

Mediant™ Appliances

Mediant 800 CCE & Mediant Server CCE

Microsoft Skype for Business
Cloud Connector Edition (CCE)

Version 2.0.2

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Each abbreviation, unless widely used, is spelled out in full when first used.

Document Revision Record

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28080	Initial document release for Version 1.0.
28081	Update to the link for downloading the latest CloudConnector.msi.
28082	Update to support CCE 1.4.1.
28083	Update to support Mediant CCE Appliance 2.0.0.
28084	Update for version Mediant CCE Appliance 2.0.0.6
28085	Update for version Mediant CCE Appliance 2.0.2
28086	Replaced Server CCE Appliance Rear View figure.

Documentation Feedback

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1 Introduction

Thank you for purchasing the Mediant 800 CCE Appliance for Microsoft Skype for Business and the Mediant Server CCE Appliance for Microsoft Skype for Business Cloud Connector Edition for Version 2.0.2 Please read this manual before starting your deployment.

The guide provides the following:

- Information regarding the default configuration of the AudioCodes Mediant 800 Server CCE unit.
- The steps to deploy the AudioCodes CCE into an enterprise environment.
- Information on how to restore the CCE to default.

Download the latest documentation at: <http://www.audiocodes.com/downloads>.

Throughout this guide, AudioCodes Mediant 800 Server Cloud Connector Edition Appliance is referred to as Mediant CCE Appliance.

This document refers to Microsoft CCE Version 1.4.1 and AudioCodes Mediant CCE Appliance Install Wizard 2.0.2

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2 Mediant CCE Appliance Hardware Platforms

The Mediant CCE Appliance is deployed on the following platforms:

- AudioCodes Mediant 800 CCE Appliance is installed on the OSN server.
- AudioCodes Mediant Server CCE Appliance is installed on an HP ProLiant server Hyper-V Virtual machine.

Table 2-1: CCE Hardware Platforms Specifications

Appliance	AudioCodes Mediant 800 CCE Appliance	AudioCodes Mediant Server CCE Appliance
Hardware	Mediant 800 with OSN server	HP ProLiant server
Processor	64-bit processor, four core (4 real cores), 2.70 Gigahertz (GHz)	64-bit dual processor, six core (12 real cores), 2.50 gigahertz (GHz)
RAM	32 gigabytes (GB) RAM	64 gigabytes (GB) RAM
Disk	Single SSD 512 GB	Four 600 GB 10K RPM 128M Cache SAS 6Gbps disks, configured in a RAID 5 configuration
NICs	Two physical NICs 1Gbps + one 100Mbps	Four 1Gbps NICs



Note: The procedures described in this document are relevant for both Mediant Appliance CCE platforms as described above. In some cases, separate procedures are required for each platform, in which case, this is indicated.

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3 Default Configuration CCE Unit

The Mediant CCE Appliance Host server is installed on the Windows Server 2012 R2 platform with the following:

- **User:** Administrator
- **Password:** R3m0t3Supp0rt
- **Host default IP address:** 192.168.0.10
- The host server disk includes a Recovery partition that contains the files needed to deploy CCE - CCE software and Software SBC (used for Mediant Server CCE).
- The SBC/Gateway application component (hardware or software) uses the default IP address and default Username/Password – as specified in the relevant SBC/Gateway *User's Manual*.



Important: The local user “Administrator” should not be deleted under any circumstances as the CCE application uses this user during the CCE installation and in future CCE updates.

3.1 Mediant 800 Gateway/SBC Default Settings

3.1.1 Login

Username: Admin

Password: Admin

3.1.2 IP Address Information

- Factory default IP address: 192.168.0.2

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4 CCE Installation

This section describes how to install the CCE. Before commencing with the installation, note the pre-installation information described in the section below.

4.1 Pre-Installation Information

The following describes the pre-installation information which should be read before commencing the CCE installation.

4.1.1 References

Before commencing the setup, refer to the references below that describe how to plan and configure the Skype for Business CCE. Reviewing these sources is very important for the successful CCE setup. The procedures described in this document assume that the user has reviewed these sources:

- Plan for Skype for Business Cloud Connector Edition – [1]
<https://technet.microsoft.com/en-us/library/mt605227.aspx>
- Configure Skype for Business Cloud Connector Edition – [2]
<https://technet.microsoft.com/en-us/library/mt605228.aspx>
- Upgrading from old CCE version to CCE 1.4.1 - <https://technet.microsoft.com/en-us/library/mt740656.aspx>



Note: References are made throughout this document to [1] and [2].

4.1.2 Prerequisites

Note the following prerequisites before commencing the installation:

- Review the above links from Microsoft.
- Office 365 with CloudPBX license (E5 license or E3 + Cloud PBX) and all required DNS and SRV records created for the Office 365 tenant have been configured.
- A Global administrator role for your Office 365 tenant account. See <https://support.office.com/en-us/article/About-Office-365-admin-roles-da585eea-f576-4f55-a1e0-87090b6aaa9d>
- Allocate the following six IP addresses in the internal LAN/Corporate DMZ range:
 - CCE Host server - LAN/Corporate DMZ
 - CCE Edge - LAN/Corporate DMZ
 - CCE DC - LAN/Corporate DMZ
 - CCE Mediation - LAN/Corporate DMZ
 - CCE CMS - LAN/Corporate DMZ
 - Gateway/SBC - LAN/Corporate DMZ
- One external IP address (WAN/Internet DMZ)
 - Edge – WAN/Internet DMZ
- One external certificate according to MSFT requirements [see Reference 1 above]. Make sure that your prepared external certificate contains private keys. This external certificate should be issued from public CA.

For instructions how to use certificates from the intermediate CA in the chain of the external certificate refer to the Microsoft Troubleshooting issue at:
<https://technet.microsoft.com/en-us/library/mt740658.aspx>.

- The Enterprise firewall has been setup according to MSFT requirements [see Reference 2 above].
 - A correct firewall configuration. See <https://technet.microsoft.com/en-us/library/mt605227.aspx> for more info.
 - The BIOS has been set correctly setup according to Appendix A for optimal performance.



Important: Microsoft's Cloud Connector Edition update is triggered by Microsoft Office 365:

- The CCE platform is disabled until the CCE updates have completed.
- The CCE update may also restart the CCE host server.

At the time of the CCE update, the following is expected:

- Call scenario: Skype for Business client > CCE > SBC > SIP trunk, Office 365 will not send **INVITE** to the CCE.
- Call scenario: SIP Trunk > SBC > CCE > Office 365, CCE Mediation Server may return **503 Proxy INVITE failed**.

4.1.3 Remote Connection

You can connect to the Mediant CCE appliance Host server either via remote desktop connection (RDP) or by connecting a keyboard, mouse and a screen. Use the following default credentials to connect to the Remote Desktop credentials:

- **User:** Administrator
- **Password:** R3m0t3Supp0rt
- **Host default IP address:** 192.168.0.10

4.1.4 Network Interfaces

The AudioCodes CCE Install Wizard creates several virtual switches for the usage of the CCE Virtual Machines under the following names:

- **Internet DMZ** - connect to corporate network or corporate DMZ
- **Corporate DMZ** - connect to internet or internet DMZ

Figure 4-1: Typical Network Connection View (Mediant 800)

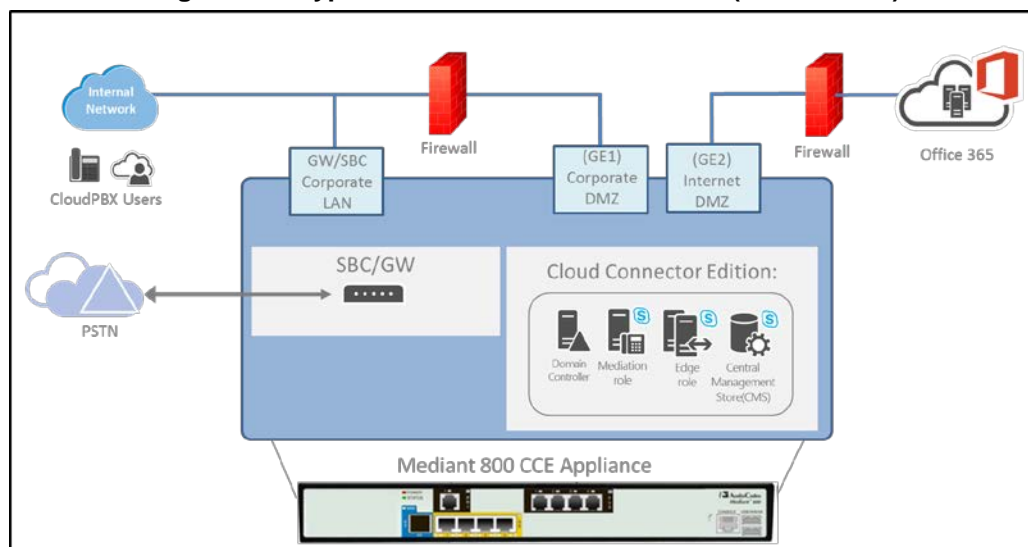
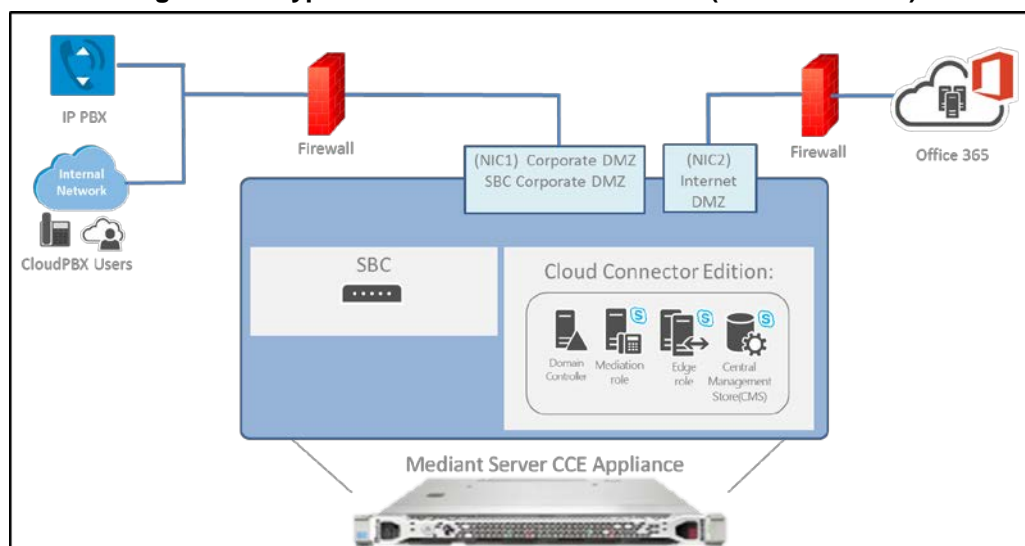


Figure 4-2: Typical Network Connection View (Mediant Server)



Note: When installing on the Mediant Server CCE platform, the Install wizard allocates 2 virtual NICs for the software SBC, both are which are associated to physical NIC1. For a different SBC networking configuration, use the Hyper-V Virtual Switch Manager to define the required settings.

4.1.5 CCE Appliance Platforms

This section describes the network interfaces of the CCE Appliance platform.

4.1.5.1 Mediant 800 CCE Appliance

The CCE uses the two external NICs on the OSN server (rear panel). These ports are labelled GE1 and GE2.

Figure 4-3: Rear View

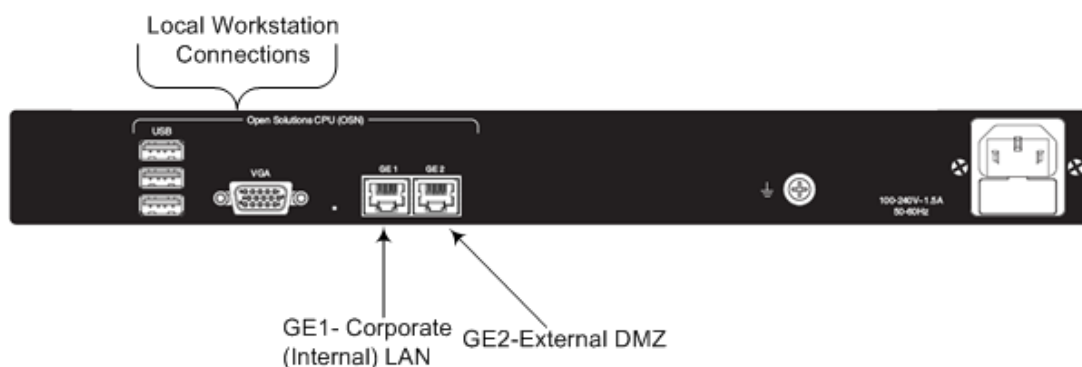
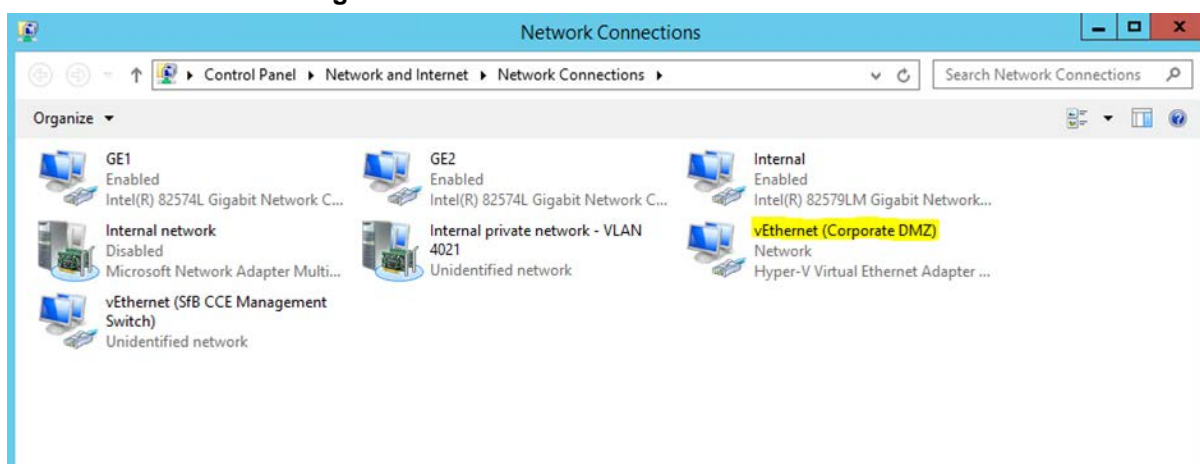


Figure 4-4: Mediant 800 OSN Network Interfaces

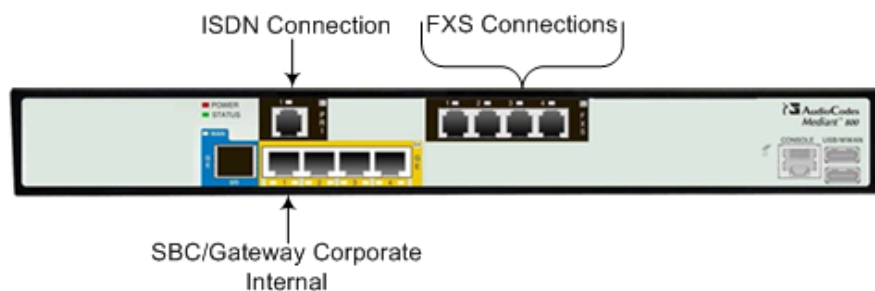


- **GE1, GE2 and Internal** are physical NIC interfaces.
- The **vEthernet (Corporate DMZ)** is a virtual NIC interface that uses GE1 as its physical interface. Use the **vEthernet (Corporate DMZ)** interface to set your Host IP settings.



