Configuration Note

AudioCodes One Voice™ for Microsoft® Skype for Business

CloudBond 365™ All Editions

Software Installation

Version 7.2.5

AudioCodes

CLOUDBOND 365

Tomorrow's UC Today

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Related Documentation

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Product Notice 0252 BIOS Update

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26583	Initial document release for Version 7.0.
26584	Co-located Hyper-V / Domain Controller with Virtual Machines section update.
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26586	Updates for Version 7.2.5

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1 Introduction

This document describes how to install CloudBond 365 Software Version 7.2.5. It is intended primarily for AudioCodes staff and dealers, but may also be used as a guide for re-loading software onto existing AudioCodes hardware, such as for system recovery.

The Software Install Wizard described in the guide is capable of installing software for:

- CloudBond 365 Standard Box Edition
- CloudBond 365 Standard+ Box Edition
- CloudBond 365 Pro Box Edition
- CloudBond 365 Enterprise Box Edition
- CloudBond 365 Virtualized Edition

The Software Install Wizard can optionally install:

- Skype for Business Consolidated Edge Server on Branch / Paired Pool Deployment
- AudioCodes SBC software
- A Reverse Proxy Server

The Software Install Wizard can also deploy CloudBond 365 in two forms:

- Standalone Deployment
- Branch / Paired Pool Deployment

1.1 Software Installer

The software installer consists of several components:

- A bootable USB drive containing a WinPE environment
- An ISO image of the CloudBond 365 Software
- A Software Configuration Wizard to gather data for installation
- An automated software installer to install the CloudBond 365 software to match a requested configuration

1.2 Configurations

The Software installer and Configuration Wizard allow for installation of multiple configurations of the CloudBond 365 software.

The Software installer and Configuration Wizard allow the CloudBond 365 software to be installed onto a Bare Metal hardware platform, or onto one with Windows 2012 R2 operating system already installed.

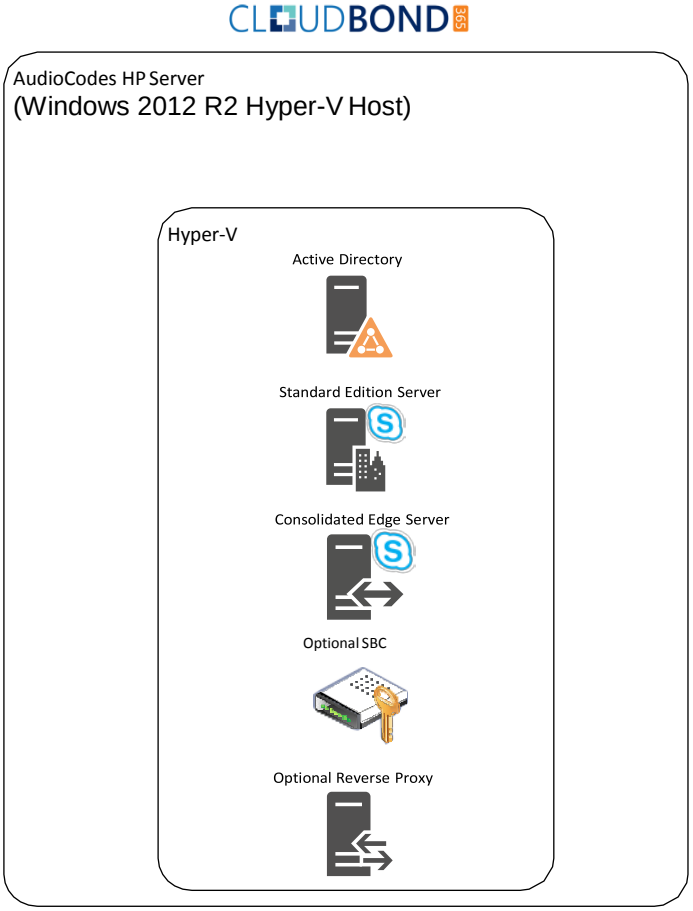
The software installer supports only the approved AudioCodes hardware.

1.2.1 Hyper-V Host with Virtual Machines

The **Hyper-V Host with Virtual Machines** deployment model installs Hyper-V on the selected host machine, and the three CloudBond 365 Servers (Controller, Fe, and Edge) as three separate virtual machines within Hyper-V.

This option is suitable for CloudBond 365 Pro Box and Enterprise Box Editions. (e.g., AudioCodes HP Servers).

Figure 1-1: Hyper-V Host with Virtual Machines

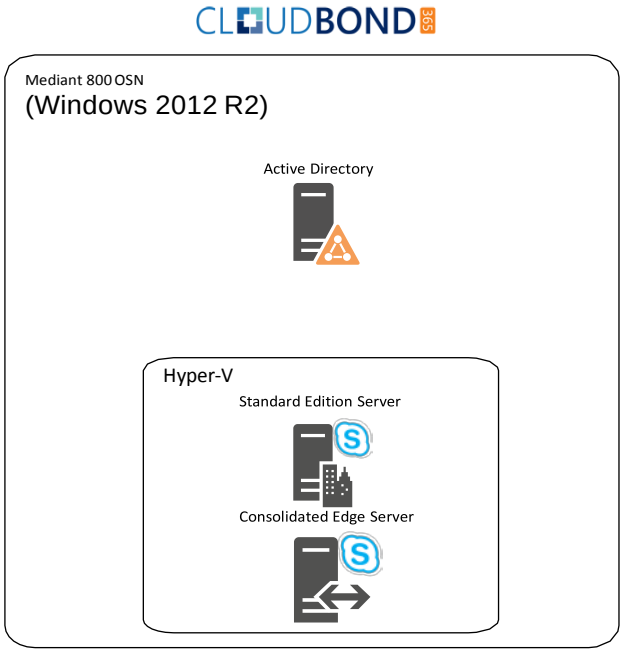


1.2.2 Co-located Hyper-V / Domain Controller with Virtual Machines

The co-located Hyper-V / Domain Controller with Virtual Machines install the CloudBond 365 Controller (DC) and Hyper-V within the host machine, with the remaining CloudBond 365 Servers (FE and Edge) as Hyper-V virtual machines.

This option is suitable for CloudBond 365 Standard / Standard+ Box Editions (e.g. AudioCodes Mediant 800B OSN server).

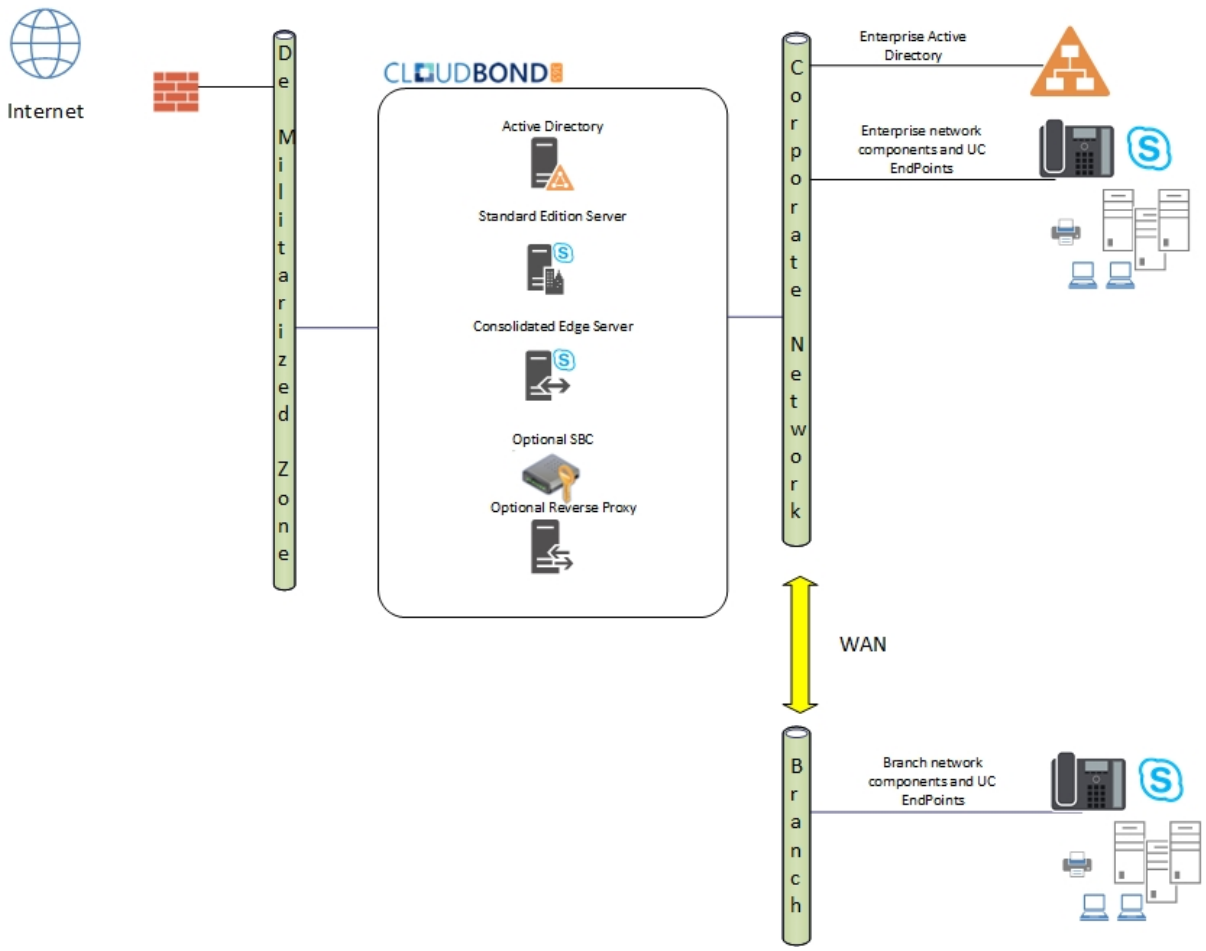
Figure 1-2: Co-Located DC and Hyper-V



1.2.3 Standalone Deployment

A standalone deployment is typically used for the first CloudBond 365 system installed for a customer.

