



Cisco Unity Express Virtual Software Support for ESXi on Cisco UCS and Cisco UCS E-Series Server Modules

Cisco Unity Express Virtual is supported on ESXi on Cisco Unified Computing System (Cisco UCS) and Cisco UCS E-Series Server modules. If required, you can choose to buy the Cisco UCS or the Cisco UCS E-Series Server module to install the Cisco Unity Express Virtual application.

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Overview of Installation Steps

The following steps provide an overview of how to set up Cisco Unity Express Virtual software.

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- Step 1** Select and install a server on which to operate the Cisco Unity Express Virtual.
See [Hardware Requirements for Cisco Unity Express Virtual, on page 2](#).
- Step 2** Set up the VMware ESXi environment on the server.
See [Set up the VMware ESXi Environment, on page 2](#).
- Step 3** Download the Cisco Unity Express Virtual OVA file from: <http://www.cisco.com>.
See [Download the Cisco Unity Express Virtual OVA file, on page 3](#).
- Step 4** Deploy the OVA on the server.

See [Deploy the Cisco Unity Express Virtual OVA, on page 3](#).

Step 5 Configure the networking and other Cisco Unity Express Virtual settings, according to the details of your network.

See [Configure Cisco Unity Express Virtual after Deployment, on page 4](#).

Step 6 Set up communication between Cisco Unity Express Virtual and the Unified Communications Manager.

See [Cisco Unity Express Virtual Software Support for ESXi on Cisco UCS and Cisco UCS E-Series Server Modules, on page 1](#).

Hardware Requirements for Cisco Unity Express Virtual

This section provides information about the hardware requirements.

Virtual Machine Requirements for Cisco Unity Express Virtual

Cisco Unity Express Virtual software requires VMware ESXi 5.1, and above. For details about VMware feature support, see the [VMware Feature Guide](#). After configuring the server hardware, install VMware vSphere ESXi.

[Table 1: Virtual Machine Requirements for Cisco UCS and Cisco UCS E-Series server Platforms](#), on page 2 provides hardware recommendations for Cisco UCS platform and Cisco UCS E-Series server platforms.

Table 1: Virtual Machine Requirements for Cisco UCS and Cisco UCS E-Series server Platforms

Mailboxes	CPU	RAM	Hard Disk	External Interface	Recording hours	Maximum Voice Ports
1-100	1.1 GHz, 1 core	4 GB	100 GB	1 Gigabit Interface	60	32
101-500	1.9 GHz, 2 cores	4 GB	100 GB	1 Gigabit Interface	600	32

Set up the VMware ESXi Environment

After configuring the server hardware, install VMware vSphere ESXi. For instructions, see [Implementing Virtualization Deployments](#).

VMware Tools

Cisco Unity Express Virtual Software Release 10.0 does not support installation of VMware Tools or any third-party tools in a Linux environment.

Download the Cisco Unity Express Virtual OVA file

The Open Virtualization Archive (OVA) file contains a compressed, installable version of the virtual machine. To download the Cisco Unity Express Virtual (OVA) file (virtual machine template), perform the following steps:

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- Step 1** Open the Cisco Unity Express Virtual Server site: <https://software.cisco.com/download/navigator.html?mdfid=278535672&selMode=null>.
- Step 2** If prompted, log in using your Cisco.com user name and password.
- Step 3** Locate the OVA in “Download Software” section and download the file.
-

Deploy the Cisco Unity Express Virtual OVA

After downloading the Cisco Unity Express Virtual OVA, use the following procedure to deploy OVA or the virtual machine template.

