



## **Cisco Unified Contact Center Express Installation Guide Release 9.0(1)**

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# Cisco Unified Contact Center Express installation

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This document explains how to install Cisco Unified Contact Center Express (Unified CCX) 9.0(1) on a single-node setup (standalone) or two-node setup (high availability) in a cluster environment. Review all installation instructions carefully before you install Unified CCX 9.0(1).

For information about upgrading from any earlier releases to 8.x, see *Upgrading to Cisco Unified Contact Center Express Release 9.0(1)* available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html)



## Note

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For information on how to upgrade from Unified CCX 8.x to the current release, see *Cisco Unified Communications Operating System Administration Guide for Cisco Unified CCX and Cisco Unified IP IVR* available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

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- [Audience, page v](#)
- [Related documents, page v](#)
- [Additional information, page vi](#)
- [Documentation feedback, page vi](#)

## Audience

This guide is intended for Cisco Unified Communications system administrators. You should have the network and telephony knowledge that is required to install and set up the Unified CCX software. You should also be familiar with the Cisco Unified Communications Manager (Unified CM) configuration at your site.

## Related documents

For additional installation-related information, see the following documents:

- *Upgrading to Cisco Unified Contact Center Express*

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_installation\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_installation_guides_list.html)

- *Cisco Unified Contact Center Express Administration Guide*

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

- For a list of troubleshooting tips related to installation, see the following URL:

[http://docwiki.cisco.com/wiki/Troubleshooting\\_Unified\\_Contact\\_Center\\_Express](http://docwiki.cisco.com/wiki/Troubleshooting_Unified_Contact_Center_Express)

- For a complete list of terms used in Cisco Unified CCX and Cisco Unified IP IVR, see the following URL:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_technical_reference_list.html)

For more information about Unified CCX documentation, see the following URL:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd\\_products\\_support\\_series\\_home.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/tsd_products_support_series_home.html)

## Additional information

For information on obtaining support, obtaining additional documentation, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly What's New in Cisco Product Documentation, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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# CHAPTER 1

## Installation scenarios

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The following sections provide an overview of the high-level tasks that you must perform for each installation scenario. Each high-level task also includes a link to another section of the document, which you can follow for detailed information about the task.

You can use this document to perform the following installation scenarios:

- [Install from DVD on first node, page 1](#)
- [Install from DVD on second node, page 2](#)
- [Apply patch during install on first node, page 2](#)
- [Apply patch during install on second node, page 3](#)
- [Add second node for high availability, page 4](#)

### Install from DVD on first node

To install software that you have on a DVD on the first node, follow the steps below.

#### Procedure

---

- Step 1** Perform all preinstallation tasks that apply to your site.  
See [Preinstallation, on page 7](#).
- Step 2** Follow the procedure to begin installing the software on the DVD to your server.  
See [Start installation, on page 24](#).
- Step 3** Follow the procedure for performing a basic installation.  
See [Perform basic installation, on page 33](#).
- Step 4** When the First Node Configuration window displays, choose **Yes** to configure the new server as the first node.  
See [Step 9 in Perform basic installation](#).
- Step 5** Follow the procedure to configure the first node.  
See [Configure first node, on page 39](#).

- Step 6** Follow the procedure to perform the initial setup configuration for the first node and perform other postinstallation tasks that apply to your site.  
See [Initial setup for first node, on page 52](#)
- 

#### Related Topics

[Postinstallation tasks, on page 51](#)

## Install from DVD on second node

To install software from a DVD on the second node, follow the steps below.

#### Procedure

---

- Step 1** Perform all preinstallation tasks that apply to your site.  
See [Preinstallation, on page 7](#).
- Step 2** Follow the procedure to add the second node to the first node.  
See [Add second node for HA, on page 45](#).
- Step 3** Follow the procedure to begin installing the software on the DVD to your server.  
See [Start installation, on page 24](#).
- Step 4** Follow the procedure for performing a basic installation.  
See [Perform basic installation, on page 33](#).
- Step 5** When the First Node Configuration displays, choose **No** to configure the new server as the second node for high availability (HA).  
See [Perform basic installation](#).
- Step 6** Follow the procedure to configure the second node and form a cluster.  
See [Configure second node for HA, on page 46](#).
- Step 7** Follow the procedure to perform the initial setup configuration for the second node and perform other postinstallation tasks that apply to your site.  
See [Perform initial setup for second node, on page 56](#).
- 

#### Related Topics

[Postinstallation tasks, on page 51](#)

## Apply patch during install on first node

You can upgrade to a later release by downloading and applying a patch during installation. To apply a patch during installation of the first node, follow the steps below.

### Procedure

---

- Step 1** Perform all preinstallation tasks that apply to your site.  
See [Preinstallation](#), on page 7.
  - Step 2** Follow the procedure to begin installing the software on the DVD to your server.  
See [Start installation](#), on page 24.
  - Step 3** Follow the procedure to apply a software patch.  
See [Apply patch](#), on page 30.
  - Step 4** Follow the procedure for performing a basic installation.  
See [Perform basic installation](#), on page 33.
  - Step 5** When the First Node Configuration window displays, choose **Yes** to configure the new server as the first node.  
See [Step 9 in Perform basic installation](#).
  - Step 6** Follow the procedure to configure the first node.  
See [Configure first node](#), on page 39.
  - Step 7** Perform all postinstallation tasks that apply to your site.  
See [Postinstallation tasks](#), on page 51.
- 

## Apply patch during install on second node

You can upgrade to a later release by downloading and applying a patch during installation. To apply a patch during installation of the first node, follow the steps below.

### Procedure

---

- Step 1** Perform all preinstallation tasks that apply to your site.  
See [Preinstallation](#), on page 7.
- Step 2** Follow the procedure to begin installing the software on the DVD to your server.  
See [Start installation](#), on page 24.
- Step 3** Follow the procedure to apply a software patch.  
See [Apply patch](#), on page 30.
- Step 4** Follow the procedure for performing a basic installation.  
See [Perform basic installation](#), on page 33.
- Step 5** When the First Node Configuration window displays, choose **No** to configure the new server as the second node.  
See [Perform basic installation](#).
- Step 6** Follow the procedure to configure the second node and form a cluster.  
See [Configure second node for HA](#), on page 46.

- Step 7** Perform all postinstallation tasks that apply to your site.  
For a list of postinstallation tasks, see [Postinstallation tasks](#), on page 51.
- 

## Add second node for high availability

### Before You Begin

Before adding new node for high availability, ensure that you have taken backup on Publisher (node 1).

For more information, see *Cisco Unified Contact Center Express Disaster Recovery System Administration Guide* available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

### Procedure

---

- Step 1** Perform all preinstallation tasks that apply to your site.  
See [Preinstallation](#), on page 7.
- Step 2** Ensure that you have the appropriate number of licenses to support adding a new node.  
For more information on specifying the required number of licenses, see *Cisco Unified Contact Center Express Administration Guide Release 9.0(1)* available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)
- Step 3** Before you install the new node, ensure that you have added it to the first node. From the Cisco Unified CCX Administration of the first node, add the IP address/Hostname of the second node.  
See [Add second node for HA](#), on page 45.
- Step 4** Record the configuration settings for the server that you plan to install.  
To record your configuration settings, see [Server configuration information for installation](#).
- Step 5** You must install the same software version on both nodes in the cluster.  
For more information on the different installation options, see [Installation options](#), on page 22.
- Step 6** Follow the procedure to begin installing the software on the DVD to your server.  
See [Start installation](#), on page 24.
- Step 7** If you need to upgrade the version of Unified CCX, continue with the procedure for applying a software patch.  
See [Apply patch](#), on page 30.
- Note** If the base version of node 1 is already patched with a service release, install node 2 with the same base version and continue applying patch to upgrade it to the same service release as on node 1.
- Step 8** Follow the procedure for performing the basic installation.  
See [Perform basic installation](#), on page 33.
- Step 9** When the First Node Configuration displays, choose **No** to configure the new server as the second node.  
See [Step 9 in Perform basic installation](#).
- Step 10** Follow the procedure to configure the second node and form a cluster.  
See the [Configure second node for HA](#), on page 46.

- Step 11** Follow the procedure to perform the initial setup configuration for the second node and perform other postinstallation tasks that apply to your site.  
See [Perform initial setup for second node, on page 56](#) and [Preinstallation, on page 7](#).
-





## CHAPTER 2

# Preinstallation

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This section contains the important considerations, frequently asked questions, and preinstallation tasks that you must perform to ensure that you can successfully install Unified CCX.

- [Unified CCX, page 7](#)
- [Pre-installation tasks, page 8](#)
- [Important considerations before installation, page 9](#)
- [Installation requirements, page 10](#)
- [Unified CCX licenses, page 11](#)
- [Cisco Unified CCX disk space usage, page 13](#)
- [Server configuration information for installation, page 14](#)
- [Usernames and passwords, page 19](#)
- [Unified Communications Answer File Generator, page 21](#)
- [Network errors during installation, page 21](#)
- [Installation options, page 22](#)

## Unified CCX

Unified CCX is the backbone of the Cisco Unified Contact Center environment, comprising:

- **First node:** Required in all deployments of Unified CCX.
- **Second node:** The second node provides fault tolerance to the system and provides standby capabilities if the first node goes down. The second node, also called the high availability (HA), node is optional. The first and second nodes can be split across the local area network (LAN) and wide area network (WAN).

Unified CCX 9.0(1) is an appliance application similar to Unified CM. It must be installed on dedicated servers, which must be either Media Convergence Servers (MCS) or UCS servers (B-series or C-series). For details on the server requirements, see [Server requirements](#).

# Pre-installation tasks

Perform all pre-installation tasks to ensure that you successfully install Cisco Unified Contact Center Express.

## Procedure

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- Step 1** Read this entire document to familiarize yourself with the installation procedure.
- Step 2** Verify the integrity of any new server hardware (such as hard drives and memory) by running any manufacturer-provided utilities.
- Step 3** Ensure that your servers are listed as supported hardware and sized appropriately to support the load of the cluster. Make sure to account for any growth that has occurred since initial system configuration.
- Step 4** If you are installing a cluster or adding a node, verify that the links between servers meet the 80-ms round-trip time (RTT) requirement and that you have enough bandwidth to support database replication.  
For more information on the 80-ms RTT requirement, see *Cisco Unified Contact Center Express Solution Reference Network Design*, available at [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_implementation\\_design\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_implementation_design_guides_list.html).
- Step 5** If you are getting the system time from an NTP server (mandatory for VMware deployments), verify that the first node can synchronize with the NTP server before you install a subsequent node. Log into the Command Line Interface on the first node and enter the following command: `utils ntp status`
- Note** To avoid potential compatibility, accuracy, and network jitter problems, the external NTP servers that you specify for the primary node must be NTP v4 (version 4). If you are using IPv6 addressing, external NTP servers must be NTP v4.
- For more information, see *Command Line Interface Guide for Cisco Unified Communications Solutions*, available at: [http://preview.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://preview.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html).
- Caution** If the first node fails to synchronize with an NTP server, installation of a subsequent node can also fail.
- Step 6** If your firewall is not in the routing path, disable the firewall between nodes, if possible. Also, increase the firewall timeout settings until after you complete the installation.  
To temporarily allow network traffic in and out of the nodes (for example, setting the firewall rule for these nodes to IP any/any) does not always suffice. The firewall might still close necessary network sessions between nodes due to timeouts.
- Step 7** Do not run Network Address Translation (NAT) or Port Address Translation (PAT) between Unified CCX nodes.
- Step 8** Record the network interface card (NIC) speed and duplex settings of the switch port to which you will connect the new server.  
You should configure the same NIC settings on the server and on the switch port. For GigE (1000/FULL), you should set NIC and switch port settings to Auto/Auto; do not set hard values.  
Enable PortFast on all switch ports that are connected to Cisco servers. With Portfast enabled, the switch immediately brings a port from the blocking state into the forwarding state by eliminating the forwarding delay [the amount of time that a port waits before changing from its Spanning-Tree Protocol (STP) learning and listening states to the forwarding state].
- Step 9** Verify that all servers on which you plan to install Unified CCX are properly registered in DNS.
- Step 10** Obtain a license file.
- Note** For more information on specifying the required number of licenses, see *Cisco Unified CCX Administration Guide*, available at: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html).

- Step 11** Record the configurations settings for each server that you plan to install.
- Step 12** For Unified CCX, configure any subsequent nodes on the first node before you install a subsequent node. From Unified CCX Administration on the first node, choose **System > Server** and configure the IP address for the subsequent nodes. For more information, see *Cisco Unified CCX Administration Guide*.
- 

## Important considerations before installation

Carefully read the information that follows before you proceed with the installation:

- Be aware that when you install on an existing server, the hard drive gets formatted, and all existing data on the drive gets overwritten.
- Installing Unified CCX 9.0(1) on an existing server will format the hard drive and permanently remove the existing Unified CCX data. It also upgrades the system Basic Input Output System (BIOS), firmware, and Redundant Array of Inexpensive Disks (RAID) configuration if found outdated.
- Ensure to connect each Unified CCX node to an uninterruptible power supply (UPS) to protect the Unified CCX server from unexpected power failure that may damage the physical media and to avoid reinstallation of Unified CCX.
- Install the Unified CCX software on the first node or publisher node first and then on the subsequent nodes.
- Verify that the first node is reachable (through LAN or WAN) from the second node before you start installing the second node.
- Make a note of the security password that you specified while installing the first node, because it is required during the installation of second node.



**Note** DNS configuration is mandatory for Unified CCX installation. Both Forward and Reverse records are required.

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- All servers in a cluster must run the same release of Unified CCX. The only exception is during a cluster software upgrade, during which a temporary mismatch is allowed.
- Configure the server by using a static IP address so that the server IP address remains unchanged.
- Do not attempt to perform any configuration tasks during the installation.
- Do not install any Cisco-verified applications until you complete the installation.
- Be aware that the field values (namely hostname and passwords) that you enter while you are running the installation program are case-sensitive.
- Use the same Maximum Transmission Unit (MTU) value for all servers in the cluster.
- If you are already running Unified CCX 7.x and planning to install Unified CCX 9.0(1), use the Cisco Unified CCX Pre-Upgrade Tool to back up all of the data from your existing system and restore this data on the upgraded Unified CCX 9.0(1) system.

- Install the Unified CCX software during off-peak hours or a maintenance window to avoid service interruptions.
- When you insert or remove a USB drive, you might see error messages on the console similar to “sdb: assuming drive cache: write through.” You can safely ignore these messages.
- Carefully read the information that follows before you proceed with the installation.

## Installation requirements

### Server requirements

Unified CCX 9.0(1) is packaged with the Linux-based Unified Communications Operating System (UCOS). It is an appliance model developed by Cisco. This appliance model provides a collection of frameworks, such as installation, serviceability, and service management, so that Unified CCX installed on this platform can leverage more out of this in terms of integration, communication and administration in coordination with Cisco Unified Communications Manager (Unified CM).

To install Unified CCX on approved servers (MCS, B-series, and C-series), following hardware requirements must be met.

- Hardware—Approved MCS, B-series, and C-series servers
- Hard disk—146 GB minimum
- RAM—4 GB minimum

For a list of approved MCS, B-series, and C-series servers, see the *Cisco Unified Contact Center Express Software and Hardware Compatibility Guide* available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_device_support_tables_list.html)

**Note**

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To prevent unpredictable behavior or loss of Unified CCX configuration and user data due to power failure, ensure uninterrupted power supply to the Unified CCX servers at all times.