Figure 1-3: Standalone Deployment



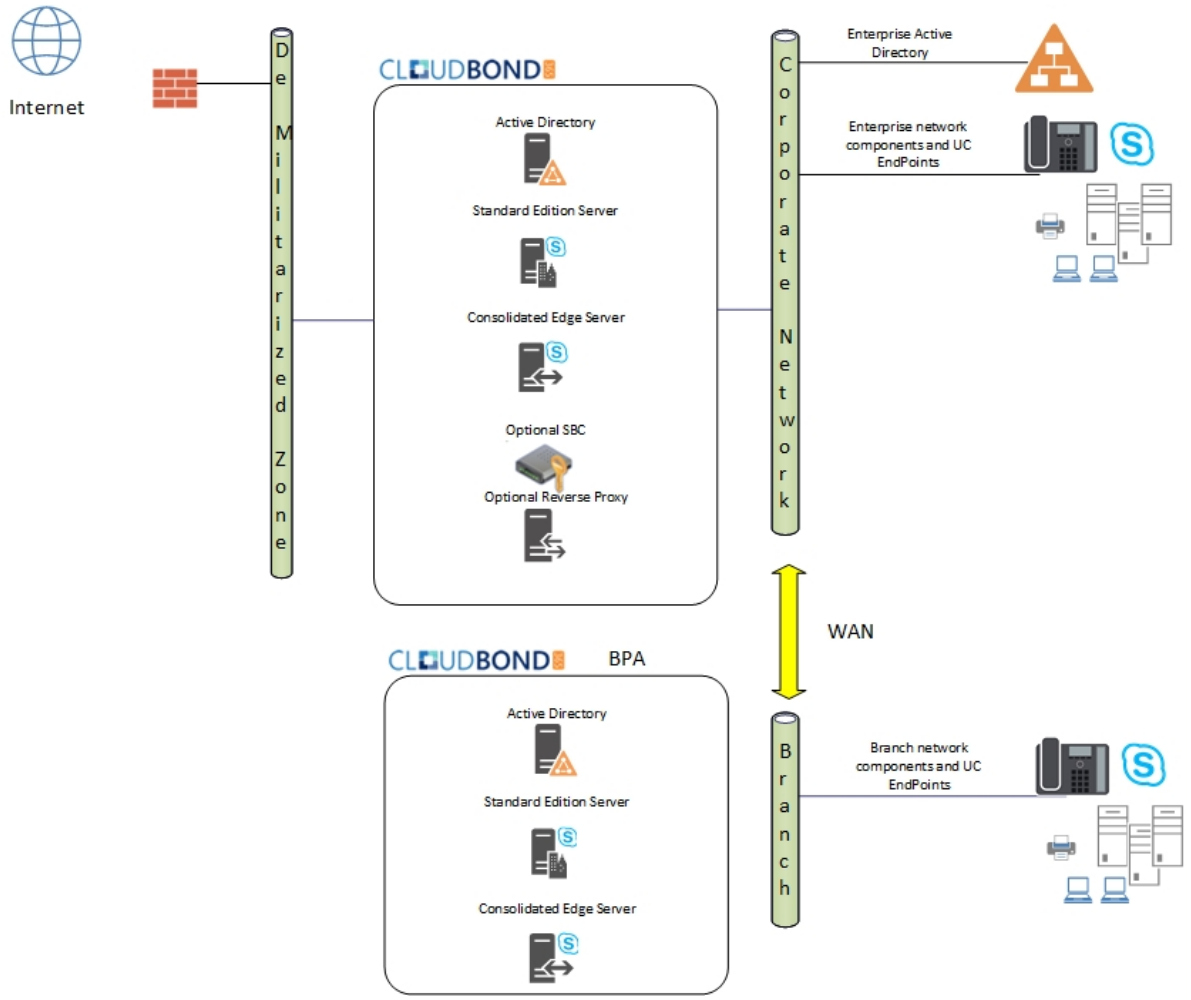
1.2.4 Branch / Paired Pool Deployment

A Branch / Paired Pool Appliance Deployment (BPA) is used where the customer already has an existing CloudBond 365 system deployed. A BPA deployment is used for the second and subsequent CloudBond 365 Deployments within the same customer environment.

There are many possible configurations and reasons for installing a BPA. Typically, it is to provide either:

- Continuous service to a Branch site with slow or unreliably WAN links. This is similar to a Skype for Business Survivable Branch Appliance, but with more features.
- Failover capability within the corporate site using Skype for Business Paired pools.

Figure 1-4: BPA Deployment



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2 Software Media

CloudBond 365 software is normally supplied on a specially prepared USB key. The key is bootable and must be inserted into the device as part of the installation procedure. It allows CloudBond 365 software to be installed onto the following:

- Bare Metal server hardware
- Windows 2012 R2 operating system already installed on the hardware

Warning: If booting from the USB key, all data will be wiped from the hardware device during installation. The software presents a warning and prompts for permission to continue before wiping data.

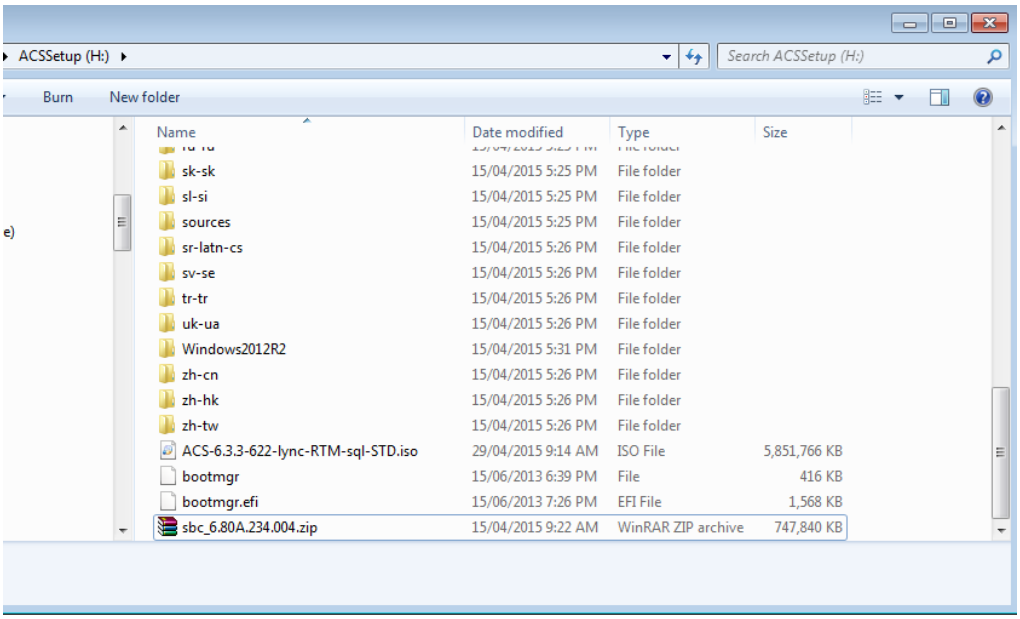
2.1 USB Drive

The USB Drive directory structure should be as shown in the image below. The drive contains:

- WinPE environment files
- Windows 2012 R2 directory
- ACS-7.2.x ISO image
- sbc_X.X.X.zip file containing the AudioCodes Software SBC

The USB drive is formatted as NTFS and is bootable. Additionally, the label of the USB Drive **must be** 'ACSSetup'.

Figure 2-1: USB Drive Contents



Warning: Under no circumstances must any .ISO image, file or folder containing the letters 'sbc' be present besides the zip file, as shown in the figure above (the exact version might differ from the figure above).

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3 Preparation

The CloudBond 365 Software may only be loaded onto hardware certified by AudioCodes. This will primarily be:

- AudioCodes HP Server for CloudBond 365 Pro and Enterprise Box Editions
- AudioCodes Mediant 800B with OSN for the CloudBond 365 Standard / Standard+ Box Edition

The hardware device must be prepared for the new software prior to installation. The preparation steps include:

- Ensuring no Ethernet cables are attached

Warning: If booting from the USB key, all data will be wiped from the device during installation. The software presents a warning and prompts for permission to continue before wiping data.

3.1 Partitioning

If performing a 'bare metal' installation, the following partitions will be automatically configured on the machine as part of the installation:

Table 3-1: Configured Partitions

Drive	Label	File System	Size (GB)
C	Windows	NTFS	80
D	Data	NTFS	At least 215 + 5 for Session Border Controller + 55 for Reverse Proxy
E	Recovery	NTFS	15

3.2 General Server Hardware

Do not connect any network cables during installation!!

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4 Bare Metal Install

This section describes the process for installing the CloudBond 365 software without a pre-installed Operating System on the server hardware (also known as *Bare Metal Install*).

The process boots into a Windows 2012 R2 Pre-installation Environment (WinPE) on the connected server hardware.

Warning: All data will be wiped from the hardware device during installation. The software presents a warning and prompts for permission to continue before wiping data.

The Installation program then partitions and formats the HDD storage of the hardware devices, installs Windows 2012 R2, and copies the contents of the USB key to the Recovery partition.

Once Windows 2012 is installed on the host, you can remove the USB Key, and continue with the installation as described in the next chapter.

4.1 Bare Metal Install – AudioCodes HP Server

This section describes how to install the software on the AudioCodes HP Server platform.

The CloudBond 365 Pro and Enterprise Box Editions are shipped with the software pre-installed.

