *Main image upload completed*.

6. Click **Shut down TelePresence Server**. This option will now change to **Confirm TelePresence Server shutdown**. Click to confirm.
7. Click **Restart TelePresence Server and upgrade**.  
The unit will reboot and upgrade itself; this can take up to 25 minutes.

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**Note:** You may be logged out due to inactivity. If this happens, log in again, go to **Configuration > Shutdown** and click **Restart TelePresence Server and upgrade**.

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8. Go to the **Status** page to verify that your device is using the new version.
9. If necessary, restore your configuration; refer to the online help for details.

# Troubleshooting and technical support information

## Using the event log to help solve a problem

You can use the event log to produce debugging information to assist technical support in solving any problems. Event logging capture filter topics are set by default to **Errors, warnings and information**. Do not change the capture filter topic level without the guidance of technical support.

## Getting more help

If you experience any problems when configuring or using the TelePresence Server, consult the online help available from the user interface.

If you cannot find the answer you need in the documentation, check the web site at <http://www.cisco.com/cisco/web/support/index.html> where you will be able to:

- Make sure that you are running the most up-to-date software.
- Get help from the Cisco Technical Support team.

Make sure you have the following information ready before raising a case:

- Identifying information for your product, such as model number, firmware version, and software version (where applicable).
- Your contact email address or telephone number.
- A full description of the problem.

To view a list of Cisco TelePresence products that are no longer being sold and might not be supported, visit [http://www.cisco.com/en/US/products/prod\\_end\\_of\\_life.html](http://www.cisco.com/en/US/products/prod_end_of_life.html) and scroll down to the TelePresence section.

## Checking VMware compatibility

If you are using third party hardware for hosting the Cisco TelePresence Server on Virtual Machine application, check the hardware compatibility. This can be done using the VMware compatibility guide tool available from <http://www.vmware.com/resources/compatibility/search.php>.

## VMware checklist

1. Check the accessibility to the VM host server (by ping, physical console access, ssh remote access, KVM-over-IP console, and so on)
2. Check the network connectivity of the VMkernel (by executing the vmkping command using Tech Support Mode to verify network connectivity from the VMkernel NIC level)
3. If you are having problems connecting to the vSphere Client management console, execute the command `/sbin/services.sh` from an SSH session to restart the ESXi management agent
4. Check the utilization of the VM host server (CPU utilization, memory utilization, disk access speed, storage access speed, network access status, power utilization, and so on). If any specific application causes high utilization, stop or restart this application to isolate the overall VM host performance level.

Alternatively execute the command `esxtop` from Tech Support Mode to list all system processes running on the ESXi host application

5. Check the ESXi server file log (`hostd.logs`) under the folder `/var/log/vmware`  
This log contains common error logs such as iSCSI naming error, authentication error, host convertibility error, and so on.
6. Verify that there is adequate disk space available on the volume that is storing the database files to ensure correct operation of the database. If there is not adequate space available on the physical volume that stores the database files, free up disk space
7. Validate the authentication to the vCenter Server database. The vCenter Server service may not be able to authenticate with the database in the following circumstances:
  - There are permission issues with the database when importing from one instance to another
  - The password on the account you are using to authenticate to the database has changed but the password in the registry has not changed as well
  - The vCenter Server database user is not granted correct permissions

## Analyzing the cause of VMware issues

Table 5: VMware issues and possible root causes

Potential source of issue	Symptoms to look for
Storage	<p>Look for the VM store application image stored either on the local drive, SAN or NFS. VMs often freeze or hang up if the application failed to access the storage.</p> <p>Possible error messages are:</p> <ul style="list-style-type: none"> <li>■ vCenter Server does not start</li> <li>■ vCenter Server is slow to respond</li> <li>■ vCenter Server fails after an indefinite amount of time</li> </ul>
Network	<p>Any network failure or locking causes a connection failure between the VM and the virtual network. Also, if using NFS or iSCSI, storage may cause application failures because the application cannot access the file system.</p>
DNS	<p>DNS server failures or communication failures between DNS and the VM server may cause the VMware application or the Cisco TelePresence Server on Virtual Machine application to fail.</p>
vCenter Server	<p>If vCenter is not operating properly, even though the Cisco TelePresence Server on Virtual Machine application is still up and running, you may lose connection to the application from the network.</p>
Host application	<p>Check any critical alarms on the VM application for events on the host or application level (check the event information from vSphere Client).</p>

## Known sources of issues with Cisco TelePresence Server on Virtual Machine

### VM Image Fails to Boot

If the VM image fails to boot, check the VT (Virtualization Technology) setting in BIOS. This needs to be enabled for hosting VMs. If it is not set, set it and re-install ESXi then load the .ova file.

## Guest console in vSphere 5 fails to run on some Microsoft platforms

When attempting to open a console screen from vSphere for the VM:

- Error message: “The VMRC console has disconnected...attempting to reconnect.”
- Screen remains black

The following operating systems are at risk:

- Windows 7 64 bit – reported on VMware forum (<http://communities.vmware.com/thread/333026>)
- Windows Server 2008 R2 (64-bit)

## Raid Controller Synchronization

If the VMware system is synchronizing its RAID disks, disk performance is seriously degraded. We strongly recommend that you do not install Cisco TelePresence Server on Virtual Machine on VM platforms where RAID disks are in a degraded or synchronizing state.

## TelePresence Server Displays Different Serial Number/MAC address on Reboot

This situation can occur if multiple network interfaces are configured. Only one network interface is supported.

## Collecting logs from the host

If VMware is causing problems on a Cisco TelePresence Server on Virtual Machine host, we recommend that you collect logs from the host for analysis:

1. Using the vSphere client (or the vCenter Server managing this ESXi host) connect to the ESXi host on which the Cisco TelePresence Server on Virtual Machine is running
2. Go to **File > Export > Export System logs**, choose the appropriate ESXi host and go with the default settings

After you have downloaded the logs analyze them, or have them analyzed to determine the issue.

More information on exporting logs can be found at [Collecting diagnostic information for VMware ESX/ESXi using the vSphere Client \(653\)](#).

## Restoring default configuration (factory reset)

Very rarely, it may become necessary to run the `reset_config` command on a TelePresence Server. This resets the configuration of the TelePresence Server to its original default settings.

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**Note:** This command removes the IP address and other network configurations, the installed licenses and the configured users.

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To restore the default configuration:

1. Restart the TelePresence Server
2. Within 30 seconds after reboot, enter `reset_config` at the console



The configuration reset is complete.

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