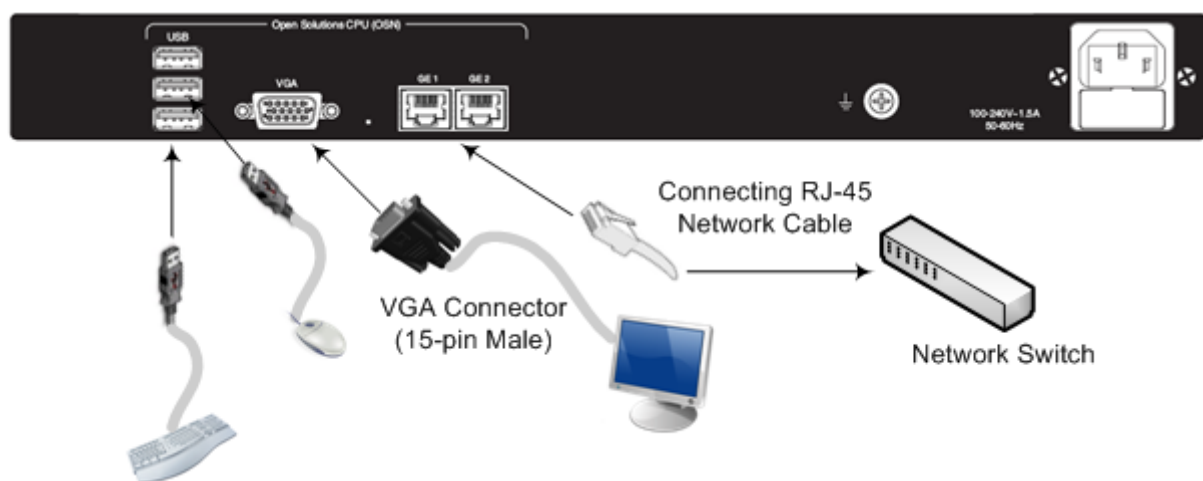
Important: Do not change, delete or edit any of defined NIC interfaces other than setting the IP settings of the **vEthernet (Corporate DMZ)**.

The gateway/SBC (front panel) NIC is used to connect to the Gateway and SBC application.

Figure 4-5: Front View

➤ **To connect mouse and keyboard to the OSN:**

1. Connect computer peripherals (e.g., mouse and keyboard) to the USB ports (Standard-A type) labeled **USB**.
2. Connect a monitor using a 15-Pin D-type male connector to the VGA female port, labeled **VGA** (this VGA cable is not supplied).

Figure 4-6: Connecting OSN Server and Acquiring IP Address

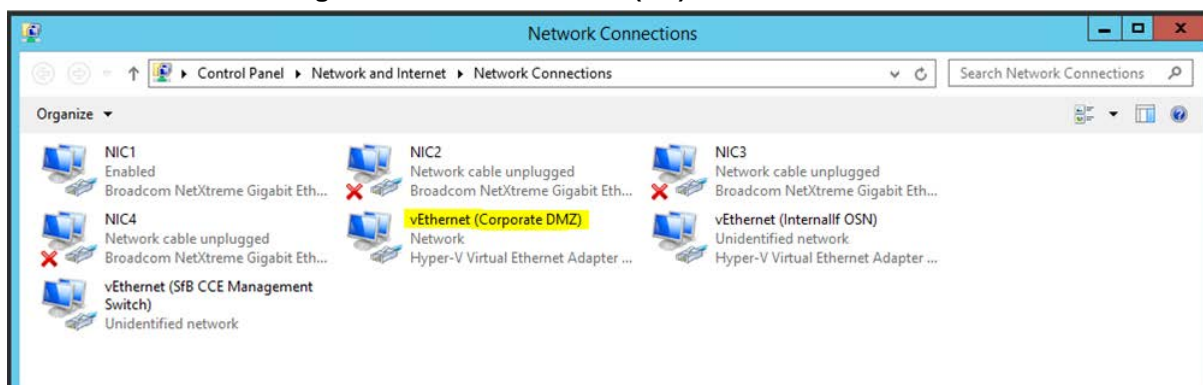
4.1.5.2 Server CCE Appliance

On the Mediant Server CCE Appliance, there are four 1000 GbE LAN NICs. The CCE uses two of these NICs.

In the event where the Software SBC is installed on the Server CCE Appliance platform, you can share the same NICs with the CCE or define separate NICs.

Figure 4-7: Rear View

Figure 4-8: Mediant Server (HP) Network Interfaces



- **NIC1 – NIC4** are physical NIC interfaces.
- The **vEthernet (Corporate DMZ)** is a virtual NIC interface that uses **NIC1** as its physical interface. Use the **vEthernet (Corporate DMZ)** interface to set your Host IP settings.

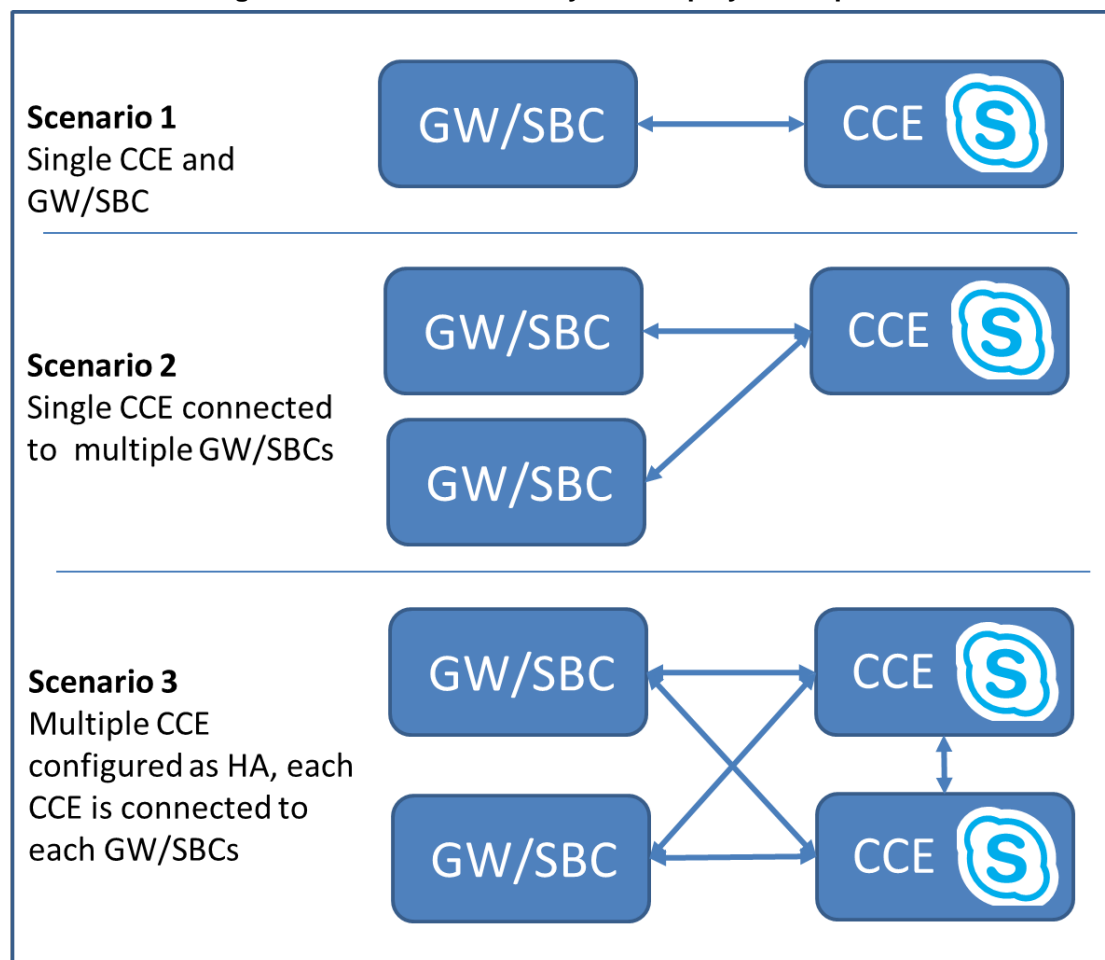


Important: Do not change, delete or edit any of defined NIC interfaces other than setting the IP settings of the **vEthernet (Corporate DMZ)**.

4.1.6 CCE Deployment Scenarios

The CCE server is combined with the AudioCodes Gateway/SBC and can be deployed in multiple scenarios. See the diagram below which illustrates the supported deployments options:

Figure 4-9: CCE and Gateway/SBC Deployment Options



Deploying multiple CCEs and Gateways/SBCs allows you to enhance your site capacity, and implement High Availability (HA) configuration for the CCE instance and also for Gateway/SBC redundancy configuration. The following deployment scenarios are supported:

- **Scenario 1:** Single CCE Appliance and Gateway/SBCs
- **Scenario 2:** Single CCE connected to multiple Gateway/SBCs
- **Scenario 3:** Multiple CCE configured as HA where each CCE is connected to all Gateways/SBCs

4.1.7 Single Site with High Availability (HA) Compared to Multi-site Deployments

The following table lists the differences between a single PSTN site with HA support and multiple PSTN sites deployment (Multi-Site).

It is important that you set the different configuration values according to the rules described in the table below:

Table 4-1: Single Site with High Availability (HA) and Multi-site Deployments

Item	Single-Site with HA	Multi-Site
Site Directory	Requires the same shared folder across instances.	Requires a different shared folder across PSTN sites instances.
SIP Domains	Domain names and order should be the same across instances.	Domain names and order should be the same across PSTN sites.
Site name	Same Site Name across instances	Different Site Name across PSTN sites.
Edge Certificate	May use the same certificate for all CCE in the site (may use wildcard).	May use the same certificate for all CCE in all sites, the certificate should include all sites SAN (may use wildcard).
VM password	Recommended to use the same password across instances.	May use different password across PSTN sites.
Virtual machines Internal IP	Different across instances.	Different across PSTN sites.
Edge External pool FQDN	Same across instances.	Different across PSTN sites.
External IP Edge	Different across instances.	Different across PSTN sites.
PSTN GW settings	Same gateway and order across instances.	Different cross PSTN sites.
DNS record	Add records with the same External Access FQDNs and different IP addresses.	Add records with different External Access FQDNs and different IP addresses.
Setup hybrid tenant	Set PeerDestination	Set PeerDestination for fallback.

Item	Single-Site with HA	Multi-Site
Setup gateway	Mediation Server (MS) GW M:N mapping in this site.	PSTN Gateway(s) in each PSTN site should only connect to the Mediation Server(s) in the same site.

4.2 Installing CCE

This section describes how to install the CCE on one of the CCE Appliance platforms (as described in Chapter 02).

4.2.1 Step 1: General Operating System Preparation

The procedure below describes how to prepare the operating system.

➤ **To prepare the general operating system:**

1. Define the correct date and time on the host server.
2. Define the computer name.



Note: The computer name is used as the CCE name in Skype for Business Online.

3. Define the host IP address. The host must be able to connect to the Internet.
4. Activate Windows 2012 R2 on the host server with the key from the Microsoft sticker that is attached to the Mediant server.

The AudioCodes Mediant CCE Appliance is supplied with Windows Server 2012 R2 Standard Edition OEM licenses, with the Microsoft Product License code stickers attached to the server hardware.



Notes:

- It is important that you login with the local user name “Administrator” when performing the installation. Login with any other local user will cause the installation to fail.
- You must initially activate the Windows license on the Host server.
- It is recommended to photograph or copy the Windows product key stickers and save them in a safe place for future use, for a system re-installation or if your server is physically placed in a rack where it may be difficult to access the Windows sticker during the installation process.

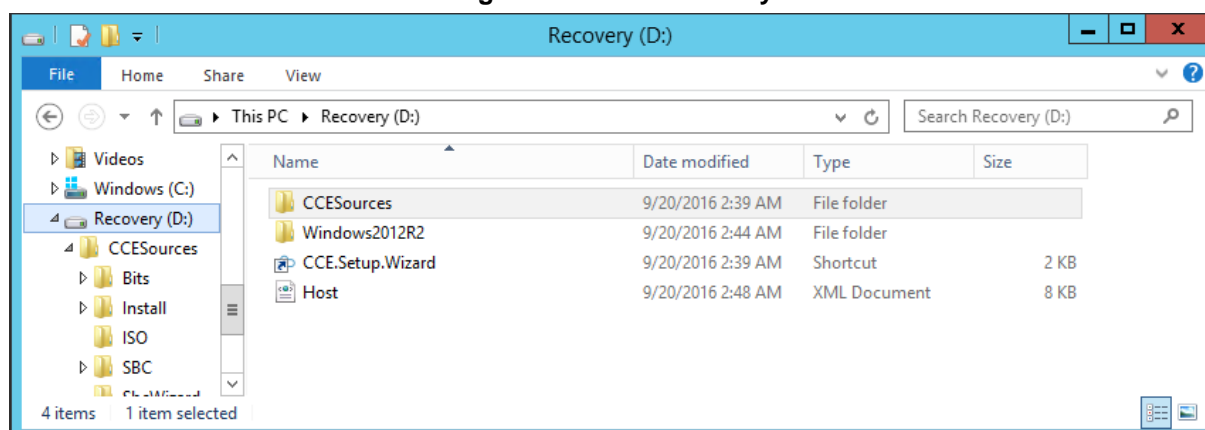
4.2.2 Step 2: Run CCE Setup Wizard

The procedure below describes how to run the CCE Setup Wizard.

➤ **To run the CCE Setup Wizard:**

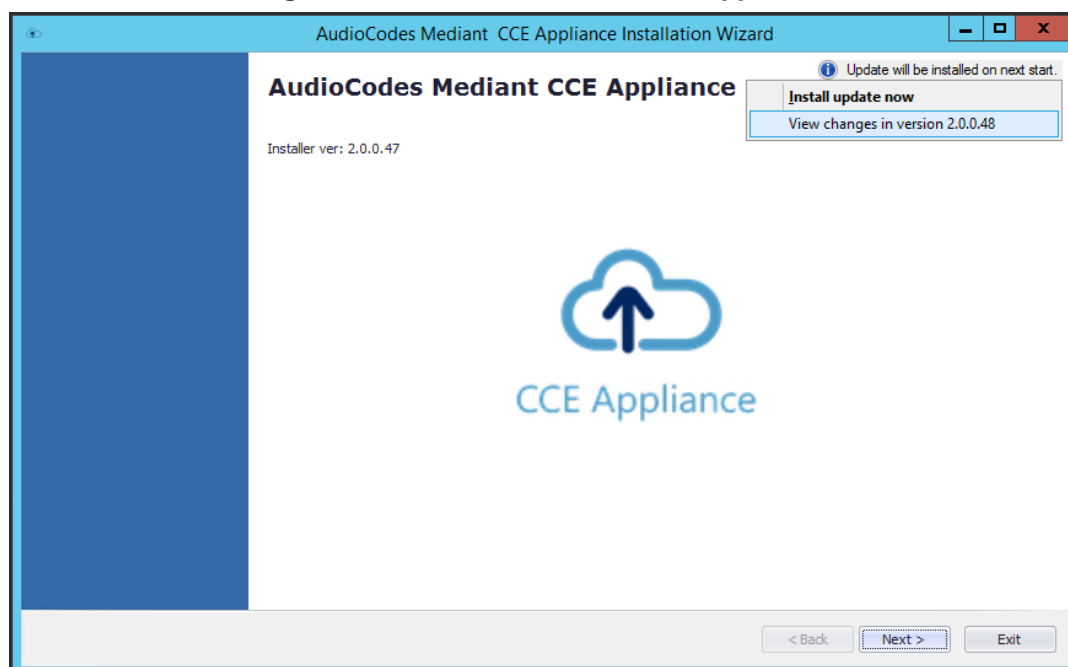
1. Access the Recovery partition, "Recovery (D)".

Figure 4-10: PC Directory



2. Double-click **CCE.Setup.Wizard**. The Install Wizard checks for CCE Install Wizard updates. If a newer version of the Install Wizard is found, it will start downloading the new version. Use the **Install Update Now** option in the top right corner of this dialog to use the latest Install Wizard. The installer will close itself and will run the new downloaded Install Wizard.