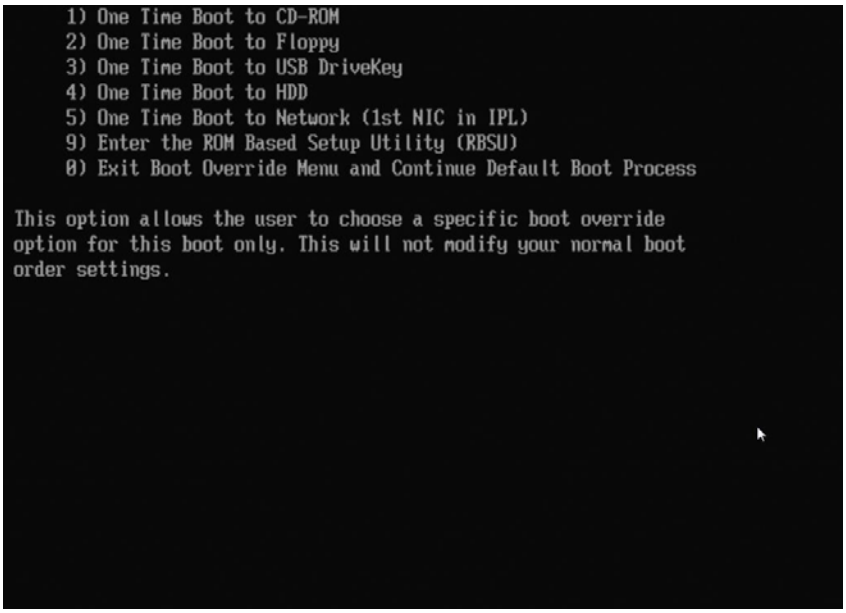
If installing on an AudioCodes Mediant 800, see Section 4.2 on page 22.

1. Insert the USB Drive in the front USB port.
2. Power on the server.
3. When the HP Splash screen appears, click F11 for Boot Menu.

Figure 4-1: HP Splash Screen

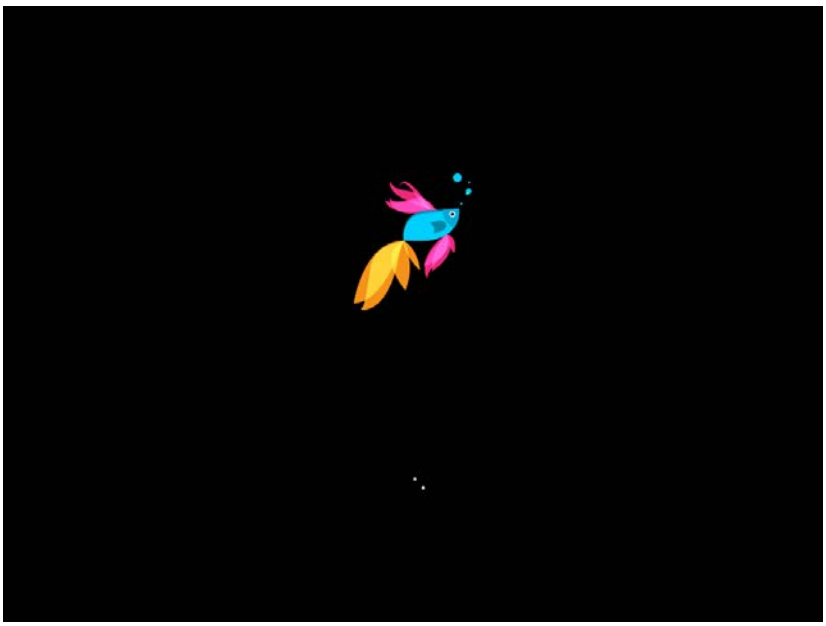
4. Select a manual One Time Boot to USB.

Figure 4-2: One Time Boot



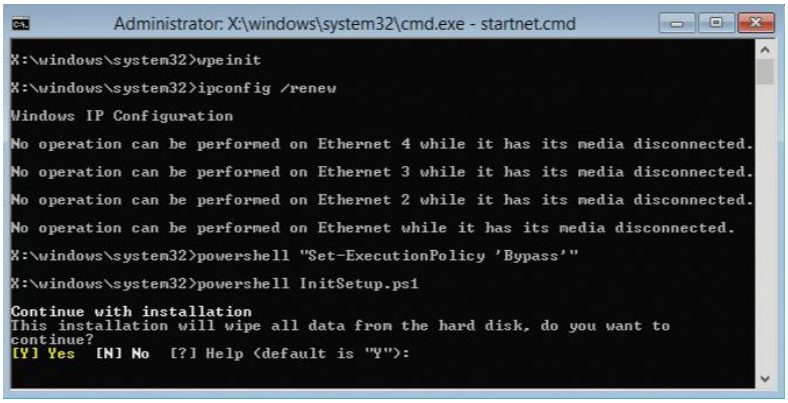
5. After selecting the USB key to boot from, the WinPE Splash screen appears.

Figure 4-3: WinPE Splash Screen



6. After WinPE starts, you will see a command line window, asking if you wish to Continue with installation. Click <Enter>, or <Y> followed by <Enter>, to continue the installation process.

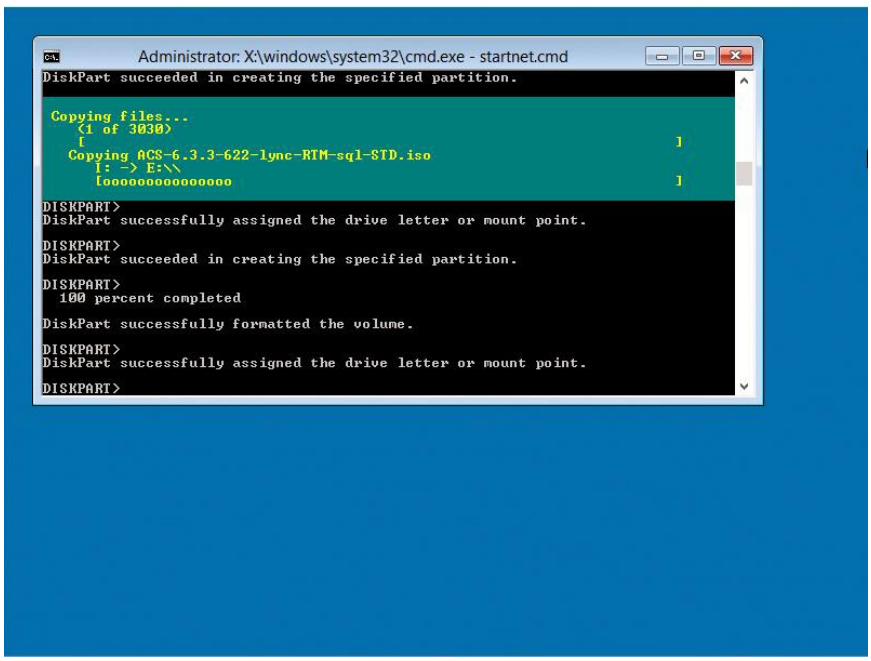
Figure 4-4: Continue with installation



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

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 2012 R2 as the operating system and may reboot several times.

Figure 4-5: Copying files from USB to Recovery



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

4.2 Bare Metal Install – Mediant 800 OSN

This section describes how to install or re-install the software on the AudioCodes Mediant 800 OSN platform. The CloudBond 365 Standard Box / Standard+ Box Edition is normally supplied with the software already installed.

Warning: You may need to upgrade the BIOS on older Mediant 800 OSN models before proceeding. See the latest Product Notice – AudioCodes CloudBond 365 BIOS Update. The minimum required BIOS version for Standard Box Edition is now American Megatrends Inc. 60104T00. The minimum required BIOS version for Standard+ Box Edition is now American Megatrends Inc. 51214T00.

➢ **To perform a Bare Metal install:**

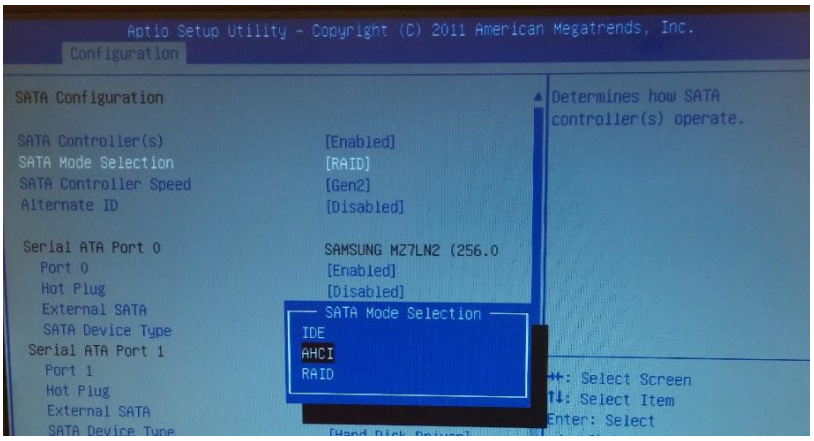
1. Insert the USB Drive in the rear USB port.
2. Power on the server.
3. When the AMI BIOS Splash screen appears, click F2 for Setup Menu.

Note: The BIOS version is displayed on the splash screen. In the example below, the version is (41112T00), and requires updating.

Figure 4-6: AMI BIOS Splash Screen

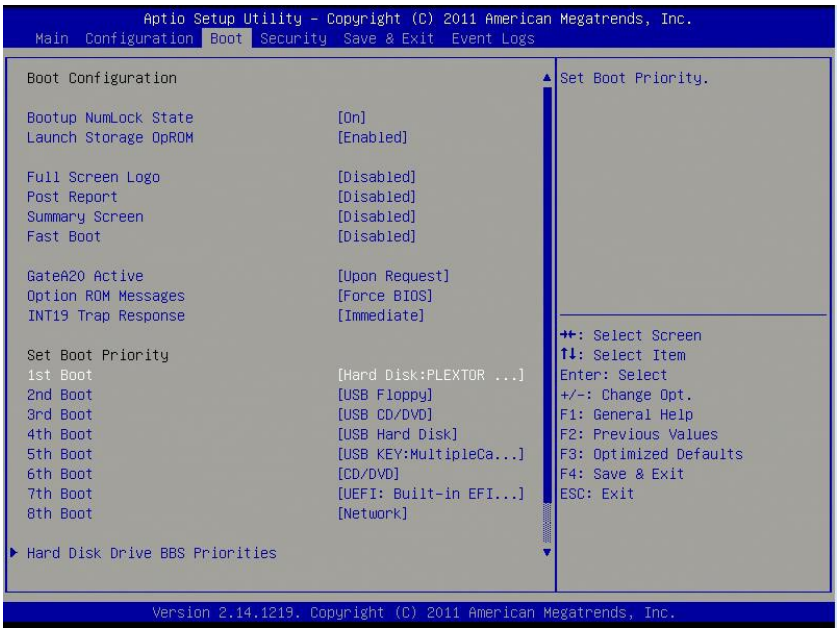
4. Navigate to the Configuration page, and then ensure that SATA mode is set to AHCI.

