



# Cisco TelePresence Server on Virtual Machine

Installation Guide

**Last Updated: January 2018**

4.4

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## Change History

**Table 1 Installation Guide Change History**

Date	Change	Reason
January 2018	Content refresh	Addition to Platform Licensing comparison
August 2016	Content refresh	Software update to 4.4, introduction of Cisco Meeting Server 1000.
April 2016	Content refresh	Addition of ESXi prerequisites
April 2016	Content refresh	Software update to 4.3
April 2015	Content refresh	Software update to 4.1(2.29), Cisco TelePresence Server on Virtual Machine improvements

## 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.
- 46 vCPUs deployment requiring the Multiparty Media 410v platform (co-residency not supported).
- 70 vCPUs deployment requiring the Cisco Meeting Server 1000 (CMS 1000) platform (co-residency not supported).

These deployments have different processing capacities and licensing requirements. For more information see [Recommended Platform, page 8](#).

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](#).

## Platform Licensing Comparison

**Note:** These are the recommended combinations for configuration via TelePresence Conductor. Other combinations are possible but are likely to cost more than expected. For further information see [http://docwiki.cisco.com/wiki/Advanced\\_Resource\\_Optimization\\_on\\_TelePresence\\_Server](http://docwiki.cisco.com/wiki/Advanced_Resource_Optimization_on_TelePresence_Server).

**Table 2 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 <sup>†</sup>	Mono	In main video	1/8
360p30 <sup>†</sup>	Stereo	720p5	1/4
480p30	Stereo	In main video	1/4
480p30	Stereo	720p5	1/3
720p30	Stereo	720p5	1/2
720p30	Stereo	720p15	1
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

<sup>†</sup> Requires TelePresence Conductor XC2.2 or later.

## General Information

**Table 3 TelePresence Server conferencing capacity on various platforms for current products**

Screen licenses required per call	Maximum calls by hardware type (with licenses to provide 100% of capacity)								
	8 Cores VM (8 vCPU)	Media 310 or MCU 5310	30 vCPU VM ‡	Media 320 or MCU 5320	Two appliance cluster	Media 820	Media 410v ‡ (46 vCPU)	CMS 1000 ‡ (70 vCPU)	Two blade cluster with Media 820
	5 screen licenses	6 screen licenses	10 screen licenses	12 screen licenses	24 screen licenses	30 screen licenses	32 screen licenses	42 screen licenses	60 screen licenses
1/52	200*	200*	200*	200*	200*	200*	200*	200*	200*
1/8	41	49	81	97	195	200*	200*	200*	200*
1/4	20	24	40	48	97	120	128	168	200*
1/3	15	18	30	36	73	90	96	126	180
1/2	10	12	20	24	48	60	64	84	120
1	5	6	10	12	24	30	32	42	60
1 1/2	3	4	6	8	16	20	21	28	40
2	2	3	5	6	12	15	16	21	30
3	1	2	3	4	8	10	10	14	20
4	1	1	2	3	6	7	8	10	15

\* 200 is the maximum number of calls on a TelePresence Server. Requires Cisco TelePresence Conductor XC2.3 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 410v, CMS 1000, or 30 vCPU 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).

**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.

**Note:** BE6K has not had any capacity changes since 4.1(1.79).

**Note:** This table is for current products only. For a comprehensive list including older products please see the licensing capacity table in the online help.

## Prerequisites

## Prerequisites

## Recommended Platform

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

**Table 4 Cisco Meeting Server 1000 platform configuration**

SKU	Description	Quantity
UCSC-C220-M4S	UCS C220 M4 SFF w/o CPU mem HDD PCIe PSU /rail kit	1
UCS-CPU-E52695E	2.10GHz E5-2695 v4 120W 18C 45MB Cache	2
UCS-MR-1X081RV-A	8GB DDR4-2400MHz RDIMM/PC4-1920	8
UCS-HD300G10K12G	300GB 12G SAS 10K RPM SFF HDD	2
UCSC-RAILB-M4	Ball Bearing Rail Kit for C220 M4 and Crr2 M4 rack servers	1
UCSC-MLOM-BLK	MLOM blanking panel	1
N20-BBLKD	UCS 2.5 inch HDD blanking panel	6
UCSC-HS-C220 M4	Heat sink for UCS C220 M4 rack servers	2
UCSC-PSU1-770W	770W AC Hot-Plug Power Supply for 1U	2
UCSC-MRAID12G	Cisco 12G SAS Modular Raid Controller	1
R2xx-RAID1	Enable RAID 1 Setting	1