Figure 4-11: Mediant Server – CCE Appliance



3. Click **Next** to continue.

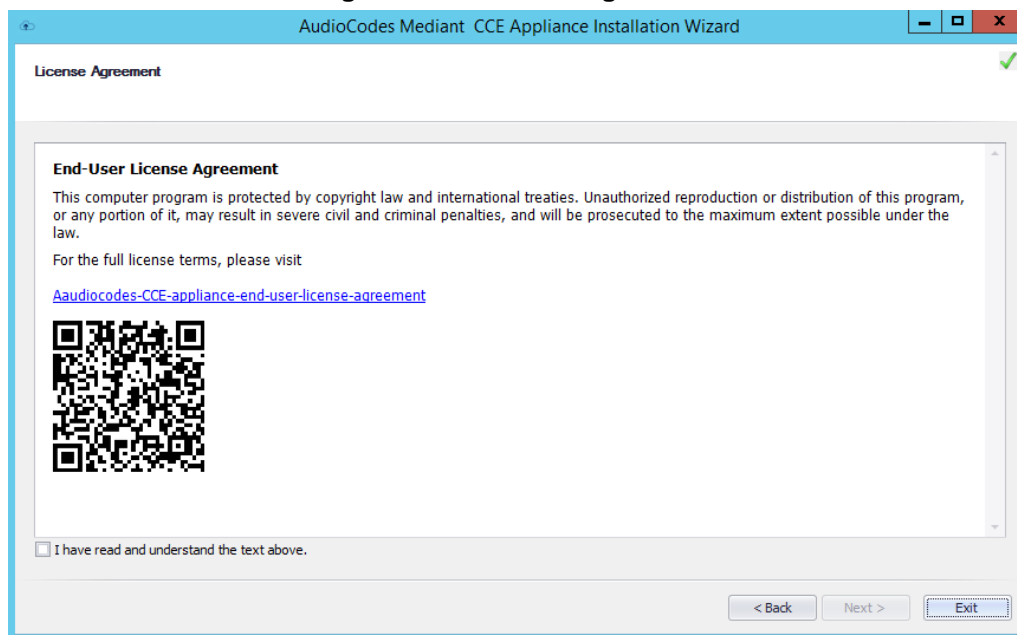
4.2.3 Step 3: Enable AudioCodes and Microsoft License Agreement

Read and agree to the AudioCodes and Microsoft end user license agreements. Microsoft license agreements are part of the Microsoft component installation. This step installs the PowerShell modules required for CCE setup, and performs several prerequisite actions such as creating virtual switches and changing the local Group Policy to not forcefully unload the user registry at user logoff.

➤ **To install PowerShell modules:**

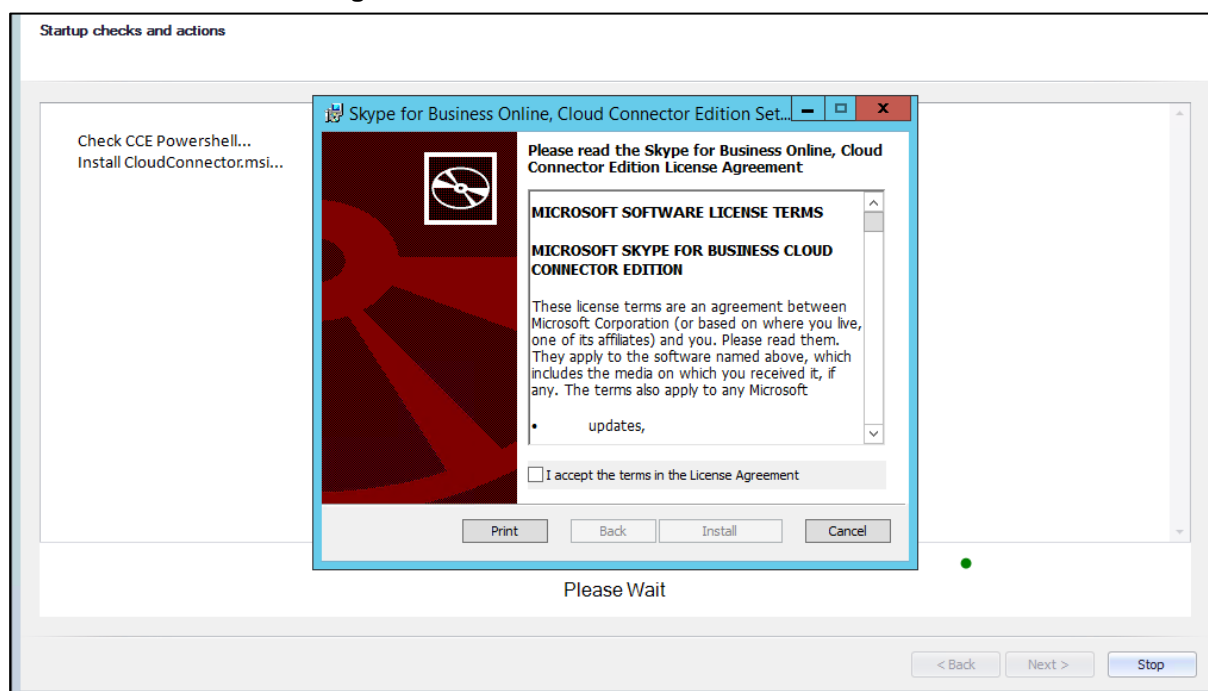
1. On the License Agreement screen, select the **I have read and understand the text above** checkbox.

Figure 4-12: License Agreement



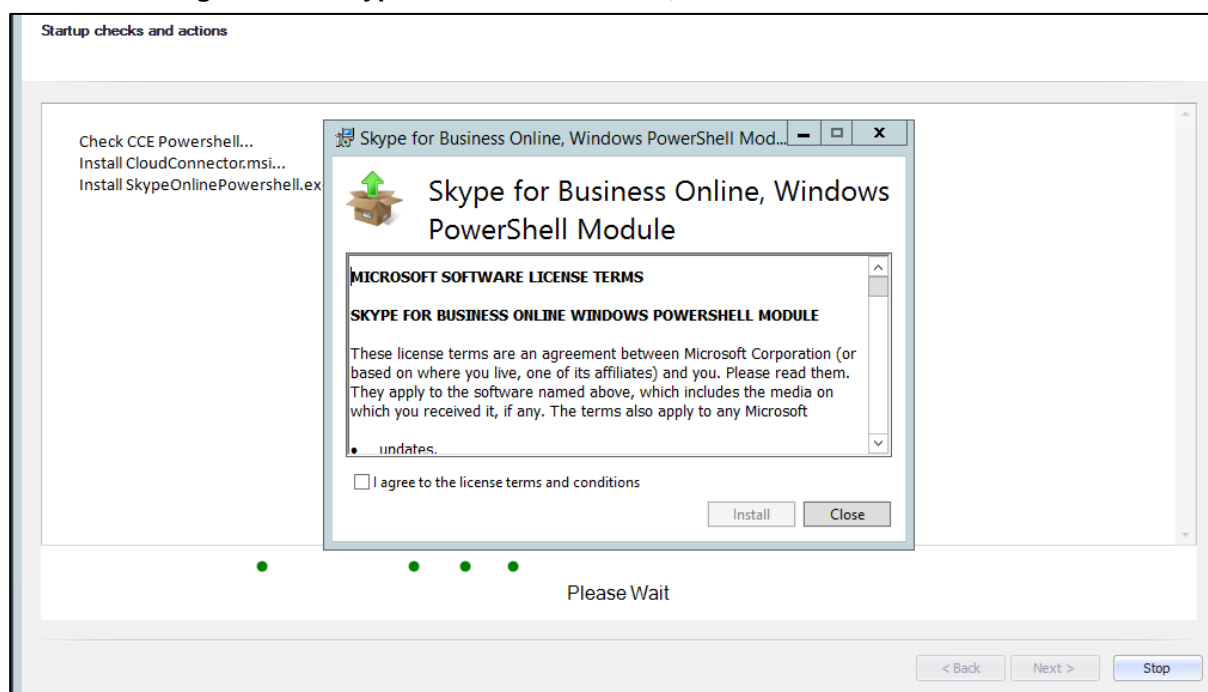
2. Click **Next.**; the following screen appears:

Figure 4-13: Check CCE PowerShell and CCE



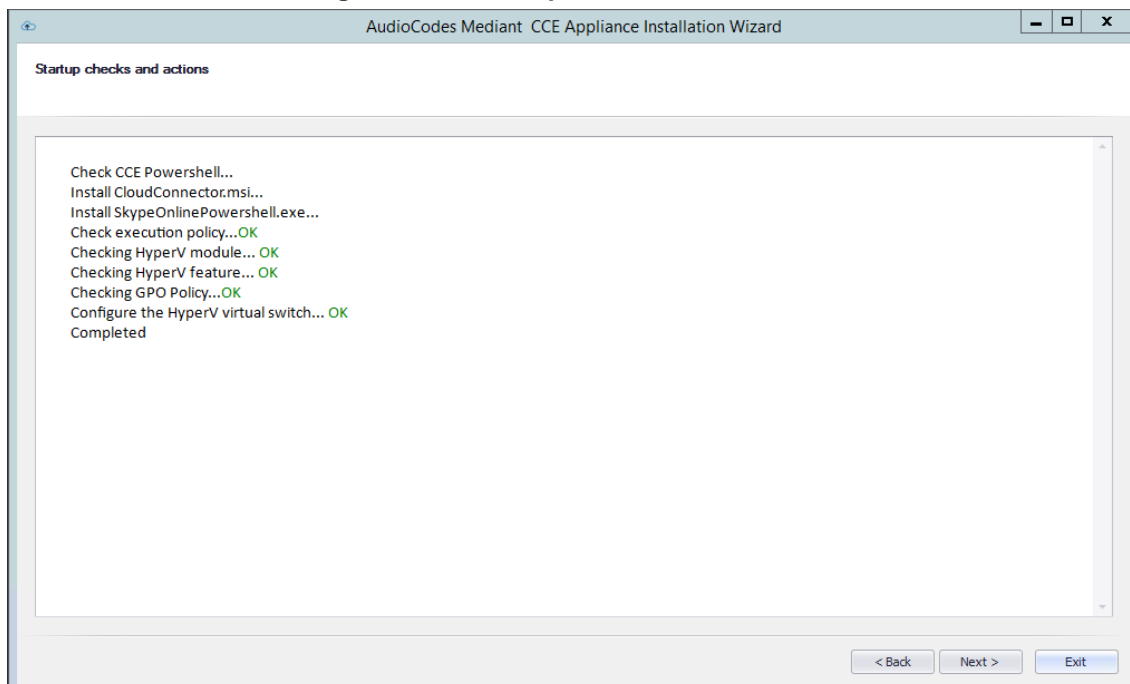
3. Select the **I accept the terms in the License Agreement** and follow the Skype for Business Online Cloud Connector PowerShell setup.

Figure 4-14: Skype for Business Online, Windows PowerShell Module

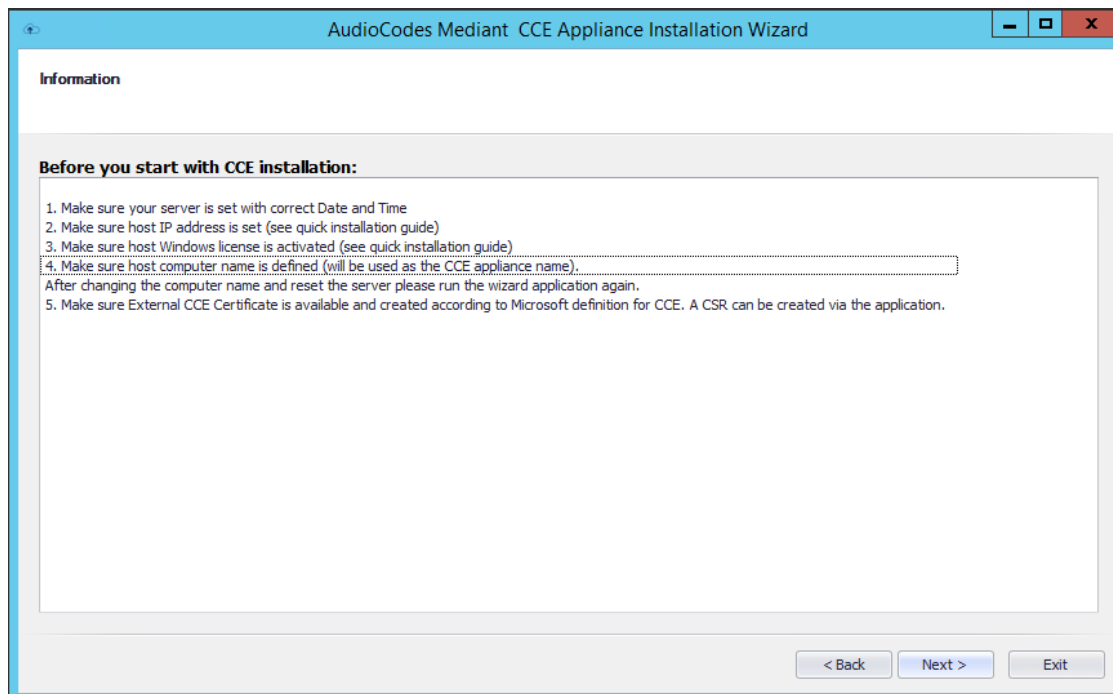


4. Select the **I agree to the license terms and conditions** and follow the Skype for Business Online Windows PowerShell setup.

5. At this stage, the system checks that all prerequisites have been installed correctly. Click **Next**.

Figure 4-15: Startup Checks and Modules

6. Make sure you that have completed the listed prerequisites before continuing to the next step, and then click **Next**.

Figure 4-16: Prerequisites

4.2.4 Step 4: Install/Uninstall CCE

At this stage, the installer checks if an older or previous attempt to install the CCE has been performed. In case it detects an older version of the CCE, it displays the Uninstall option. If this is the first time you have installed the CCE on this server, the Install Wizard skips this step.

The procedure below describes how to install/uninstall the CCE:

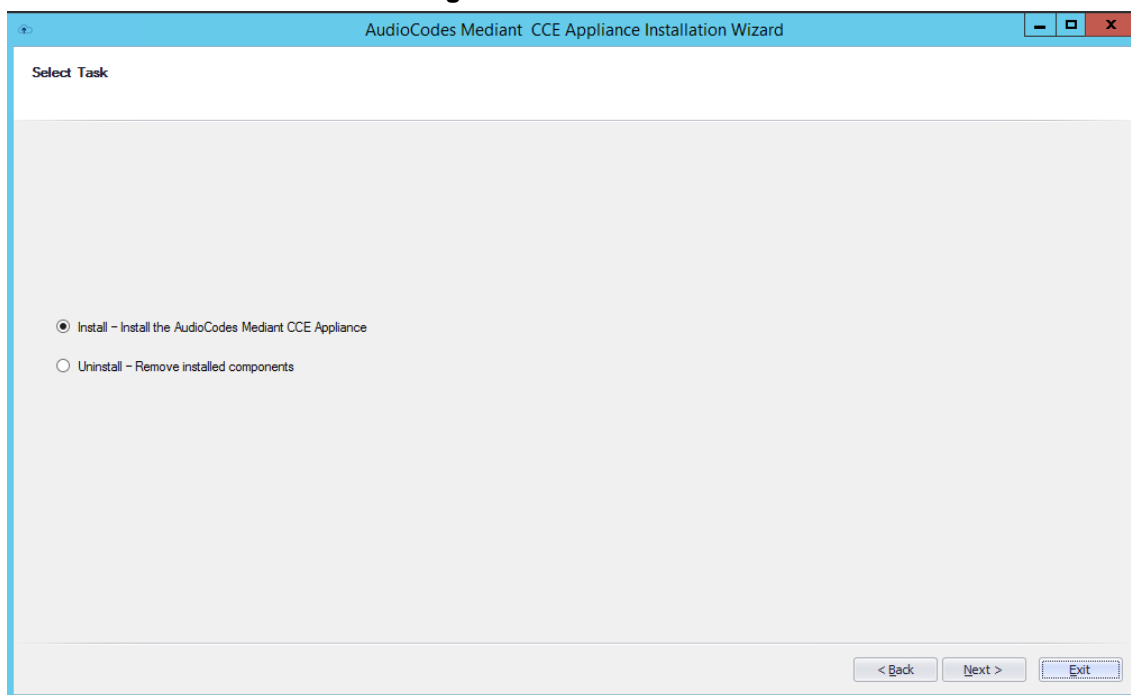
➤ **To install the AudioCodes Mediant CCE application:**

1. Click the **Install** option.
2. Click **Next**.

➤ **To uninstall the AudioCodes Mediant CCE application:**

1. Click the **Uninstall** option (usually done in case you encounter errors with the previous installation).
2. Click **Next**.