Before you begin

- Download Cisco Unity Express Virtual OVA for installation
- Have your server installed on a VMware ESXi environment
- Have VMware vSphere Client installed and functional on your system

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- Step 1** In the vSphere Client GUI, select **File > Deploy OVF Template...**
The Deploy OVF Template dialog box appears.
- Step 2** Browse to the location where Cisco Unity Express Virtual server OVA file is downloaded. Click **Next**.
- Step 3** Review and confirm the OVF Template details. Click **Next**.
- Step 4** Enter the name of the device in **Name** field. The name provided determines how the device appears in the left pane of the vSphere window.
- Step 5** Click **Next**.
- Note** If there are multiple server hosts running ESXi, select the host on which you want Cisco Unity Express Virtual server to run.
- Step 6** Select any of the following **Thick provisioning format** and click **Next**.
- Thick Provision Lazy Zeroed
 - Thick Provision Eager Zeroed
- Step 7** Click **Next**.
The Deploy OVF Template dialog box displays the available networks.

- Step 8** Select the network under **Destination Networks** option. The selected network is used to communicate with the remote sites.
- Note** Ensure that the VM is connected to physical adapter of the ESXi.
- Step 9** Click **Next**.
The Deployment Settings dialog box displays a summary of the options that you have configured.
- Step 10** Click **Finish** to deploy Cisco Unity Express Virtual Server.
A dialog box indicates when the deployment is complete.
- Step 11** Select the VM instance, right click and choose **Edit Settings....**
The Virtual Machine Properties dialog box appears.
- Step 12** Click the **Hardware** tab and set the values for memory and vCPU. See [Table 1: Virtual Machine Requirements for Cisco UCS and Cisco UCS E-Series server Platforms](#) , on page 2.
- Step 13** Click the **Resources** Tab and select **CPU**. Adjust the Reservation and Shares to the value as provided in [Table 1: Virtual Machine Requirements for Cisco UCS and Cisco UCS E-Series server Platforms](#) , on page 2.
- Step 14** Select **Memory** and change the reservation value as provided mentioned in the [Table 1: Virtual Machine Requirements for Cisco UCS and Cisco UCS E-Series server Platforms](#) , on page 2.
- Step 15** Save the settings of the virtual machine.
- Step 16** Select **Resource Allocation** and confirm the resource reservations.

Configure Cisco Unity Express Virtual after Deployment

After deploying the OVA template, perform the following procedure to configure Cisco Unity Express Virtual.

Before you begin

- VMware vSphere Client installed and operating
- Cisco Unity Express Virtual Software OVA template deployed

- Step 1** In the vSphere Client GUI, in the left pane, select the Cisco Unity Express Virtual device. The name of the device is the name configured during installation.
- Step 2** To open the console, click the **Console** icon in the vSphere toolbar.
A console window appears for the selected CUE instance.
- Step 3** In the console window, click the **Power On** icon (appears as a green “Play” button).
The device boots, displaying the boot output in the console. When the start-up is complete, the console displays a message, prompting you to start configuration.
- Step 4** At the prompt in the console window, confirm that you want to start the configuration process.
- **y**: If you enter **y**, the system asks you to confirm, then begin the interactive post installation configuration process.
 - **n**: If you select **n**, the initial setup wizard is skipped, and you are prompted to enter the administrator user ID and password. The default call agent is set to Unified CME.

- Timeout: If you do not enter any input for two minutes, the initial setup wizard is skipped, and you are prompted to enter the IP address, netmask, and default gateway address. Once you enter the information, the Cisco Unity Express Virtual Express system is online.

Step 5 When prompted, enter IP address and netmask of the device.

Note Cisco Unity Express Virtual requires IP communication access to the Cisco Unified Communications Manager and Remote sites.

Step 6 When prompted, enter the default gateway address. Confirm that the configuration is correct.

Step 7 When prompted for the host name, enter the name by which Cisco Unity Express Virtual appears within your network. Use a name that conforms to the fully qualified domain name (FQDN) rules.

Step 8 When prompted for a domain, enter a domain.

Note Configuring DNS server is optional. If DNS server is not configured, Cisco Unity Express Virtual gets the mapping of IP address to hostname and vice-versa, from “Extension: SubjectAltName” section of Unified Communications Manager certificate.