- Cisco BE6kHD (UCS C220 M4S) running the tested reference configuration (TRC#2) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#BE6000H.C2.A0Servers\\_and\\_Small\\_Plus\\_UConUCS\\_Tested.C2.A0Reference\\_Configurations](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#BE6000H.C2.A0Servers_and_Small_Plus_UConUCS_Tested.C2.A0Reference_Configurations)
- BE7KMD (UCS C240 M4S2) running the tested reference configuration (TRC#1) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#BE7000M\\_Servers\\_and.C2.A0Medium\\_UConUCS\\_Tested\\_Reference.C2.A0Configurations](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#BE7000M_Servers_and.C2.A0Medium_UConUCS_Tested_Reference.C2.A0Configurations)
- BE7KHD (UCS C240 M4SX) running the tested reference configuration (TRC#1) as specified at the following location: [http://docwiki.cisco.com/wiki/UC\\_Virtualization\\_Supported\\_Hardware#BE7000H.C2.A0Servers\\_and\\_Large\\_UConUCS\\_Tested.C2.A0Reference\\_Configurations](http://docwiki.cisco.com/wiki/UC_Virtualization_Supported_Hardware#BE7000H.C2.A0Servers_and_Large_UConUCS_Tested.C2.A0Reference_Configurations)

## CPU Requirements

There are four deployment configurations for Cisco TelePresence Server on Virtual Machine:

- 8 Cores Cisco TelePresence Server
- 30 Hyperthread Core Cisco TelePresence Server
- 46 Hyperthread Core Cisco TelePresence Server
- 70 Hyperthread Core 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.



## Prerequisites

**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.

The 30 Hyperthread Core deployment configuration uses 30 virtual CPUs and can be deployed on servers with at least 16 physical CPU cores with Hyperthreading enabled.

The 46 Hyperthread Core deployment configuration uses 46 virtual CPUs and can be deployed on servers with at least 24 physical CPU cores with Hyperthreading enabled. These platforms should be exclusively dedicated for the Cisco TelePresence Server on Virtual Machine.

The 70 Hyperthread Core deployment configuration uses 70 virtual CPUs and can be deployed on servers with at least 36 physical CPU cores with Hyperthreading enabled. These platforms 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 30 Hyperthread Core 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 30 Hyperthread Core option or the 8 Cores option. In the 30 Hyperthread Core 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.
- Check the **Cluster on Die** BIOS setting is disabled via **BIOS > Advanced > QPI Configuration > Cluster on Die**.
- VMware version is ESXi 5.5 Update 2 (or later) or ESXi 6.0.
- 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.
- Only one network interface is configured.

**Note:** The Cisco Multiparty Media 410v requires Hypervisor version ESXi 5.5 Update 2 (or later).

**Note:** The Cisco Meeting Server 1000 requires Hypervisor version ESXi 6.0 and Virtual Machine version 11.

**Note:** We recommend RAID for backing up.

## Specifications-Based System Minimum Requirements

If using a specifications-based system the Cisco TelePresence Server on Virtual Machine supports up to:

- 5 screen licenses with the 8 vCPU version (some older processors such as the E5-2609 are only capable of up to 4 screen licenses)
- 10 screen licenses with the 30 vCPU version

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 16 GB\* RAM to be dedicated to Cisco TelePresence Server on Virtual Machine. (Minimum of two memory chips (one per processor).
- At least 53 GB of local storage.