Figure 4-17: Select Task



Note: In some cases, the uninstall may not completely clean the previous installation of the Office 365 tenant. In case it fails to uninstall, you need to follow the steps described in Section Cleaning the Office 365 Tenant on page 61.

4.2.5 Step 5: Set CCE General Information

The procedure below describes how to set the CCE general information.

You can select between a single CCE server installation or multiple CCE servers installed in a High Availability (HA) CCE configuration in a single site.

➤ **To set the CCE Installation Type:**

1. Select the “First CCE in Site” option in case you are installing the first CCE server in HA configuration or for a standalone CCE deployment (Scenario 1 and 2).
2. Select the “HA” option in case you are installing additional CCE servers in the same site. (Scenario 3).
3. In the 'Site Directory' field, enter the CCE site directory (if it's not the first CCE, point the Site Directory to the shared directory used by the first CCE on the site as the site directory). The site root directory is used to hold the windows OS image, CCE bits, Cloud Connector installation files and CCE CA certificates. This folder is also used by the CCE for the HA synchronization. For scenario 1&2, you can use a local folder such as C:\CCE\Site.

When installing an HA configuration, this folder should be defined as a shared folder that is accessible for all CCE servers in the same site (Scenario 3).

The shared folder may be used as a local folder on the first CCE installed in this site.

The shared folder should either be read/write accessible to anyone (i.e. no password) or it should be password protected. In case password protection is implemented, the user name should be 'cceService' and the password should be the password that is defined in the “Register CCE” step.

4. Enter your Office 365 Global Tenant Admin credentials (User Name and Password).
5. The system tries to connect to your Office 365 tenant to fetch additional information to be used during this installation.
6. Click the **Next** button to continue.

Figure 4-18: Set General Information

7. Optional: You can use the **Load INI** button if you have a predefined CCE ini file. The Install Wizard will use this file during the installation.

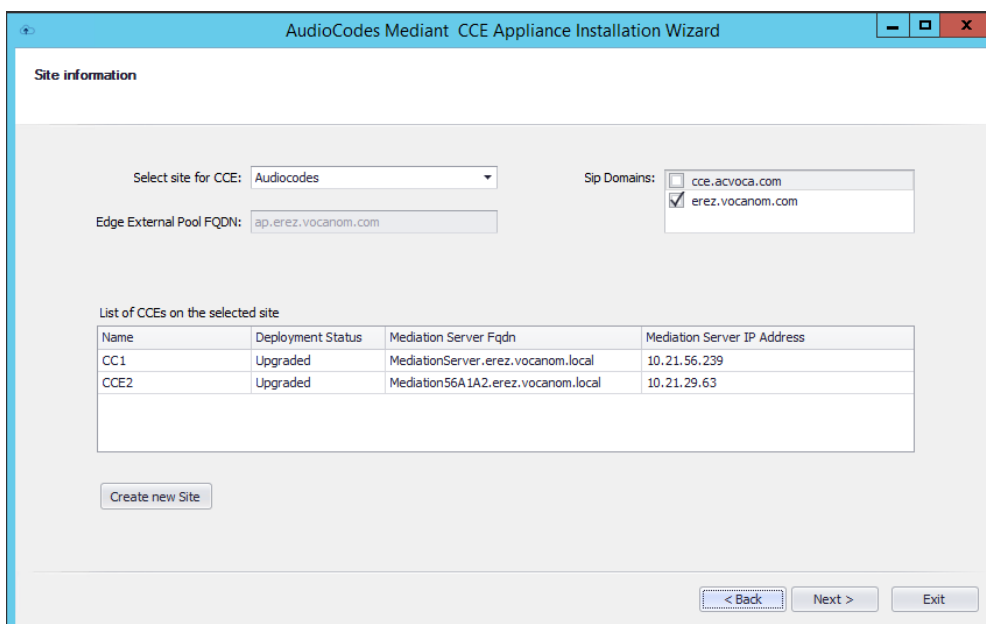
4.2.6 Step 6: Set CCE Site Information

The procedure below describes how to set your CCE Site information. Each CCE server is associated with a single PSTN Site, where a PSTN Site can host up to four CCE servers.

➤ **To set the CCE Site Information:**

1. Select the site to add this CCE server from the Select site for CCE options.

Figure 4-19: Set Site Information



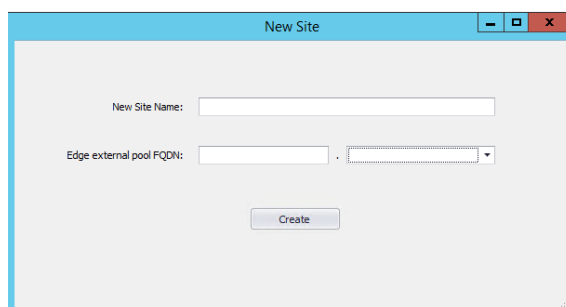
The screenshot shows the 'Site information' window of the AudioCodes Mediant CCE Appliance Installation Wizard. It includes a dropdown for 'Select site for CCE:' set to 'AudioCodes', a text field for 'Edge External Pool FQDN:' set to 'ap.erez.vocanom.com', and a list of 'Sip Domains' with 'erez.vocanom.com' selected. Below is a table titled 'List of CCEs on the selected site'.

Name	Deployment Status	Mediation Server Fqdn	Mediation Server IP Address
CC1	Upgraded	MediationServer.erez.vocanom.local	10.21.56.239
CCE2	Upgraded	Mediation56A1A2.erez.vocanom.local	10.21.29.63

At the bottom left is a 'Create new Site' button, and at the bottom right are '< Back', 'Next >', and 'Exit' buttons.

2. In case a new site needs to be created, click the **Create new Site** button, the following window opens:

Figure 4-20: Add New Site



The screenshot shows the 'New Site' window. It has a text field for 'New Site Name:', a text field for 'Edge external pool FQDN:' followed by a dropdown menu, and a 'Create' button at the bottom.

- a. Set the new Site name.
 - b. Set the new Site Edge external pool FQDN and select the correct SIP domain from the available SIP domain that you already created in your Office 365 tenant.
 - c. Click the **Create** button, the installer creates the new site and adds it to the site list in the Site Information dialog.
3. Select the SIP Domains for this site by selecting the correct items in the SIP Domains list (select the SIP domains that are used by Office 365 users associated with this PSTN Site). Important: the same SIP domains must be selected in all CCE's in the same site.

4. The table at the bottom of this dialog displays all the existing CCEs already defined in the selected site.
5. Click the **Next** button to continue.

4.2.7 Step 7: Manage External Certificates

The CCE server requires a certificate for the external Edge obtained from a public Certificate Authority (CA). The procedure below describes how to manage this certificate.

In case you don't have a public certificate for your deployment, the Install Wizard provides you with an easy tool for generating a Certificate Signing Request (CSR) to be signed by a certificate authority (CA).

The CCE Install Wizard allows you to import an existing certificate generated by an external certificate authority (CA).

4.2.7.1 Step 7-1: Generate CSR

Use this step in case you don't have a PFX certificate for the CCE Edge, in this step you will need to create a new CSR, sign it using a public CA and then upload the certificate to the CCE install wizard.

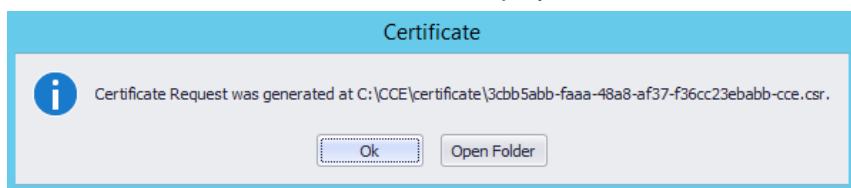
➤ To generate certificate CSR:

1. Open the **Generate CSR** tab.
2. Select the wildcard certificate option in case you plan to create single Wildcard certificate to be used on all Edge pool servers.
3. The Common name field identifies the host name associated with the certificate.
4. Optional: Fill in your company details in the following fields: Country Code, Location, Organization, State and organization unit.
5. Optional: Add additional Subject Alternate Name DNS if required, using the **Add** button.
6. Select the Key Length 2048.

Figure 4-21: Generate CSR

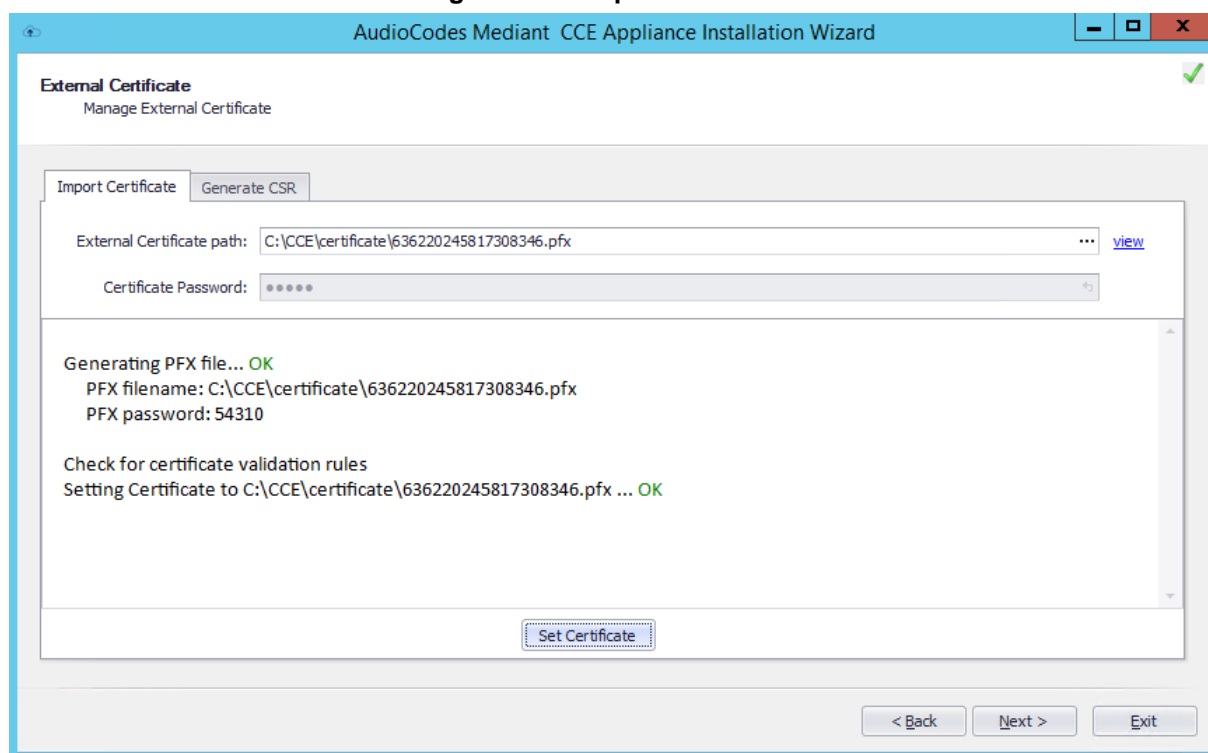
7. Click the **Generate CSR** button.
8. The installer generates a new CSR and saves it on the CCE host under the

C:\CCE\Certificate folder. The installer displays the new CSR file name.



9. At this stage, you will need to sign your CSR with the Certificate Authority for acquiring a valid public Certificate.
10. Copy the signed certificate to the CCE host C:\CCE\Certificate folder.
11. Select the **Import Certificate** tab to upload your signed certificate.
12. Select the certificate file in the External Certificate path file. Use the **...** button to browse to this file.
13. Click the **Set Certificate** button, the installer checks the certificate validity and displays the information status in the area below.

Figure 4-22: Import Certificate



14. Review the information status and then click the **Next** button.

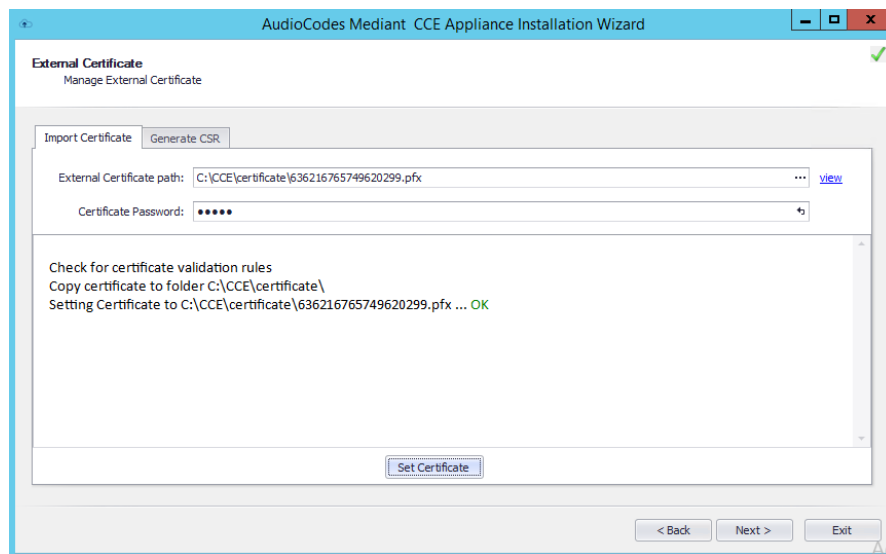
4.2.7.2 Step 7-2: Import the PFX Certificate

Use this step in case you already have a PFX certificate that contains a private key and full certificate chain for the CCE Edge.

➤ **To import the PFX certificate:**

1. Open the **Import Certificate** tab.
2. Copy your signed certificate to the CCE host C:\CCE\Certificate folder.
3. Select the PFX certificate file in the External Certificate path file. Use the ... button to browse to this file.
4. Enter the signed certificate password; make sure you type the correct password.

Figure 4-23: Import Certificate



5. Click the **Set Certificate** button; the installer checks the certificate validity and displays the information status in the area below.
6. If all **OK**, click the **Next** button to continue to the next step.

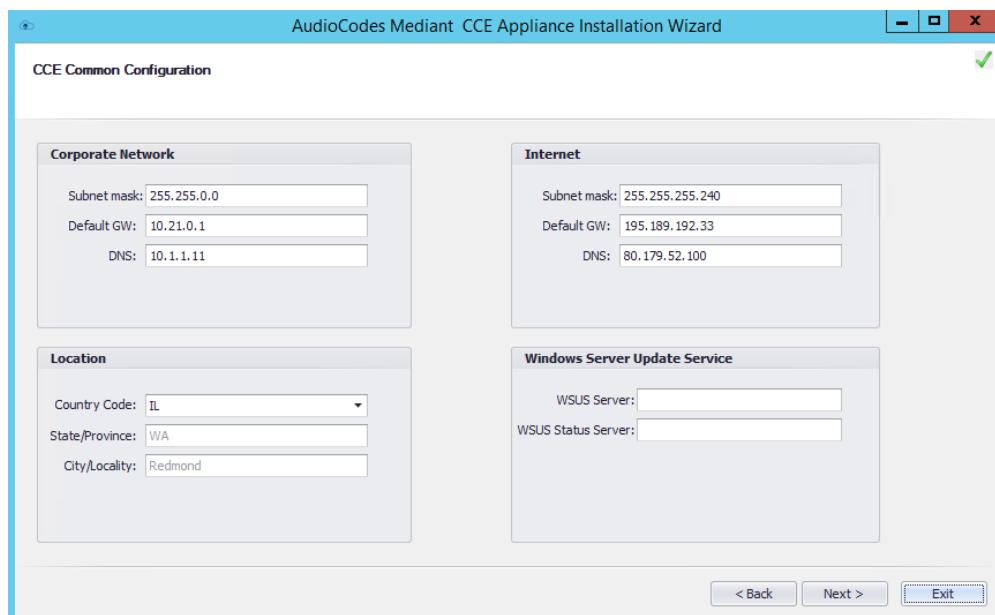
4.2.8 Step 8: Set Common Configuration

The procedure below describes how set the common CCE configuration.

