



# APPENDIX 5

## Installing the Software

This chapter describes how to install the software for the Cisco TelePresence Exchange System.

- [Determining the Method and Order of Installation, page 5-1](#)
- [Options for Connecting to the Cisco TelePresence Exchange System Servers for Installation, page 5-3](#)
- [Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers, page 5-4](#)
- [Installing the Cisco TelePresence Exchange System Call Engine Servers, page 5-9](#)
- [Installing the Cisco TelePresence Exchange System Administration Servers, page 5-14](#)
- [Verifying Data Connectivity Among the Servers, page 5-18](#)

## Determining the Method and Order of Installation

You can install the servers in series or in parallel. To determine which method is best for you, see [Table 5-1](#) and the following sections:

- [Serial Installation, page 5-2](#)
- [Parallel Installation, page 5-2](#)

**Table 5-1**      **Comparison of Serial and Parallel Cisco TelePresence Exchange System Installation**

Installation Method	Advantage	Disadvantage
Serial	Less opportunity for entry errors. You enter information into the installation wizard for only one server at a time.	Longer installation process. Each server installation requires 40 minutes to install. <sup>1</sup> So the full serial installation requires 240 minutes (6 servers × 40 minutes each).
Parallel	Shorter installation process. Each server pair requires 40 minutes to install. <sup>1</sup> You must install the database servers serially before you begin to install the administration and call engine servers. If you install all four of the administration and call engine servers at the same time, the full parallel installation requires 160 minutes (2 database server installations x 40 minutes each plus 2 parallel installations x 40 minutes).	Greater opportunity for entry errors. You enter information into the installation wizard for two to four servers at a time.

1. If you are installing the Cisco TelePresence Exchange System software on a server that requires a firmware update, the installer automatically begins the update, which typically takes about 30 minutes, before performing the server installation. This time is not included in these estimations.

## Serial Installation

Software installation for each server requires approximately 40 minutes when you employ a serial installation. To ensure the proper exchange of information among the Cisco TelePresence Exchange System servers during a serial installation, install the servers in the following order:

1. Install the primary database server.
2. Install the secondary database server.
3. Install the administration and call engine servers. The order in which you install these remaining nodes does not matter.

See the following sections for detailed installation instructions for each server:

- [Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers, page 5-4](#)
- [Installing the Cisco TelePresence Exchange System Call Engine Servers, page 5-9](#)
- [Installing the Cisco TelePresence Exchange System Administration Servers, page 5-14](#)

## Parallel Installation

**Note**

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You need one copy of the installation DVD for each server that you plan to install in parallel.

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To reduce the overall installation time of the Cisco TelePresence Exchange System servers, you can install some of the servers in parallel in the following order:

1. Install the primary database server.
2. When the primary database server installation is complete, install the secondary database server.  
Ensure that the database server installations and synchronization are complete before you proceed to install the call engine and administration servers.
3. Install the administration and call engine servers in parallel. You can start the installation for as many servers as you have installation DVDs.

See the following sections for detailed installation instructions for each server:

- [Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers, page 5-4](#)
- [Installing the Cisco TelePresence Exchange System Call Engine Servers, page 5-9](#)
- [Installing the Cisco TelePresence Exchange System Administration Servers, page 5-14](#)

# Options for Connecting to the Cisco TelePresence Exchange System Servers for Installation

You have two connection options for running the Cisco TelePresence Exchange System installer on each server:

- Direct connection to the console, for example, through a keyboard-video-mouse (KVM) switch.
- Remote connection by using the integrated management module (IMM) interface. See the [“Using the IMM to Remotely Install the Cisco TelePresence Exchange System Software”](#) section on page 5-3.

**Note**

Although you may use the IMM to remotely run the installer, the Cisco TelePresence Exchange System installation DVD must be inserted into the server. Cisco currently does not support full remote installation by mounting the DVD or image file using the IMM.

## Using the IMM to Remotely Install the Cisco TelePresence Exchange System Software

**Before You Begin**

- For each server that you want to access remotely, you must first complete the procedures in the [“Setting Up the IMM”](#) section on page 4-7.
- Insert the Cisco TelePresence Exchange System installation DVD into the server. Cisco currently does not support full remote installation by mounting the DVD or image file using the IMM.
- Complete this task by using one of the following web browsers:
  - Microsoft Internet Explorer version 8.x or 9.x with the latest Service Pack
  - Mozilla Firefox version 3.7 or later
- Make sure that the web browser allows popup windows from the IMM.