Step 9 When prompted regarding using DNS, enter **y** to configure Cisco Unity Express Virtual to use DNS.

Step 10 Enter the IP for the primary DNS server.

Step 11 Enter the IP for a secondary DNS server, if one is available. Otherwise, press **Enter**.

Step 12 When prompted for the primary network time protocol (NTP) server, enter the server domain name or the IP address. In some Cisco Unity Express Virtual software cases, a default server IP address appears automatically, and press **Enter**.

Note Cisco Unity Express Virtual requires a NTP server.

Step 13 When prompted for the secondary NTP server, enter the server domain name or IP if you have a secondary NTP. Otherwise, press **Enter**.

Step 14 When prompted for time zone information, use the menus to set your local time zone, and confirm when prompted. Cisco Unity Express Virtual restarts.

Step 15 When prompted, enter an administrator user ID.

Step 16 Enter a password for the account, and confirm.

Note Ensure that you use this username and password to access Cisco Unity Express Virtual through SSH after installation.

When this procedure is complete, Cisco Unity Express Virtual indicates that the system is online and displays a command line prompt. For example:

```
SYSTEM ONLINE
CUE#
```

Example for Configuring the Cisco Unity Express Virtual

When you open the first session, the system launches the post installation configuration tool, and asks you if you want to start configuration immediately.

Enter the appropriate response, **y** or **n**. If you enter **y**, the system asks you to confirm, then begin the interactive post installation configuration process.

If you enter **n**, the initial setup wizard is skipped, and you are prompted to enter the administrator user ID and password.

If you do not enter any input for two minutes, the initial setup wizard is skipped, and you are prompted to enter the IP address, netmask, and default gateway address.

The following is a sample configuration if **y** is selected:

```

IMPORTANT::
IMPORTANT:: Welcome to Cisco Systems Service Engine
IMPORTANT:: post installation configuration tool.
IMPORTANT::
IMPORTANT:: This is a one time process which will guide
IMPORTANT:: you through initial setup of your Service Engine.
IMPORTANT:: Once run, this process will have configured
IMPORTANT:: the system for your location.
IMPORTANT::
IMPORTANT:: If you do not wish to continue, the system will be halted
IMPORTANT:: so it can be safely removed from the router.
IMPORTANT::

Do you wish to start configuration now (y,n)? y
Are you sure (y,n)? y

*****
* Service Engine IP configuration *
*****

Please enter the IP address of your Module: 192.0.2.10
Please enter the netmask of your Module: 255.255.0.0
Please enter the default gateway for your Module: 192.0.2.20

The following IP configuration is set:

IP : 192.0.2.10
NETMASK:255.255.0.0
GATEWAY: 255.255.0.0

Do you wish to use this configuration (y, n) [n]: y

Enter Hostname
(my-hostname, or enter to use Router): Enter
Using Router as default

Enter Domain Name
(mydomain.com, or enter to use local domain): Enter
Using localdoamin as default

IMPORTANT:: DNS Configuration:
IMPORTANT::
IMPORTANT:: This allows the entry of hostnames, for example foo.cisco.com, instead
IMPORTANT:: of IP addresses like 1.123.45.678 for application configuration. In order
IMPORTANT:: to set up DNS you must know the IP address of at least one of your
IMPORTANT:: DNS Servers.

Would you like to use DNS (y,n)?y

Enter IP Address of the Primary DNS Server
(IP address): 192.0.2.10
Found server 192.0.2.10

Enter IP Address of the Secondary DNS Server (other than Primary)

```

(IP address, or enter to bypass): **Enter**

Enter Fully Qualified Domain Name(FQDN: e.g. myhost.mydomain.com)
or IP address of the Primary NTP server
(FQDN or IP address, or enter for 192.0.2.10): **demo.cisco.com**
Found server cantor.cisco.com

Enter Fully Qualified Domain Name(FQDN: e.g. myhost.mydomain.com)
or IP address of the Secondary NTP Server
(FQDN or IP address, or enter to bypass): **Enter**

Please identify a location so that time zone rules can be set correctly.
Please select a continent or ocean.