## Prerequisites

- IOPS (input/output operations per second) and storage performance must meet or exceed the following requirements:

**Table 5 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 16 GB\* of RAM, and 8, 30, 46, or 70 vCPUs. (Only the 8 vCPU and 30 vCPU options are relevant to the specification-based system.)
- Cisco TelePresence Server on Virtual Machine must be the only VM hosted on the specifications-based system when using the 30 vCPU VM. It cannot be co-resident with other any other UC application (unlike the 8-core option).
- VMware version is ESXi 5.5 Update 2 (or later) or ESXi 6.0.
- VMware client to access Hypervisor directly or through Virtual Center to deploy the OVA.

**Note:** \* This increased in software version 4.3 from 12 GB in the previous release.

## 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.
- **ds-mm--public\_<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.

**Note:** These instructions are only applicable for software versions 4.3 and later due to platform operating system changes introduced in version 4.3. For installing software versions 4.2 and earlier, see documentation applicable to earlier software versions. You cannot upgrade from OR downgrade to 4.2 and earlier versions from 4.3 and later due to the changes in the underlying operating system.

## Configuring Initial IP Details

When deploying a Cisco TelePresence Server on Virtual Machine for the first time, you can configure initial IP details for the Cisco TelePresence Server on Virtual Machine (IPv4 only) when prompted by the following screen. Leave these options blank to use DHCP.

The screenshot shows a window titled "Deploy OVF Template" with a "Properties" tab selected. The window contains a sidebar with navigation links: "Source", "OVF Template Details", "Name and Location", "Deployment Configuration", "Disk Format", "Network Mapping", and "Properties" (which is highlighted and labeled "Ready to Complete"). The main area of the window is titled "Properties" and contains the following fields:

- IP Address**: The initial IP address for TelePresence Server. Leave blank to use DHCP.
- Subnet mask**: The initial subnet mask. Leave blank to use DHCP.
- Default Gateway**: The initial default gateway address. Leave blank to use DHCP.

At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", and "Cancel".

These IP details will only be used on the very first boot of the Cisco TelePresence Server on Virtual Machine. The Cisco TelePresence Server on Virtual Machine will attempt to configure its IP details with these parameters if

## Installing the TelePresence Server

entered. If entered incorrectly, you will need to use the console to configure network details (see [Task 1: Discovering or Reconfiguring the IP Address, page 16](#)).

## 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

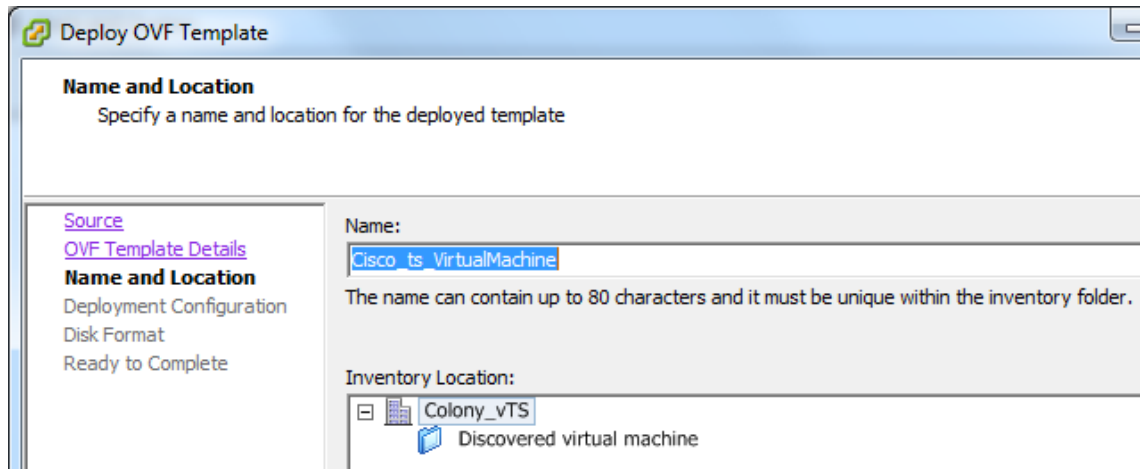
These instructions represent a typical installation; not all of the steps listed may be necessary, depending on your deployment environment. The Deploy OVF Template wizard dynamically changes to reflect the host configuration.