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### Browser requirements

You can access the Unified CCX 9.0(1) web applications from a remote system using the following browsers:

- Microsoft Internet Explorer Version 8.x or later
- Mozilla Firefox Version 3.x or 4.x

**Note**

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The Cisco Unified CCX 9.0(1) Web Chat Application can be accessed only using Microsoft Internet Explorer Version 8.x.

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Cisco does not support or test on any other web browsers.

# Unified CCX licenses

Licensing helps manage Unified CCX licenses and enforces the licenses for Unified CCX components and nodes. In Unified CCX 9.0(1), all the licenses are node-locked, which means the use of the license is restricted to only one particular node based on the License MAC address of that node. Typically, a Unified CCX 9.0(1) license is based on the License MAC of the first node only. This section provides information on obtaining licenses for new Unified CCX nodes as well as for Unified CCX nodes that have been upgraded from various releases.

## Demo licenses

The Unified CCX 9.0(1) Installation DVD comes bundled with four demo licenses; one each for Unified IP IVR, STD, ENH, and PRE package. Because ordering actual licenses may take a while, you can start using the demo licenses by uploading them to the system using the Unified CCX 9.0(1) Administration web interface. A demo license is valid for initial 30 days only. You can use these demo licenses to familiarize yourself with the capabilities of the applications available on the Unified CCX 9.0(1) Installation DVD during the initial 30 days. Using the demo licenses helps you understand the capabilities of each package.

## New licensing mechanism

The Unified CCX 9.0(1) system uses a new licensing mechanism. The licenses are based on a string called the License MAC, which is different from the physical MAC address of a system. The License MAC string is generated during installation and is based on various input fields, such as the hostname and IP address. If any of these fields change after fresh installation, the License MAC becomes invalid and you must request new licenses. You can generate the License MAC before or after installation.

### Related Topics

[Obtain License MAC after installation, on page 11](#)

[Obtain License MAC before installation, on page 11](#)

## Obtain License MAC after installation

License MAC appears during system install. You must make a note of the License MAC for ordering license files. To obtain License MAC after installing Unified CCX 9.0(1), complete the following steps:

### Procedure

- 
- Step 1** Log in to the Unified CCX 9.0(1) system command line interface (CLI) using Unified CCX Administrator credentials.
  - Step 2** Run `show status` command. Output of this command contains the License MAC.
- 

## Obtain License MAC before installation

To obtain License MAC before you install Unified CCX 9.0(1), complete the following steps:

## Procedure

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- Step 1** Go to the answer file generation Website: [http://www.cisco.com/web/cuc\\_afg/index.html](http://www.cisco.com/web/cuc_afg/index.html)
- Step 2** Select **Cisco Unified CCX** from **Product Options**.
- Step 3** Fill in all the configuration information used for installation, such as IP address, hostname, and more on that site.  
The answer file that is generated can be used for unattended Unified CCX 9.0(1) installation. You can also use this answer file to generate the License MAC (based on given parameters) so you can order the license before you build the machine.
- Step 4** After the answer file is generated, this page enables you to obtain the License MAC.  
**Caution** If you change any of the parameters or configuration information after ordering the license, License MAC will be changed and the ordered license file may become invalid.
- Step 5** To obtain a node license file for new Unified CCX servers and to obtain additional node-locked licenses, perform the following steps:
- Enter the Product Authorization Key (PAK) that you received with your Unified CCX or phone order in the License Registration web tool at: <http://www.cisco.com/go/license>.
  - Click **Submit**.
  - Follow the system prompts. You must enter the License MAC of the first node of the Unified CCX cluster. You must enter a valid email address as well as the number of nodes for which you want licenses. The system sends the license files to you through email by using the email ID that you provided. The format of a license file specifies **unified ccx\_90\_<timestamp>.lic**. If you retain the **.lic** extension, you can rename the license file. You cannot use the license if you edit the contents of the file in any way.  
**Note** Unified CCX 9.0(1) supports only node-locked licenses. However, Unified CCX 9.0(1) continues to recognize the existing licenses used for Unified CCX versions earlier than 9.0(1) on an upgraded system only if an upgrade license is also present.
  - You must upload the license file to the server with the matching License MAC address that you provided in **Step 3**. This server then takes on the functionality of the license manager.  
For more information on how to upload a license file and view license information, see *Cisco Unified Contact Center Express Administration Guide* available here:  
[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html).
  - For Unified CCX HA setup, a Warm Standby License is issued to enable this feature. The process of ordering such a license is the same as that of a single node standalone license.
- 

## What to Do Next

The Unified CCX 9.0(1) Warm Standby license and all other licenses are node-locked to the License MAC address of the first node (typically the Database Publisher node) of a Unified CCX cluster. When a second node is added, it is verified that the first node has the valid add-on Warm Standby License. After the cluster is set up, the licenses will be valid on both the nodes in a cluster.

License MAC is dependent on some system parameters. Modifying any of these parameters can change License MAC thereby invalidating current License files. Here are the parameters on which the validity of a License MAC depends:

- Time zone

- NTP server 1 (or none)
- NIC speed (or auto)
- Hostname
- IP Address
- IP Mask
- Gateway Address
- Primary DNS
- SMTP server
- Certificate Information (Organization, Unit, Location, State, Country)

## License grace period

If your License MAC becomes invalid, you must request a new license. The system however continues to operate for 30 days without a new license. After the 30-day grace period ends, the system shuts down until you upload a new license using the updated License MAC. After you obtain rehosted licenses, these licenses can be uploaded through Add License page of the Unified CCX 9.0(1) Administration web interface.

## Cisco Unified CCX disk space usage

This section provides information about determining disk space usage and requirements when you install the Unified CCX. The historical reporting (HR) database (DB) size of the Unified CCX depends on the size of the hard disk on which it is stored. The table below provides an example of disk space usage for these DB types.

**Table 1: Cisco Unified CCX Disk Space Usage**

Sever Type	Server Disk Size	HR DB Size	Repository DB Size	Agent Db Size (rascal)	Configuration DB Size
7816	1x160 GB	11 GB	3.0 GB	0.5 GB	0.5 GB
	1x250 GB	11 GB	3.0 GB	0.5 GB	0.5 GB
7825	2x160 GB	12 GB	3.0 GB	0.5 GB	0.5 GB
	2x250 GB	12 GB	3.0 GB	0.5 GB	0.5 GB
7835	2x146 GB	13 GB	3.0 GB	0.5 GB	0.5 GB
7845	4x146 GB	20 GB	3.0 GB	0.5 Gb	0.5 GB
	4x300 GB	26 GB	3.0 GB	0.5 GB	0.5 GB

## Server configuration information for installation

Use [Table 2: Node configuration table, on page 14](#) to record the information about your server that both the Answer File Generator and the basic installation wizard prompt you to enter. Gather this information for each Unified CCX 9.0(1) server that you install. You may not need to obtain all the information; gather only the information that is pertinent to your system and network configuration. You should make copies of this table and record your entries for each server in a separate table so it is easy to configure your system.


**Note**

Because some of the fields are optional, they may not apply to your configuration. For example, if you choose not to set up an SMTP host during installation, the parameter still displays, but you do not need to enter a value.


**Caution**

You cannot change some of the fields after installation without reinstalling the software, so be sure to enter the values that you want.

The last column in the table shows whether you can change a field after installation, and if you can, it provides the appropriate CLI command.


**Caution**

Changing some of these configuration parameters result in changes to your current License MAC. In such as case, you need to rehost the Unified CCX 9.0(1) licenses. For more information, see [New licensing mechanism, on page 11](#).

**Table 2: Node configuration table**

Parameter	Description	Can Entry Be Changed Postinstallation?
<b>Administrator ID</b>	This field specifies the administrator account user ID that you use for secure shell access to the CLI, for logging in to Unified Communications Operating System Administration and for logging in to the Disaster Recovery System.	No, you cannot change the entry after installation.  <b>Note</b> After installation, you can create additional administrator accounts, but you cannot change the original administrator account user ID.
Your entry:		
<b>Caution</b>	Avoid creating administrator account user IDs (for CLI access or OS administration) starting with “uccx” or “UCCX” because such user IDs may conflict with system account names used internally within the Unified CCX server.	

Parameter	Description	Can Entry Be Changed Postinstallation?
<b>Administrator Password</b>	This field specifies the password for the Administrator account, which you use for secure shell access to the CLI, for logging in to Unified Communications Operating System Administration and for logging in to the Disaster Recovery System. Ensure the password is at least six characters long; it can contain alphanumeric characters, hyphens, and underscore.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set password admin</b>
<b>Application User Name</b>	You use the Application User Name as the default user name for accessing applications that are installed on the system except Unified Communications Operating System Administration and Disaster Recovery System.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; utils reset_ui_administrator_name</b>
Your entry:		
<b>Application User Password</b>	You use the Application User Password as the default password or accessing applications that are installed on the system except Unified Communications Operating System Administration and Disaster Recovery System.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; utils reset_ui_administrator_password</b>
Your entry:		
<b>Country</b>	From the list, choose the appropriate country for your installation.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	<b>Note</b> The value you enter gets used to generate a Certificate Signing Request (CSR) and self-signed certificates.	<b>CLI &gt; set web-security</b>
<b>DNS Primary</b>	Enter the IP address of the DNS server that you want to specify as the primary DNS server. Enter the IP address in dotted decimal format as ddd.ddd.ddd.ddd.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set network dns primary</b>
Your entry:		
<b>DNS Secondary (optional)</b>	Enter the IP address of the DNS server that you want to specify as the optional secondary DNS server.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set network dns secondary</b>
Your entry:		
<b>Domain</b>	This field represents the name of the domain in which this machine is located.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:		<b>CLI &gt; set network domain</b>

Parameter	Description	Can Entry Be Changed Postinstallation?
<b>Gateway Address</b>	Enter the IP address of the network gateway.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	If you do not have a gateway, you must still set this field to 255.255.255.255. Not having a gateway may limit you to communicating only with devices on your subnet.	<b>CLI &gt; set network gateway</b>
<b>Hostname</b>	Enter a hostname that is unique to your server.	No, hostname change is not supported in Cisco Unified CCX 9.0(1).
Your entry:	The hostname can comprise up to 64 characters and can contain alphanumeric characters and hyphens.	For more information, see the <i>Cisco Unified Contact Center Express Administration Guide</i> available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>
<b>IP Address</b>	Enter the IP address of your server.	Yes, you can change the entry after installation.
Your entry:		For information on how to change the IP Address for Unified CCX, see the <i>Cisco Unified Contact Center Express Administration Guide</i> or <i>Cisco Unified Serviceability Administration Guide</i> available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>
<b>IP Mask</b>	Enter the IP subnet mask of this machine.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:		<b>CLI &gt; set network ip eth0</b>
<b>MTU Size</b>	The maximum transmission unit (MTU) represents the largest packet, in bytes, that this host will transmit on the network.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	Enter the MTU size in bytes for your network. If you are unsure of the MTU setting for your network, use the default value.  Default: 1500 bytes  The MTU setting must be the same on all nodes in a cluster.	<b>CLI &gt; set network mtu</b>

Parameter	Description	Can Entry Be Changed Postinstallation?
<b>NIC Duplex</b>	Choose the duplex mode for the network interface card (NIC), either Full or Half.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	<b>Note</b> This parameter is displayed only when you choose not to use Automatic Negotiation.	<b>CLI &gt; set network nic</b>
<b>NIC Speed</b>	Choose the speed for the NIC, either 10 megabits per second or 100 megabits per second.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	<b>Note</b> This parameter is displayed only when you choose not to use Automatic Negotiation.	<b>CLI &gt; set network nic</b>
<b>NTP Server</b>	Enter the hostname or IP address of one or more network time protocol (NTP) servers with which you want to synchronize.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	<b>Note</b> To avoid potential compatibility, accuracy, and network jitter problems, the external NTP servers that you specify for the primary node must be NTP v4 (version 4). If you are using IPv6 addressing, external NTP servers must be NTP v4.	<b>CLI &gt; utils ntp config</b>
<b>Security Password</b>	Servers in the cluster use the security password to communicate with one another.	Yes, you can change the entry after installation by using the following CLI command:
Your entry:	The password must contain at least six alphanumeric characters. It can contain hyphens and underscores, but it must start with an alphanumeric character. <b>Note</b> Save this password. You will be asked to enter the same security password while installing the second node to form a cluster.	<b>CLI &gt; set password user security</b> To avoid losing communications between nodes, you must change the Security password on both nodes in a cluster and reboot both the nodes. For more information, see the description of this command in the <i>Cisco Unified Communications Operating System Administration Guide</i> , available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>

Parameter	Description	Can Entry Be Changed Postinstallation?
<b>SMTP Location</b>	Enter the hostname or IP address for the SMTP server that is used for outbound email.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set smtp</b>
Your entry:	The hostname can contain alphanumeric characters, hyphens, or periods, but it must start with an alphanumeric character. <b>Note</b> You must fill in this field if you plan to use electronic notification.	
<b>Organization</b>	Enter the name of your organization.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set web-security</b>
Your entry:	<b>Note</b> The value you enter gets used to generate a Certificate Signing Request (CSR).	
<b>Unit</b>	Enter the name of the business unit of your organization.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set web-security</b>
Your entry:	<b>Note</b> The value you enter gets used to generate a Certificate Signing Request (CSR).	
<b>Location</b>	Enter the location of the server. The system uses this information to generate certificate signing requests (CSRs), which are used to obtain third-party certificates.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set web-security</b>
Your entry:	You can enter any location that is meaningful within your organization. Examples include the state or the city where the server is located.	
<b>State</b>	Enter the state where the server is located.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set web-security</b>
Your entry:	<b>Note</b> The value you enter gets used to generate a Certificate Signing Request (CSR).	
<b>Country</b>	From the list, choose the appropriate country for your installation.	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set web-security</b>
Your entry:	<b>Note</b> The value you enter gets used to generate a Certificate Signing Request (CSR) and self-signed certificates.	
<b>Time Zone</b>	This field specifies the local time zone and offset from Greenwich Mean Time (GMT).	Yes, you can change the entry after installation by using the following CLI command: <b>CLI &gt; set timezone</b>
Your entry:	Choose the time zone that most closely matches the location of your machine.	

## Supported servers

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For information about supported server models, see the following documents:

- Cisco Unified Contact Center Express Software and Hardware Compatibility Guide, available at:  
[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_device_support_tables_list.html)
- Release notes for your product release, available at:  
[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html)

## Do not install other software on server

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You must perform all software installations and upgrades by using Unified Communications Operating System Administration. The system can upload and process only software that is approved by Cisco.

You cannot install or use third-party or Windows-based software applications that you may have been using with a previous version of Unified CCX with Unified CCX 9.0(1).

## Username and passwords

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**Note**

The system checks your passwords for strength. For guidelines on creating a strong password, see the [Strong passwords](#), on page 20.

During the installation, you must specify the following usernames and passwords:

- [Administrator username and password](#), on page 19
- [Application username and password](#), on page 20
- [Security password](#), on page 20

## Administrator username and password

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You use the Administrator username and password to log in to the following areas:

- Unified Communications Operating System Administration
- Disaster Recovery System
- Command Line Interface

To specify the Administrator user name and password, follow these guidelines:

- Administrator username—The Administrator username must start with an alphabetic character and can contain alphanumeric characters, hyphens and underscores.
- Administrator password—The Administrator password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores. See the [Strong passwords, on page 20](#) for additional information on how to create a strong password.

You can change the Administrator password or add a new administrator by using the command line interface. For more information, see the *Cisco Unified Communications Operating System Administration Guide*, available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

## Application username and password

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You use the Application username and password to access applications that are installed on the system, along with external tool Cisco Unified Real-Time Monitoring Tool (Unified RTMT).