- 1) Africa 4) Arctic Ocean 7) Australia 10) Pacific Ocean
 - 2) Americas 5) Asia 8) Europe
 - 3) Antarctica 6) Atlantic Ocean 9) Indian Ocean
- #? **2**

Please select a country.

- 1) Anguilla 29) Honduras
- 2) Antigua & Barbuda 30) Jamaica
- 3) Argentina 31) Martinique
- 4) Aruba 32) Mexico
- 5) Bahamas 33) Montserrat
- 6) Barbados 32) Netherlands Antilles
- 7) Belize 34) Nicaragua
- 8) Bolivia 35) Panama
- 9) Brazil 36) Paraguay
- 10) Canada 37) Peru
- 11) Caribbean NL 38) Puerto Rico
- 12) Cayman Islands 39) St Barthelemy
- 13) Chile 40) St Kitts & Nevis
- 14) Colombia 41) St Lucia
- 15) Costa Rica 42) St Maarten (Dutch)
- 16) Cuba 43) St Martin (French)
- 17) Curacao 44) St Pierre & Miquelon
- 18) Dominica 45) St Vincent
- 19) Dominican Republic 46) Suriname
- 20) Ecuador 47) Trinidad & Tobago
- 21) El Salvador 48) Turks & Caicos Is
- 22) French Guiana 49) United States
- 23) Greenland 50) Uruguay
- 24) Grenada 51) Venezuela
- 25) Guadeloupe 52) Virgin Islands (UK)
- 26) Guatemala 53) Virgin Islands (US)
- 27) Guyana
- 28) Haiti

#? **49**

Please select one of the following time zone regions.

- 1) Eastern (most areas)
- 2) Eastern - MI (most areas)
- 3) Eastern - KY (Louisville area)
- 4) Eastern - KY (Wayne)
- 5) Eastern - IN (most areas)
- 6) Eastern - IN (Da, Du, K, Mn)
- 7) Eastern - IN (Pulaski)
- 8) Eastern - IN (Crawford)
- 9) Eastern - IN (Pike)
- 10) Eastern - IN (Switzerland)
- 11) Central (most areas)
- 12) Central - IN (Perry)
- 13) Central - IN (Starke)
- 14) Central - MI (Wisconsin border)
- 15) Central - ND (Oliver)
- 16) Central - ND (Morton rural)

Example for Configuring the Cisco Unity Express Virtual

```

17) Mountain (most areas)
18) Mountain - ID (south); OR (east)
19) Mountain Time - Navajo
20) MMST - Arizona (except navajo)
21) Pacific
22) Alaska (most areas)
23) Alaska - Juneau area
24) Alaska - Sitka area
25) Alaska - Annette Island
26) Alaska - Yakutat
27) Alaska (west)
28) Aleutian Islands
29) Hawaii
#? 21
The following information has been given:
United States
Pacific Time

Therefore TZ='America/Los_Angeles' will be used.
Is the above information OK?
1) Yes
2) No
#? 1

Local time is now: Thu May 16 17:12:11 PDT 2019.
Universal Time is now: Fri May 17 00:12:11 UTC 2019.
No NTP servers configured.
Would you like to manually adjust the system time (y,n)? n executing app post_install
Enter Call Agent
1) Cisco Unified Communications Manager (CUCM)
2) Cisco Unified Communications Manager Express (CUCME)
-- default #? 2
Setting Call Agent to CUCME
executing app post_install done postinstall2 - starting all the services
Created symlink from /etc/systemd/system/multi-user.target.wants/tomcat.service to
/usr/lib/systemd/system/tomcat.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/superthread.service to
/usr/lib/systemd/system/superthread.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/wfengine.service to
/usr/lib/systemd/system/wfengine.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/media_ums.service to
/usr/lib/systemd/system/media_ums.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/smartagent.service to
/usr/lib/systemd/system/smartagent.service.
Created symlink from /etc/systemd/system/default.target.wants/monit.service to
/usr/lib/systemd/system/monit.service.
Created symlink from /etc/systemd/system/default.target.wants/monitEnableAll.service to
/usr/lib/systemd/system/monitEnableAll.service.
Removed symlink /etc/systemd/system/serial-getty@ttyS0.service.
Created symlink from /etc/systemd/system/getty.target.wants/serial-getty@ttyS0.service to
/usr/lib/systemd/system/serial-getty@.service.

waiting for all services to come online ... 50

IMPORTANT::
IMPORTANT:: Administrator Account Creation
IMPORTANT::
IMPORTANT:: Create an administrator account.
IMPORTANT:: With this account, you can log in to the
IMPORTANT:: Cisco Unity Express Virtual
IMPORTANT:: GUI and run the initialization wizard.
IMPORTANT::