**Procedure**

**Step 1** Point your web browser to the IP address of the IMM interface.

**Step 2** Log in to the IMM web interface.

**Step 3** Select **Continue**.

**Step 4** Select **System > Tasks > Remote Control**.

**Step 5** Click **Start Remote Control in Single User Mode**.

This opens a console window, which you will use later to enter information as the installer runs.

**Tip**

If the console window does not open, press and hold down the Control key and click **Start Remote Control in Single User Mode** again. Continue to hold the Control key until the window opens.

**Step 6** In the IMM web interface, select **System > Tasks > Power/Restart**.

**Step 7** Click **Restart the Server Immediately**.

**Step 8** Click **OK** to confirm the restart.

When the DVD is recognized after the restart, the installer begins to run. Use the console window to complete the installation procedures.

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#### What to Do Next

Complete the installation procedures for the server:

- [Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers, page 5-4](#)
- [Installing the Cisco TelePresence Exchange System Call Engine Servers, page 5-9](#)
- [Installing the Cisco TelePresence Exchange System Administration Servers, page 5-14](#)

## Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers

Complete the following tasks in the order shown:

- [Installing the Database Server Software, page 5-4](#)
- [Checking the Initial High-Availability Roles of the Database Servers, page 5-7](#)
- [Checking the Network Connectivity of the Database Servers, page 5-9](#)

## Installing the Database Server Software

Complete this task to install the Cisco TelePresence Exchange System database server software onto the server.

#### Before You Begin

- Complete the tasks and requirements in [Chapter 4, “Preparing for Installation.”](#)
- Find your completed [Appendix A, “Installation Worksheets.”](#)
- Choose your installation method. See the [“Determining the Method and Order of Installation” section on page 5-1.](#)
- Insert the Cisco TelePresence Exchange System installation DVD into the server.
- Turn on or restart the server. If you are performing the installation remotely via the IMM, complete the procedure in the [“Using the IMM to Remotely Install the Cisco TelePresence Exchange System Software” section on page 5-3.](#)

After the restart, the server recognizes the DVD and automatically runs the installer.



#### Note

If you are installing the Cisco TelePresence Exchange System software on a server that requires a firmware update, the installer automatically begins the update. During the update, the system will restart approximately four times. The update typically takes about 30 minutes. If you are installing by using the IMM, you will temporarily lose connectivity during the firmware update.

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**Tip**

To move among the options in an installer screen, press the **Tab** key. To select a highlighted option, press the **Spacebar**, **Return**, or **Enter** key.

**Procedure**

**Step 1** When the installer prompts you to do a media check of the DVD, take one of the following actions:

- If you previously performed a media check of the installation DVD, select **No**.
- Otherwise, Cisco recommends that you select **Yes**. After the DVD passes the media check, select **OK**.

If the installation DVD fails the media check, burn a new DVD. Download the software from <http://www.cisco.com/go/ctx-download>.

After several minutes, the installer displays the current software version that is installed on the server (if any) and the software version on the DVD.

**Step 2** In the Proceed with Install screen, select **Yes**.

**Step 3** In the Platform Installation Wizard screen, select one of the following options, depending on whether you want to enter the server information before or after the installer spends approximately 30 minutes installing the software on the server:

- To first enter the server information and then install the software, select **Proceed**.
- To first install the software and then enter the server information, select **Skip**.

If you choose Skip, then after approximately 30 minutes of installing software on the server, take the following actions:

- The system displays the Pre-existing Configuration Information screen, on which you select **Continue**. Pre-existing configurations are currently not supported.
- The system then returns to the Platform Installation Wizard screen, on which you select **Proceed**.

**Step 4** At the Node Role Configuration screen, enter **database** as the role of the node, then select **OK**.

**Step 5** Verify that the confirmation screen indicates that this node will be configured to run the **database**. If correct, select **Proceed**.

**Note**

If a different server installation screen appears, select **Back** to return to [Step 4](#).