To specify the Application username and password, follow these guidelines:

- Application username—The Application username must start with an alphabetic character and can contain alphanumeric characters, hyphens and underscores.
- Application user password—The Application user password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores. See the [Strong passwords, on page 20](#) for additional information on how to create a strong password.

You can change the Application username and password by using the command line interface. For more information, see *Command Line Interface Reference Guide for Cisco Unified Communications Solutions*, available at:

[http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod\\_maintenance\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/voicesw/ps556/prod_maintenance_guides_list.html)

## Security password

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The system uses this password to authorize communications between nodes, and you must ensure that this password is identical on both the nodes in a cluster.

The Security password must be at least six characters long and can contain alphanumeric characters, hyphens, and underscores. See the [Strong passwords, on page 20](#) for additional information on how to create a strong password.

## Strong passwords

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To create a strong password, follow these recommendations:

- Mix uppercase and lowercase letters.
- Mix letters and numbers.

- Include hyphens and underscores.
- Remember that longer passwords are stronger and more secure than shorter ones.

Avoid the following types of passwords:

- Do not use recognizable words, such as proper names and dictionary words, even when combined with numbers.
- Do not invert recognizable words.
- Do not use word or number patterns, such as aaabbb, qwerty, zyxwvuts, 123321, and so on.
- Do not use recognizable words from other languages.
- Do not use personal information of any kind, including birthdays, postal codes, names of children or pets, and so on.

## Unified Communications Answer File Generator

Unified Communications Answer File Generator, a Web application, generates answer files for unattended installations of Unified CCX 9.0(1) or later. Individual answer files (platformConfig.xml) are copied to the root directory of a USB key or a floppy diskette and are used in addition to the Unified CCX DVD during the installation process.

The Web application supports the following features:

- Allows simultaneous generation and saving of answer files for unattended installation on the publisher node and the subscriber node.
- Provides syntactical validation of data entries.
- Provides online help and documentation.

However, the Web application supports only basic installations and not upgrades.

You can access the Unified Communications Answer File Generator at the following URL:

[http://www.cisco.com/web/cuc\\_afg/index.html](http://www.cisco.com/web/cuc_afg/index.html)

The Unified Communications Answer File Generator supports Internet Explorer Version 6.0 or later and Mozilla Version 1.5 or later.

**Note**

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Cisco requires that you use USB keys that are compatible with Linux 2.4. It is important that you use USB keys that are preformatted to be compatible with Linux 2.4 for the configuration file. These keys will have a W95 FAT32 format.

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## Network errors during installation

During the installation process, the installation program verifies that the server can successfully connect to the network by using the network configuration that has been entered. If the installer fails to connect, a relevant message is displayed prompting you to select one of the following options:

- **RETRY**—The installation program tries to validate networking again. If validation fails again, the error dialog box displays again.
- **REVIEW (Check Install)**—This option allows you to review and modify the networking configuration. When an error is detected, the installation program returns to the network configuration windows. Networking gets validated after you complete each networking window, so the message might display multiple times.
- **HALT**—The installation halts. You can copy the installation log files to a USB disk to aid troubleshooting of your network configuration.
- **IGNORE**—The installation continues. The networking error gets logged. In some cases, the installation program validates networking multiple times, so this error dialog box might display multiple times. If you choose to ignore network errors, the installation may fail.

## Installation options

The installation process of Unified CCX 9.0(1) allows you to perform a basic installation, factory installation, installation using Answer File Generator, patch upgrade to a newer service release during the installation, and upgrade from Unified CCX 7.x to Unified CCX 9.0(1).

For a more detailed description of the different installation types, see below.

**Table 3: Installation options**

Installation Type	Description
Basic	This option allows you to install the Unified CCX 9.0(1) software from the installation disc and configure it simultaneously.
Factory	This option allows you to obtain a MCS hardware from Cisco, preinstalled with the Unified CCX 9.0(1) software, which you need to configure upon receiving in order to complete the installation.
Use Answer File Generator	This option allows you to install the Unified CCX 9.0(1) software unattended if you provide the pre-existing configuration information on a USB key or floppy disk.
Apply Patch (upgrade during installation)	This option allows you to apply a patch in order to upgrade the software available on the installation disc. You can only apply one patch during the installation process.  <b>Note</b> Ensure that you have the upgrade patch available on a DVD or on a remote server before you choose this option.



## CHAPTER 3

# Unified Contact Center Express installation

This section describes how to install the operating system and Unified CCX application. You install the operating system and application by running one installation program. This document divides the procedure for using this installation program into the following major topics:

- [Installation wizard navigation, page 23](#)
- [Start installation, page 24](#)
- [Enter preexisting configuration information, page 30](#)
- [Apply patch, page 30](#)
- [Perform basic installation, page 33](#)
- [Configure first node, page 39](#)
- [Add second node for HA, page 45](#)
- [Configure second node for HA, page 46](#)

## Installation wizard navigation

For instructions on how to navigate within the installation wizard, see table below.

**Table 4: Installation wizard navigation**

To Do This	Press This
Move to the next field	Tab
Move to the previous field	Alt-Tab
Choose an option	Space bar or Enter
Scroll up or down in a list	Up or Down arrow
Go to the previous window	Space bar or Enter to choose Back (when available)

To Do This	Press This
Get help information on a window	Space bar or Enter to choose Help (when available)

**Note**

During installation it is possible for your monitor screen to go blank if you leave it unattended for a long time. In such a situation, it is recommended not to use the space bar because pressing the space bar chooses the default option available on the current window and moves to the next window. Instead, press Escape on your keyboard to display the current screen with the available options open for you to choose and proceed with the installation.

## Start installation

If you are installing the second node to form a cluster, you must configure the host name or IP address of the new node on the first node. From the Cisco Unified CCX Administration web interface of the first node, choose **System > Server** and enter the IP address or host name of the second node. For more information, see the *Cisco Unified Contact Center Express Administration Guide Release 9.0(1)*, available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

To start the installation, complete the following steps:

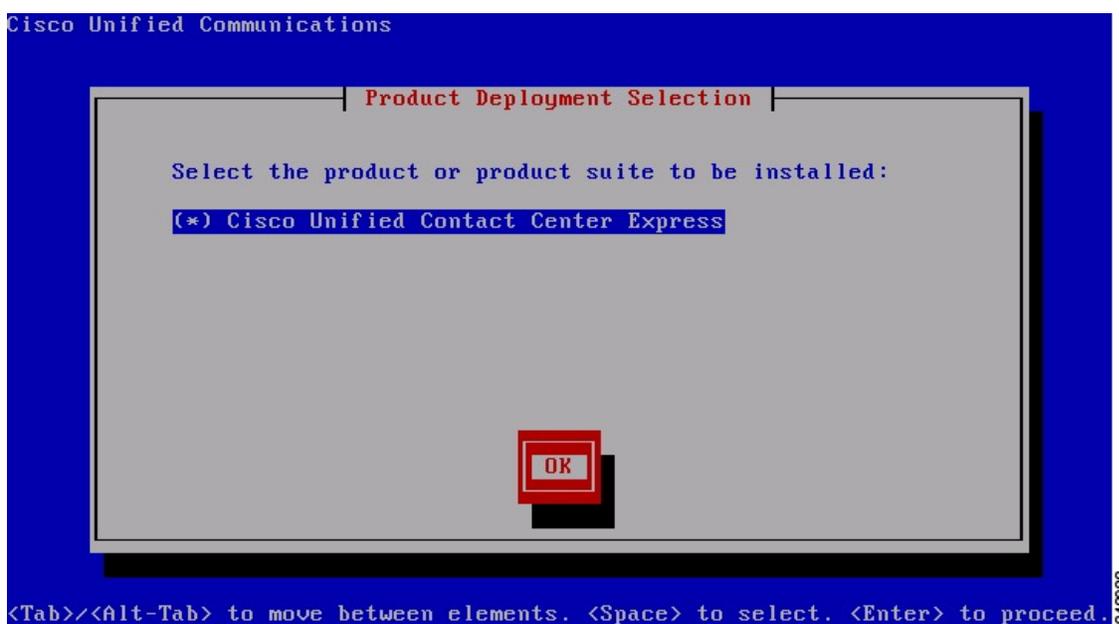
### Procedure

- 
- Step 1** If you have a USB key with configuration information that the Answer File Generator generated, insert it now.
- Note** If you have a new server with the software preinstalled, you do not need to install from a DVD, unless you want to reimage the server with a later product release. You can go directly to the [Enter preexisting configuration information, on page 30](#).
- Step 2** Insert the installation DVD into the tray and restart the server, so it boots from the DVD. After the server completes the boot sequence, the DVD Found window displays.
- Step 3** To perform the media check, choose **Yes**. To skip the media check, choose **No**. The media check checks the integrity of the DVD. If your DVD passed the media check previously, you might choose to skip the media check.
- Step 4** If you choose **Yes** to perform the media check, the Media Check Result window displays. Perform these tasks:
- If the Media Check Result displays **Pass**, click **OK** to continue the installation.
  - If the media fails the Media Check, either download another copy from Cisco.com or obtain another DVD directly from Cisco.
- Step 5** The system installer performs the following hardware checks to ensure that your system is correctly configured. If the installer makes any changes to your hardware configuration settings, you will get prompted to restart your system. Leave the DVD in the drive during the reboot:
- First, the installation process checks for the correct drivers, and you may see the following warning:  
**No hard drives have been found. You probably need to manually choose device drivers for install to succeed. Would you like to select drivers now?**

To continue the installation, choose **Yes**.

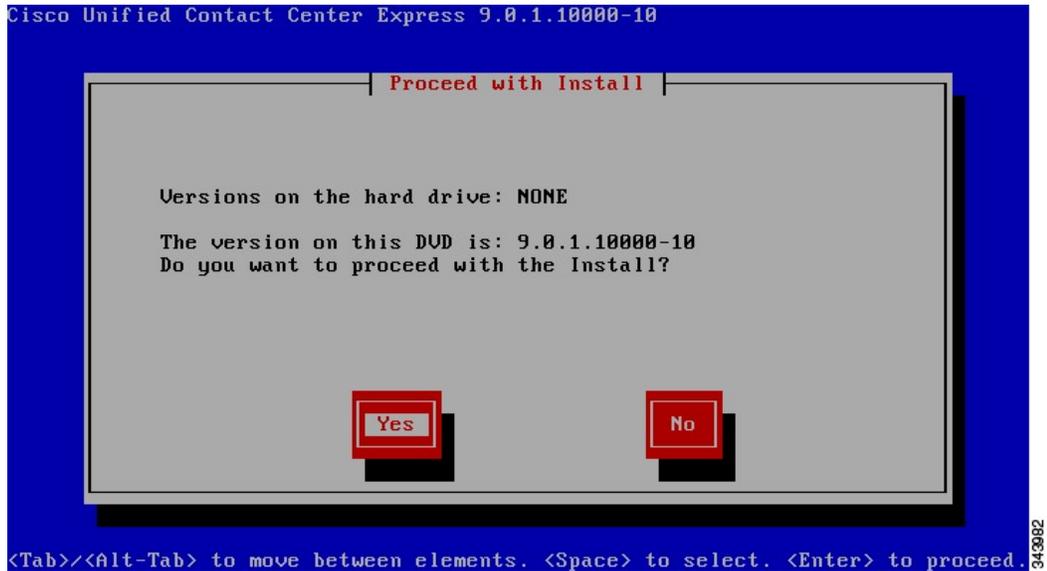
- b) The installation next checks to see whether you have a supported hardware platform. If your server does not meet the exact hardware requirements, the installation process fails with a critical error. If you think this is not correct, capture the error and report it Cisco support.
  - c) The installation process next verifies RAID configuration and BIOS settings.  
**Note** If this step repeats, choose **Yes** again.
  - d) If the installation program must install a BIOS or RAID update, a notification appears telling you that the system must reboot. Press any key to continue with the installation.
- After the hardware check is complete, the Product Deployment Selection window displays.

**Figure 1: Product Deployment Selection window**



- Step 6** In the Product Deployment Selection window, select **Cisco Unified Contact Center Express** and click **OK** to install the product suite. The Proceed with Install window appears.

**Figure 2: Proceed with Install window**

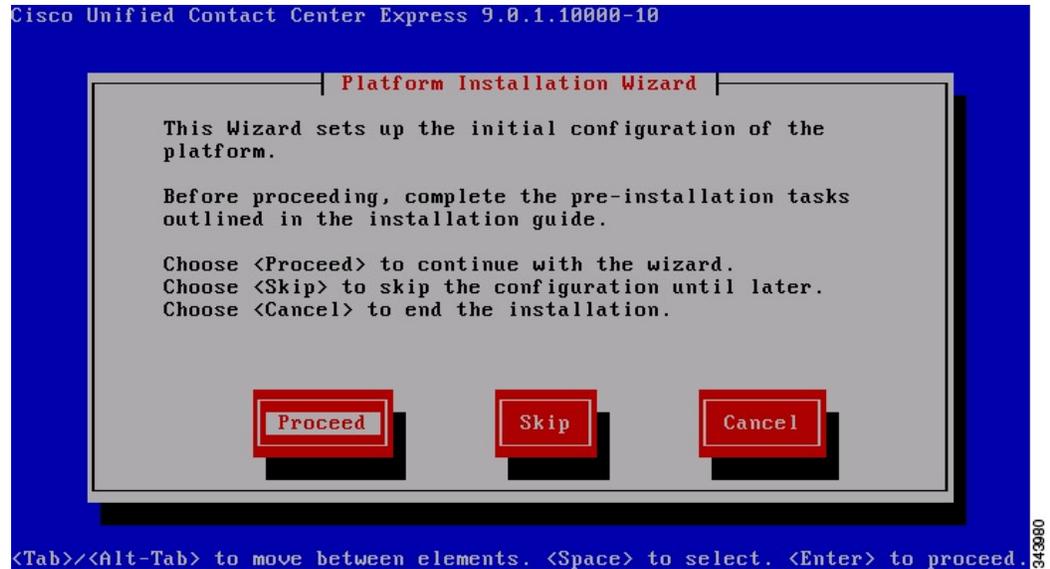


- Step 7** If an earlier version of the software is currently installed on the server, the Proceed with Install window displays the software version currently existing on your hard drive and the version available on the DVD. Choose **Yes** to continue with the installation or **No** to cancel.

**Caution** If you choose **Yes** in the Proceed with Install window, all existing data on your hard drive gets overwritten and lost.

The Platform Installation Wizard window displays.