➤ **To set the CCE common configuration:**

1. Set the CCE Internal Corporate network settings: Subnet mask, Default GW and DNS address (in case multiple DNS address are required, add them with space separators).
2. Set the CCE Internet network settings: Subnet mask, Default GW and DNS address. (In case multiple DNS address are required, add them with space separators).
3. Optional: Set the CCE location information including Country code, State and City/Location.
4. Optional: In case your company uses the Windows Server Update Services (WSUS), set its IP address in the WSUS Server and WSUS Status Server fields. In case these fields are left empty, the CCE checks for updates from the internet.
5. Click the **Next** button.

Figure 4-24: Set Common Configuration



AudioCodes Mediant CCE Appliance Installation Wizard

CCE Common Configuration

Section	Field	Value
Corporate Network	Subnet mask:	255.255.0.0
	Default GW:	10.21.0.1
	DNS:	10.1.1.11
Internet	Subnet mask:	255.255.255.240
	Default GW:	195.189.192.33
	DNS:	80.179.52.100
Location	Country Code:	IL
	State/Province:	WA
	City/Locality:	Redmond
Windows Server Update Service	WSUS Server:	
	WSUS Status Server:	

< Back Next > Exit

4.2.9 Step 9: Set CCE Configuration

The procedure below describes how set the CCE different Virtual Machines (VM) configuration.

➤ **To set the CCE VM configuration:**

1. Set the CCE virtual machine IP address per all 4 Virtual machines (AD, CMS, Mediation, Edge).
2. The computer name of all 4 VM is defined by the installer and cannot be changed.
3. For the CCE Edge, set the external SIP IP address (use public IP addresses if there is no NAT or NAT address).
4. Set the External Media IP address (currently only one IP is supported, so this should be the same External SIP IP).
5. The External Media Pool name field is already filled by the installer according to the external SIP Pool name and there is no need to change it.
6. Set the External Public IP; the Public External IP addresses should only be specified if NAT is used. If NAT is not used, do not fill this field.
7. Set the Number of media ports. This represents the port range for the external Media Relay. This range should be an even number from 100 to 10000. For both TCP and UDP, each concurrent call requires 2 ports, so the concurrent call capability for the Media Relay should be in the range / 2. Note: the number of supported concurrent calls also depends on the capacity of the PSTN Gateway.
8. Click the **Next** button.

Figure 4-25: Set CCE VM Configuration

The screenshot displays the 'CCE Configuration' window of the 'AudioCodes Mediant CCE Appliance Installation Wizard'. The window is titled 'CCE Configuration' and has a green checkmark in the top right corner. It is divided into two main panels: 'Active Directory' on the left and 'Edge' on the right. The 'Active Directory' panel contains three sub-sections: 'Active Directory' with fields for 'Computer Name' (AD4EED9F) and 'IP' (10.21.27.11); 'CMS Server' with fields for 'Computer Name' (CMS4EED9F) and 'IP' (10.21.27.12); and 'Mediation Server' with fields for 'Computer Name' (Mediation4EED9F) and 'IP' (10.21.27.13). The 'Edge' panel contains fields for 'Computer Name' (Edge4EED9F), 'Internal IP' (10.21.27.14), 'External SIP IP' (195.189.192.36), 'External Media IP' (195.189.192.36), 'External Media pool Name' (ap), 'External Public IP' (empty), and 'Number of media ports' (10000). At the bottom of the window, there are three buttons: '< Back', 'Next >', and 'Exit'.

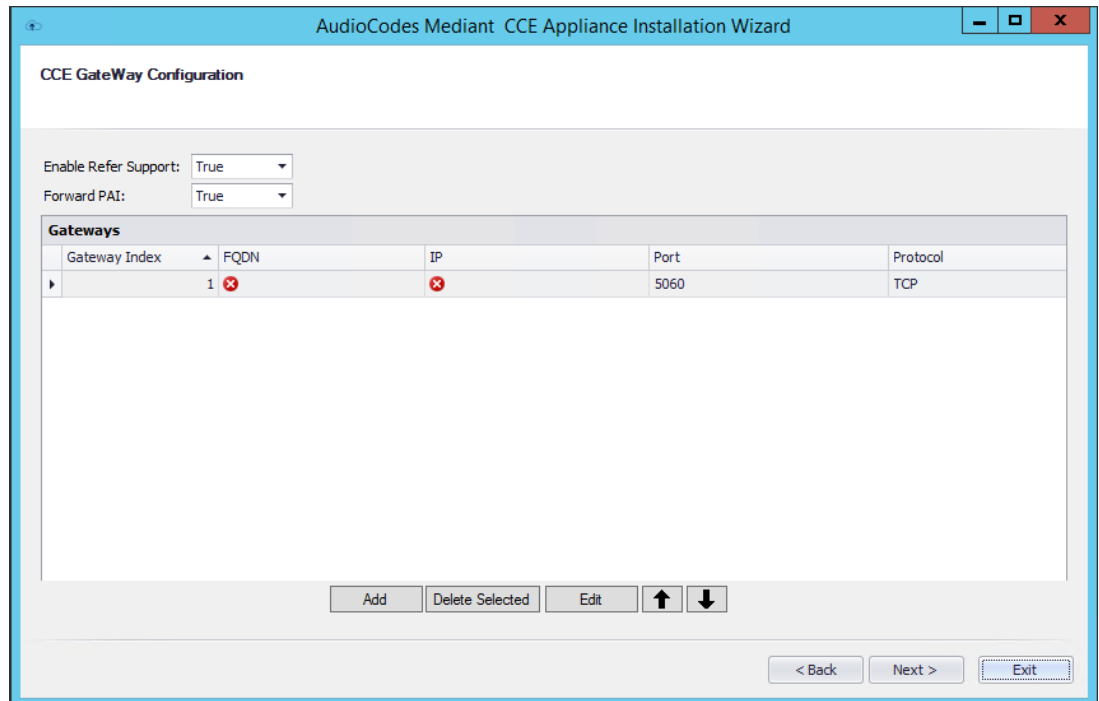
4.2.10 Step 10: Set Gateway Configuration

The procedure below describes how to define the CCE Gateway configuration.

➤ **To set the CCE Gateway configuration:**

1. From the Enable Refer Support drop-down list, select **True**. This will define whether SIP REFER support is enabled or disabled on the gateway/SBC. The default value is **True**.
2. Select True in the Forward PAI (P Asserted ID).

Figure 4-26: Set Gateway Configuration



AudioCodes Mediant CCE Appliance Installation Wizard

CCE GateWay Configuration

Enable Refer Support: True

Forward PAI: True

Gateway Index	FQDN	IP	Port	Protocol
1	X	X	5060	TCP

Add Delete Selected Edit ↑ ↓

< Back Next > Exit

3. Fill the CCE Gateway settings using the **Edit** button.

Figure 4-27: Edit Gateway Settings

AudioCodes Mediant CCE Appliance Installation Wizard

CCE GateWay Configuration

Enable Refer Support: True

Forward PAI: True

Gateway Index	FQDN	IP	Port	Protocol
1	GW1.cce.local	10.21.27.15	5060	TCP

Update Cancel

Add Delete Selected Edit ↑ ↓

< Back Next > Exit

4. Set the Gateway/SBC SIP IP address and port and protocol.
5. Set the Gateway/SBC FQDN address. (recommended value for this field is GW<index>.<site name>.cce.local).
6. Click the **Update** button to add the new Gateway/SBC settings.
7. For sites with multiple gateways, configure the additional Gateways settings using the **Add** button.
8. When complete, click the **Next** button.

**Note:**

- In case your site has multiple gateway/SBC and CCEs:
 - ✓ Make sure the order of all GW/SBC are the same, use the up/down arrows to set the exact order.
 - ✓ Make sure the Gateway FQDN is the same in all defined CCEs.
- You can configure up to four Gateway settings in the Gateway table.

4.2.11 Step 11: Copy and Download Files

The Wizard copies all the required files from the recovery partition to the selected site directory. It downloads the latest CCE bits from the Microsoft site in case there is a newer version available. At the end of the process, it prepares the Windows VHDX file as the master that is used to prepare the CCE Virtual machines.

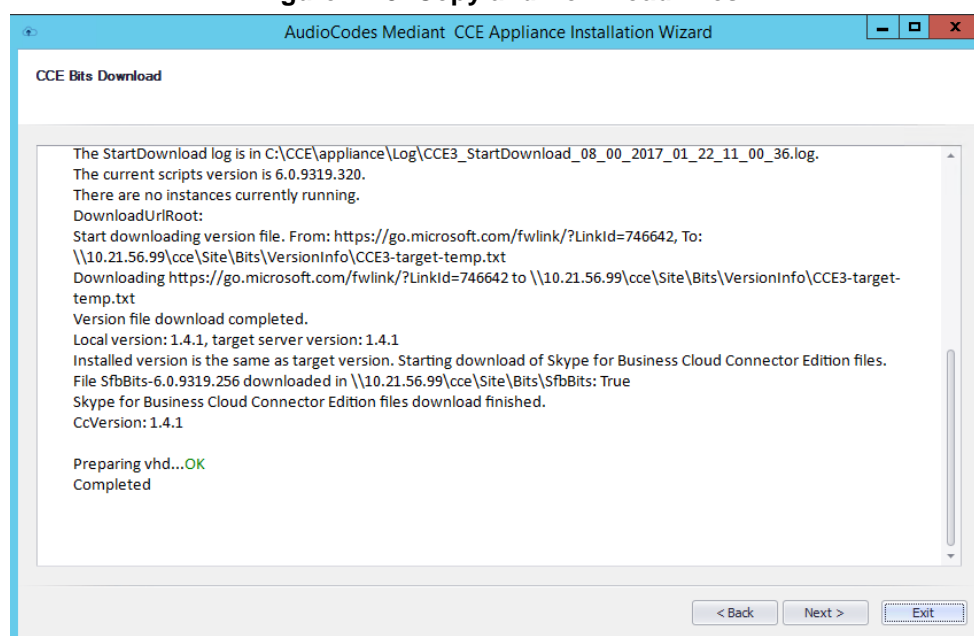


Note: In case there are multiple CCEs on a site, the installer tries to copy files to the site directory. In case of network directory, the installer prompts whether you would like to skip this operation and use the files already available in the site directory; it is recommended to perform the copy action.

➤ **To copy and download files:**

1. Wait for the download operation to complete; the **Next** button is active.

Figure 4-28: Copy and Download Files



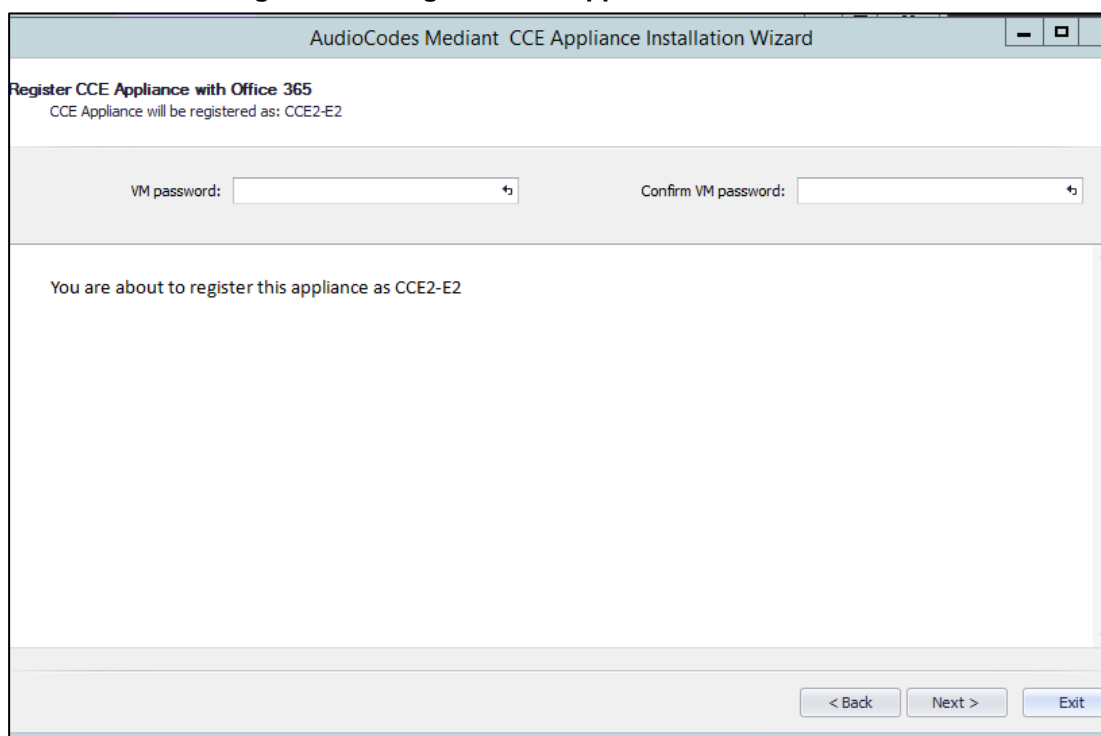
4.2.12 Step 12: Register the CCE Appliance

The procedure below describes the steps to set the CCE Admin password and how to register in the Office 365 as a new CCE.

➤ **To install the instance:**

1. Enter the password that will be used as the VM admin and confirm it in the VM password fields. This password is used for the Host and Virtual Machines administrator and cceService users, and is also used in General Information step for accessing to the shared site directory (see Step 5 in Section 4.2.5).