**Step 6** In the Static Network Configuration screen, complete the following steps:

**Note**

If you are using the serial installation method, always install the primary (active) database server before you install the secondary (backup) database server.

- a. Enter the host name, IP address, and subnet mask for the database server.
- b. Enter the IP address for the default gateway.
- c. Verify your entries and select **OK**.

**Step 7** In the DNS Client Configuration screen, select **No**. The Domain Name Server (DNS) client is not supported on the database server.

- Step 8** In the Database Redundancy Configuration screens, complete the following steps:
- When prompted to enable redundancy on the database node, select **Yes**.
  - When asked whether to configure this node as the *primary* database server, select **Yes** or **No**, depending on which database server you are installing (**Yes** for primary, **No** for secondary).
  - Enter the VIP address to be shared by the primary and secondary database servers.
  - Enter the hostname and IP address for the *peer* server:
    - If you are configuring the primary database server, then enter details for the secondary server.
    - If you are configuring the secondary database server, then enter details for the primary server.
  - Select **OK**.

- Step 9** In the Administrator Login Configuration screen, complete the following steps to create a Linux account for accessing the CLI of the database server:




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**Note** You must use the same administrator username and password for all database, administration, and call engine servers in the cluster.

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- In the Administrator ID field, enter a username.
- In the Password and Confirm Password fields, enter a password.
- Select **OK**.

- Step 10** In the Certificate Information screen, complete the following steps to generate a locally significant certificate (LSC) for the server:




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**Note** Refer to your company guidelines on the format for each of these entries.

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- In the Organization field, enter your company name.
- In the Unit field, enter descriptive information about the server.  
Example: *business-unit, department*
- Enter the location of the server.  
Example: *building-name, floor, rack*
- Enter the state in which the server is located.  
You can enter an abbreviation or the full name for the state.
- Select the country in which the server is located.  
Enter the first letter of the country name, and use the up and down arrows to select the country. Then press the **Tab** key.
- Select **OK**.

- Step 11** In the Network Time Protocol Client Configuration screen, complete these steps:

- Enter at least one NTP server IP address, hostname, or pool name.  
Cisco recommends that you configure at least three external NTP entries.




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**Note** You must use the same NTP entries on all database, call engine, and administration servers.

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- b. Take one of the following actions, the availability of which depends on whether you chose to enter the server information before or after installing the software in [Step 3](#):
  - Select **Test** to confirm connectivity to the NTP entries, and then select **Proceed**.
  - Select **OK**.

**Step 12** In the Security Configuration screen, enter the security password, confirm the password, and select **OK**.

**Note**

You must configure the same security password on all database, administration, and call engine servers. After you configure the security password on a server, you cannot change it without reinstalling the server.

**Caution**

This is your last chance in the installation wizard to select **Back** to verify your entries. Complete the next step only when you are sure that the entries that you made throughout this procedure are correct.

**Step 13** In the Platform Configuration Confirmation screen, click **OK**.

If, in [Step 3](#), you chose to proceed to enter the server information before installing the software, the following information applies:

- The installer spends approximately 30 minutes installing the software.
- If the system has problems with the information that you entered in the installation wizard, you will be prompted to correct the information.

The server ejects the installation DVD and reboots the server while completing the installation. This process takes approximately 10 minutes. When complete, the system prompts you to log in to the CLI.

The installation of Cisco TelePresence Exchange System has completed successfully.

```
Cisco TelePresence Exchange System x.x.x.x
hostname login:
```

**What To Do Next**

If you have not yet installed the software for the secondary database server, do so now by repeating this procedure.

Otherwise, proceed to the [“Checking the Initial High-Availability Roles of the Database Servers”](#) section on page 5-7.

## Checking the Initial High-Availability Roles of the Database Servers

After the secondary database server is installed, the database servers should automatically begin to synchronize with each other. Complete this task on each database server to confirm the correct initial high-availability (HA) role of primary or secondary, and to verify that the databases have begun synchronization.

**Note**

The database synchronization process typically takes about 40 minutes to complete. During this time, after you verify that synchronization has begun, you can continue with the installation process.