Figure 4-7: SATA Mode



5. Navigate to the Boot page, and then ensure the internal HDD (usually PLEXTOR) is set as the first boot device.

Figure 4-8: M800 First boot device



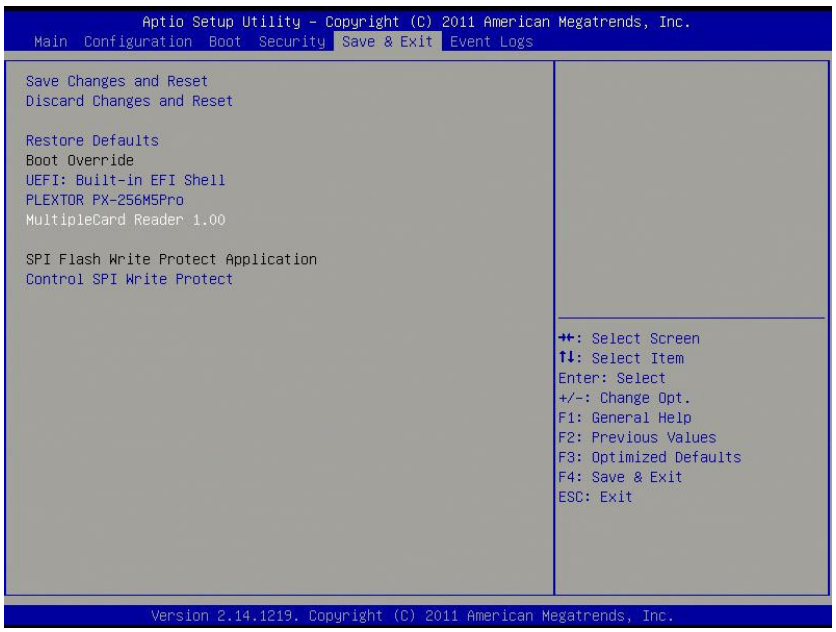
6. Navigate to the **Save & Exit** page, and then select **Save Changes** and **Exit**; the Mediant 800 OSN reboots.

7. When the AMI BIOS Splash screen appears, click **F2** for the Setup Menu.

Figure 4-9: AMI BIOS Splash Screen

8. Navigate to the Save & Exit page. This time move the cursor down to Boot Override, and select the USB key. In the example below, the USB device appears as **MultipleCard Reader**.
9. Click **Enter**; the Mediant 800 OSN restarts.

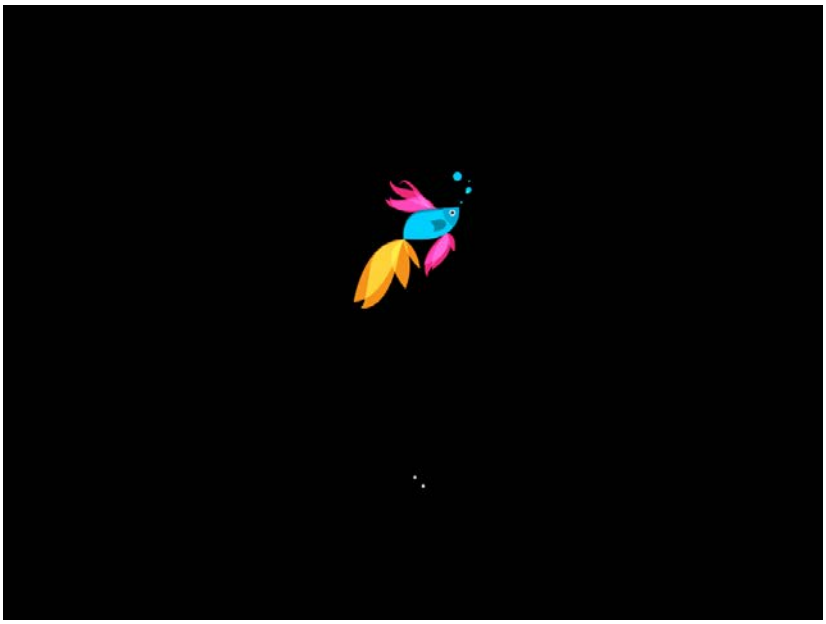
Figure 4-10: M800 Boot Override



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

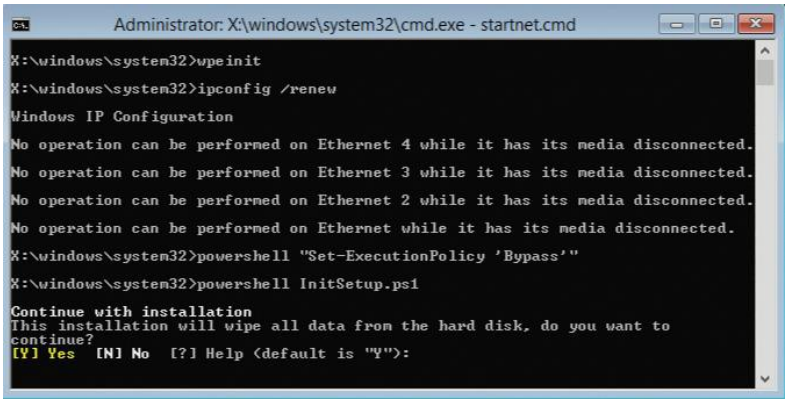
10. After restarting, the Mediant 800 OSN boots from the USB key (one time only) and the WinPE Splash screen appears:

Figure 4-11: WinPE Splash Screen



11. After WinPE starts, you will see a command line window, asking if you wish to Continue with installation. Click **Enter**, or **Y** followed by **Enter** to continue the installation process.

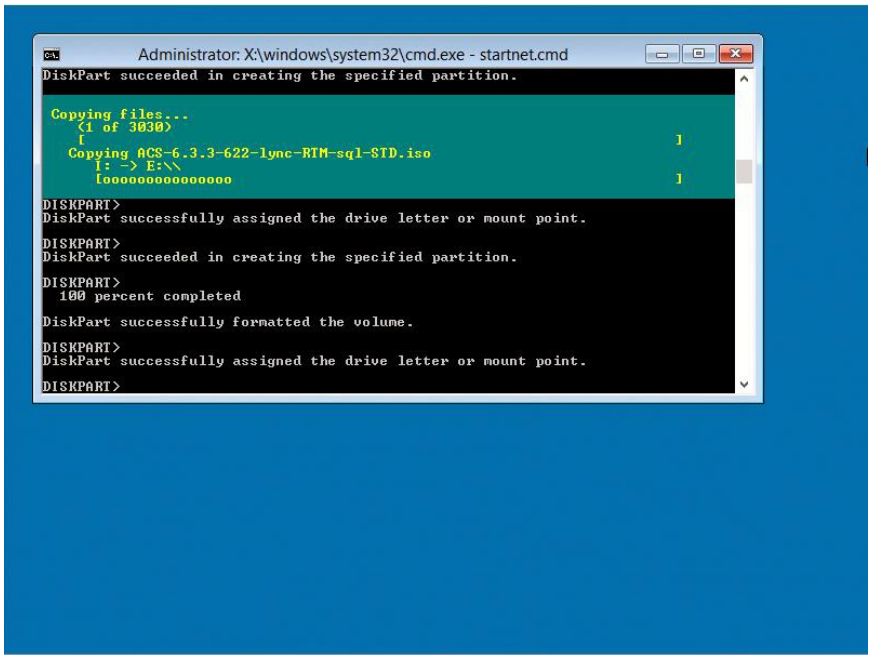
Figure 4-12: Continue with Installation



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

12. 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 2012 R2 as the operating system and may reboot several times.

Figure 4-13: Copying Files from USB to Recovery



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

5 Installing from Windows 2012 R2

If performing a Bare Metal installation by booting from the USB key, Windows 2012 R2 will be installed for you and the contents of the USB key copied to the Recovery partition.

Once the Windows 2012 R2 operating system has been installed, you can continue the software installation with the steps in the following sections.

Before continuing, make sure:

- The HDD storage has been partitioned and formatted correctly
- The contents of the USB Key have been copied to the Recovery partition
- The date, time, and time zone are set correctly within Windows

Note: After Windows 2012 R2 is installed, drive letters for the various partitions are randomly assigned and may vary from those in the following screenshots. The CloudBond software installer standardizes the drive letters during installation.

Warning: Failure to set the date, time, and time zone correctly prior to software installation will result in issues which may only become apparent sometime after installation.

Warning: If you choose to install a Branch / Paired Pool Appliance deployment type, you will need to prepare the existing CloudBond 365 environment before installing the additional BPA server. These steps are detailed in Section 8 on page 47. Do not start the Configuration Wizard before completing these steps.

To commence the remaining installation steps, mount the ISO image from the Recovery partition and start the Configuration Wizard, as described below.