Figure 4-29: Register CCE Appliance with Office 365



AudioCodes Mediant CCE Appliance Installation Wizard

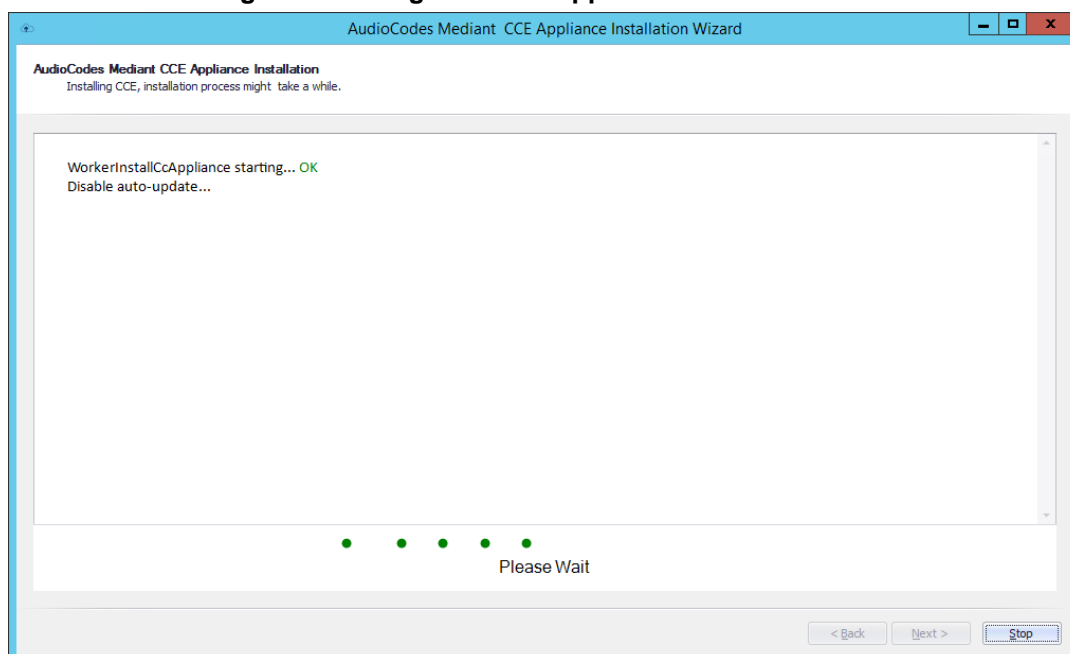
Register CCE Appliance with Office 365
CCE Appliance will be registered as: CCE2-E2

VM password: Confirm VM password:

You are about to register this appliance as CCE2-E2

< Back Next > Exit

2. Click the **Next** button.

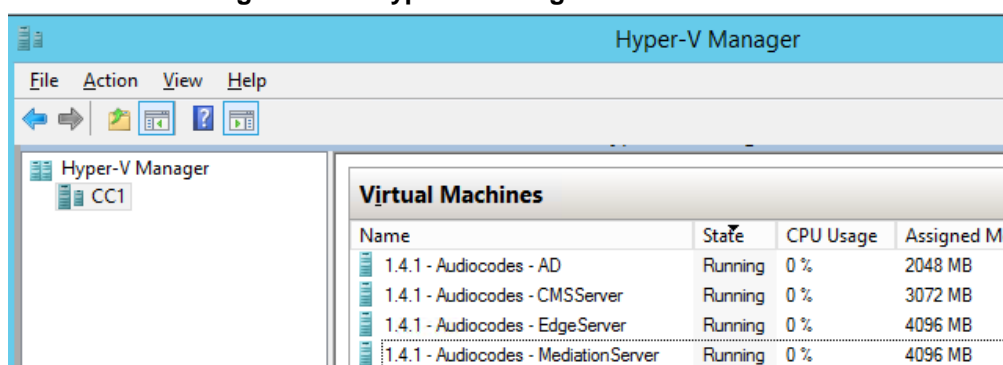
Figure 4-30: Register CCE Appliance with Office 365


3. At this stage, the installer starts installing the CCE components.



Note: This step takes approximately 90 minutes. It disables auto update while performing the setup.

4. At the end of the process, check that the installation has completed without errors and verify that the Hyper-V Manager includes all 4 CCE virtual machines as shown in the figure below.

Figure 4-31: Hyper-V Manager Virtual Machines


5. It is recommended to access all VMs and verify that all automatic/automatic delay services are running.

4.2.13 Step 13: Set the CCE Update Configuration

The Microsoft Office 365 periodically updates the CCE operating system and the Skype for Business roles every time new updates are available.

The updates are pushed automatically to the CCE server and perform system upgrade. During the upgrade, the CCE may not be operational. The CCE Install Wizard allows you to define the time frames to perform these updates. It is recommended to define the time windows to perform the updated at company non-working hours.

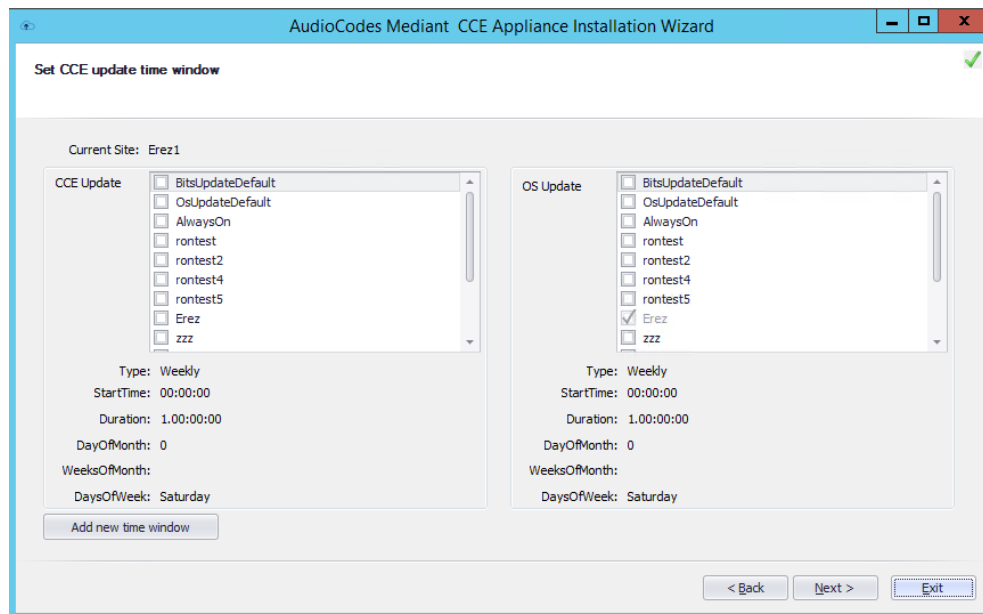
In a High Availability deployment, the Office 365 applies updates sequentially to each CCE. Office 365 allows the definition of multiple different update time windows per “Site”.

Update time windows are identified by Time window name and update settings.

➤ **To set the CCE and OS update time windows:**

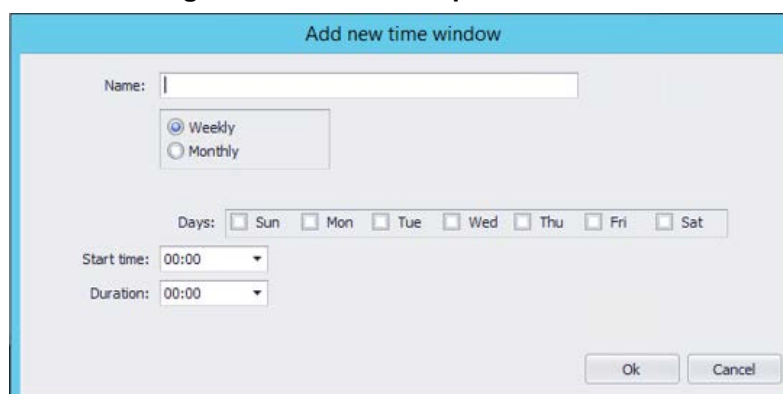
1. Select the Update Time Windows from the CCE Update list as the time windows to be used for the CCE Bits updates (you may select multiple time windows).
2. Select the Update Time Windows from the OS Update list as the time windows to be used for the OS updates (you may select multiple time windows).

Figure 4-32: Set CCE and OS Update Configuration



3. You can add new time windows definitions using the **Add new time window** button:

Figure 4-33: Add new update time window



4. Enter the name of the new time window.
5. Select either the Weekly or Monthly update option.
6. Select the days of the week to allow the update.
7. Select the start time and the duration to allow the update.
8. Click the **OK** button, the new time window is created and added to the available time window list. You can select the new time windows for your CCE site.
9. Once complete, click the **Next** button to continue.



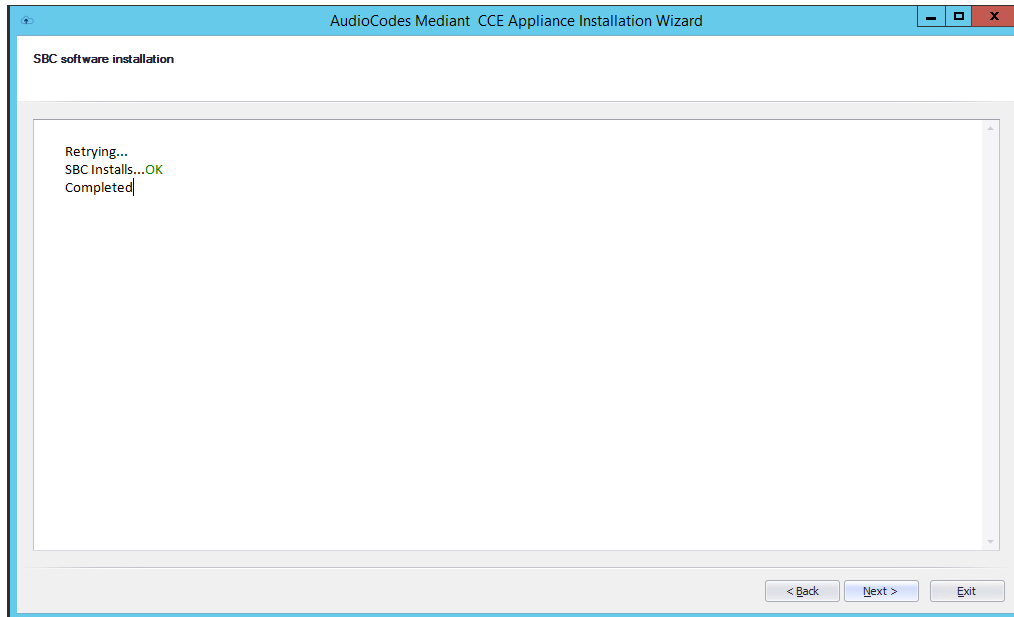
Note: In case you want to disable automatic OS or CCE updates, set the time windows duration to 0.

4.2.14 Step 14: Add Software SBC on the Mediant Server CCE Appliance

For AudioCodes Mediant Server CCE Appliance (based on the HP server), the install wizard adds AudioCodes Software SBC as an extra Virtual machine. To configure the AudioCodes Virtual Software SBC, refer to document *LTRT-10406 Mediant Virtual Edition SBC Installation Manual Ver. 7.0*.

➤ To add software SBC on the CCE Appliance:

Figure 4-34: SBC Software Installation



1. Click **Next** button to continue.

4.2.15 Step 15: Set the GW/SBC Certificate

At this stage, you will be able to set the collocated Gateway/SBC certificate. This certificate is required in case TLS is used to secure the connection between the Gateway/SBC and the CCE Mediation server.

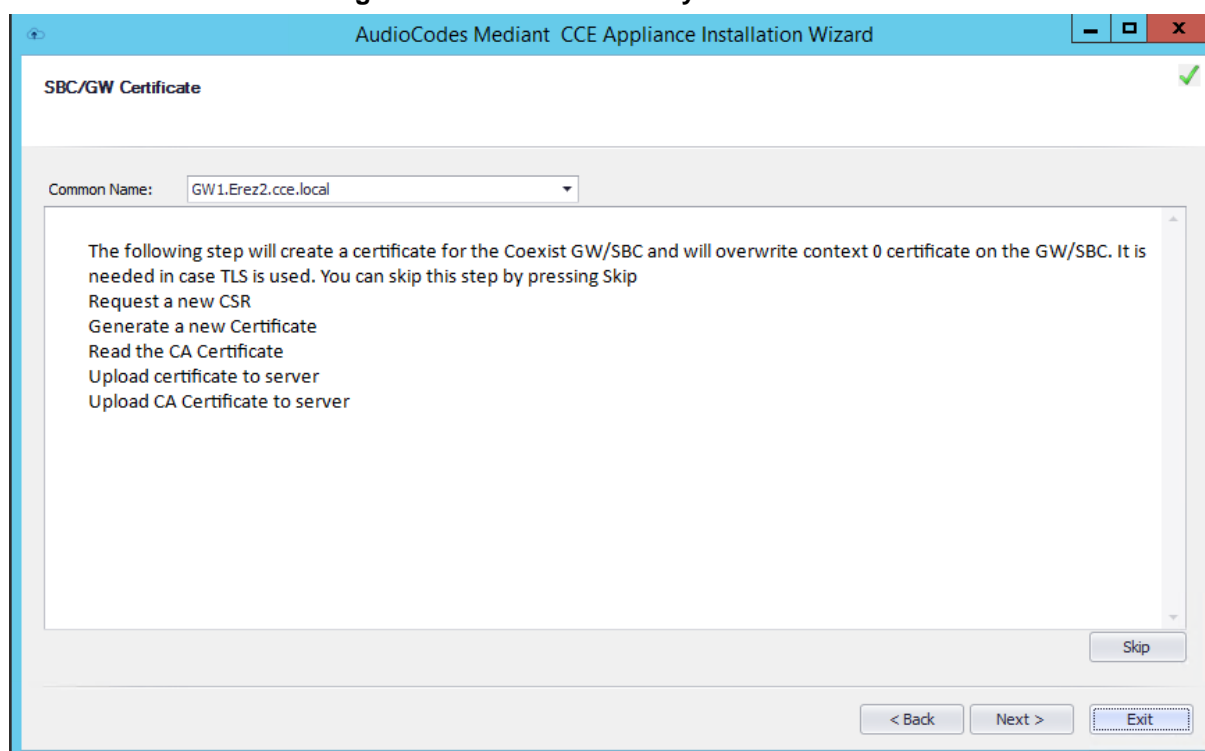
In case TLS is not required you can select the **Skip** button.

The new certificate will be signed by the CCE internal CA automatically and be uploaded to the Gateway/SBC under Context index 0 (note: the new certificate will override any other certificate in context 0).

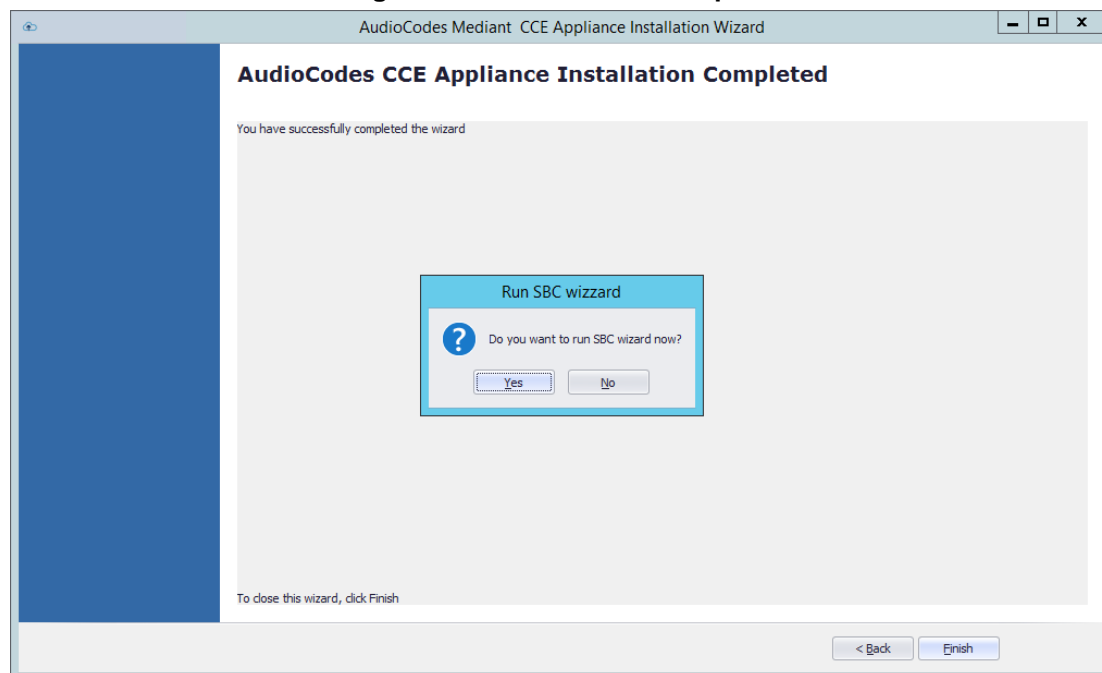
➤ **To set the gateway/SBC certificate:**