## Procedure

### Step 1 Log in to the CLI of the database server.

```
Cisco TelePresence Exchange System x.x.x.x
hostname login: <username>
Password: <password>

Command Line Interface is starting up, please wait...

Welcome to the Platform Command Line Interface

admin:
```

### Step 2 Enter the **utils service database status** command.

The following example shows sample output from a database server that was installed with the primary role:

```
admin: utils service database status
The initial configured HA role of this node      : primary
The current HA role of this node                 : primary
The database vip address                        : 10.22.130.61
Node name                                       : ctx-db-1
Node IP address                               : 10.22.130.50
Corosync status                               : Running PID <19250>
Current Designated Controller (DC)             : ctx-db-1 - partition with quorum
MySQL status                                   : Running pid 15633
Connection Sync Status                         : Connected
Role (this-node/peer-node)                    : Primary/Secondary
Disk Status (this-node/peer-node)              : UpToDate/UpToDate
```

The following example shows sample output from a database server that was installed with the secondary role:

```
admin: utils service database status
The initial configured HA role of this node      : secondary
The current HA role of this node                 : secondary
The database vip address                        : 10.22.130.61
Node name                                       : ctx-db-2
Node IP address                               : 10.22.130.58
Corosync status                               : Running PID <26656>
Current Designated Controller (DC)             : ctx-db-1 - partition with quorum
MySQL status                                   : Not running (only runs on database
server with current role primary.)
Connection Sync Status                         : Connected
Role (this-node/peer-node)                    : Secondary/Primary
Disk Status (this-node/peer-node)              : UpToDate/UpToDate
```



**Tip** While the databases are synchronizing, the Connection Sync Status output displays “SyncTarget <percentage>”. If you see a Connection Sync Status of “Unconfigured,” synchronization did not start successfully. Check the network connectivity between the database servers, and verify that all Cisco TelePresence Exchange System servers are in the same VLAN.

## Related Topics

- [Appendix C, “Command Reference”](#)



## Checking the Network Connectivity of the Database Servers

Enter the following command on each database server to attempt to reach one of the Cisco TelePresence Exchange System solution components in another VLAN, such as the Cisco Unified Communications Manager or the Cisco Session Border Controller:

**utils network ping *ip-address***

The output confirms network connectivity:

```
admin: utils network ping 10.68.10.80
PING 10.68.10.80 (10.68.10.80) 56(84) bytes of data.
64 bytes from 10.68.10.80: icmp_seq=0 ttl=247 time=1.38 ms
64 bytes from 10.68.10.80: icmp_seq=1 ttl=247 time=1.39 ms
64 bytes from 10.68.10.80: icmp_seq=2 ttl=247 time=1.42 ms
64 bytes from 10.68.10.80: icmp_seq=3 ttl=247 time=1.63 ms

--- 10.68.10.80 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3003ms
rtt min/avg/max/mdev = 1.386/1.461/1.636/0.101 ms, pipe 2
```

### Related Topics

- [Appendix C, “Command Reference”](#)

## Installing the Cisco TelePresence Exchange System Call Engine Servers

Complete the following tasks in the order shown:

- [Installing the Call Engine Server Software, page 5-9](#)
- [Checking the Call Engine Server Status and Network Connectivity, page 5-13](#)

## Installing the Call Engine Server Software

Complete this task to install the Cisco TelePresence Exchange System call engine server software onto the server.

### Before You Begin

- Complete the tasks in the [“Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers”](#) section on page 5-4.
- Find your completed [Appendix A, “Installation Worksheets.”](#)
- Insert the Cisco TelePresence Exchange System installation DVD into the server.
- Turn on or restart the server. If you are performing the installation remotely via the IMM, complete the procedure in the [“Using the IMM to Remotely Install the Cisco TelePresence Exchange System Software”](#) section on page 5-3.

After the restart, the server recognizes the DVD and automatically runs the installer.

**Note**

If you are installing the Cisco TelePresence Exchange System software on a server that requires a firmware update, the installer automatically begins the update. During the update, the system will restart approximately four times. The update typically takes about 30 minutes. If you are installing by using the IMM, you will temporarily lose connectivity during the firmware update.

**Tip**

To move among the options in an installer screen, press the **Tab** key. To select a highlighted option, press the **Spacebar**, **Return**, or **Enter** key.