**Note:** The same process is used to deploy all options, except for the **Configuration** option on the **Deployment Configuration** screen of the wizard (step 7 below).

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**.

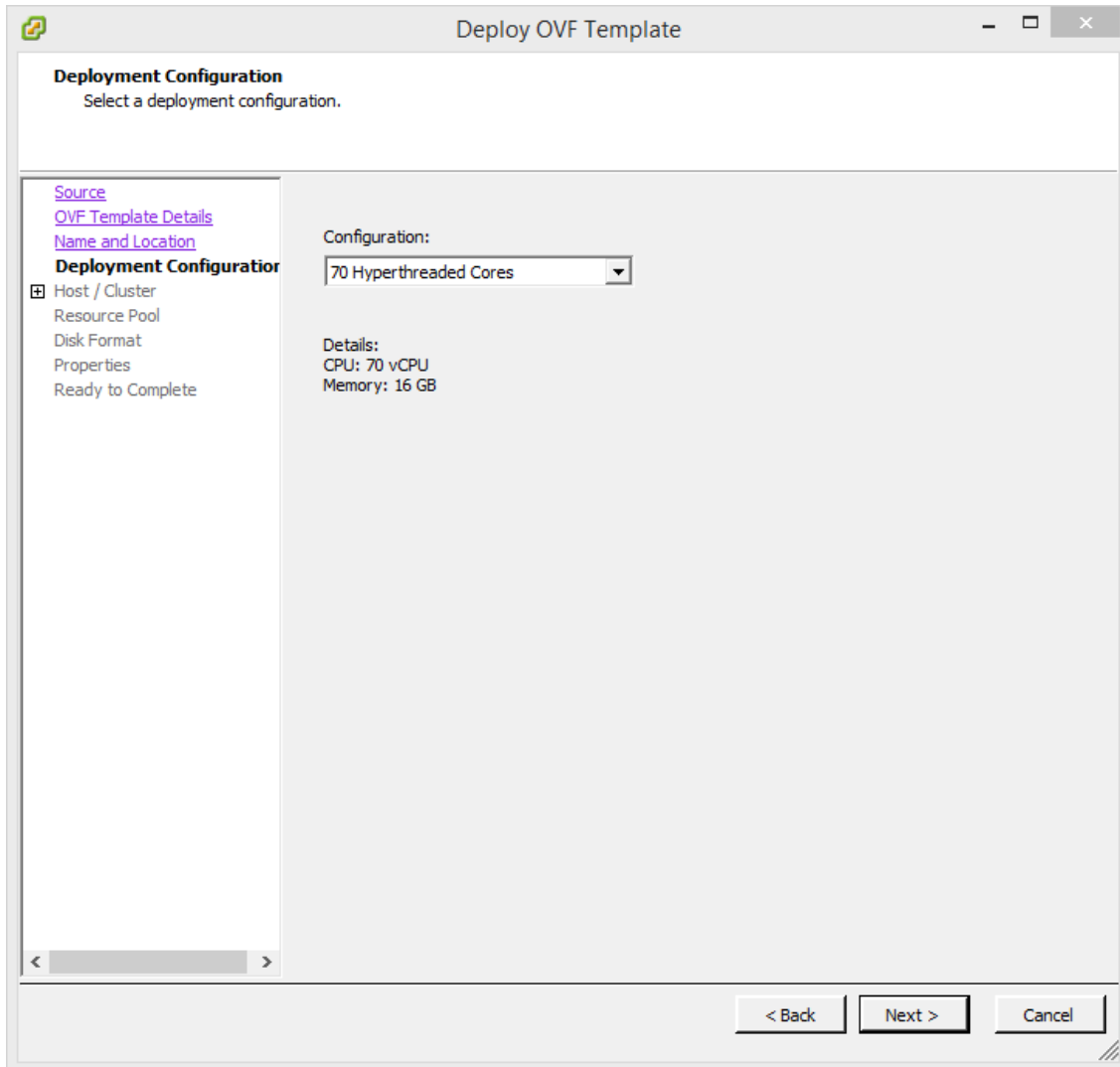
Installing the TelePresence Server

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.