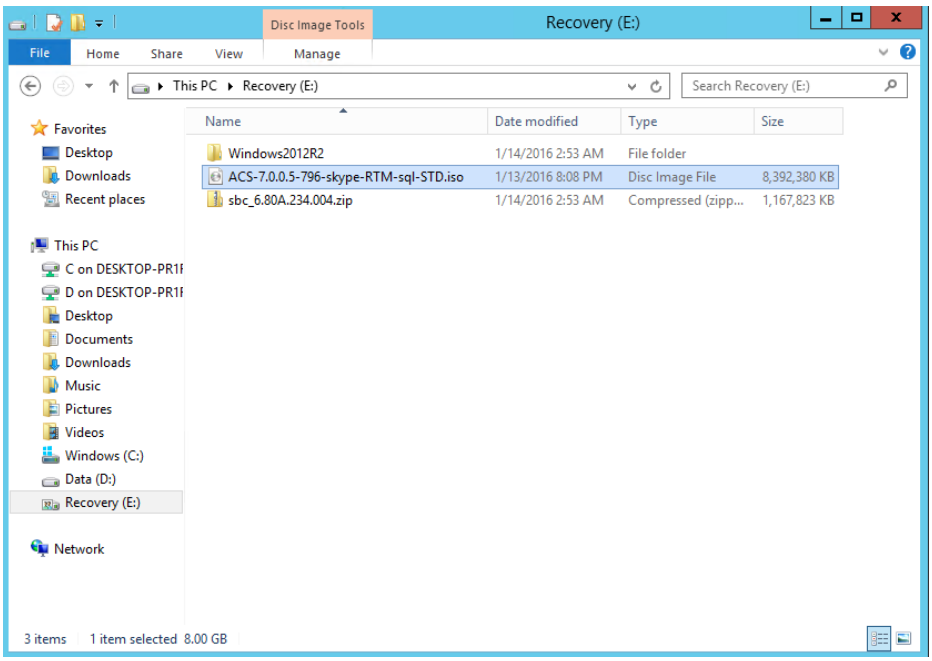
5.1 Recovery Partition

The Recovery partition should have a copy of selected contents from the USB key. The Recovery partition contains the following:

- Windows 2012 R2 directory
- ACS-7.0.x ISO image
- sbc_x.x.x zip file containing the AudioCodes Software SBC

The directory structure of the 'Recovery' Partition should appear as in the image below.

Figure 5-1: USB Drive Contents



Warning: Under no circumstances, should there be any files or folders containing the letters 'sbc' present besides the zip file as shown in the image (the exact version might differ from the image).

If the Configuration Wizard has been previously run, you may find the following additional files in the root of the recovery partition:

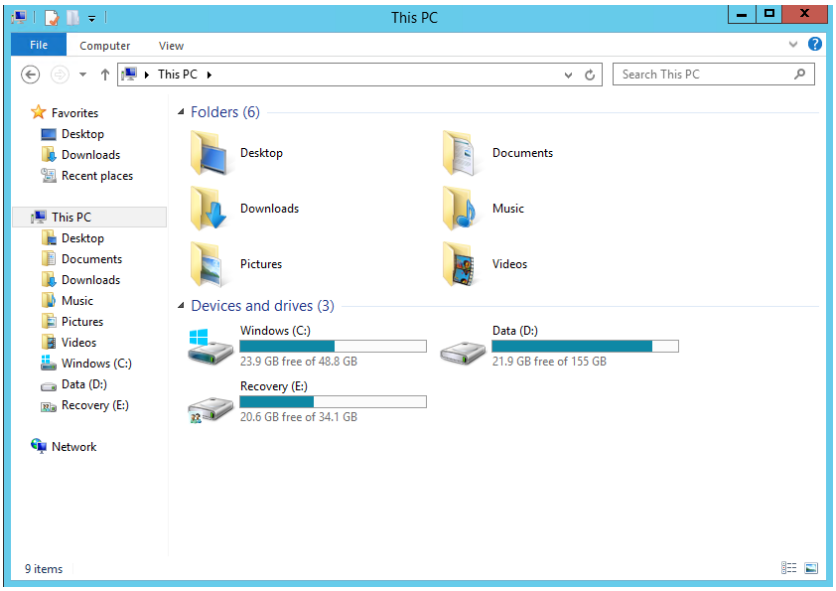
- configuration.xml
- Host.xml
- identities.txt

5.2 Mounting the ISO Image

If you have not already done so, remove the USB key from the system.

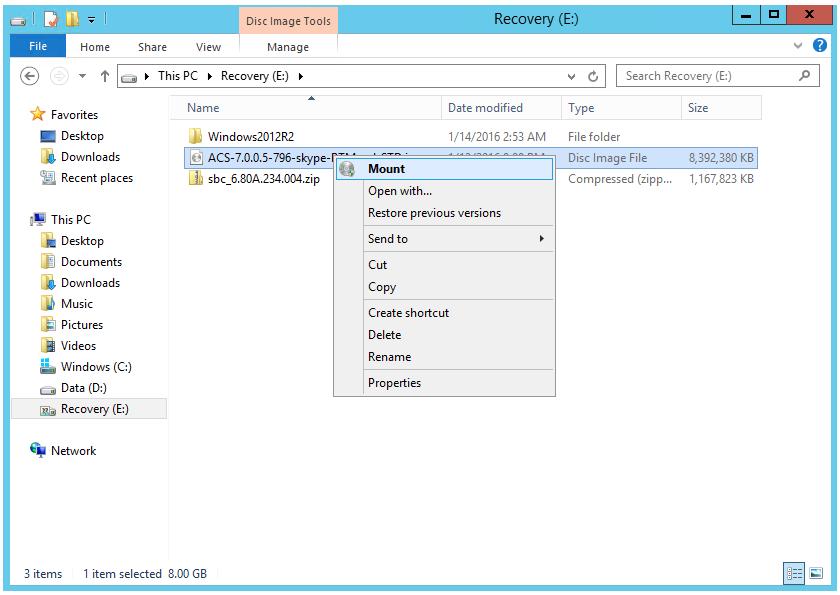
1. Open the Windows File Explorer.
2. Open the Recovery partition (double click).

Figure 5-2: Open the Recovery partition



3. Locate the ACS-7.x.x ISO image.
4. Mount the image by double clicking, or right-click and select mount.

Figure 5-3: Mounting the ISO image



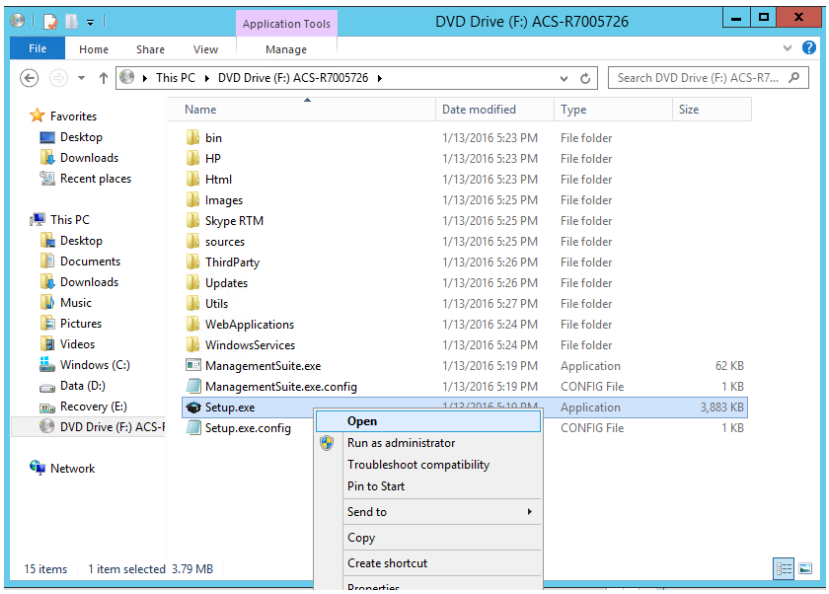
5. The ISO image will be mounted and assigned an available drive letter.
6. Windows File Explorer will automatically open a window showing the contents of the mounted ISO image.

5.3 Starting the Configuration Wizard

Warning: Do not start the Configuration Wizard before reading the following chapter regarding Deployment Types.

1. Locate the Setup application within the mounted ISO image.
2. Double Click, or right click and select open, to start the Configuration Wizard.

Figure 5-4: Starting the Configuration Wizard



6 Software Configuration Wizard

The Software Configuration Wizard will guide you through the options available for installing the CloudBond 365 software product.

When completed, the Wizard will store your configuration choices in a configuration file on the local HDD storage, in both the Recovery partition, and the c:\acs\installtmp directory.

Each time the Configuration Wizard is started, it will search for an existing configuration file. If one is located, the Configuration Wizard will proceed straight to the final summary page in readiness to perform the software installation.

6.1 Deployment Type

Shortly after starting the configuration wizard, you must choose from two deployment types:

- Standalone
- Branch / Paired Pool Appliance (BPA)

The two deployment types have completely different installation results, and are detailed in separate sections.

Warning: Once a Deployment Type is chosen, it is not possible to change the Deployment Type without restarting the Configuration Wizard.

6.1.1 Standalone Deployment Type

Note: A Standalone Deployment creates the first CloudBond 365 system for a customer.

A Standalone deployment type is for a standalone, CloudBond 365 Skype for Business deployment.

This is generally the first Skype for Business install for a site, and uses the Resource Forest model. It will automatically install a Domain Controller (DC) with the CloudBond 365 Management Suite (SysAdmin), Front-End server, and Edge Server, all within the Resource Forest.

The customer can then either operate the CloudBond 365 system by itself in standalone mode, or, follow the *AudioCodes CloudBond 365 Deployment Guide* to join the Resource Forest to their existing Domain using a forest trust.

If performing a Standalone Deployment Type, continue with the Section 7 on page 33.

6.1.2 Branch / Paired Pool Deployment Type

Note: A Branch / Paired Pool deployment can only be added to an existing CloudBond 365 system or any other Microsoft Skype for Business customer deployment.

A Branch / Paired Pool Appliance deployment type is for adding a CloudBond 365 Skype for Business device to an existing CloudBond 365 or Microsoft Skype for Business environment. It will create an additional SysAdmin Management Server, which can optionally be deployed as an additional full domain controller for resiliency / branch authentication and an FE server within the existing Skype for Business Topology. Optionally other components, like consolidated Edge server, SBC and Reverse Proxy can also be installed in the BPA depending on the hardware used.

If performing a Branch / Paired Pool Deployment Type, skip to Section 8 on page 47.

7 Standalone Deployment Type

A Standalone deployment type is for a standalone, CloudBond 365 Skype for Business deployment.