**Figure 3: Platform Installation Wizard window**



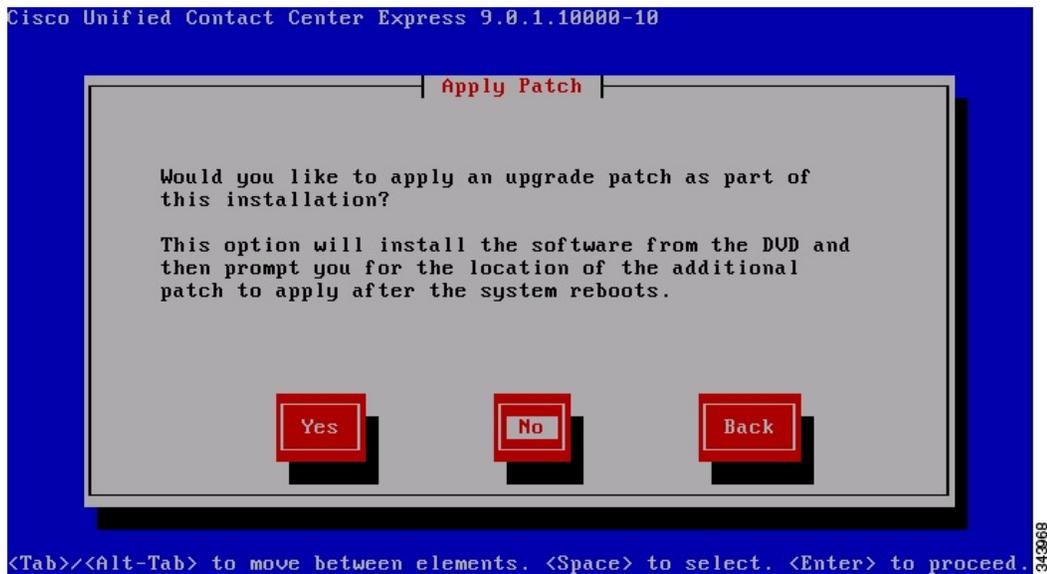
**Step 8** Choose one of the following options:

- a) To enter your configuration information manually and have the installation program install the configured software on the server, choose **Proceed** and continue with this procedure. The Apply Patch window appears (see [Figure 4: Apply Patch window, on page 28](#)).
- b) Choose **Proceed** to manually configure the software that is preinstalled on your server. In this case, you do not need to install the software, but you must configure the preinstalled software. Continue with the [Enter preexisting configuration information, on page 30](#).
- c) Choose **Skip** to install the software before manually configuring it. In this case, the installation program installs the software, and then prompts you to configure it manually. Choosing Skip here will preinstall the application on your server first and then allow you to enter the configuration information at a later time. This method might cause you to spend more time performing the installation than the other methods. Continue with the [Enter preexisting configuration information, on page 30](#).
- d) Choose **Skip** to perform unattended installation. In this case, you provide pre-existing configuration information on a USB key, floppy disk generated using Answer File Generator tool. The installer will not ask any questions from here on unless there is any discrepancy in the configuration information supplied.

After the installation completes, perform the postinstallation tasks as listed in [Postinstallation tasks](#), on page 51.

- Step 9** Choose the type of installation you want to perform, and continue with the following steps. See [Install from DVD on second node](#), on page 2 for more information on installation options.

**Figure 4: Apply Patch window**

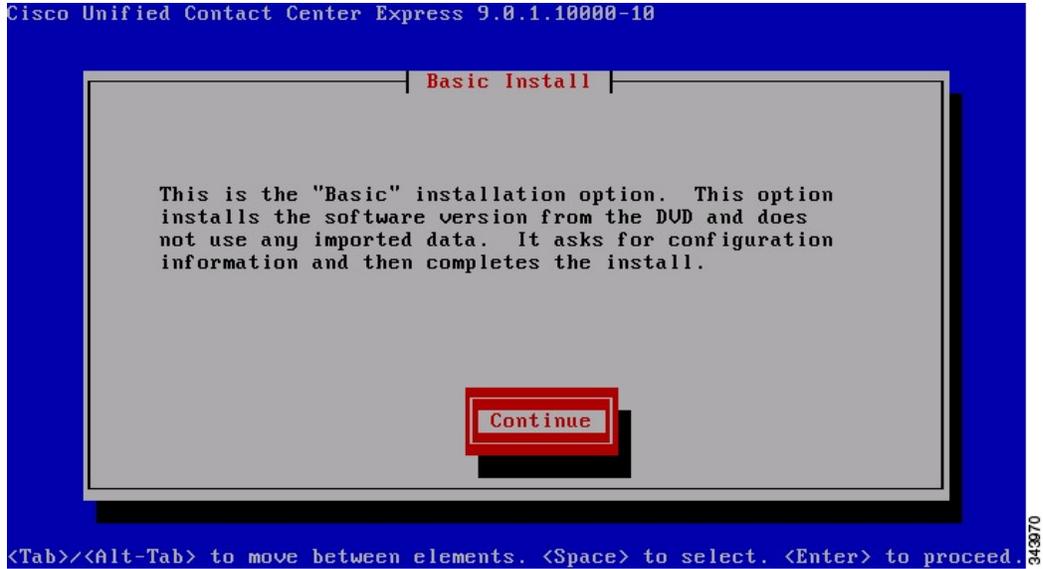


In the Apply Patch window, choose one of the following options:

- To apply a patch and upgrade to a later Service Release of the software during installation, choose **Yes**. Continue with the [Apply patch](#), on page 30.
- To skip this step, choose **No**. The Basic Install window appears. [Figure 5: Basic Install window](#), on page 29

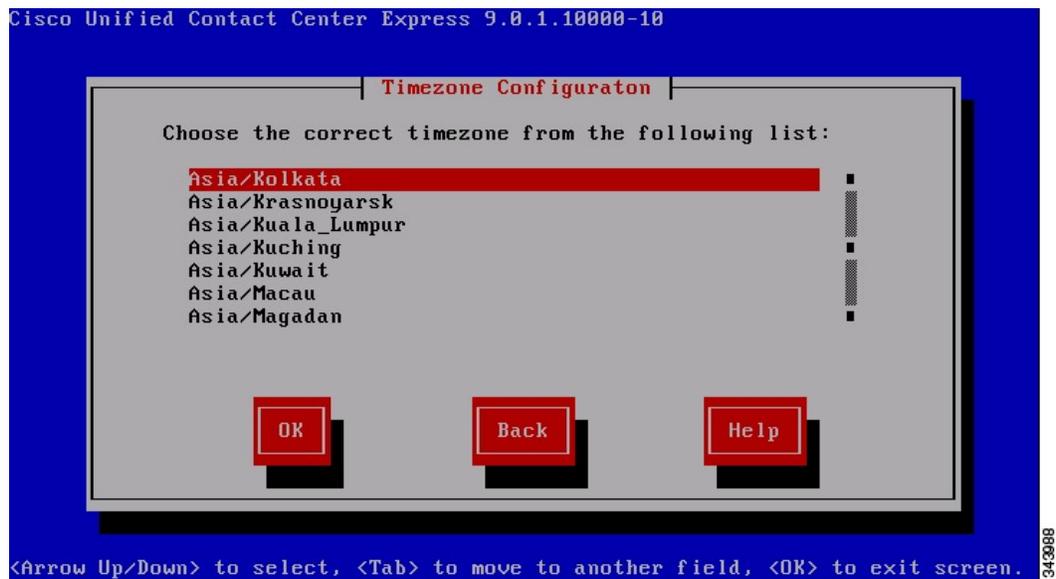
c) To return to the previous window, choose **Back**.

**Figure 5: Basic Install window**



**Step 10** In the Basic Install window, choose **Continue** to install the software version on the DVD or configure the preinstalled software. The Timezone Configuration window displays. Continue with the [Perform basic installation, on page 33](#).

**Figure 6: Timezone Configuration window**



## Enter preexisting configuration information

Start here if you have a server that has the product preinstalled or if you chose **Skip** in the Platform Installation Wizard window. To start entering preexisting configuration information, complete the following steps:

### Procedure

- 
- Step 1** After the server restarts, the Preexisting Installation Configuration window displays.
- Step 2** If you have preexisting configuration information created using the Answer File Generator and stored on a CD or a USB key, insert the disc or the USB key now and choose **Continue**. The installation wizard will read the configuration information during the installation process.
- Note** If a popup window states that the system detected new hardware, press any key and then choose **Install** from the next window.
- The Platform Installation Wizard window displays (see [Figure 3: Platform Installation Wizard window](#), on page 27).
- Step 3** To continue with the Platform Installation Wizard, choose **Proceed**.
- Step 4** Choose the type of installation you want to perform, and continue with the following steps. See [Table 3: Installation options](#), on page 22 for more information on installation options.
- In the Apply Patch window, choose one of the following options:
- To apply a patch and upgrade to a later Service Release of the software during installation, choose **Yes**. Continue with the [Apply patch](#), on page 30.
  - To skip this step, choose **No**. The Basic Install window appears (see [Figure 5: Basic Install window](#), on page 29).
  - To return to the previous window, choose **Back**.
- Step 5** In the Basic Install window, choose **Continue**. The Timezone Configuration window displays (see [Figure 6: Timezone Configuration window](#), on page 29). Continue with the [Perform basic installation](#), on page 33.
- 

## Apply patch

If you choose **Yes** in the Apply Patch window, the installation wizard installs the software version on the DVD first and then restarts the system. You must obtain the appropriate upgrade file from Cisco.com before you apply an upgrade patch during installation.



### Note

You can upgrade to any supported higher release as long as you have a full patch, which is not an engineering special (ES) or a service release (SR), in which case you can only upgrade to a later service release within the same maintenance release.

---



**Note** If you have node 1 with Base and SU running, and you want to form a cluster on node 2, follow the instructions mentioned in the “Apply Patch” section. This section details the process/procedure required to install Base and SU build (patch). Once install is complete, follow instructions in this link [Perform initial setup for second node, on page 56](#) to complete setting cluster.

For information about supported upgrades, see the *Cisco Unified Contact Center Express Software and Hardware Compatibility Guide*, available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_device\\_support\\_tables\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_device_support_tables_list.html)

You can also find relevant information in the Release Notes for your product release available here:

[http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/prod_release_notes_list.html)

You can access the upgrade file during the installation process from either a local disk (DVD) or from a remote FTP or SFTP server. To start applying the patch, complete the following steps:

### Procedure

- 
- Step 1** The Install Upgrade Retrieval Mechanism Configuration window displays.
- Step 2** Choose the upgrade retrieval mechanism to use to retrieve the upgrade file:
- SFTP—Retrieves the upgrade file from a remote server by using the Secure File Transfer Protocol (SFTP). Skip to [Upgrade from remote server, on page 32](#).
  - FTP—Retrieves the upgrade file from a remote server by using File Transfer Protocol (FTP). Skip to [Upgrade from remote server, on page 32](#).
  - LOCAL—Retrieves the upgrade file from a local DVD. Continue with [Upgrade from local disk, on page 31](#).
- 

## Upgrade from local disk

Before you can upgrade from a local disk, you must download the appropriate patch file from Cisco.com and use it to create an upgrade DVD. You must create an ISO image on the DVD from the upgrade file.

To start upgrading from a local disk, complete the following steps:



**Note** Simply copying the ISO file to a DVD will not work.

### Procedure

- 
- Step 1** When the Local Patch Configuration window displays, enter the patch directory and patch name, if required, and click **OK**.  
The Install Upgrade Patch Selection Validation window displays.
- Step 2** The window displays the patch file that is available on the DVD. To update the system with this patch, choose **Continue**.

The system installs the patch, then restarts the system with the upgraded software version running. After the system restarts, the Pre-existing Configuration Information window displays.

- Step 3** To continue the installation, choose **Proceed**.  
The Platform Installation Wizard window displays (see [Figure 3: Platform Installation Wizard window](#), on page 27).
- Step 4** To continue the installation, choose **Proceed** or choose **Cancel** to stop the installation.
- If you choose **Proceed**, the Apply Patch window displays (see [Figure 4: Apply Patch window](#), on page 28). Continue with [Step 5](#).
  - If you choose **Cancel**, the system halts, and you can safely power down the server.
- Step 5** When the Apply Patch window appears, choose **No** and continue with [Perform basic installation](#), on page 33.
- 

## Upgrade from remote server

Before you can upgrade from a remote server, you must download the appropriate patch file from Cisco.com to an FTP or SFTP server to which your server (on which you are applying the patch) has access.

As a selection of SFTP or FTP requires you to configure network settings so that the server can connect to the network, this selection opens with the Auto Negotiation Configuration screen.

To start upgrading from a remote server, complete the following steps:

### Procedure

---

- Step 1** As a selection of SFTP or FTP requires you to configure network settings so that the server can connect to the network.  
This selection opens the Auto Negotiation Configuration window.
- Step 2** The installation process allows you to automatically set the speed and duplex settings of the Ethernet network interface card (NIC) by using automatic negotiation. You can change this setting after installation.
- Note** To use this option, your hub or Ethernet switch must support automatic negotiation. NIC teaming however is not yet supported on Unified CCX.
- To enable automatic negotiation, choose **Yes**.  
The MTU Configuration window displays. Continue with [Step 4](#).
  - To disable automatic negotiation, choose **No**. The NIC Speed and Duplex Configuration window displays.  
Continue with [Step 3](#).
- Step 3** If you choose to disable automatic negotiation, manually choose the appropriate NIC speed and duplex settings now and click **OK** to continue.  
The MTU Configuration window displays.
- Step 4** In the MTU Configuration window, you can change the MTU (maximum transmission unit) size from the operating system default.  
The MTU represents the largest packet, in bytes, that this host will transmit on the network. If you are unsure of the MTU setting for your network, use the default value.
- Caution** If you configure the MTU size incorrectly, your network performance can be affected.

- a) To accept the default value (1500 bytes), choose **No**.
- b) To change the MTU size from the operating system default, choose **Yes**, enter the new MTU size, and click **OK**.  
The Static Network Configuration window displays.

- Step 5** For network configuration, enter your static network configuration values and click **OK**. See [Table 2: Node configuration table, on page 14](#) for field descriptions.  
The DNS Client Configuration window displays.
- Step 6** Enter your DNS client information, and click **OK**. See [Table 2: Node configuration table, on page 14](#) for field descriptions.  
After the system configures the network and checks for connectivity, the Remote Patch Configuration window appears.
- Step 7** Enter the location and login information for the remote file server. The system connects to the remote server and retrieves a list of available upgrade patches.  
If the upgrade file is located on a LINUX or UNIX server, you must enter a forward slash at the beginning of the directory path. For example, if the upgrade file is in the patches directory, you must enter /patches.  
If the upgrade file is located on a Windows server, remember that you are connecting to an FTP or SFTP server, so use the appropriate syntax, including:
- a) Begin the path with a forward slash (/) and use forward slashes throughout the path.
  - b) The path must start from the FTP or SFTP root directory on the server, so you cannot enter a Windows absolute path, which starts with a drive letter (for example, C:).  
The Install Upgrade Patch Selection Validation window displays.
- Step 8** Choose the upgrade patch to install. The system downloads, unpacks, and installs the patch and then restarts the system with the upgraded software version running.  
After the system restarts, the Pre-existing Configuration Information window appears.
- Step 9** To continue the installation, choose **Proceed**.  
The Platform Installation Wizard window displays.
- Step 10** To continue the installation, choose **Proceed** or choose **Cancel** to stop the installation.
- a) If you choose **Proceed**, the Apply Patch window displays. Continue with [Step 12](#).
  - b) If you choose **Cancel**, the system halts, and you can safely power down the server.
- Step 11** When the Apply Patch window displays, choose **No** and continue with the [Perform basic installation, on page 33](#).
- 

## Perform basic installation

To perform the basic installation, complete the following steps:

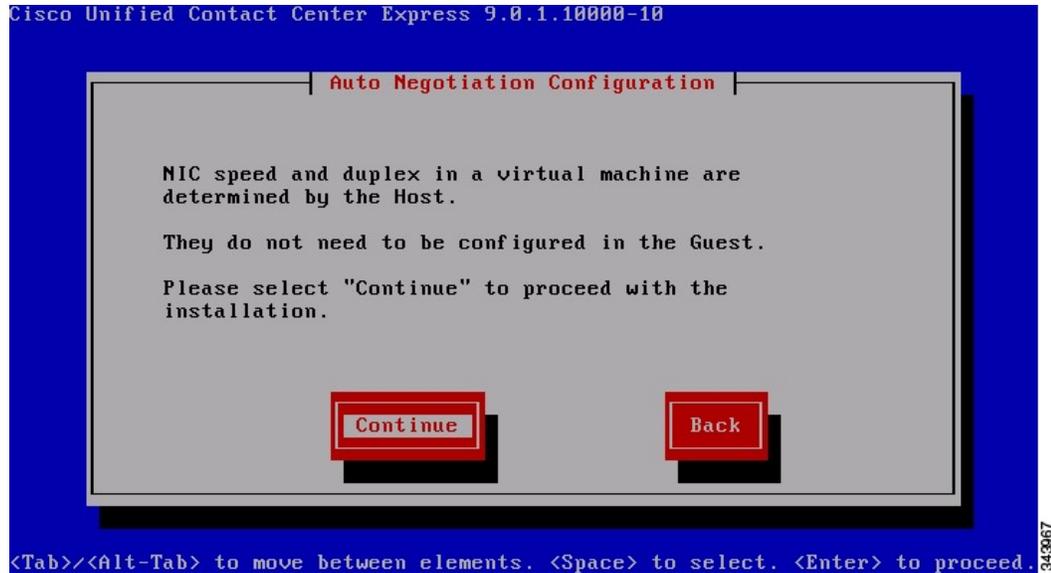
### Procedure

---

- Step 1** When the Timezone Configuration window displays, choose the appropriate time zone for the server and then click **OK**.