## Installing the TelePresence Server

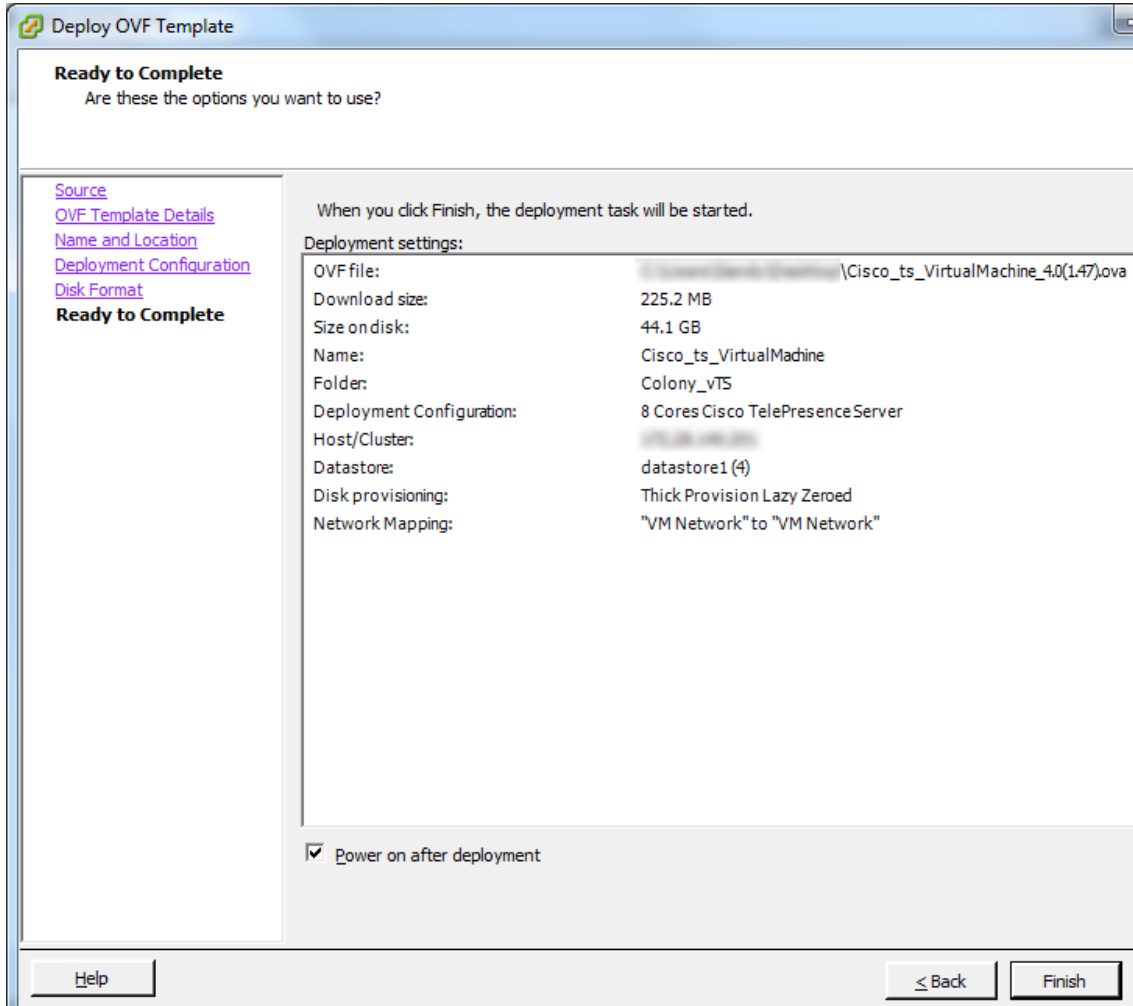
- On the **Deployment Configuration** page, for an 8 vCPU virtual machine select *8 Cores Cisco TelePresence Server*, for a 30 vCPU virtual machine select *30 Hyperthread Core Cisco TelePresence Server*, for a Media 410v select *46 Hyperthread Core Cisco TelePresence Server*, for a CMS 1000 select *70 Hyperthread Core Cisco TelePresence Server*, and then click **Next**.