```



```
Enter administrator user ID:
(user ID): test
Enter password for test:
(password):
Confirm password for test by reentering it:
(password):

SYSTEM ONLINE

Router# show software versions
Cisco Unity Express Virtual version (10.0.0)
Components:

- CUE Voicemail Language Support version 10.0.0
- Netconf version 10.0.0

Router# show software packages

Installed Packages:
- Installer (Installer application) (10.0)
- Thirdparty (Service Engine Thirdparty Code) (10.0)
- Infrastructure (Service Engine Infrastructure) (10.0)
- Global (Global manifest) (10.0)
- GPL Infrastructure (Service Engine GPL Infrastructure) (10.0)
- Voice Mail (Voicemail application) (10.0)
- Bootloader (Primary) (Service Engine Bootloader) (10.0)
- Core (Service Engine OS Core) (10.0)
- Auto Attendant (Service Engine Telephony Infrastructure) (10.0)

Installed Plug-ins:
- CUE Voicemail Language Support (Languages global pack) (10.0)
- CUE Voicemail US English (English language pack) (10.0)
Router-Module>
```

The following is a sample configuration if **n** is selected:

```
IMPORTANT::
IMPORTANT::   Welcome to Cisco Systems Service Engine
IMPORTANT::   post installation configuration tool.
IMPORTANT::
IMPORTANT:: This is a one time process which will guide
IMPORTANT:: you through initial setup of your Service Engine.
IMPORTANT:: Once run, this process will have configured
IMPORTANT:: the system for your location.
IMPORTANT::
IMPORTANT:: If you do not wish to continue, initial setup will be skipped
IMPORTANT:: and you need to manually configure the system
IMPORTANT::

Do you wish to start configuration now (y,n)? n
Autoconfig: Skipping post install...
executing app post_install
Skipping product specific post install... defaulting values
Setting Call Agent to CUCME
executing app post_install done
Creating Postgres database .... done.
INIT: Switching to runlevel: 4
INIT: Sending processes the TERM signal
STARTED: ntp_startup.sh
STARTED: LDAP_startup.sh
STARTED: SQL_startup.sh
STARTED: dnldr_startup.sh
STARTED: HTTP_startup.sh
STARTED: probe
```

```

STARTED: fndn_udins_wrapper
STARTED: superthread_startup.sh
STARTED: /usr/wfavvid/run-wfengine.sh
STARTED: /usr/bin/launch_ums.sh
STARTED: /bin/products/cue/nesla_licensing.sh

Waiting 49 ...

IMPORTANT::
IMPORTANT::      Administrator Account Creation
IMPORTANT::
IMPORTANT:: Create an administrator account. With this account,
IMPORTANT:: you can log in to the Cisco Unity Express GUI and
IMPORTANT:: run the initialization wizard.
IMPORTANT::

Enter administrator user ID:
  (user ID): admin
Enter password for admin:
  (password):
Confirm password for admin by reentering it:
  (password):

(INIT)se-0-0-0-0#
(INIT)se-0-0-0-0#
(INIT)se-0-0-0-0#
(INIT)se-0-0-0-0# conf t
Enter configuration commands, one per line. End with CNTL/Z.
(INIT)se-0-0-0-0(config)# inter
(INIT)se-0-0-0-0(config)# interface Fast
(INIT)se-0-0-0-0(config)# interface FastEthernet 0
(INIT)se-0-0-0-0(config-interface)# ip add
(INIT)se-0-0-0-0(config-interface)# ip address 192.0.2.20 255.255.0.0
(INIT)se-0-0-0-0(config-interface)# exit
(INIT)se-0-0-0-0(config)# def
(INIT)se-0-0-0-0(config)# default gat
(INIT)se-0-0-0-0(config)# ip de
(INIT)se-0-0-0-0(config)# ip default-gateway 192.0.2.30
(INIT)se-0-0-0-0(config)# end
SYSTEM ONLINE
se-0-0-0-0# conf t
Enter configuration commands, one per line. End with CNTL/Z.
se-0-0-0-0(config)# hostn
se-0-0-0-0(config)# hostname se-192.0.2.20
se-192.0.2.20(config)# end
se-192.0.2.20# wr
se-192.0.2.20#