The Auto Negotiation Configuration window displays.

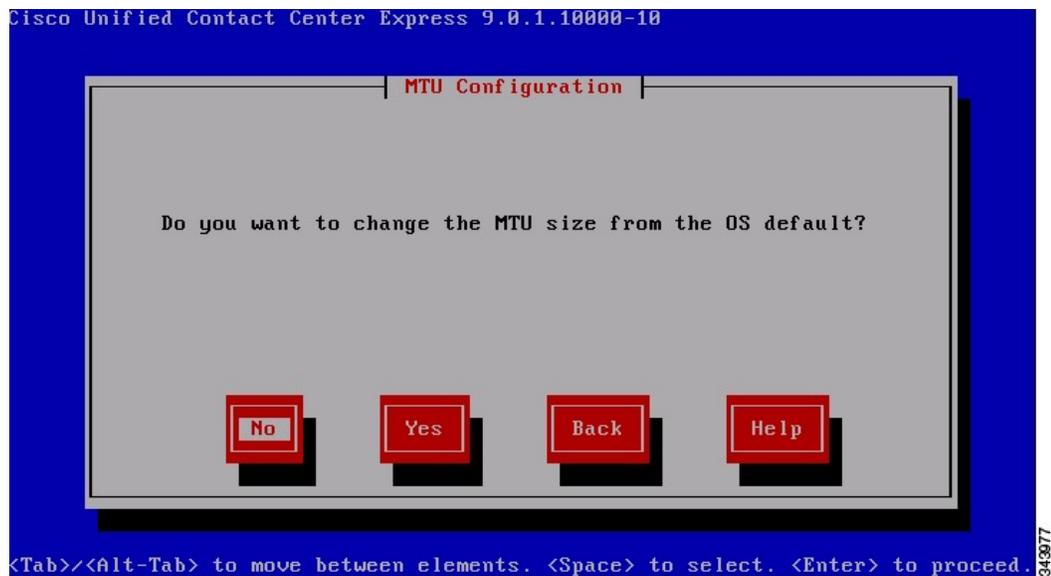
**Figure 7: Auto Negotiation Configuration window**



- Step 2** The installation process allows you to automatically set the speed and duplex settings of the Ethernet network interface card (NIC) by using automatic negotiation. You can change this setting after installation. choose **Continue**.

The MTU Configuration window displays.

**Figure 8: MTU Configuration window**



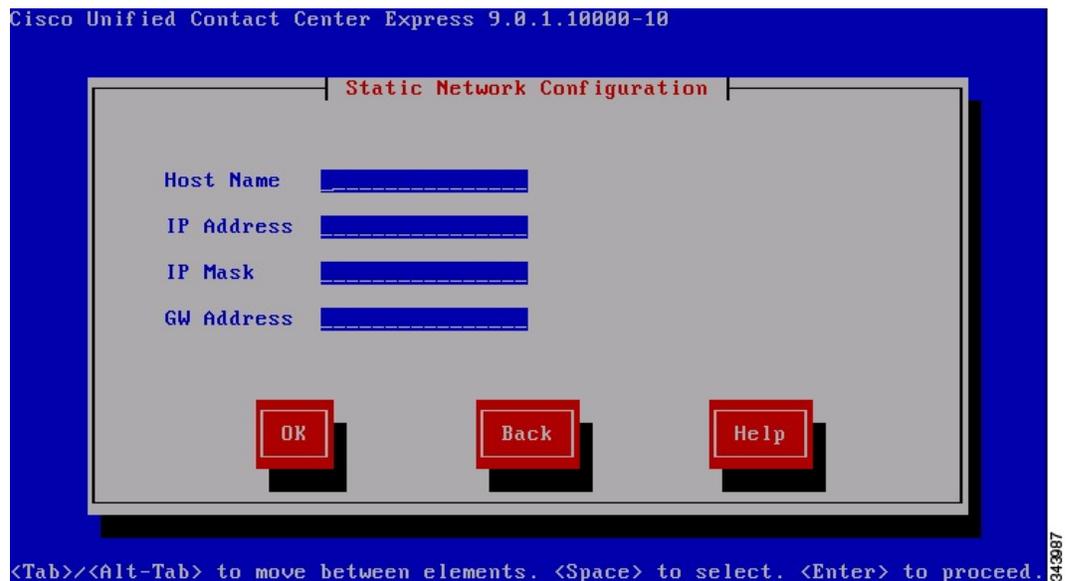
**Note** To use this option, your hub or Ethernet switch must support automatic negotiation.

**Step 3** In the MTU Configuration window, you can change the MTU size from the operating system default. The MTU represents the largest packet, in bytes, that this host will transmit on the network. If you are unsure of the MTU setting for your network, use the default value, which is 1500 bytes.

**Caution** If you configure the MTU size incorrectly, your network performance can be affected.

- a) To change the MTU size from the operating system default, choose **Yes**, enter the new MTU size, and click **OK**.
- b) To accept the default value (1500 bytes), choose **No**.  
The Static Network Configuration window displays.

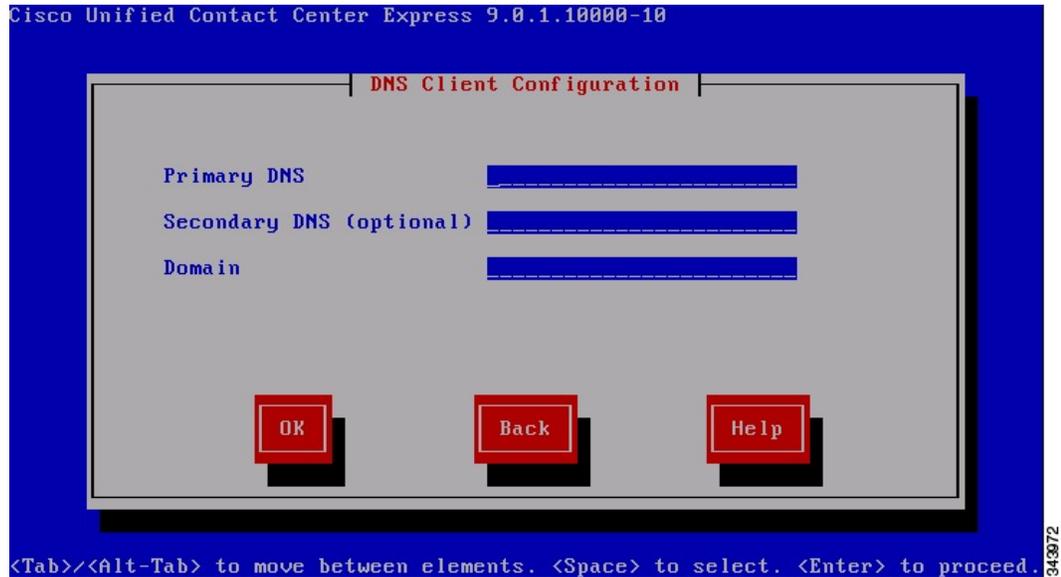
**Figure 9: Static Network Configuration window**



**Step 4** For network configuration, enter your static network configuration values and click **OK**. See [Table 2: Node configuration table](#), on page 14 for field descriptions.

**Note** While you add a host name entry for IVR in the Forward Lookup Zone of a DNS server, make sure the same entry is also visible in the Reverse Lookup Zone.

**Figure 10: DNS Client Configuration window**



The network restarts by using the new configuration information, and the Administrator Login Configuration window displays.

**Figure 11: Administrator Login Configuration window**



**Step 5** Enter your Administrator ID and password from the [Server configuration information for installation](#) and click **OK**. The Certificate Information window displays.

- Note** The Administrator ID must start with an alphabetic character, be at least six characters long, and can contain alphanumeric characters, hyphens, and underscores. You will need the Administrator ID to log in to Unified OS Administration, command line interface, and Disaster Recovery System.
- Caution** Avoid creating administrator account user IDs (for CLI access or OS administration) starting with “uccx” or “UCCX” because such user IDs may conflict with system account names used internally within the Unified CCX server.

**Figure 12: Certificate Information window**



**Step 6** Enter data to create your Certificate Signing Request—Organization, Unit, Location, State, and Country and click **OK**.

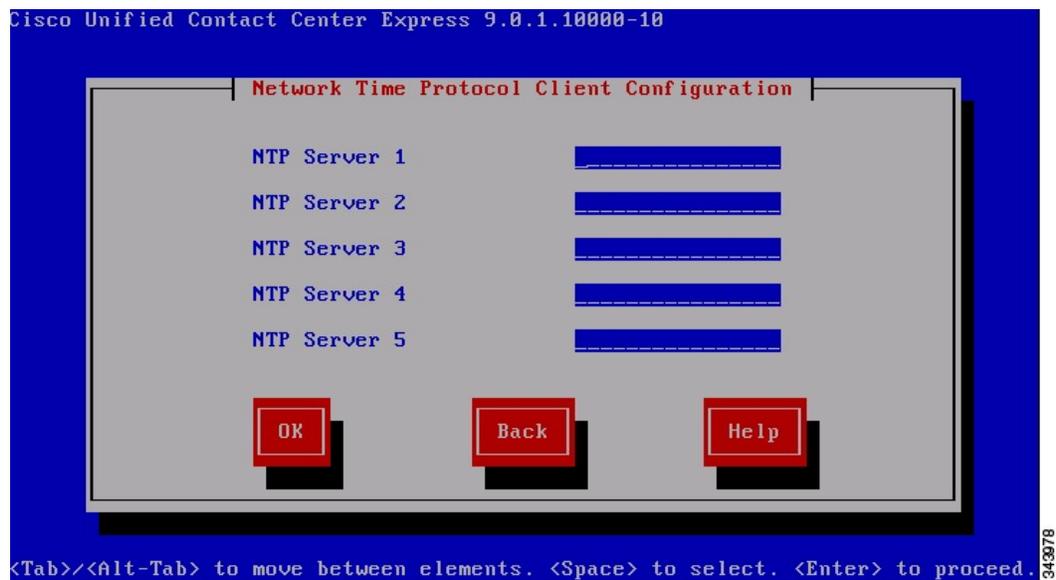
The First Node Configuration window displays.

**Figure 13: First Node Configuration window**



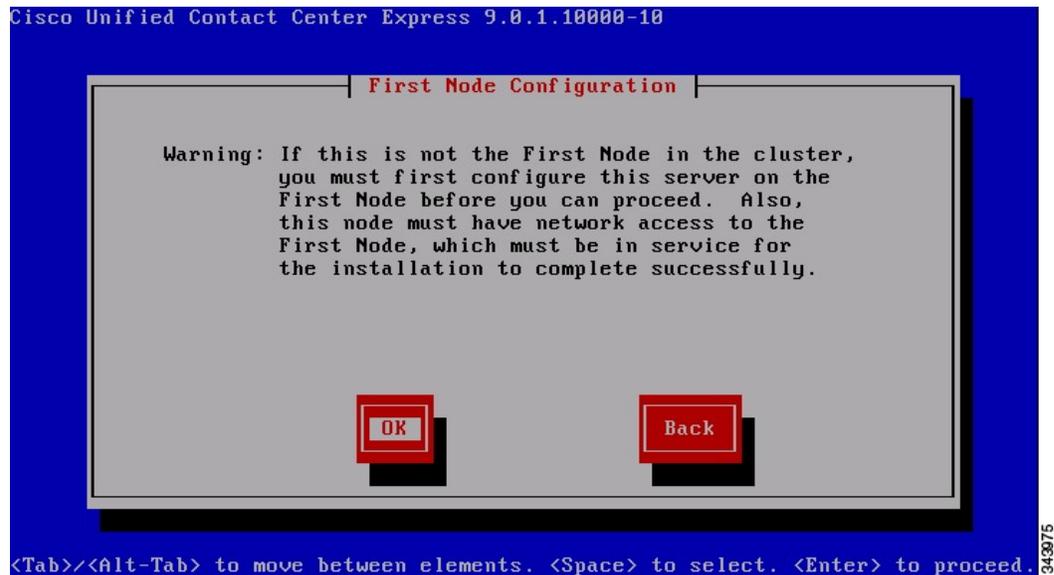
- Step 7** You can configure this server as either the first node or the second node in a Unified CCX cluster.
- To configure this server as the first Unified CCX node, choose **Yes**. The Network Time Protocol Client Configuration window displays. Continue with the [Configure first node](#), on page 39.

**Figure 14: Network Time Protocol Client Configuration window**



- b) To configure this server as the second node in the cluster, choose **No**. The First Node Configuration Warning message displays. Continue with the [Configure second node for HA](#), on page 46.

**Figure 15: First Node Configuration Window with Warning message**



## Configure first node

After you finish the basic installation, to configure the server as the first node in the cluster, complete the following steps:

### Procedure

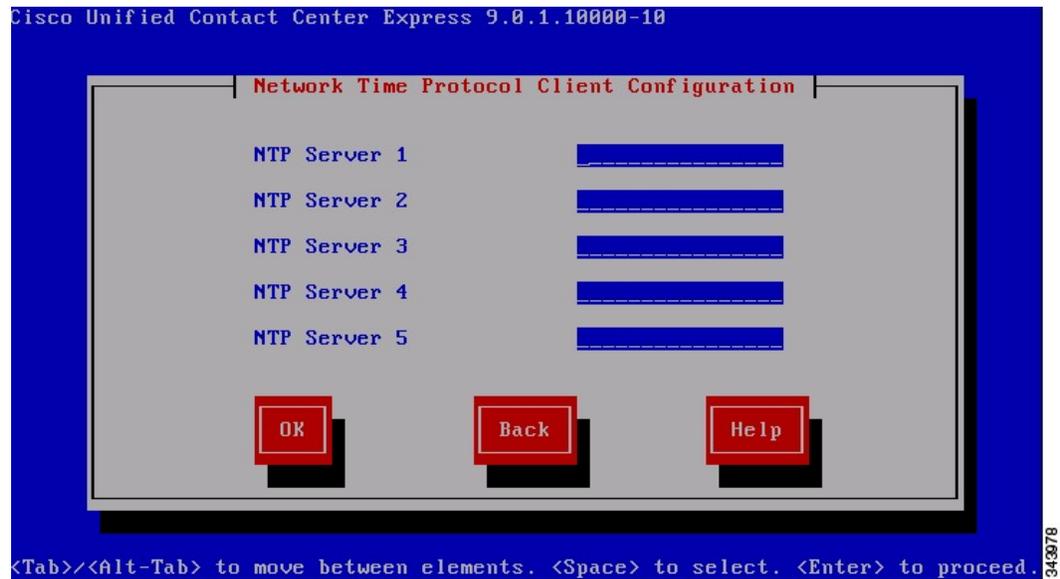
- Step 1** In the Network Time Protocol Client Configuration window, choose whether you want to configure an external NTP server or manually configure the system time. If you are installing on a VM image instead of a real server, it is mandatory to use external NTP servers in order to ensure the accuracy of system time.