This is generally the first Skype for Business installation for a site and will automatically install a Domain Controller (DC) with the CloudBond 365 Management Suite, a Front-End server and an Edge Server in the Resource Forest model.

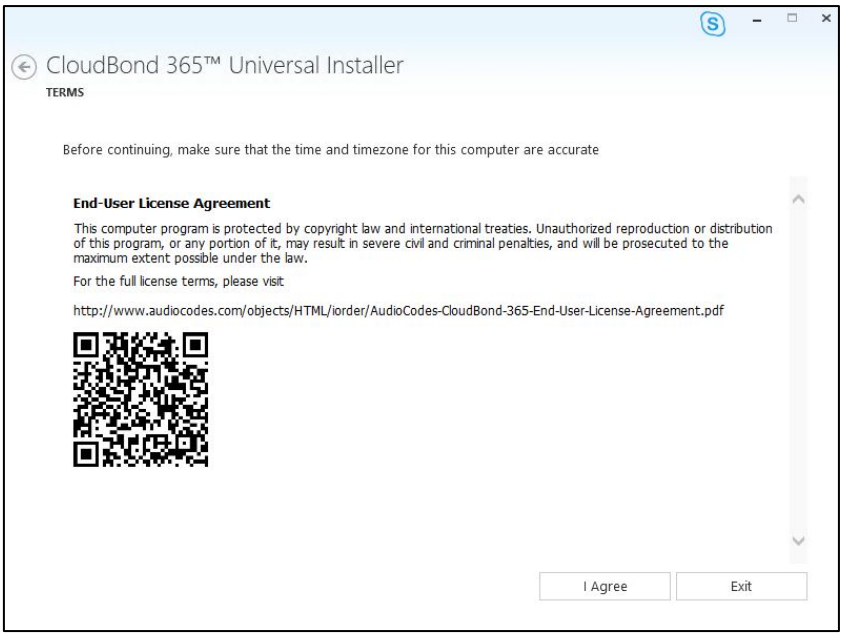
The customer can then either operate the CloudBond 365 system in standalone mode by itself, or, follow the *AudioCodes CloudBond 365 Deployment Guide* to join the Resource Forest to their existing Domain using a forest trust.

7.1 License Agreement

If you are running the Configuration Wizard for the first time, or an existing configuration file is not found, a license agreement page is presented. You must agree to the license terms before proceeding with the software installation.

This page offers a short copy write text, a link to the full license agreement, and a QR code which contains said link. Click I Agree to continue setup, or Exit to abort.

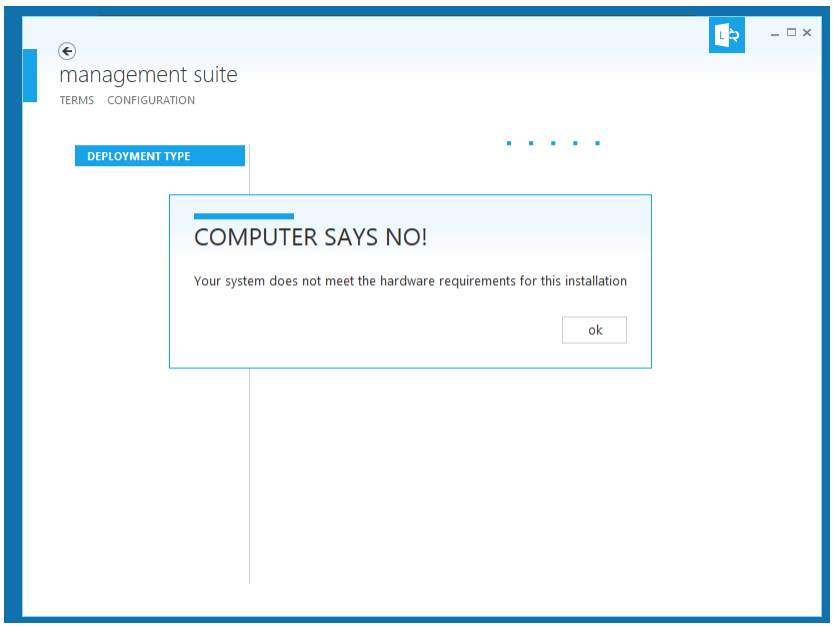
Figure 7-1: License Agreement



7.2 Hardware Check

The Configuration Wizard will first verify the hardware platform that it is running on. The hardware detected will influence the options presented within the Configuration Wizard. When the system running the setup does not meet the hardware requirements, the following message is shown.

Figure 7-2: Hardware Check

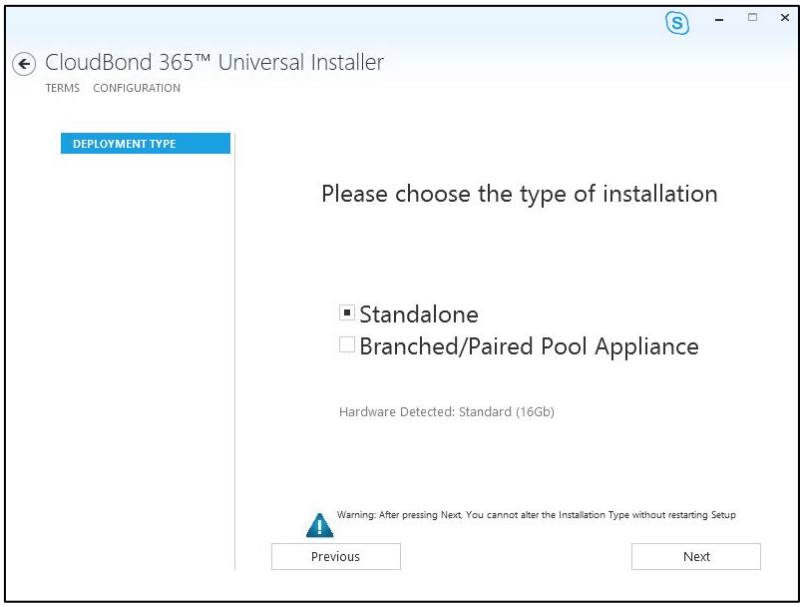


7.3 Deployment Type

You must choose the Standalone deployment type, for the first CloudBond 365 system for a customer.

This page also shows which hardware level was detected.

Figure 7-3: Choosing Deployment Type



7.4 Deployment Model

There are currently three Deployment Models on the Configuration Wizard to choose from:

- Virtual Edition
- Hyper-V Host with Virtual Machines
- Co-Located Hyper-V / Domain Controller with Virtual Machines

If you're not installing the Virtual Edition, you can optionally install:

- Session Border Controller (SBC)
- Reverse Proxy Server (RP)

Note:

- The hardware detected by the Configuration Wizard determines which Deployment Models are available, e.g., on a Mediant 800 OSN with 16/32GB RAM, only the Co-Located Hyper-V / Domain Controller with Virtual Machines is offered.
- The Skype for Business Consolidated Edge server is mandatory for a Standalone Deployment Type, but optional for a BPA Deployment Type.
- The optional SBC and RP are not available on CloudBond 365 Standard Box Edition (Mediant 800 OSN).
- If both the SBC and RP additional machines are checked, the Front-End Server will start with reduced memory to accommodate the two extra machines.

7.4.1 Virtual Edition

The Virtual Edition allows you to install the CloudBond 365 application onto your own (virtual) hardware. The installer must run the installation file on three individual Windows Server 2012 R2 Operating System environments, in this order:

1. On the server that'll be hosting the CloudBond 365 management server
2. On the server that'll be hosting the CloudBond 365 FrontEnd server
3. On the server that'll be hosting the CloudBond 365 Edge server

7.4.1.1 Virtual Machine Specification

When CloudBond 365 is deployed as Virtualized Edition, you need to prepare the following Virtualized environment. Its minimum specification is shown in the table below. Virtualization is supported on Hyper-V or VMware.

Table 7-1: Minimum Specification of the Virtualized Environment

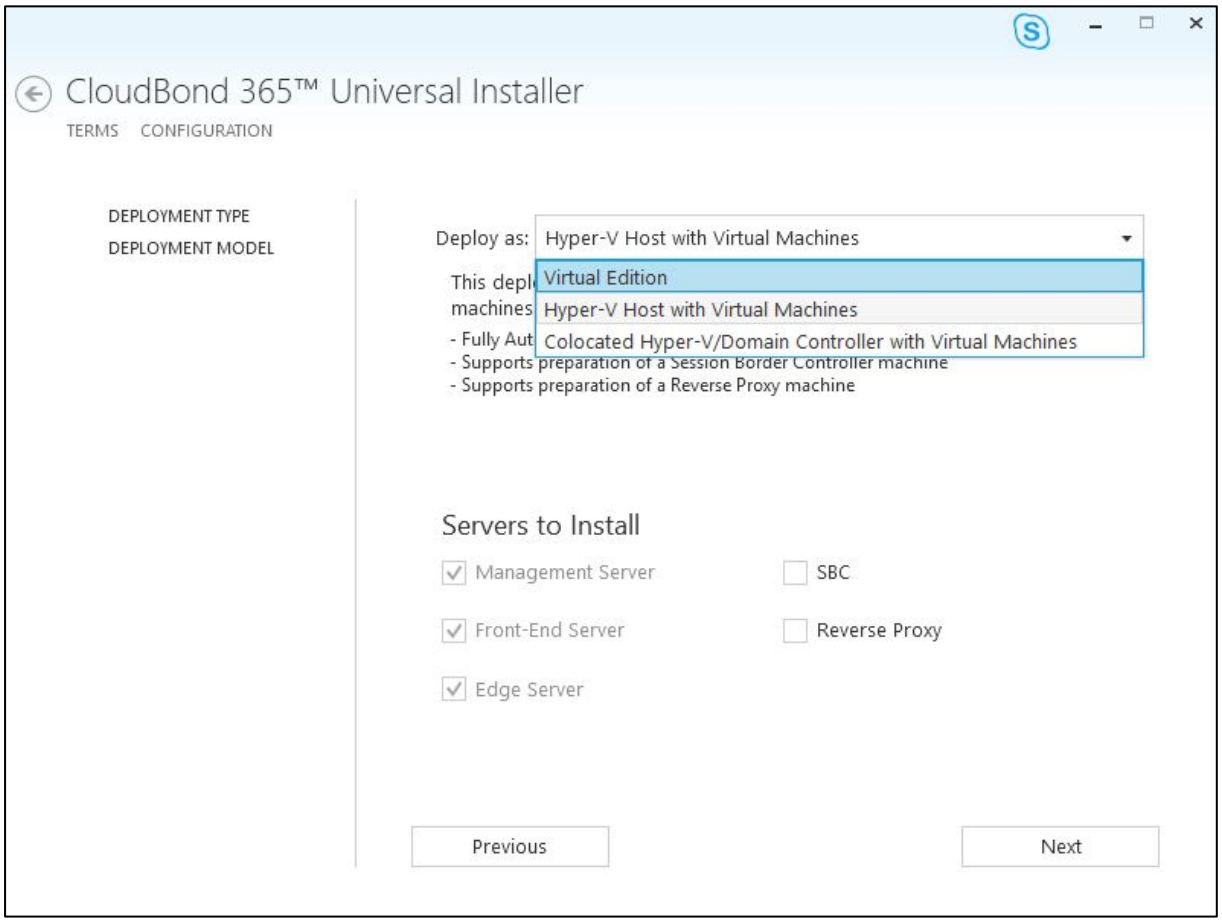
Server	Use	OS***	CPU (Virtual Core)	RAM* in GB	HDD in GB	NIC**
1	Domain Controller & Management	Win 2012 R2	4/4/4	4/8/8	80	1
2	Front End	Win 2012 R2	6/12/16	10/20/24	80	1
3	Edge	Win 2012 R2	4/6/6	8/16/16	50	2