**Procedure**

- Step 1** When the installer prompts you to do a media check of the DVD, take one of the following actions:
- If you have already performed a media check of the installation DVD, select **No**.
  - Otherwise, Cisco recommends that you select **Yes**. After the DVD passes the media check, select **OK**.
- If the installation DVD fails the media check, burn a new DVD. Download the software from <http://www.cisco.com/go/ctx-download>.
- After several minutes, the installer displays the current software version that is installed on the server (if any) and the software version on the DVD.
- Step 2** In the Proceed with Install screen, select **Yes**.
- Step 3** In the Platform Installation Wizard screen, select one of the following options, depending on whether you want to enter the server information before or after the installer spends approximately 30 minutes installing the software on the server:
- To first enter the server information and then install the software, select **Proceed**.
  - To first install the software and then enter the server information, select **Skip**.
- If you choose Skip, after approximately 30 minutes of installing software on the server, take the following actions:
- The system displays the Pre-existing Configuration Information screen, on which you select **Continue**. Pre-existing configurations are currently not supported.
  - The system then returns to the Platform Installation Wizard screen, on which you select **Proceed**.
- Step 4** At the Node Role Configuration screen, enter **engine** as the role of the node, then select **OK**.
- Step 5** Verify that the confirmation screen indicates that this node will be configured to run the *call processing engine*. If correct, select **Proceed**.

**Caution**

If a different server installation screen appears, select **Back** to return to [Step 4](#).

- Step 6** In the Cisco TelePresence Exchange System Other Nodes screen, complete these steps:
- a. In the Database node name (Mandatory) field, enter the virtual hostname that is shared by the database servers.
  - b. In the Database node IP Address (Mandatory) field, enter the virtual IP (VIP) address that is shared by the database servers.

- c. Leave the remaining fields blank.
- d. Select **OK**.

**Step 7** In the Static Network Configuration screen, complete these steps:

- a. Enter the host name, IP address, and subnet mask for the call engine server.
- b. Enter the IP address for the default gateway.
- c. Select **OK**.

**Step 8** In the DNS Client Configuration screen, select **No**. The Domain Name Server (DNS) client is not supported on the call engine server.

**Step 9** In the SIP Load Balancer Configuration screen, select **Yes**.



**Note** If you are in the rare situation where you are installing the Cisco TelePresence Exchange System software before you have a functioning Cisco Application Control Engine (ACE) to use as the SIP load balancer, then you may select **No** on the SIP Load Balancer Configuration screen and proceed to [Step 11](#). You must, however, add the SIP load balancer configuration later via the CLI. See the “[Configuring SIP Load Balancing on the Call Engine Servers](#)” section on [page 28-5](#).

**Step 10** In the SIP Load Balancer Information screen, complete the following steps:

- a. IP Address—Enter the VIP address of the ACE.
- b. Port—Enter the port number on which the call engine server will connect to the load balancer.
- c. Select **OK**.

**Step 11** In the Administrator Login Configuration screen, complete the following steps to create a Linux account for accessing the CLI of the call engine server:



**Note** You must use the same administrator username and password for all database, administration, and call engine servers in the cluster.

- a. Enter a username in the Administrator ID field.
- b. Enter a password into the Password and Confirm Password fields.
- c. Select **OK**.

**Step 12** In the Certificate Information screen, complete the following steps to generate a locally significant certificate (LSC) for the server:



**Note** Refer to your company guidelines on the format for each of these entries.

- a. In the Organization field, enter your company name.
- b. In the Unit field, enter descriptive information about the server.  
Example: *business-unit, department*
- c. Enter the location of the server.  
Example: *building-name, floor, rack*
- d. Enter the state in which the server is located.

You can enter an abbreviation or the full name for the state.

- e. Select the country in which the server is located.

Enter the first letter of the country name, and use the up and down arrows to select the country. Then press the **Tab** key.

- f. Select **OK**.

**Step 13** In the Network Time Protocol Client Configuration screen, complete these steps:

- a. Enter the same NTP server IP addresses, hostnames, or pool names that you configured for the database servers.
- b. Take one of the following actions, the availability of which depends on whether you chose to enter the server information before or after installing the software in [Step 3](#):
  - Select **Test** to confirm connectivity to the NTP entries, and then select **Proceed**.
  - Select **OK**.