**Note** It is important that you use external NTP servers to ensure that system time is kept accurate.

- a) To set up an external NTP server, choose **Yes** in the Network Time Protocol Client Configuration window (see [Figure 14: Network Time Protocol Client Configuration window](#), on page 38) and then enter the IP address, NTP server name, or NTP server pool name for at least one NTP server (see [Figure 16: Setting](#)

Up External NTP Servers, on page 40). You can configure up to five NTP servers, and it is important that you use at least three. Click **OK** to continue with the installation.

**Figure 16: Setting Up External NTP Servers**



**Note** Ensure the external NTP server is stratum 9 or higher (meaning stratum 1-9). The second node in a cluster will get its time from the first node.

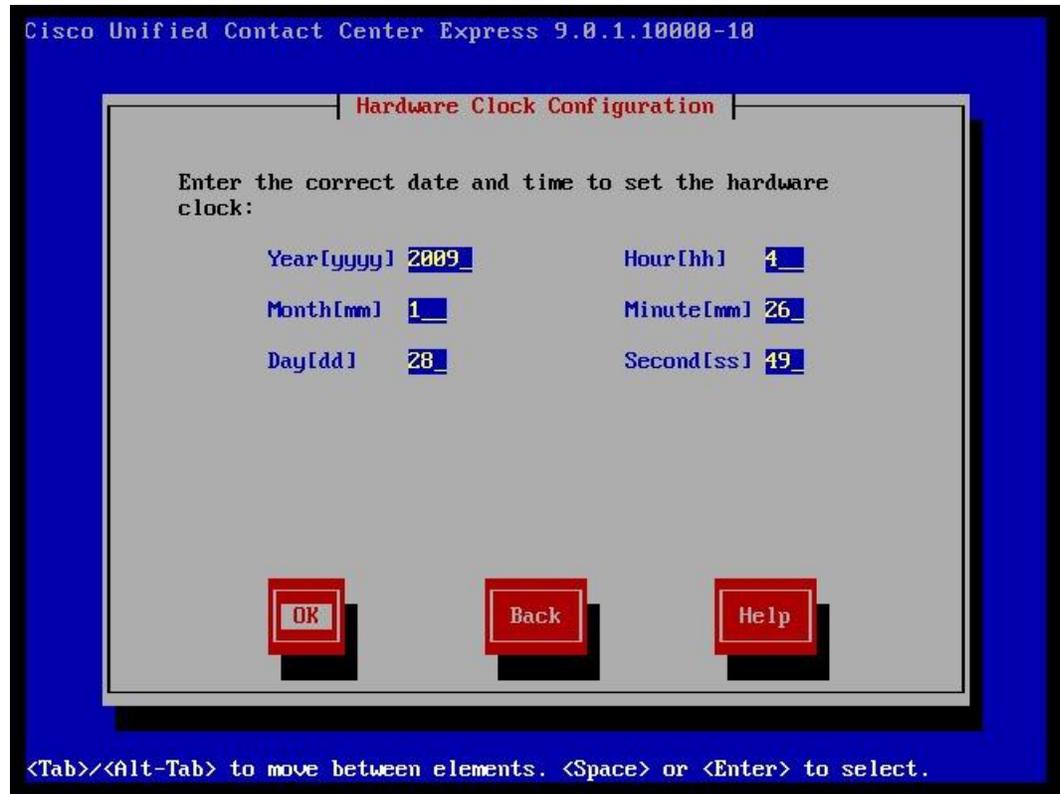
The system contacts an NTP server and automatically sets the time on the hardware clock.

**Note** If the Test button displays, you can choose **Test** to check whether the NTP servers are accessible.

- b) To manually configure the system time, click **No** and enter the appropriate date and time to set the hardware clock in the Hardware Clock Configuration window (see [Figure 17: Hardware Clock Configuration window, on page 41](#)).

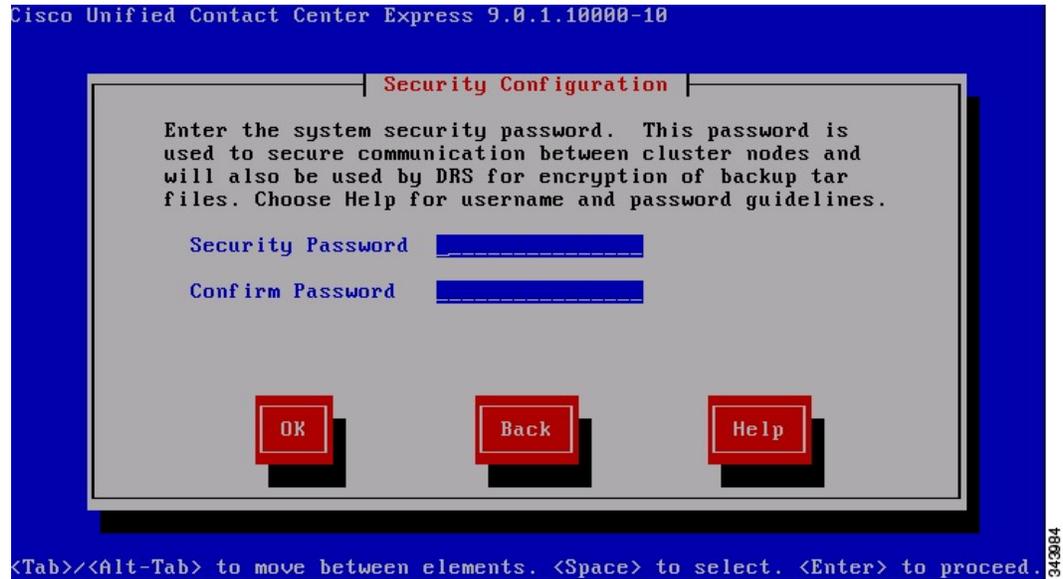
The href on this image references a .tif file. It must reference a .jpg file.

**Figure 17: Hardware Clock Configuration window**



Click **OK** to continue with the installation. The Security Configuration window displays (see [Figure 18: Security Configuration window](#), on page 42).

**Figure 18: Security Configuration window**

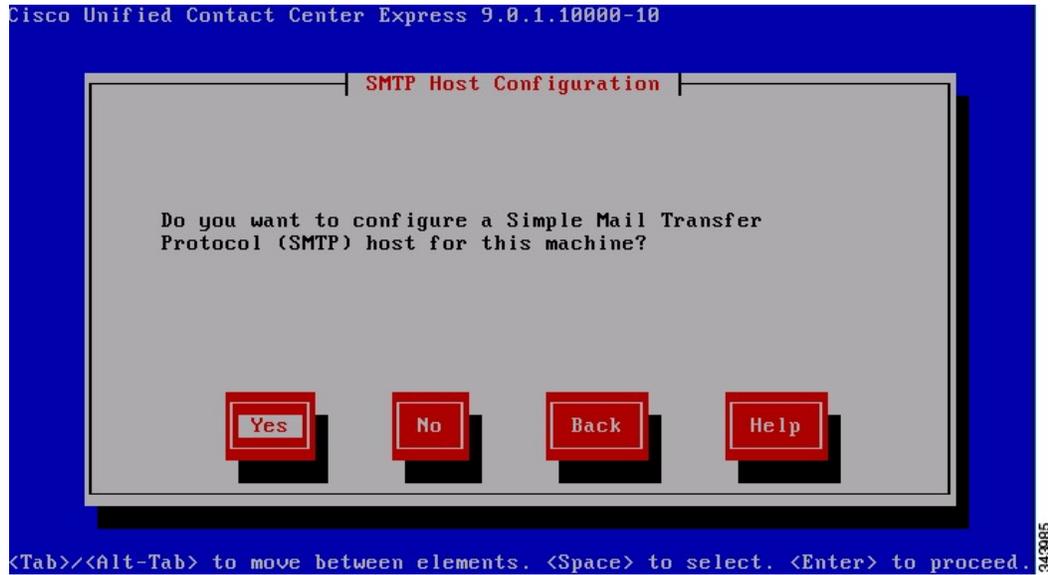


**Step 2** Enter the Security password from [Table 2: Node configuration table](#), on page 14 and click **OK**.

**Note** The Security password must start with an alphanumeric character, be at least six characters long, and can contain alphanumeric characters, hyphens, and underscores. The system uses this password to authorize communications between nodes, and you must ensure this password is identical on both the nodes in a cluster.

The SMTP Host Configuration window displays (see [Figure 19: SMTP Host Configuration window](#), on page 43).

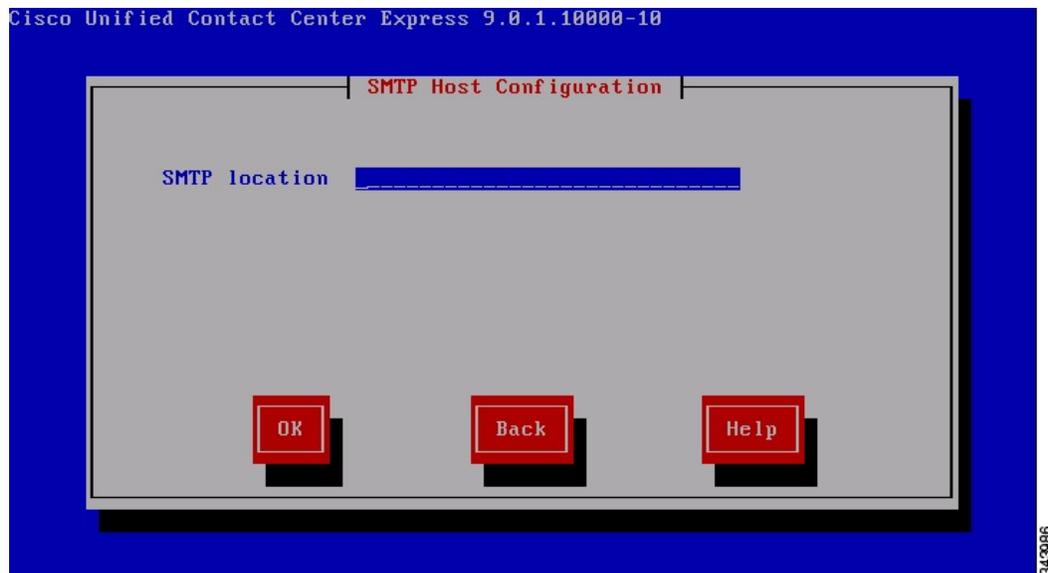
**Figure 19: SMTP Host Configuration window**



If you want to configure an SMTP (Simple Mail Transfer Protocol) server for your system, choose **Yes** (see [Figure 20: SMTP Host Configuration window](#), on page 43).

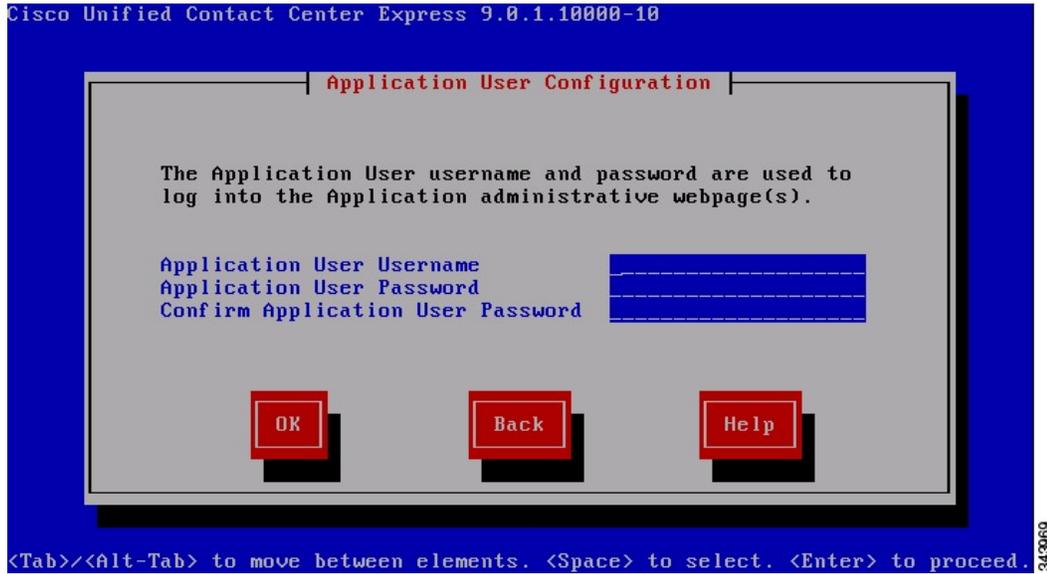
**Note** You must configure an SMTP server to use certain platform features; however, you can also configure an SMTP server later by using the platform GUI or the command line interface.

**Figure 20: SMTP Host Configuration window**



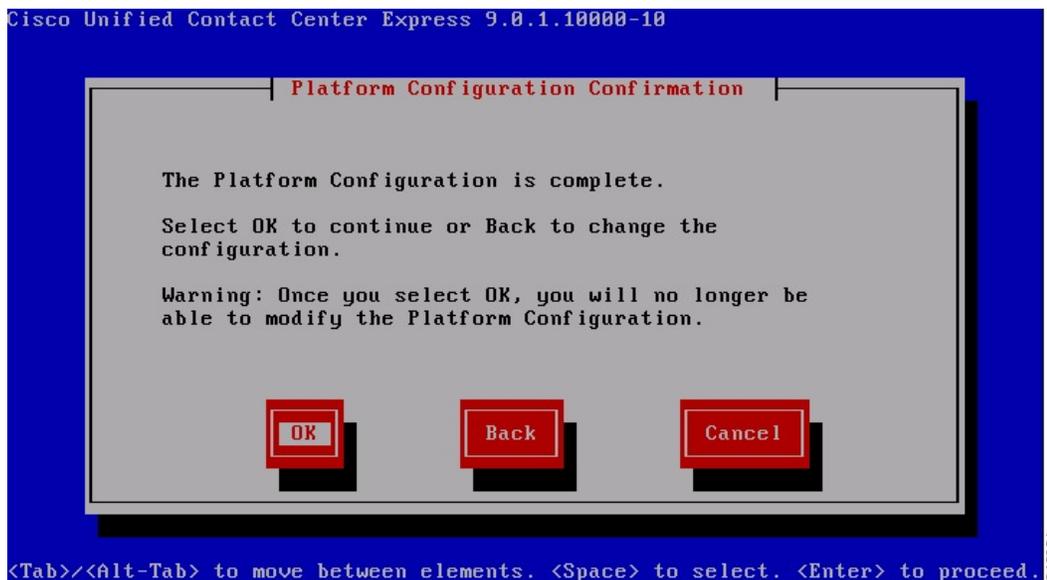
- Step 3** Enter the SMTP host name or IP address in the SMTP Host Configuration window and click **OK**. The Application User Configuration window displays (see [Figure 21: Application User Configuration window](#), on page 44).

**Figure 21: Application User Configuration window**



- Step 4** Enter the Application User name and password from [Table 2: Node configuration table](#), on page 14 and confirm the password by entering it again. Click **OK**. The Platform Configuration Confirmation window displays (see [Figure 22: Platform Configuration Confirmation window](#), on page 44).