* RAM assigned according to number of users: 500/2000/5000

** NIC can be shared

*** Windows Server 2012 R2 must be licensed

Figure 7-4: Deployment Model – Virtual Edition



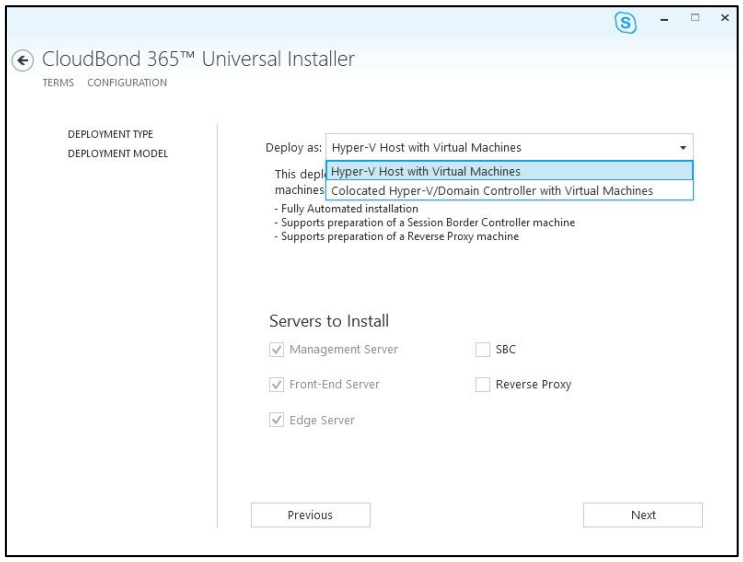
7.4.2 Hyper-V Host with Virtual Machines

The Hyper-V Host with Virtual Machines installs Hyper-V on the selected host machine, and the three CloudBond 365 Servers (Controller, FE, and Edge) as three separate virtual machines within Hyper-V.

You may also choose to add an SBC server and Reverse Proxy server.

This option is suitable for CloudBond 365 Pro, and CloudBond 365 Enterprise. (e.g., AudioCodes HP Servers)

Figure 7-5: Deployment Model - Pro and Enterprise

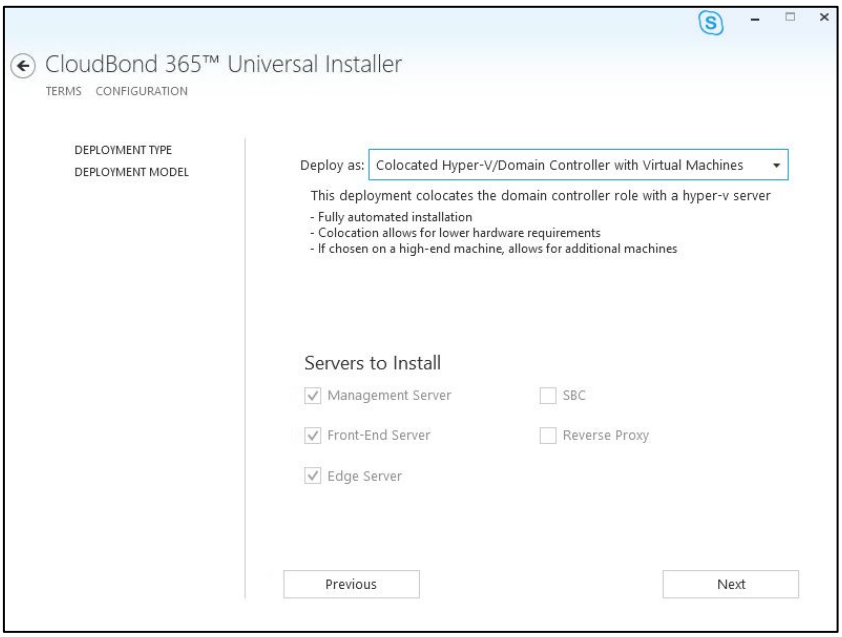


7.4.3 Co-located Hyper-V / Domain Controller with Virtual Machines

The Co-Located Hyper-V / Domain Controller with Virtual Machines installs the CloudBond 365 Controller (DC) and Hyper-V within the host machine, with the remaining CloudBond 365 Servers (FE and Edge) as Hyper-V virtual machines.

This option is suitable for CloudBond 365 Standard Box Edition (e.g., AudioCodes Mediant 800B OSN server).

Figure 7-6: Deployment Model - Mediant 800



7.5 Credentials for Standalone Deployment

If performing a Standalone Deployment, you will be asked to confirm or change the login credentials for the CloudBond 365 Administrator.

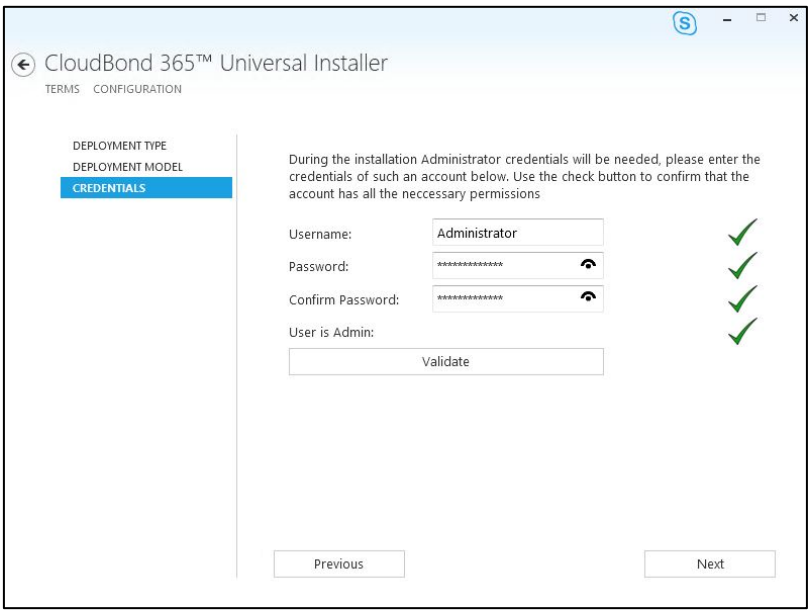
The credential page requires you to enter the credentials of an Administrator account to verify you have the required permissions to continue the installation process.

If the configuration is being entered for a Bare Metal install, the entered username and password will be created.

If running the installer from pre-installed Windows2012 R2, the entered credentials must already be present on the system.

Click **Validate** to verify the information you entered is correct.

Figure 7-7: Credentials



7.6 Domain Information (Standalone Deployment)

If you selected a Standalone Deployment Type, you will be prompted to confirm or change the new Domain information, including NetBIOS domain name, the Domain FQDN, and the default SIP Domain within Skype for Business. You may leave these values at their default settings, or modify them as required.