**Step 14** In the Security Configuration screen, enter the security password, confirm the password, and select **OK**.



**Note**

You must configure the same security password on all database, administration, and call engine servers. After you configure the security password on a server, you cannot change it without reinstalling the server.



**Caution**

This is your last chance in the installation wizard to select **Back** to verify your entries. Complete the next step only when you are sure that the entries that you made throughout this procedure are correct.

**Step 15** In the Platform Configuration Confirmation screen, select **OK**.

If, in [Step 3](#), you chose to proceed to enter the server information before installing the software, the following information applies:

- The installer spends approximately 30 minutes installing the software.
- If the system has problems with the information that you entered in the installation wizard, you will be prompted to correct the information.

The server ejects the installation DVD and reboots the server while completing the installation. This process takes approximately 10 minutes. When complete, the system prompts you to log in to the CLI.

The installation of Cisco TelePresence Exchange System has completed successfully.

```
Cisco TelePresence Exchange System x.x.x.x
hostname login:
```

### What To Do Next

If you have not yet installed the software for the second call engine server, do so now by repeating this procedure.

Otherwise, proceed to the [“Checking the Call Engine Server Status and Network Connectivity”](#) section on page 5-13.

## Checking the Call Engine Server Status and Network Connectivity

Complete this task to confirm that the call engine server is up and can connect to the other Cisco TelePresence Exchange System servers.

### Procedure

- Step 1** Log in to the CLI of the call engine server.

```
Cisco TelePresence Exchange System x.x.x.x
hostname login: <username>
Password: <password>

Command Line Interface is starting up, please wait...

Welcome to the Platform Command Line Interface

admin:
```

- Step 2** To verify that the call engine server is running, enter the **utils service sipserver status** command.

In the following example, the call engine server is still starting up. In this case, you would want to wait a few minutes for the server to finish starting up:

```
admin: utils service sipserver status
sipserver.....Starting - PID <10202>
```

In the following example, the call engine server is up and running:

```
admin: utils service sipserver status
sipserver.....Running - PID <10202>
```

- Step 3** To confirm that the call engine server has network connectivity, enter the following command, specifying the IP or VIP address of any of the Cisco TelePresence Exchange System servers that are already installed:

**utils network ping ip-address**

The output confirms network connectivity:

```
admin: utils network ping 10.22.139.230
PING 10.22.139.230 (10.22.139.230) 56(84) bytes of data.
64 bytes from 10.22.139.230: icmp_seq=0 ttl=64 time=0.512 ms
64 bytes from 10.22.139.230: icmp_seq=1 ttl=64 time=0.093 ms
64 bytes from 10.22.139.230: icmp_seq=2 ttl=64 time=0.090 ms
64 bytes from 10.22.139.230: icmp_seq=3 ttl=64 time=0.090 ms

--- 10.22.139.230 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3001ms
rtt min/avg/max/mdev = 0.090/0.196/0.512/0.182, pipe 2
```

### Related Topics

- [Appendix C, “Command Reference”](#)

# Installing the Cisco TelePresence Exchange System Administration Servers

Complete the following tasks in the order shown:

- [Installing the Administration Server Software, page 5-14](#)
- [Checking the Administration Server Status and Network Connectivity, page 5-17](#)

## Installing the Administration Server Software

Complete this task to install the Cisco TelePresence Exchange System administration server software onto the server.

### Before You Begin

- Complete the tasks in the “[Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers](#)” section on page 5-4.
- If you are following the serial installation method, also complete the tasks in the “[Installing the Cisco TelePresence Exchange System Call Engine Servers](#)” section on page 5-9.
- Find your completed [Appendix A, “Installation Worksheets.”](#)
- Insert the Cisco TelePresence Exchange System installation DVD into the server.
- Turn on or restart the server. If you are performing the installation remotely via the IMM, complete the procedure in the “[Using the IMM to Remotely Install the Cisco TelePresence Exchange System Software](#)” section on page 5-3.

After the restart, the server recognizes the DVD and automatically runs the installer.



#### Note

If you are installing the Cisco TelePresence Exchange System software on a server that requires a firmware update, the installer automatically begins the update. During the update, the system will restart approximately four times. The update typically takes about 30 minutes. If you are installing by using the IMM, you will temporarily lose connectivity during the firmware update.