1. Select the correct Gateway/SBC FQDN from the Common Name field.

Figure 4-35: Set the Gateway/SBC Certificate



2. Click the **Next** button to continue.

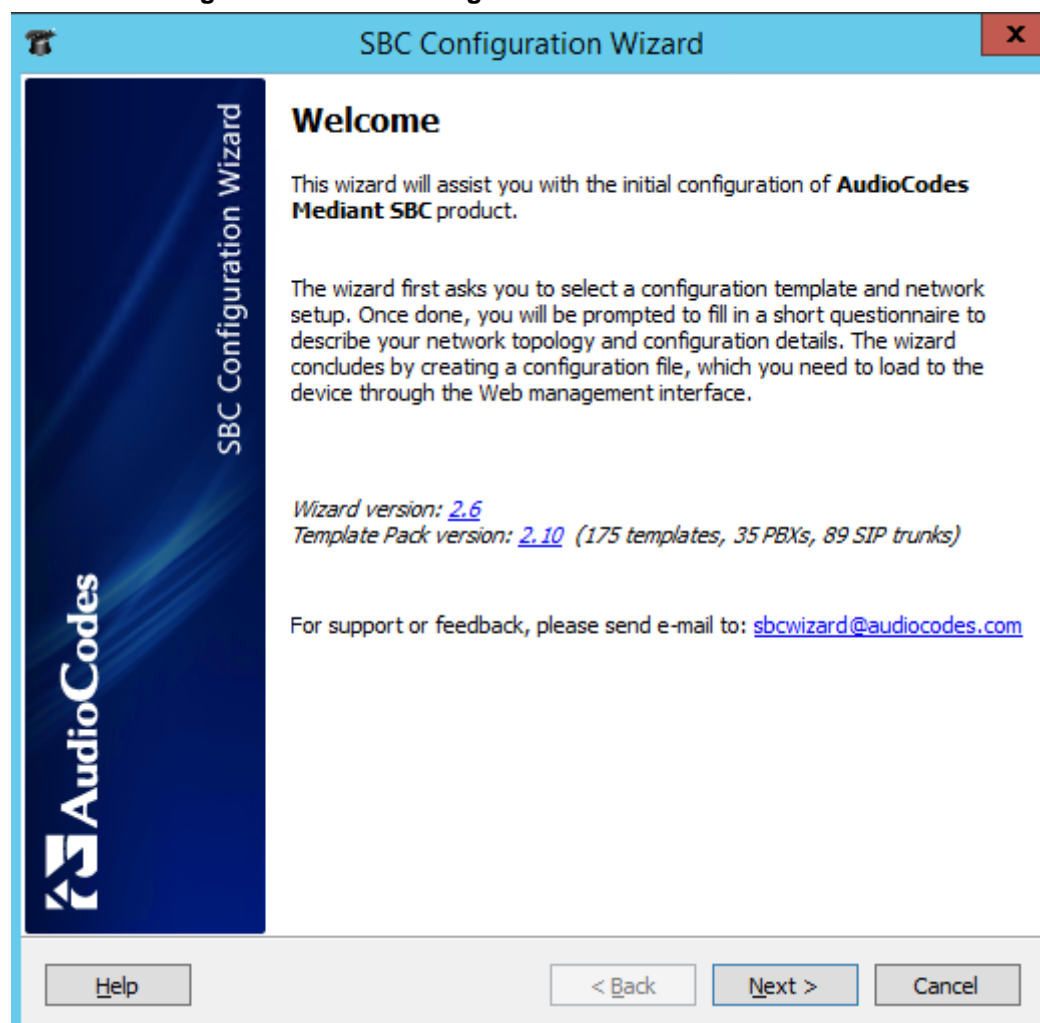
Figure 4-36: Installation Complete

3. Click **Finish**. You are asked if you wish to run the SBC wizard to configure the SBC device using the SBC wizard and then to generate an ini file at end of the process.

4.2.16 Step 16: Configure AudioCodes Gateway/SBC

To configure the SBC, you can use the SBC Wizard which opens automatically at the end of the AudioCodes Mediant CCE Install Wizard process.

Figure 4-37: SBC Configuration Wizard Welcome



Configure the AudioCodes Mediant 800 Gateway/SBC or Mediant Software SBC according to your PSTN/SIP trunk connection. For more information, refer to the relevant product documentation:

- Mediant 800B Gateway and E-SBC User's Manual
- Mediant Software SBC Virtual and Server Editions User's Manual
- Skype for Business - Mediant SBC for ITSP SIP Trunking Configuration Note

4.2.17 Step 17: Post-Installation Configuration

Once the installation has completed, perform the post installation steps according to instructions in the *Configure Cloud Connector integration with your Office 365 tenant link* <https://technet.microsoft.com/en-us/library/mt740651.aspx>:

- Configure the firewall
- Set up PSTN gateways
- Update the domain for your tenant
- Add DNS records in Office 365 for your Edge
- Set up your users in Office 365
- Enable users for Cloud PBX voice and voice mail services
- Assign users to PSTN sites

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5 Recovering CCE Image from USB

The AudioCodes Mediant CCE Appliance is shipped with the Host server pre-installed; however, in some cases customers may need to re-install or recover the CCE image.

This section describes the process for recovering the Mediant CCE Appliance (restore to default).



Warning: All data will be removed from the hardware device during the recovery process. During this process, a warning message is displayed, which prompts for permission to continue before data is erased.

This chapter describes the recovery procedures:

- Recovering AudioCodes Mediant Server CCE Appliance image (see below).
- Recovering AudioCodes Mediant 800 CCE Appliance image (see Section 5.2).

5.1 Recovering Mediant Server CCE Appliance Image

The procedure below describes how to install the software on the Mediant Server CCE Appliance.

➤ **To install the software on the Mediant Server CCE Appliance:**

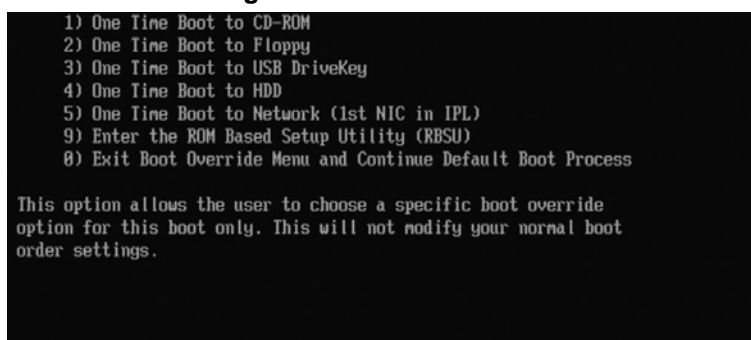
1. Insert the Mediant CCE Appliance recovery USB Drive to the front USB port.
2. Power up the server.
3. When the HP Splash screen appears, press **F11** for the Boot Menu.

Figure 5-1: HP Splash Screen



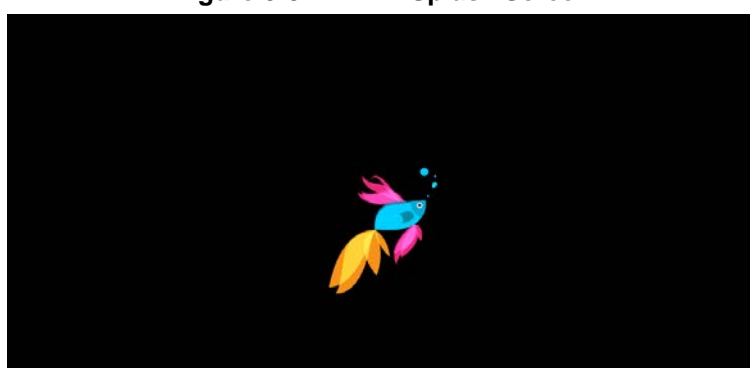
4. Select Option **3 One Time Boot to USB DriveKey** option.

Figure 5-2: One Time Boot



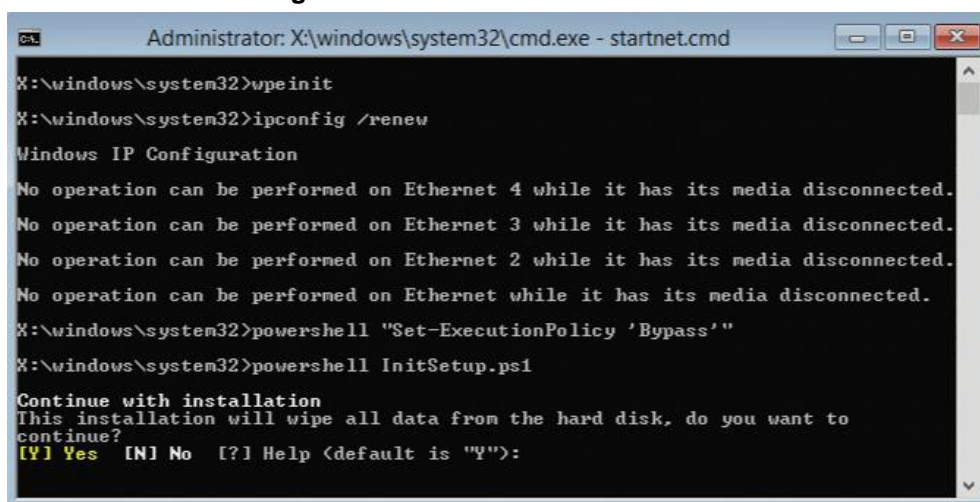
5. After selecting the USB key from which to boot, the WinPE Splash screen appears:

Figure 5-3: WinPE Splash Screen



6. After the WinPE commences, you will see a command line window, prompting you to Continue with the installation.

Figure 5-4: Continue with installation



- Click <Enter>, or <Y> followed by <Enter>, to continue the installation process.



Warning: All data will be erased from the device during installation.

The installer software will now partition and format all HDD storage of the hardware platform, and copy the contents of the USB to the recovery partition. The software will install Windows 2012R2 as the operating system and may reboot several times.

Figure 5-5: Copying files from USB to Recovery

```
Administrator: X:\windows\system32\cmd.exe - startnet.cmd
DiskPart succeeded in creating the specified partition.

Copying files...
{1 of 3030}
Copying ACS-6.3.3-622-lync-RTM-sql-STD.iso
I: -> E:\
{oooooooooooooooo}

DISKPART>
DiskPart successfully assigned the drive letter or mount point.
DISKPART>
DiskPart succeeded in creating the specified partition.
DISKPART>
100 percent completed
DiskPart successfully formatted the volume.
DISKPART>
DiskPart successfully assigned the drive letter or mount point.
DISKPART>
```

Once Windows 2012 R2 has been installed, you may remove the USB key.

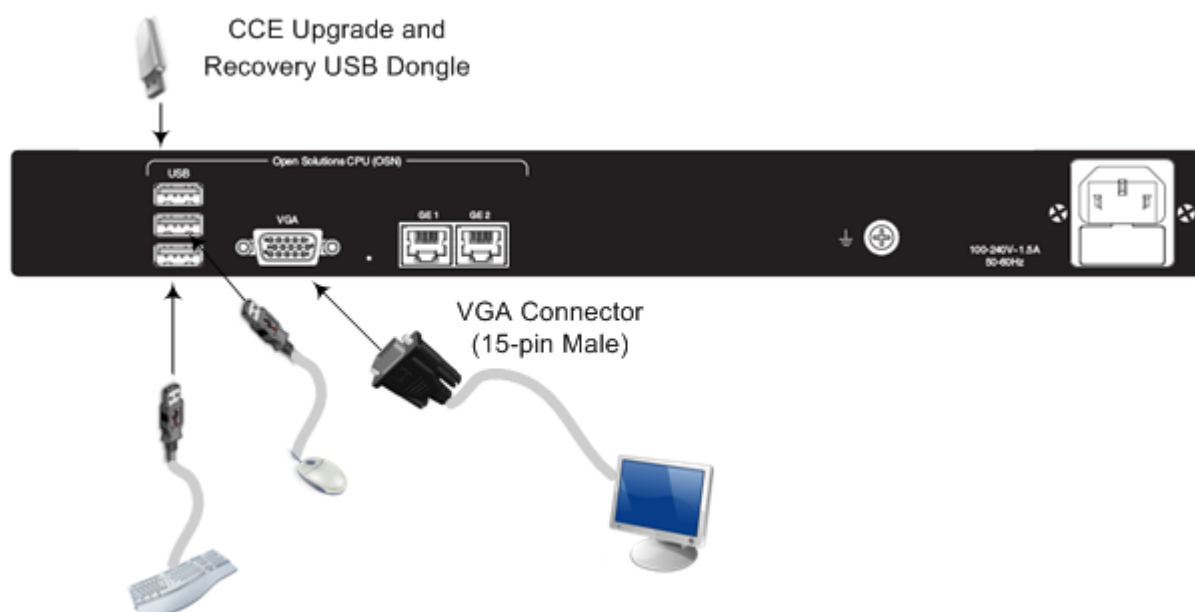
5.2 Recovering Mediant 800 CCE Appliance Image

The procedure below describes how to install or re-install the CCE software on the AudioCodes Mediant 800 CCE Appliance.

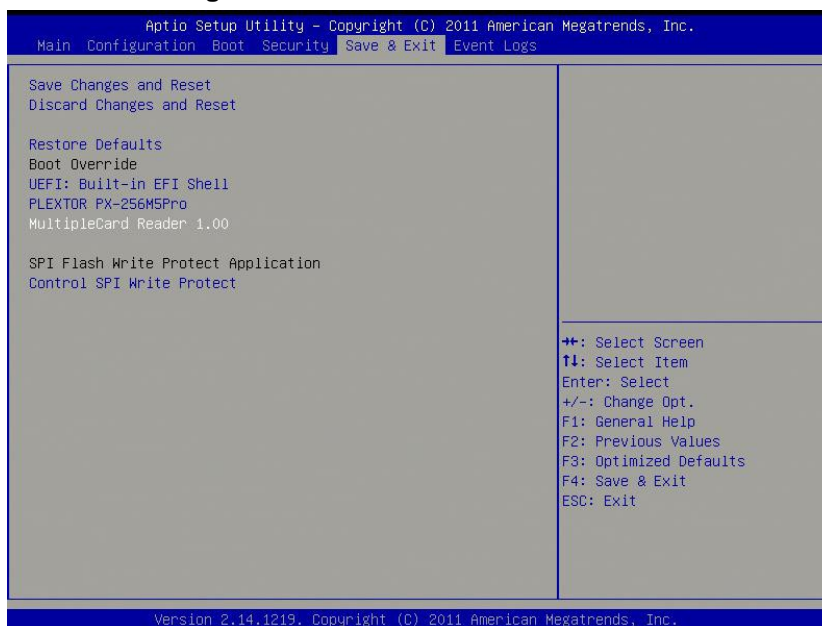
➤ **To install or re-install the software on the AudioCodes Mediant 800 CCE Appliance:**

1. Plug in the Mediant 800 appliance's OSN server accessories:
 - a. Connect computer peripherals (e.g., mouse and keyboard) to the USB ports (Standard-A type) labeled **USB**.
 - b. Connect the CCE Upgrade and Recovery USB dongle to one of the USB ports, labeled **USB**.
 - c. Connect a monitor using a 15-Pin D-type male connector to the VGA female port; labeled **VGA** (this VGA cable is not supplied).

Figure 5-6: Plugging OSN Server Accessories



2. Power up the OSN server.
3. When the AMI BIOS Splash screen is displayed, press **F2** for Setup Menu.
4. Navigate to the Save & Exit page, move the cursor down to Boot Override, and select the USB key. In the example below, the USB device appears as **MultipleCard Reader**.