**Figure 22: Platform Configuration Confirmation window**



- Step 5** To continue with the installation, click **OK**.  
To modify the platform configuration, choose **Back** on the Platform Configuration Confirmation window.  
The system installs and configures the software. The DVD drive ejects, and the server reboots.
- Caution** Do not reinsert the DVD.
- Step 6** When the installation process completes, you get prompted to log in using the Administrator user name and password.
- Step 7** Complete the postinstallation tasks that are listed in the [Postinstallation tasks](#), on page 51.

## Add second node for HA

Before you install Unified CCX 9.0(1) on the second node, you must add the server details of second node on the first node using the Unified CCX Administration web interface.

To configure a new server that needs to be added to form a Unified CCX cluster for an HA setup, complete the following steps:

### Procedure

- Step 1** On the Unified CCX Administration web interface of the first node, choose **System > License Information > Add License(s)**.
- Step 2** Browse to select an HA premium or enhanced license and click **Upload**.
- Step 3** Once the HA license is successfully uploaded and validated, choose **System > Server**. The List Servers window displays.  
You can use the List Servers window to view, add, and remove servers in the cluster.
- Step 4** Click **Add New**. The Server Configuration window displays.  
**Note** If you have not uploaded an HA license yet, you will be prompted with a warning message to upload one. Click **OK** to go to the License Information window and upload.
- Step 5** In the Server Configuration window, enter the values for the following fields:  
**Note** You can add only one additional node. If you have already installed two nodes in the cluster, the server details of only one node is displayed in this window and the **Add New** button is disabled.

Field	Description
Hostname/IP Address	Hostname or IP address of the new Unified CCX server to be added to form a cluster. This is a mandatory field.
MAC Address	Physical MAC address of the new server.
Description	Description for the new server.

- Step 6** Click **Add** to add details of the new server.
- Step 7** You can now start installing the second node for HA.

## Configure second node for HA

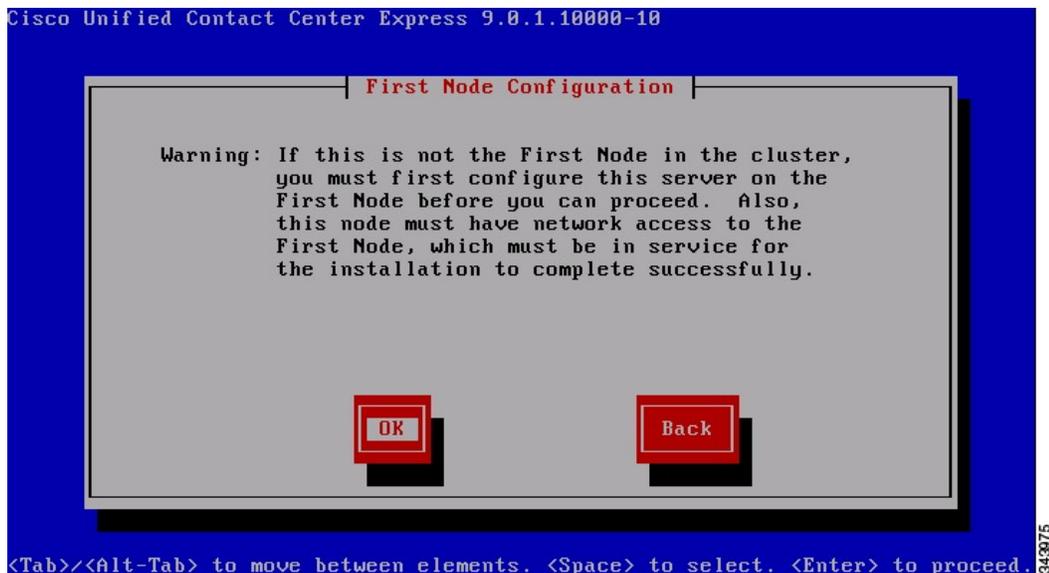
After you add the details of second node on the first node using the Cisco Unified CCX Administration web interface, you can start installing and configuring the second node.

To configure the second node and form a cluster for an HA setup, complete the following steps:

### Procedure

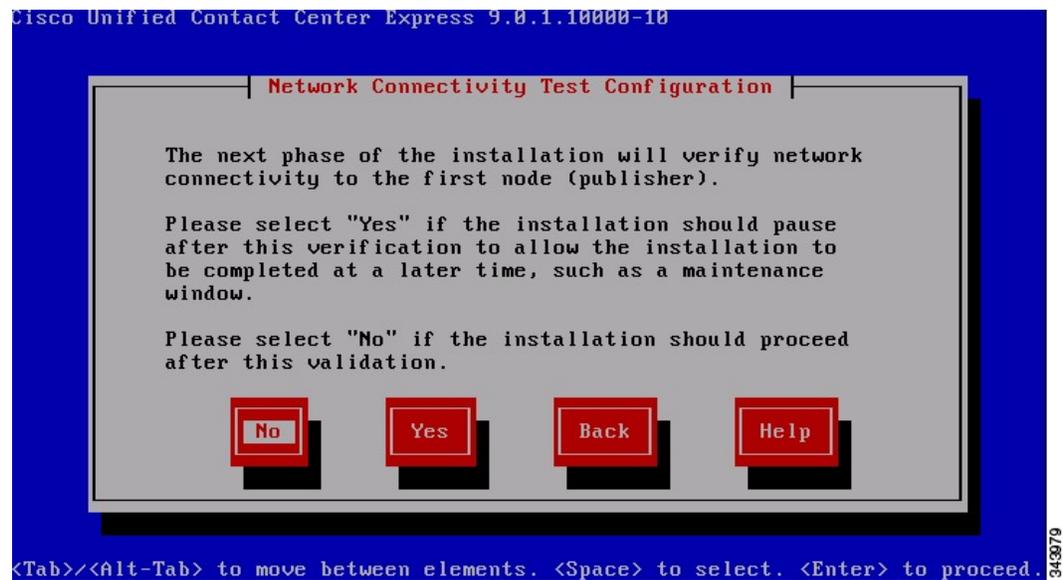
- Step 1** If you configured Network Time Protocol (NTP) on the first node, ensure that it is synchronized with an NTP server before you install the second node. From the Command Line Interface on the first node, enter `utils ntp status`. Ensure that the output indicates that the node is synchronized with an NTP server.
- Note** If the first node is not synchronized with an NTP server, installation of the second node will fail.
- Step 2** On the First Node Configuration window, read the Warning and make sure you have correctly configured the first node (see [Figure 23: First Node Configuration Warning window](#), on page 46). To continue with the installation of the second node, click **OK**.

**Figure 23: First Node Configuration Warning window**



The Network Connectivity Test Configuration window displays (see [Figure 24: Network Connectivity Test Configuration window](#), on page 47).

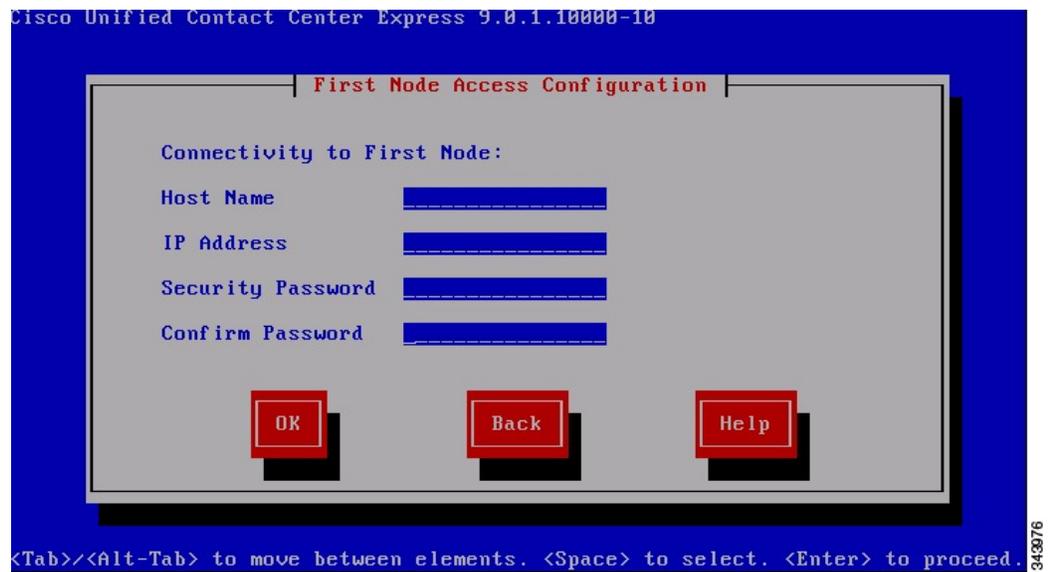
**Figure 24: Network Connectivity Test Configuration window**



- Step 3** During installation of the second node, the system checks to ensure that the second node can connect to the first node.
- To pause the installation after the system successfully verifies network connectivity, choose **Yes**.
  - To continue the installation without a pause, click **No**.

The First Node Access Configuration window displays (see [Figure 25: First Node Access Configuration window](#), on page 48).

**Figure 25: First Node Access Configuration window**



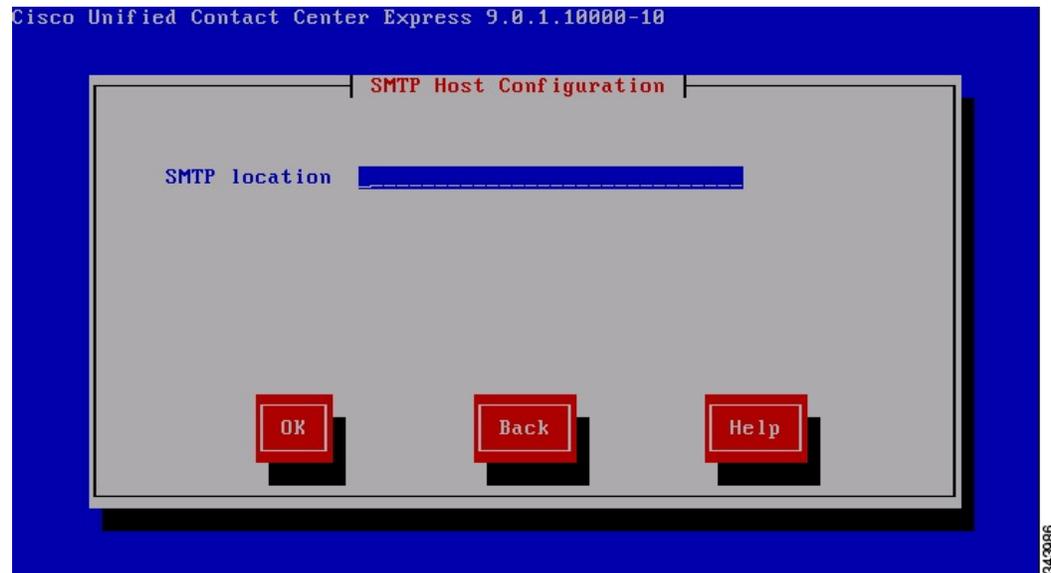
**Step 4** Enter the first node connectivity information (Host Name, IP Address, and Security Password) and click **OK**. The system checks for network connectivity.

If you chose to pause the system after the system successfully verifies network connectivity, the Successful Connection to First Node window displays. Choose **Continue**.

**Note** If the network connectivity test fails, the system always stops and allows you to go back and re-enter the parameter information.

The SMTP Host Configuration window displays (see [Figure 26: SMTP Host Configuration window](#), on page 49).

**Figure 26: SMTP Host Configuration window**

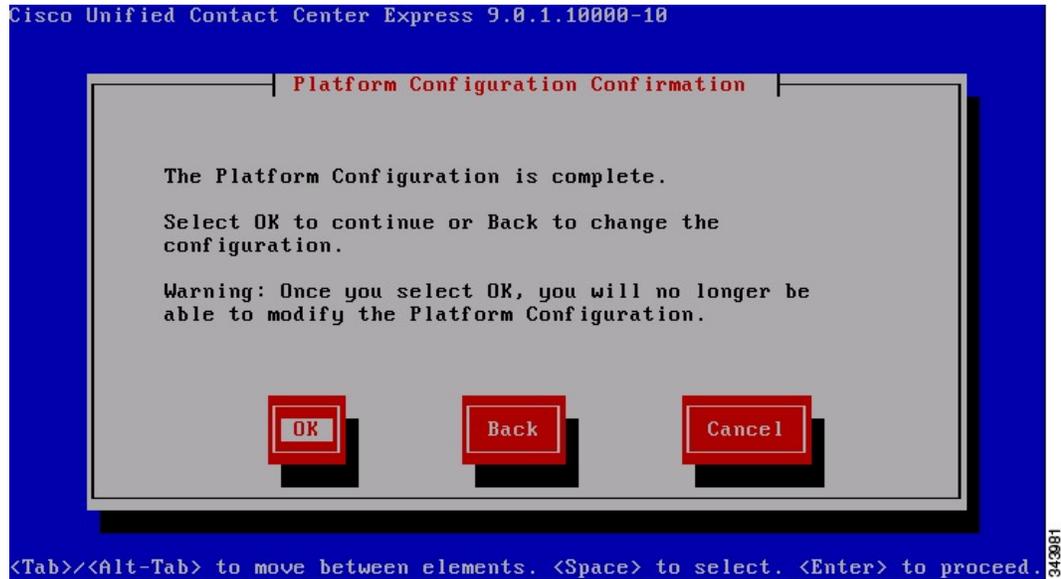


**Step 5** If you want to configure an SMTP server, choose **Yes** and enter the SMTP host name or IP address.

**Note** To use certain operating system features, you must configure an SMTP server; however, you can also configure an SMTP server later by using the operating system GUI or the command line interface. If you have configured an SMTP server for the first node, you must configure it for the second node also.

The Platform Configuration Confirmation window displays (see [Figure 27: Platform Configuration Confirmation window](#), on page 50).

**Figure 27: Platform Configuration Confirmation window**



- Step 6** To start installing the software, click **OK**. The system installs and configures the software. The DVD drive ejects, and the system reboots.
- Note** Your system automatically fetches the configuration information from the first node to set up and configure the second node for HA.
- To modify the platform configuration, choose **Back** on the Platform Configuration Confirmation window.
- Step 7** When the installation process completes, log in to the Unified CCX Administration web interface of the second node using the Application user credentials and complete the postinstallation tasks as listed in the [Postinstallation tasks](#), on page 51.
- Note** Installing the second node and then adding it to the cluster must be done during off peak hours to avoid possible call drops during the formation of a cluster.



# CHAPTER 4

## Postinstallation tasks

After installing Unified CCX on your server, you must set some configuration parameters and perform other postinstallation tasks before you start using it.

See the following table for a list of postinstallation tasks.

**Table 5: Postinstallation Tasks**

Post-Installation Task	Important Notes
Perform the initial setup for the first node of Unified CCX.	See the <a href="#">Initial setup for first node</a> , on page 52 if you have a single node setup.
Perform the initial setup for the second node of Unified CCX.	See <a href="#">Perform initial setup for second node</a> , on page 56 if you have a two node setup.
The locale English_United_States installs automatically on the server; however, you can add new locales to the server, if required.	See the <i>Cisco Unified Communications Operating System Administration Guide</i> available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>
If applicable, configure any network management systems in use at your site.	See the <i>Cisco Unified Serviceability Administration Guide</i> available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>
Back up your Unified CCX data daily.	See the <i>Cisco Unified Contact Center Express Disaster Recovery System Administration Guide</i> available here: <a href="http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html">http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html</a>

- [Initial setup for first node](#), page 52

- [Perform initial setup for second node, page 56](#)
- [Switch network deployment from LAN to WAN, page 58](#)
- [Examine log files, page 59](#)

## Initial setup for first node

After you install Unified CCX, use the Unified CCX Administration web interface to perform the initial system setup.