```

Verify Cisco Unified Communication Manager Express and Cisco Unity Express Virtual on ESXi

-
- Step 1** Verify that the Cisco Unified Communication Manager Express is configured to support the Cisco Unity Express Virtual software.
- Step 2** Configure IP connectivity between the router and the Cisco Unity Express Virtual module. Use the following procedure to configure Cisco Unity Express Virtual module with a double-wide E-Series Server: [Configuration Options](#).

Note This step is applicable only for the Cisco UCS E-Series Servers.

Step 3 To configure IP connectivity between the router and the Cisco Unity Express Virtual module, perform the following step to configure Cisco Unity Express Virtual module with a Cisco UCS Server: **ip route cue-ip-address subnet mask FastEthernetslot/port**—creates a static route for the Cisco UCS Series Server.

Example:

```
Router# configure terminal
Router(config)# interface FastEthernet0/0
Router(config-if)# ip address 10.0.0.1 255.0.0.0
Router(config-if)# no shut
Router(config-if)# end

Router# configure terminal
Router(config)# ip route 10.0.0.2 255.255.255.255 FastEthernet0/0
Router(config)# end
```

Note This step is applicable only for the Cisco UCS Series Servers.

Verify Cisco Unified Communication Manager and Cisco Unity Express Virtual on ESXi

Step 1 After installing and verifying Cisco Unified Communications Manager software functionality, you must be able to access the Cisco Unified Communications Manager configuration web page.

Step 2 Configure IP connectivity between the router and the Cisco Unity Express Virtual module. Use the following procedure to configure Cisco Unity Express Virtual module with a double-wide E-Series Server: [Configuration Options](#).

Note This step is applicable only for the Cisco UCS E-Series Servers.

Step 3 To configure IP connectivity between the router and the Cisco Unity Express Virtual module, perform the following step to configure Cisco Unity Express Virtual module with a Cisco UCS Server: **ip route cue-ip-address subnet mask FastEthernetslot/port**—creates a static route for the Cisco UCS Series Server.

Example:

```
Router# configure terminal
Router(config)# interface FastEthernet0/0
Router(config-if)# ip address 10.0.0.1 255.0.0.0
Router(config-if)# no shut
Router(config-if)# end

Router# configure terminal
Router(config)# ip route 10.0.0.2 255.255.255.255 FastEthernet0/0
Router(config)# end
```

Note This step is applicable only for the Cisco UCS Series Servers.