- On the **Host / Cluster** page, select which host or cluster will run the deployed virtual machine and click **Next**.
- On the **Resource Pool** page, select the resource pool in which you want to run the deployed virtual machine and click **Next**.
- On the **Storage** page, select the datastore onto which the TelePresence Server files will be deployed and then click **Next**.
- 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.
- On the **Network Mapping** page, select the network mapping that applies to your infrastructure and then click **Next** (default is *VM Network*).
- On the **Ready to Complete** page, confirm the deployment settings.

Installing the TelePresence Server

- 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: Discovering or Reconfiguring the IP Address

**Note:** If an IP address was successfully configured during the task [Configuring Initial IP Details, page 11](#), this task can be ignored.

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 (you may have to press **Enter** at the console for the prompt to appear).

```
192555.225 HELPER : Info : initialised; max calls: 200, max pending calls: 100
192555.227 CDR : Info : initialised: 2000 records
192555.234 SIP : Info : Starting SIP TCP service
192555.235 SIP : Info : Starting SIPs TCP service
192555.236 SIP : Info : Starting SIP UDP service
192555.243 WEB_PAGES : Info : page services initialised
192555.245 WEB_PAGES : Info : allocated buffer for 1000 records of size 6680 bytes
Event logging to serial console now disabled
TS:> _
```

2. If DHCP is configured, enter the command `status` to discover the assigned IP address and proceed to [Task 2: Log in to the Cisco TelePresence Server on Virtual Machine, page 16](#).

**Note:** If you want to configure DHCP at this point, enter the command `dhcp`. Otherwise if you want to change the static IP address configuration enter the command `help static` {at this point, if not doing DHCP, proceed to steps 3 and 4 below}.

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**.  
You will be directed to the **Change password** page where you must enter a new password before using the TelePresence Server.

### 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.



## Configuring the TelePresence Server

**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

Name

Password

Re-enter password

Access rights  ▼

4. Click **Add user**.

### Task 6: Check 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.

## Configuring the TelePresence Server for Administration by TelePresence Conductor

4. Ensure that **HTTPS** is enabled on port 443.

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

Ephemeral Port Range	
Minimum	49152
Maximum	65535

5. Click **Apply changes**.

## Task 7: (Optional) Enable Media Encryption

To check that the Media 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 check that the Media encryption key is installed. If the key is not installed, enter the key into the **Add key** field and click **Add key**.

### Feature management

Feature management	
Feature keys	Virtual Machine activation ( )
License keys	Media encryption ( ) remove
Add key	TS screen licenses x 27 ( )
	<input type="text"/>
	<input type="button" value="Add key"/>

## Task 8: 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.  <i>Call direct</i> is required for cascading between TelePresence Servers to be supported.
<b>Outbound address</b>	Leave blank.  This field must be left blank for cascading between TelePresence Servers to be supported.
<b>Outbound domain</b>	Leave blank.  This field must be left blank for cascading between TelePresence Servers to be supported.
<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.

## (Optional) Migrating the TelePresence Server to a New Host

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

3. Click **Apply changes**.

## (Optional) Migrating the TelePresence Server to a New Host

**Note:** You may wish to carry out this task if you have an 8 core machine and want to upgrade to a CMS 1000 or a Media 410v. If so, you will need to move the VM (as explained below) before upgrading the vCPU (see [\(Optional\) Change the Number of vCPUs, page 21](#)). Then add any additional licenses for the additional capacity.