The Unified CCX Administration is a web-based application that allows you to control, configure, and monitor many functions of your Unified CCX system. The setup procedure that you perform depends on:

- Your deployment of Unified CCX with Unified CM
- Your deployment Unified CCX is SA (single-node) or HA (two-node).

If you later need to update information that you specify during the setup procedure, you can use Unified CCX Administration to make changes. For more information, see the *Cisco Unified Contact Center Express Administration Guide*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

## Initial setup for deployment with Unified CM

After you complete the installation of Unified CCX 9.0(1), you must access the Unified CCX Administration web interface through its Authentication page (using the Application username and password that you created during installation) to perform the initial setup procedure.

### Perform initial setup on Unified CCX server

To perform the initial setup on the Unified CCX 9.0(1) system, complete the following steps:

#### Procedure

**Step 1** From any computer in the network that meets the requirements, enter the following URL in a Web browser:  
`http://<servername>/appadmin`

where, `servername` is the host name or the IP address of the server on which you installed Unified CCX.

The Cisco Unified CCX Administration Authentication window appears.

**Note** While accessing the Unified CCX Administration for the first time, a security alert message might appear prompting you to install a security certificate (signed by a third party) if you have not installed a security certificate. This security certificate is required for a secure connection to the server.

For more information on how to install a security certificate, see the *Cisco Unified Contact Center Express Administration Guide Release 9.0(1)*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

**Step 2** In the Cisco Unified CCX Administration Authentication page, enter the Application username and password that you created during installation (see [Server configuration information for installation](#)).

**Note** Since the Application user password is case-sensitive, make sure that you enter the password exactly as created.

- Step 3** Click **Login**. The Cisco Unified CCX Administrator Setup window for the initial setup procedure displays.
- Step 4** Choose **Fresh Install** and then click **Next** to continue.  
The Cisco Unified CM Configuration—Service Provider Configuration window displays.
- Step 5** In the Cisco Unified CM Configuration—Service Provider Configuration window, enter the Unified CM hostname or IP address, AXL Admin User Name and Password in the respective fields for the Unified CM that you have installed for communicating with Unified CCX 9.0(1), and then click **Next** to continue.  
The License Information window displays.
- Step 6** In the License Information window, click **Browse** to select the license file that you have purchased, and then click **Next** to continue.  
The License Information window with validation information displays.
- Step 7** Verify the validation information that appears in the License Information window and then click **Next** to continue.  
The Component Activation window displays.
- Step 8** Wait until all the components get activated. After all the components are successfully activated, click **Next** to continue.  
The Publisher Activation window displays.
- Step 9** Select the checkboxes corresponding to each datastore to activate the Publisher. If the checkboxes corresponding to the listed datastores are already selected and grayed out, it means this is the first node in the cluster which would be the Publisher by default. Click **Next** to continue.  
The Cisco Unified CM Configuration window displays.
- Step 10** In the Cisco Unified CM Configuration window, the Cisco Unified CCX 9.0(1) AXL Service Provider Configuration area for a Unified CM Cluster setup displays a list of IP addresses of the AXL Service Providers sorted by priority, where the Unified CM Publisher is listed first followed by the Unified CM Subscribers. During the AXL Service Provider Authentication in the Unified CM Cluster deployment, the priority is given to the Unified CM Publisher. However, if the Unified CM Publisher is offline or not available, the next available Unified CM Subscriber is chosen for user authentication. You can also change the priority of the AXL Service Providers, if necessary, by selecting the IP address of an AXL Service Provider in the list and clicking the up and down arrow.
- Note** As per the Unified CM design, even if the Unified CM Publisher is listed after a Unified CM Subscriber, the system will use the Unified CM Publisher for authentication. However, if the Unified CM Publisher is offline, the Unified CM Subscriber will use its own database to authenticate.
- a) In the AXL Service Provider Configuration area, do the following:
- Move the IP address of the Unified CM server or servers that you want to use as the AXL service provider from the **Available AXL Service Providers** list box to the **Selected AXL Service Providers** list box.  
  
By default, the **Selected AXL Service Providers** list box is pre-populated with the IP address of the server that you specified in [Step 5](#).  
  
To move an item from one list box to the other, select the item and then click the left arrow (<) or right arrow (>).
  - In the **User Name** field, enter a user name for the AXL service provider, if you want to change the name that displays.  
  
This field is pre-populated with the user name that you specified in [Step 5](#).  
  
The AXL Admin user name must not be the Unified CM Administrator username. In case you specify a user name other than the Unified CM Administrator username, add the user name of the AXL

Administrator to the Standard Unified CCX Administrators group and “Standard AXL API Access” roles in Unified CM.

- In the **Password** field, enter a password for the AXL service provider, if you want to change the password.

This field is pre-populated with the password that you specified in [Step 5](#).

- b) In the Unified CM Telephony Subsystem—Unified CM Telephony Provider Configuration area, do the following:
  - Move the IP address of the Unified CM server that you want to use as the Computer Telephony Integration provider for the Unified CM Telephony subsystem from the Available CTI Managers list box to the Selected CTI Managers list box.  
To move an item from one list box to the other, select the item and then click left arrow (<) or right arrow (>).
  - In the User Prefix field, enter an application user name for the Unified CM Telephony subsystem.
  - In the Password and Confirm Password fields, enter a password for the Unified CM Telephony subsystem application user.
- c) In the RmCm Subsystem—RmCm Provider Configuration area, move the IP address of the Unified CM server that you want to use as the Computer Telephony Integration provider for the RmCm subsystem from the **Available CTI Managers** list box to the **Selected CTI Managers** list box.  
To move an item from one list box to the other, select the item and then click left arrow (<) or right arrow (>).
 

**Note** Depending on your Unified CCX license, the RmCm Subsystem—RmCm Provider Configuration area may not be available on your system.
- d) In the **User ID** field in the RmCm Subsystem - RmCm Provider Configuration area, enter an application user name for the RmCm subsystem.
- e) In the **Password** and **Confirm Password** fields in the Unified Telephony Subsystem—Unified CM Telephony Provider Configuration area, enter a password for the RmCm subsystem application user.

**Step 11** Click **Next** to continue.  
The System Parameters Configuration page displays.

- Step 12** In the Systems Parameters Configuration window, do the following:
- a) In the **Number of HR Session Licenses** field, enter the maximum number of Unified CCX Historical Reporting sessions that you will run simultaneously.
  - b) In the **Recording Count** field, enter the maximum number of simultaneous recordings that you will make. This field displays only if you have a Unified CCX premium license.
  - c) In the **Number of Outbound seats** field, enter the maximum number of outbound seats.
  - d) From the **Codec** drop-down list, choose the codec to use for prompts.

**Step 13** Click **Next** to continue.  
The Languages Configuration window displays.

- Step 14** In the Languages Configuration window, do the following:
- a) In the IVR Language Configuration area, choose a language from the drop-down list that you want to be available for prompts.

A list of available languages for the language group that you selected displays under the **Language Group** column.

- b) If you required a custom country-specific language, select the **Group Default** radio button corresponding to that language in order to use it as a base for your custom country-specific language.
- c) Check the **Country Specific** check box for each language to install. A country-specific language includes appropriate rules for dates, times, currency, and so on, for the designated country.
- d) In the CAD Language Configuration area, choose a language from the **CAD Language** drop-down list that you want to be available for use in the agent desktops and supervisor desktops.

**Step 15** Click **Next** to continue. The User Configuration page displays.

**Step 16** In the User Configuration page, do the following:

- a) In the **Cisco Unified CM Users** list box, select the Unified CM user that you want to designate as the Unified CCX Administrator.  
If the desired user does not appear in the **Cisco Unified CM Users** list box, enter part or full user name in the **Search** field and click **Search**.

If you are still unable to find the user in the **Cisco Unified CM Users** list box, you need to create a new user. For more information on how to create a new user in Unified CM, see [Create new Unified CM users, on page 55](#).

- b) Click the left arrow (<) to move the selected user to the **Cisco Unified CCX Administrator** list box.

**Step 17** Click **Finish**.

The Unified CCX Setup Result Information window displays confirming the result of the initial setup. The Unified CCX engine restarts.

**Step 18** Close your Web browser.

---

You have completed the initial setup of Unified CCX. Henceforth, the user selected as the Unified CCX Administrator (in [Step 16](#)) can access the Unified CCX Administration using the Administrator credentials.

To change the configuration settings that you made or to perform additional configuration activities, see the *Cisco Unified Contact Center Express Administration Guide Release 9.0(1)*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

## Create new Unified CM users

To create new Unified CM users, follow these steps:

## Procedure

---

- Step 1** Access the Cisco Unified CM Administration Authentication window and log in using the Administrator credentials.
- Step 2** In the Cisco Unified CM Administration Setup window, choose **User Management > End User**.
- Step 3** In the **Find and List Users** window, click **Add New**.
- Step 4** Create an end user by specifying the mandatory fields and other required details.
- Step 5** Once the end user creation is successful, navigate back to Unified CCX Administration and in the User Configuration window, assign the newly created user as Administrator.
- Step 6** Choose **Tools > User Management** and then select the Administrator Capability View.
- Step 7** Click **Update** if the User Configuration window does not display the new end user in the **Cisco Unified CM Users** list box.
- Step 8** In the **Cisco Unified CM Users** list box, select the Unified CM user that you want to designate as the Unified CCX Administrator.
- Step 9** Click the left arrow (<) to move the selected user to the **Cisco Unified CCX Administrator** list box.
- Note** You cannot assign Administrator capability to a user ID which is the same as the application administrator user ID created during the Unified CCX installation. If you assign Administrator capability to such a user ID, an error appears.
- Step 10** Click **Finish**.
- Step 11** If the call center needs to be operational after you finish installing the first node, then run the Unified CCX Desktop Client Configuration Tool on this node. You can do so by logging in to the web interface of the Cisco Unified CCX Administration and then choosing **Tools > Plugin > Desktop suit > Client Configuration Tool**. Let the Unified CCX Desktop Client Configuration Tool run until it stops.
- Note** If calls are to be taken only after both nodes (in an HA setup) are up, then the Unified CCX Desktop Client Configuration Tool has to run only once, otherwise run it twice; once after the first node is up and one more time after the second node is up.
- 

## Perform initial setup for second node

Before you install the second node to form a Unified CCX cluster, you should configure the server details for this node on the first node.

To configure a new server that needs to be added to form a Unified CCX cluster for an HA setup, complete the following steps:

### Procedure

---

- Step 1** From any computer in the network that meets the requirements, enter the following URL in a Web browser:  
`http://<servername>/appadmin`
- where, `servername` is the host name or the IP address of the server on which you installed Unified CCX.
- The Cisco Unified CCX Administration Authentication window appears.

**Note** While accessing the Unified CCX Administration for the first time, a security alert message might appear prompting you to install a security certificate (signed by a third party) if you have not installed a security certificate. This security certificate is required for a secure connection to the server.

For more information on how to install a security certificate, see the *Cisco Unified Contact Center Express Administration Guide Release 9.0(1)*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

**Step 2** In the Cisco Unified CCX Administration Authentication page, enter the Application username and password that you created during the installation of first node (publisher node). See [Step 4 of Configure first node](#) for more information.

**Note** Since the Application user password is case-sensitive, make sure that you enter the password exactly as created.

**Step 3** Click **Login**.  
The Welcome to Unified CCX Replication Wizard window displays.

**Step 4** On the Welcome to Unified CCX Replication Wizard window, enter the following:

Field	Description
Cluster Server IP Address	This field is pre-populated with the first node IP address.
Cisco Unified CCX Administrator User ID	Enter the user name that you created to log in to the first node of Unified CCX Administration.
Cisco Unified CCX Administrator Password	Enter the password that you created to log in to the first node of Unified CCX Administration.
Network Deployment Type	Choose the HA network deployment type as either LAN or WAN.

**Step 5** Click **Next**.  
The Component Activation window displays.

**Step 6** Wait until all the components get activated. After all the components are successfully activated, click **Next**.  
**Note** If you have chosen HA network deployment type to be over LAN, the Cisco Unified CCX Setup Result Information window displays. This window confirms the result of the setup.

**Step 7** If you have chosen HA network deployment type to be over WAN, the Cisco Unified CM Configuration window displays.

- a) In the Cisco Unified CM Configuration window, enter the configuration parameters for the second node in a similar manner as listed in [Step 11 of Initial setup for first node](#).  
**Note** It is important for you to remember that the user credentials for all the three providers/services (listed in [Step 11 of Initial setup for first node](#)) are cluster-based and valid for both the nodes; therefore, any change made to either of them gets reflected in both the nodes. However, the changes made to the selected Unified CM server for each of the services is specific to that particular node only.
- b) Click **Next**. The Cisco Unified CCX Setup Result Information window displays the result of the setup with the warning messages to create CTI port groups (if there are any port groups created in Node 1 prior to adding Node 2, then you need to create the ports for this node) from the CTI Port Group Configuration

page and configure individual ASR/TTS servers local to each Unified CCX node so as to make the ASR/TTS feature work over WAN.

c) Perform the tasks as prompted by the warnings before you make your call center operational.

**Note** It is important that after performing initial setup configuration on the second node, the administrators must configure the failover collector settings for RTMT by choosing **Tools > Service Parameters > AMC Service** in Unified CCX Serviceability.

**Step 8** Run the Unified CCX Desktop Client Configuration Tool if you have not run after setting up the first node and then close your web browser.

**Note** If calls are to be taken only after both nodes (in an HA setup) are up, then the Unified CCX Desktop Client Configuration Tool has to run only once, otherwise run it twice; once after the first node is up and one more time after the second node is up.

You have completed the setting up the Unified CCX second node for HA. To change the configuration settings that you made or to perform additional configuration activities, see the *Cisco Unified Contact Center Express Administration Guide*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

**Note** If you are upgrading a two-node Unified CCX (old version) setup having multiple device pools (for Call Control Groups) to Unified CCX 9.0(1), performing initial setup configuration on the second node after the upgrade would merge all multiple device pools to a single default device pool. However, you can manually assign a different device pool to the Call Control Group if the default device pool is not the intended one.

## Switch network deployment from LAN to WAN

You can change a LAN-based two-node setup to work over WAN. To change the network deployment from LAN to WAN for a two-node setup, do the following:

### Procedure

- Step 1** Log in to the Publisher node using the Unified CCX Administration web interface.
- Step 2** Choose **System > Server** and delete the Subscriber node (Node 2) from the list.
- Step 3** Add the Subscriber node (Node 2) details again on the Publisher node. See [Add second node for HA, on page 45](#) for details.
- Step 4** Reinstall Node 2. See [Configure second node for HA, on page 46](#) for details.
- Step 5** Choose **WAN** as the **Network Deployment Type** during the initial setup of Node 2. See the [Perform initial setup for second node, on page 56](#) for details.
- Step 6** Add or configure new Unified CM Telephony call control group(s) for the Subscriber node (Node 2). For more information, see the “Adding a New Unified CM Telephony Call Control Group” section of the *Cisco Unified Contact Center Express Administration Guide* available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)

## Examine log files

If you encounter problems with the installation, you may be able to examine the install log files by entering the following commands in Command Line Interface.

To obtain a list of install log files from the command line, enter:

```
CLI>file list install *
```

To view the log file from the command line, enter:

```
CLI>file view install log_file
```

where log\_file is the log file name.

You can also view logs by using Unified RTMT. For more information on using and installing the Unified RTMT, see the *Cisco Unified Serviceability Administration Guide*, available here: [http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/custcosw/ps1846/products_installation_and_configuration_guides_list.html)





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