#### Tip

To move among the options in an installer screen, press the **Tab** key. To select a highlighted option, press the **Spacebar**, **Return**, or **Enter** key.

### Procedure

#### Step 1

When the installer prompts you to do a media check of the DVD, take one of the following actions:

- If you have already performed a media check of the installation DVD, select **No**.
- Otherwise, Cisco recommends that you select **Yes**. After the DVD passes the media check, select **OK**.

If the installation DVD fails the media check, burn a new DVD. Download the software from <http://www.cisco.com/go/ctx-download>.

After several minutes, the installer displays the current software version that is installed on the server (if any) and the software version on the DVD.

- Step 2** In the Proceed with Install screen, select **Yes**.
- Step 3** In the Platform Installation Wizard screen, select one of the following options, depending on whether you want to enter the server information before or after the installer spends approximately 30 minutes installing the software on the server:
- To first enter the server information and then install the software, select **Proceed**.
  - To first install the software and then enter the server information, select **Skip**.
- If you choose Skip, then after approximately 30 minutes of installing software on the server, take the following actions:
- The system displays the Pre-existing Configuration Information screen, on which you select **Continue**. Pre-existing configurations are currently not supported.
  - The system then returns to the Platform Installation Wizard screen, on which you select **Proceed**.
- Step 4** At the Node Role Configuration screen, enter **admin** as the role of the node, then select **OK**.
- Step 5** Verify that the confirmation screen indicates that this node will be configured to run the *administration console*. If correct, select **Proceed**.



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**Caution** If a different server installation screen appears, select **Back** to return to [Step 4](#).

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- Step 6** In the Cisco TelePresence Exchange System Other Nodes screen, complete these steps:
- a. In the Database node name (Mandatory) field, enter the virtual hostname that is shared by the database servers.
  - b. In the Database node IP Address (Mandatory) field, enter the virtual IP (VIP) address that is shared by the database servers.
  - c. Leave the remaining fields blank.
  - d. Select **OK**.
- Step 7** In the Static Network Configuration screen, complete these steps:
- a. Enter the host name, IP address, and subnet mask for the administration server.
  - b. Enter the IP address for the default gateway.
  - c. Click **OK**.
- Step 8** In the DNS Client Configuration screen, select **No**. The Domain Name Server (DNS) client is not supported on the administration server.
- Step 9** In the Administrator Login Configuration screen, complete the following steps to create a Linux account for accessing the CLI of the call engine server:



---

**Note** You must use the same administrator username and password for all database, administration, and call engine servers in the cluster.

---

- a. Enter a username in the Administrator ID field.
- b. Enter a password into the Password and Confirm Password fields.
- c. Select **OK**.

- Step 10** In the Certificate Information screen, complete the following steps to generate a locally significant certificate (LSC) for the server:



**Note** Refer to your company guidelines on the format for each of these entries.

- a. In the Organization field, enter your company name.
- b. In the Unit field, enter descriptive information about the server.  
Example: *business-unit, department*
- c. Enter the location of the server.  
Example: *building-name, floor, rack*
- d. Enter the state in which the server is located.  
You can enter an abbreviation or the full name for the state.
- e. Select the country in which the server is located.  
Enter the first letter of the country name, and use the up and down arrows to select the country. Then press the **Tab** key.
- f. Select **OK**.

- Step 11** In the Network Time Protocol Client Configuration screen, complete these steps:

- a. Enter the same NTP server IP addresses, hostnames, or pool names that you configured for the database and call engine servers.
- b. Take one of the following actions, the availability of which depends on whether you chose to enter the server information before or after installing the software in [Step 3](#):
  - Select **Test** to confirm connectivity to the NTP entries, and then select **Proceed**.
  - Select **OK**.

- Step 12** In the Security Configuration screen, enter the security password, confirm the password, and select **OK**.



**Note** You must configure the same security password on all database, administration, and call engine servers. After you configure the security password on a server, you cannot change it without reinstalling the server.



**Caution** This is your last chance in the installation wizard to select **Back** to verify your entries. Complete the next step only when you are sure that the entries that you made throughout this procedure are correct.

- Step 13** In the Platform Configuration Confirmation screen, select **OK**.