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 the VM is powered off.

## (Optional) Change the Number of vCPUs

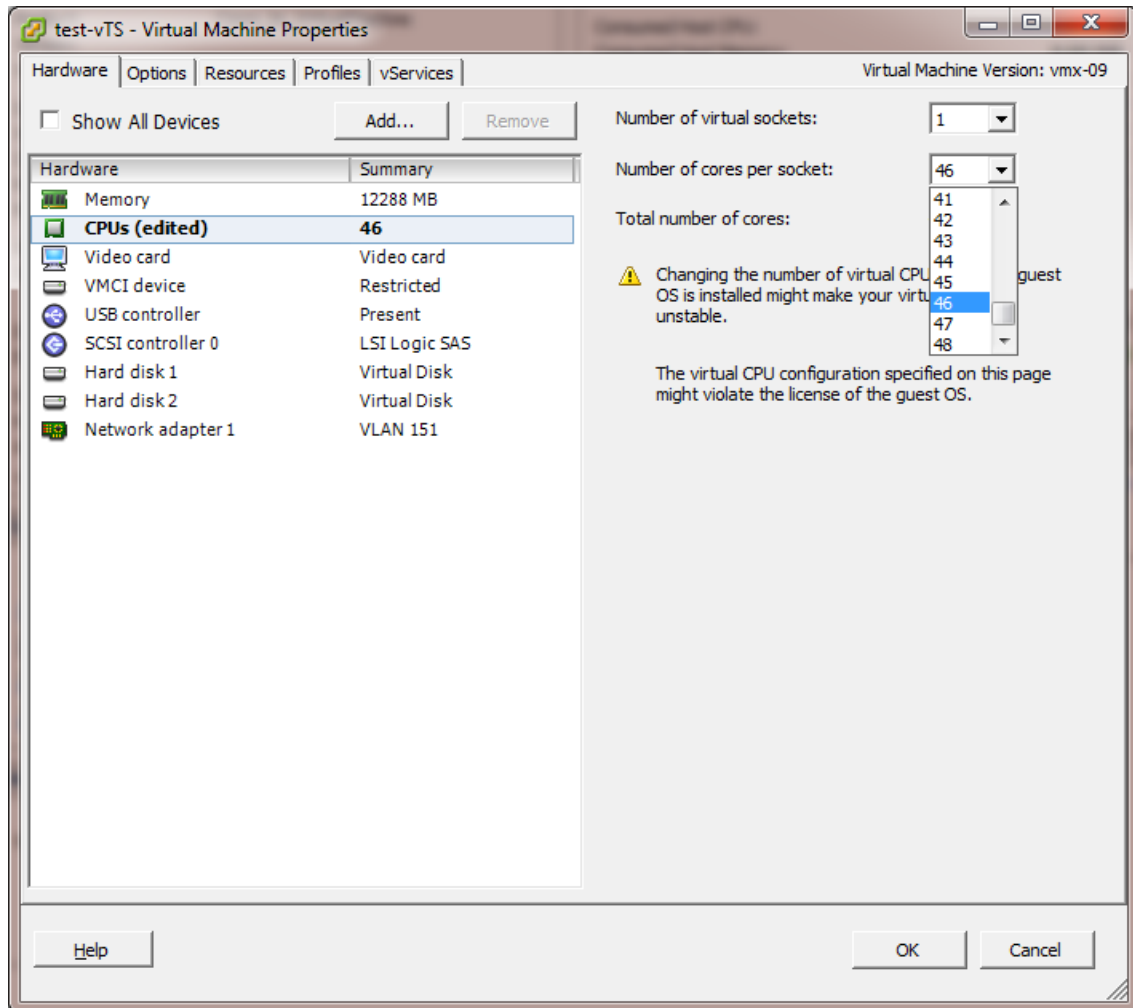
**Note:** You may wish to carry out this task if you have an 8 core machine and want to upgrade to a CMS 1000 or a Media 410v. If so, you need to move the VM (see [\(Optional\) Migrating the TelePresence Server to a New Host, page 21](#)) before upgrading the vCPU as explained below. Then add any additional licenses for the additional capacity.