Figure 5-7: Mediant 800 Boot Override

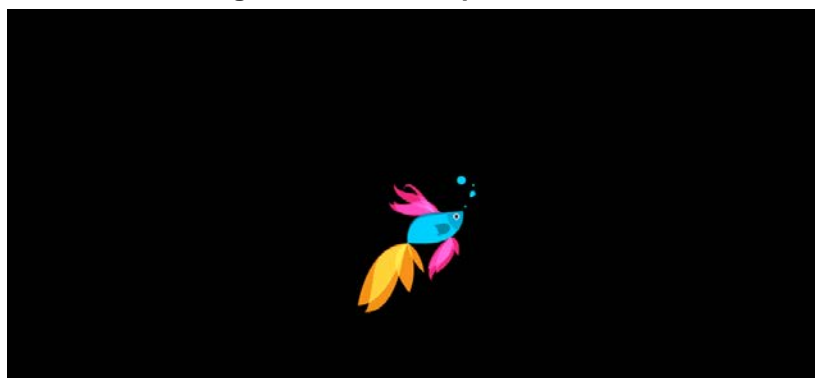
5. Press **Enter**; the Mediant 800 OSN server restarts.



Warning: Failure to set the First Boot device and Boot Override correctly can result in the server performing an endless loop, constantly rebooting from the USB (partitioning, formatting, and installing Windows each time).

6. After restarting, the Mediant 800 CCE appliance's OSN server boots from the USB key (once only) and the WinPE Splash screen appears:

Figure 5-8: WinPE Splash Screen



7. After WinPE starts, a command line window is displayed, prompting you if you wish to continue with the installation. Click **Enter**, or **Y** followed by **Enter** to continue the installation process.

Figure 5-9: Continue with Installation

```
Administrator: X:\windows\system32\cmd.exe - startnet.cmd
X:\windows\system32>upeinit
X:\windows\system32>ipconfig /renew
Windows IP Configuration

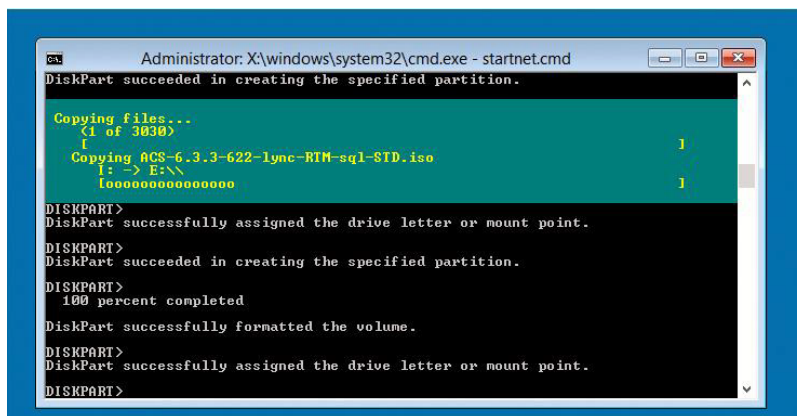
No operation can be performed on Ethernet 4 while it has its media disconnected.
No operation can be performed on Ethernet 3 while it has its media disconnected.
No operation can be performed on Ethernet 2 while it has its media disconnected.
No operation can be performed on Ethernet while it has its media disconnected.
X:\windows\system32>powershell "Set-ExecutionPolicy 'Bypass'"
X:\windows\system32>powershell InitSetup.ps1
Continue with installation
This installation will wipe all data from the hard disk, do you want to
continue?
[Y] Yes [N] No [?] Help <default is "Y">:
```



Warning: All data will be wiped from the device during installation.

8. The Installer software will now partition and format the HDD storage of the hardware platform, and copy the contents of the USB key to the recovery partition. The software will install Windows 2012R2 as the operating system and may reboot several times.

Figure 5-10: Copying Files from USB to Recovery



9. Once Windows 2012 R2 has been installed, you may remove the CCE Upgrade and Recovery USB dongle.

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A BIOS Setup

This appendix describes how to setup the BIOS of the CCE appliance.

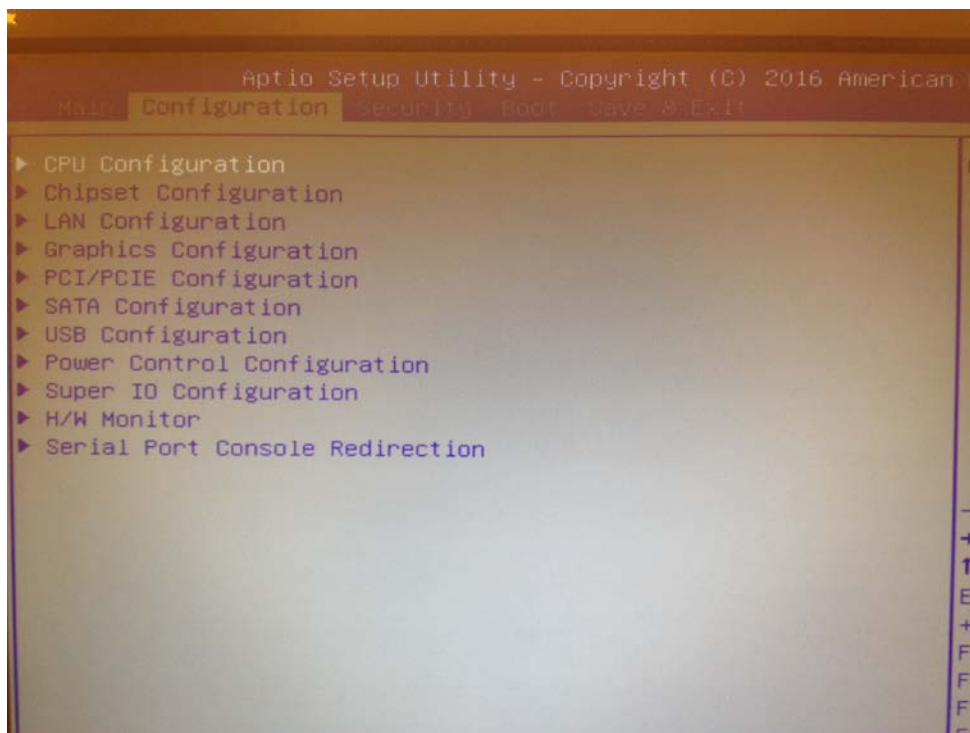
A.1 Mediant 800 CCE Appliance

The Mediant 800 CCE appliance must operate with Hyper Threading (HT) disabled in the BIOS settings.

➤ **To setup the Bios:**

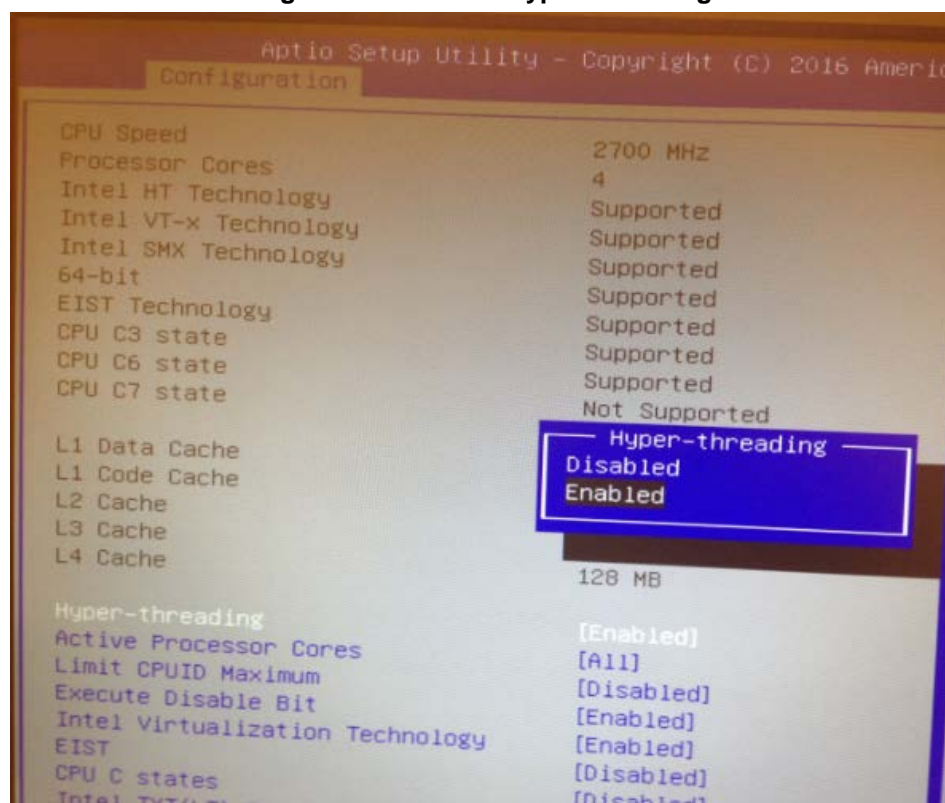
1. Reset the server and press **DEL** and **F2** to access the BIOS settings.
2. Open the CPU Configuration menu (**BIOS** menu > **Configuration** > **CPU Configuration**).

Figure A-1: CPU Configuration



3. Access the 'Hyper-threading' screen and disable Hyper-threading.

Figure A-2: Disable Hyper-threading



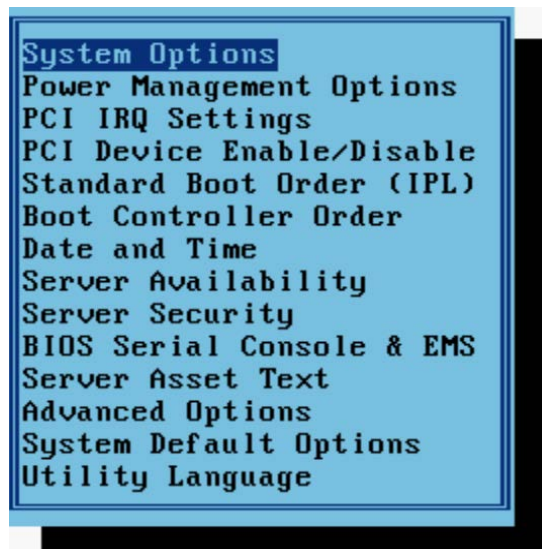
A.2 Mediant Server CCE Appliance

The Mediant server CCE appliance must operate with Hyper Threading (HT) disabled and power performance set to maximum in the BIOS settings.

➤ **Do the following:**

1. Reset the server and press **F9** to access the BIOS settings.

Figure A-3: Hyper Threading Settings



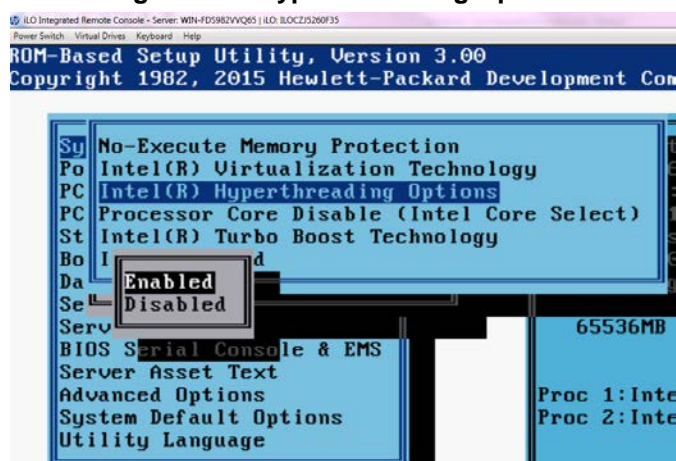
2. Choose **System Options** and then **Processor Options**:

Figure A-4: Processor Options



3. Access the 'Hyper Threading Options' screen and choose **Disabled**.

Figure A-5: Hyper Threading Options



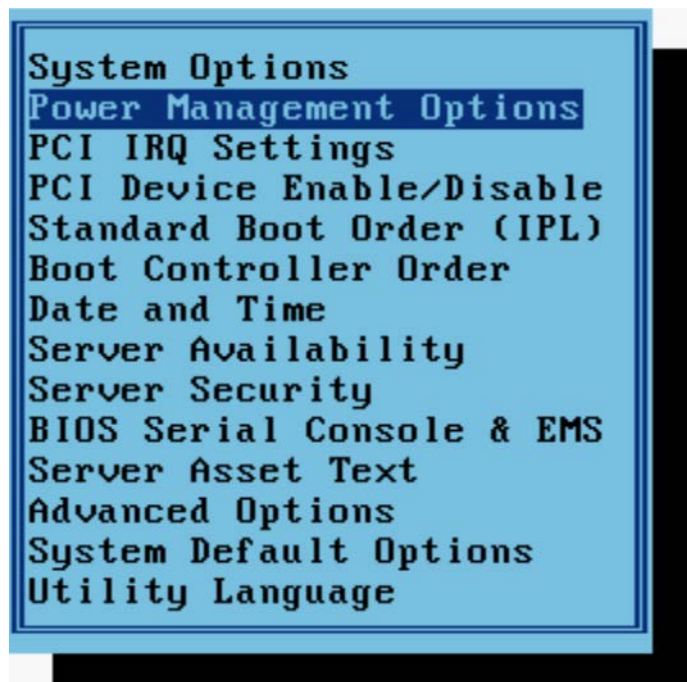
A.2.1 Power Performance Settings

This section describes how to verify the power performance settings of the Mediant Server CCE appliance.

➤ To verify the power performance settings:

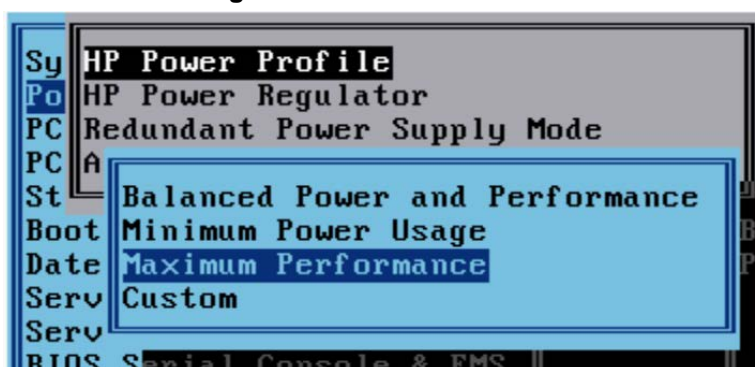
1. Choose **Power Management Options**.

Figure A-6: Power Management Options



2. Choose **HP Power Profile** and verify that the power is set to maximum performance.

Figure A-7: HP Power Profile



3. Go to **HP Power Regulator** and verify that it is set to HP Static High Performance Mode.

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B Known Issues and Workarounds

This appendix describes some known issues with Office 365 CCE installations and their workarounds.

B.1 Cleaning the Office 365 Tenant

In some cases, the Install Wizard uninstall may not completely clean the Office 365 tenant of the previous installation instance. In such cases, you need to perform the procedure described below to completely clean the CCE from your Office 365 tenant:

➤ **To clean up the Office 365 Tenant installation:**

1. Connect via remote desktop to the CCE Host.
2. Open PowerShell (run as administrator).
3. Enter the following command:

```
Import-PSSession (New-CsOnlineSession $cred)
```

4. Enter the credentials of the Office 365 Admin tenant.
5. To remove the current CCE, run the following command (you will need to copy the identity from the correct site to the next command):

```
Get-CsHybridPSTNAppliance
```

6. Enter the following command to remove the CCE appliance:

```
Unregister-CsHybridPSTNAppliance -Identity <identity here> -Force
```

7. Enter the following command to verify that the CCE has been removed:

```
Get-CsHybridPSTNAppliance
```

B.2 Manual Windows Operating System Activation

Currently the four virtual machines (VMs) (Edge, DC, Mediation and CMS) should be manually activated with the Windows 2012 R2 activation key.

Each Mediant CCE Appliance is shipped with 2 **Windows 2012R2** stickers attached to the bottom of the physical server.

- **Sticker 1:** activation key should be used for activating the Edge and DC operating systems.
- **Sticker 2:** activation key should be used for activating the Mediation and CMS operating systems.



Important: During the CCE automatic update, Office 365 creates four new VM's with the new updated CCE version that will replace the existing four VMs. As a result, the four new VMs should be manually activated with the Windows Activation Key.

A future AudioCodes release will include a mechanism that will automatically activate all four VM's during the initial installation and for every CCE update done automatically by the Office 365.

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