If, in [Step 3](#), you chose to proceed to enter the server information before installing the software, the following information applies:

- The installer spends approximately 30 minutes installing the software.
- If the system has problems with the information that you entered in the installation wizard, you will be prompted to correct the information.

The server ejects the installation DVD and reboots the server while completing the installation. This process takes approximately 10 minutes. When complete, the system prompts you to log in to the CLI.



The installation of Cisco TelePresence Exchange System has completed successfully.

Cisco TelePresence Exchange System x.x.x.x  
hostname login:

### What To Do Next

If you have not yet installed the software for the second administration server, do so now by repeating this procedure.

Otherwise, proceed to the [“Checking the Administration Server Status and Network Connectivity” section on page 5-17](#).

## Checking the Administration Server Status and Network Connectivity

Complete this task to confirm that the administration server is up and can connect to the other Cisco TelePresence Exchange System servers.

### Procedure

- Step 1** Log in to the CLI of the administration server.

```
Cisco TelePresence Exchange System x.x.x.x
hostname login: <username>
Password: <password>
```

Command Line Interface is starting up, please wait...

Welcome to the Platform Command Line Interface

admin:

- Step 2** To verify that the administration server is running, enter the **utils service adminserver status** command.

```
admin: utils service adminserver status
adminserver.....Running - PID <31650>
```

If the output does not indicate that the server is running, wait approximately 5 minutes for the server to finish coming up.

- Step 3** To confirm that the administration server has network connectivity, enter the following command, specifying the IP or VIP address of any of the Cisco TelePresence Exchange System servers that are already installed:

**utils network ping ip-address**

The output confirms network connectivity:

```
admin: utils network ping 10.22.139.230
PING 10.22.139.230 (10.22.139.230) 56(84) bytes of data.
64 bytes from 10.22.139.230: icmp_seq=0 ttl=64 time=0.512 ms
64 bytes from 10.22.139.230: icmp_seq=1 ttl=64 time=0.093 ms
64 bytes from 10.22.139.230: icmp_seq=2 ttl=64 time=0.090 ms
64 bytes from 10.22.139.230: icmp_seq=3 ttl=64 time=0.090 ms
```

```
--- 10.22.139.230 ping statistics ---  
4 packets transmitted, 4 received, 0% packet loss, time 3001ms  
rtt min/avg/max/mdev = 0.090/0.196/0.512/0.182, pipe 2
```

---

#### Related Topics

- [Appendix C, “Command Reference”](#)

## Verifying Data Connectivity Among the Servers

If the Cisco TelePresence Exchange System nodes are unable to properly exchange data, various problems will eventually arise. Complete this task to verify proper data connectivity after you install all six nodes in the Cisco TelePresence Exchange System server cluster or after you reinstall one of the nodes.

#### Procedure

---

- Step 1** Point a web browser to the following URL, using the IP address of one of the administration servers:  
**`http://ip-address/ctxadmin`**
- Make sure that you are not using the virtual IP (VIP) address that is configured on the Cisco Application Control Engine (ACE).
- Step 2** If the login page for the Cisco TelePresence Exchange System administration console does not appear, complete the following steps:
- Repeat [Step 1](#), but this time use the IP address of the *other* administration server.  
If the login page appears, proceed to [Step 3](#).
  - Make sure that the browser machine can reach other devices in the same VLAN as the administration servers. Resolve any network connectivity issues.
  - Repeat [Step 1](#).
- Step 3** Log in to the administration console with the username **admin** and the password **cisco**.
- Step 4** Select **System > Cluster Nodes**.
- Step 5** Verify that all six nodes (two database servers, two call engine servers, and two administration servers) appear in the list of cluster nodes.
- It may take up to five minutes for a newly installed node to register itself to the database and appear in the list of cluster nodes.
- Step 6** If any of the servers remain missing from the list of cluster nodes, you need to reinstall those servers to correct the security password on those servers.
- Complete the procedures that are relevant to the servers that are missing from the list of cluster nodes:
- [Installing and Synchronizing the Cisco TelePresence Exchange System Database Servers, page 5-4](#)
  - [Installing the Cisco TelePresence Exchange System Call Engine Servers, page 5-9](#)
  - [Installing the Cisco TelePresence Exchange System Administration Servers, page 5-14](#)
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