**Note:** You need to run VMware hardware version 11 to enable you to assign more than 64 cores to a machine, and VMware hardware version 9 to enable you to assign more than 32 cores to a machine. If you need to upgrade to Version 11 or Version 9, please see: [http://kb.vmware.com/selfservice/microsites/search.do?language=en\\_US&cmd=displayKC&externalId=1003746](http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1003746) for more information on VMware, version compatibility, and upgrading the virtual hardware.

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**.

(Optional) Change the Number of vCPUs

- From the **Number of cores per socket** list, select the required number of virtual CPUs (vCPUs). For the CMS 1000, select **Number of virtual sockets**: 35 and **Number of cores per socket**: 2. For all other platforms, select **Number of virtual sockets**: 1, and the required number of virtual vCPUs under **Number of cores per socket**.



- Click **OK**.
- 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.

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

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

## Upgrade Instructions

**Note:** These instructions are not applicable if moving from software version 4.2 to 4.3. For information on using 4.3 see [Using 4.4 on the Cisco TelePresence Server on Virtual Machine, page 24](#). Version 4.3 can be upgraded to 4.4 using the following 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.

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.

**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**.

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.

## Using 4.4 on the Cisco TelePresence Server on Virtual Machine

Deploying this release is similar to deploying previous versions of Cisco TelePresence Server on Virtual Machine except you have the additional option to use DHCP to acquire an IP address. To do this leave the IP address, Subnet mask and Default Gateway Properties blank when deploying the Cisco TelePresence Server on Virtual Machine.

To migrate from Version 4.2 (or earlier) to 4.3 (or later) on the Cisco TelePresence Server on Virtual Machine, it needs to be redeployed using the .ova file. Cisco have provided an upgrade redeployment tool that ensures serial numbers are preserved, and thus all the keys (activation, encryption, screen licenses) are carried across to the new deployment.

**Note:** Once you have deployed a 4.3 Cisco TelePresence Server on Virtual Machine, you cannot downgrade to 4.2 or earlier. If you have kept the old 4.2 Cisco TelePresence Server on Virtual Machine VM, you can power that on (assuming you power down the 4.3 Cisco TelePresence Server on Virtual Machine VM) at any time and resume using it.

**Caution:** You will need to get new activation and license keys if you redeploy without using the upgrade redeployment tool.

For more information on using the Cisco TelePresence Server on Virtual Machine Upgrade Redeployment Tool, see "Migrating to TelePresence Server on Virtual Machine 4.3", at:  
<http://www.cisco.com/c/en/us/support/conferencing/telepresence-server/products-installation-guides-list.html>.

**Note:** Before migrating your Cisco TelePresence Server on Virtual Machine from Version 4.2 (or earlier) to 4.3 (or later), ensure the host is running ESXi 5.5 update 2 (or later) or ESXi 6.0. You may be required to update your vCenter Server, please see: [https://www.vmware.com/resources/compatibility/sim/interop\\_matrix.php#interop&1=994,694,430,795,620&2=](https://www.vmware.com/resources/compatibility/sim/interop_matrix.php#interop&1=994,694,430,795,620&2=).



## Security

### Changing the Admin Account Password

To change the password for the admin account using the web interface:

1. Go to **Users > Users**.
2. Select **admin** user.
3. Click **Change password**.
4. Enter a new password in the **Password** and **Re-enter password** fields.
5. Click **Change password**.

### Note About Existing Privileged Account

Cisco TelePresence Server on Virtual Machine releases contain a password-protected privileged shell login over virtual console. This account can be accessed via vSphere administration console.

Cisco TelePresence Server Software 4.1(1.85) and later have this account disabled by default. Privileged Shell account password can be changed by contacting Cisco TAC.

### Security Hardening

Information on how to deploy and operate VMware products in a secure manner is available from the [VMware Security Hardening Guides](#).

## 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 6 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.</p> <p>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.

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

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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