Figure 7-8: Standalone Deployment Domain

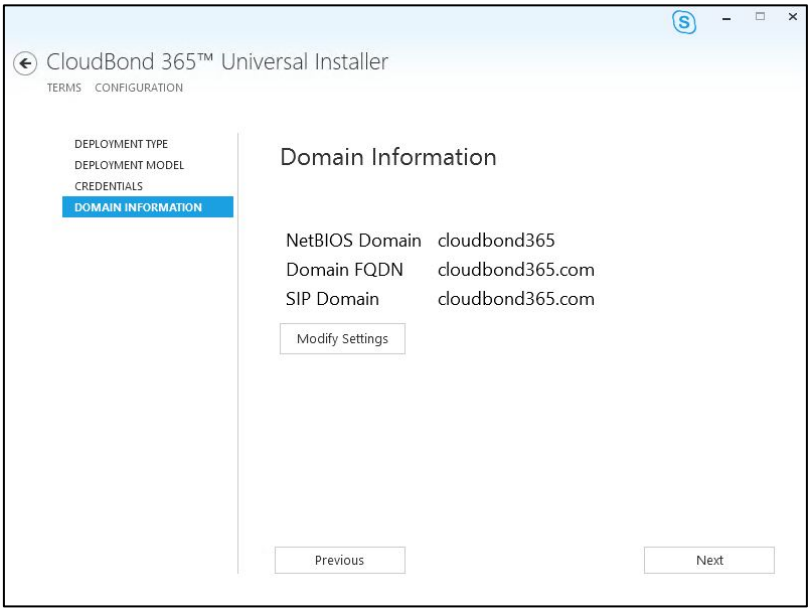
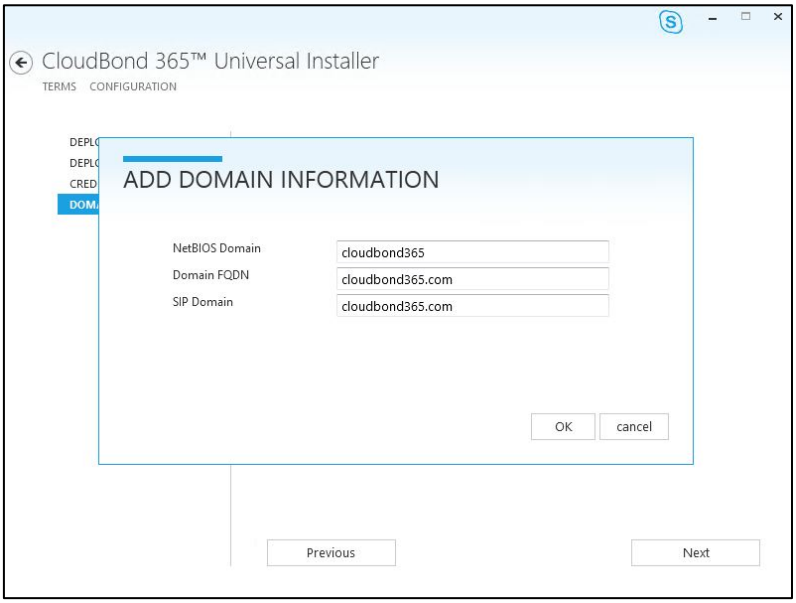


Figure 7-9: Modifying Domain Details



7.7 Domain Controller

If you selected a Standalone Deployment Type, you will be asked to verify or change the Management Server information. The wizard will automatically create a new Forest and Domain controller with the information specified, and install the SysAdmin suite and Archiving and Monitoring database on the controller.

Figure 7-10: Specify the DC (Standalone)

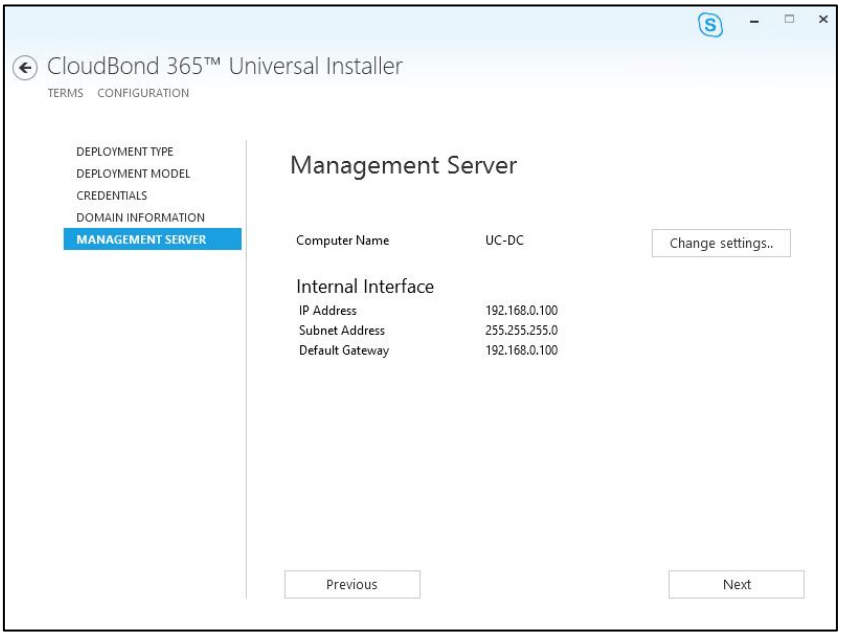
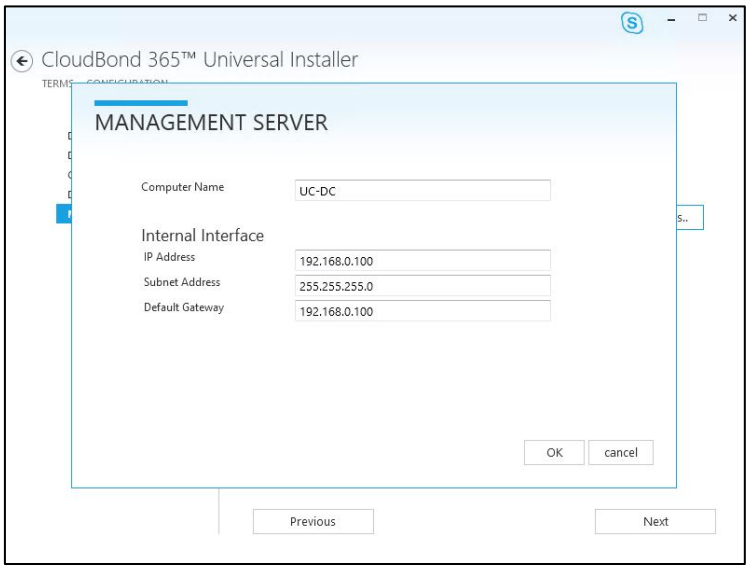


Figure 7-11: Changing the Controller Settings



7.8 Front-End Server

For all deployment types, you will be asked to confirm or change the details for the Front-End server.

Figure 7-12: Front-End server

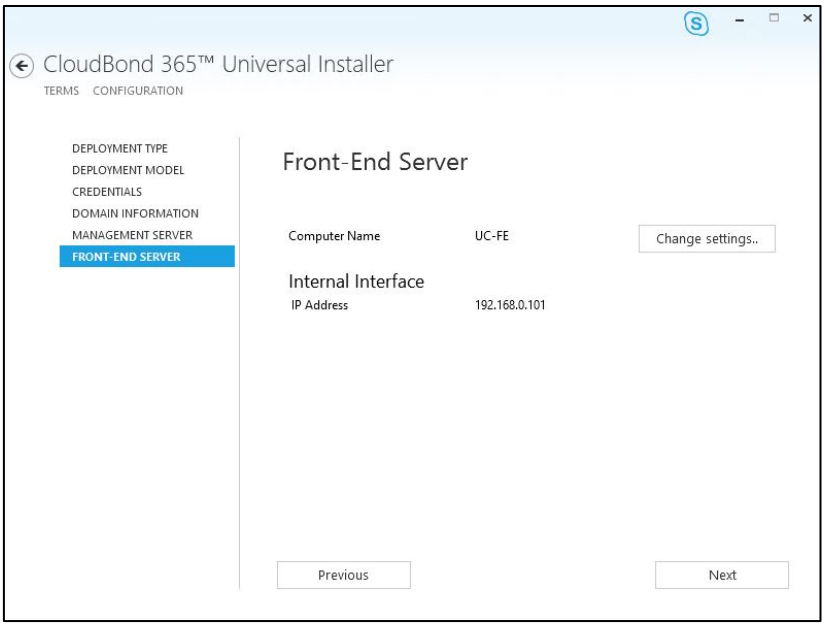
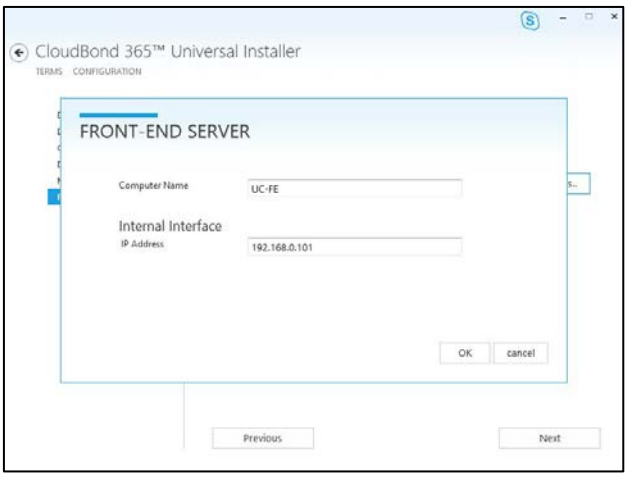


Figure 7-13: Changing the FE settings



7.9 Edge Server

For Standalone Deployment Type, you will be asked to confirm or change the details of the Edge Server.

Figure 7-14: Edge Server (Standalone)

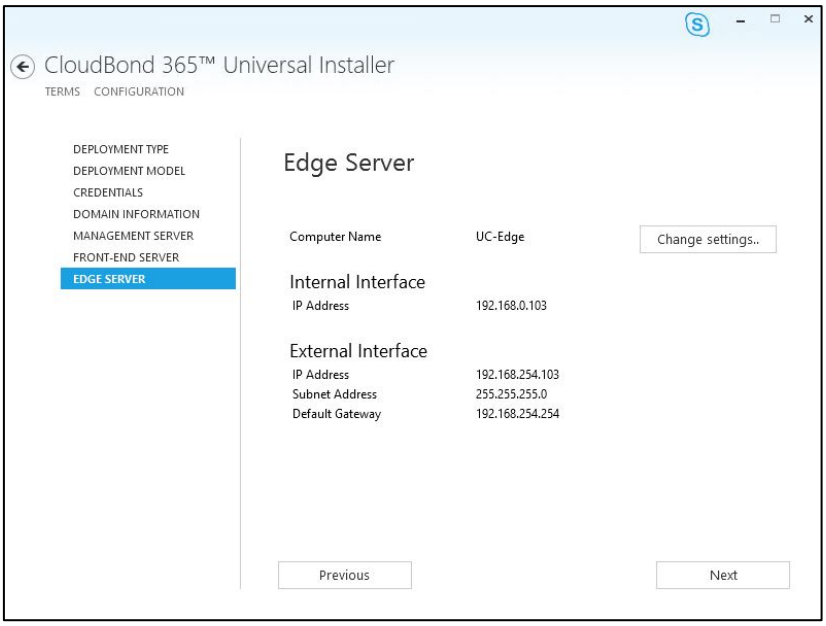
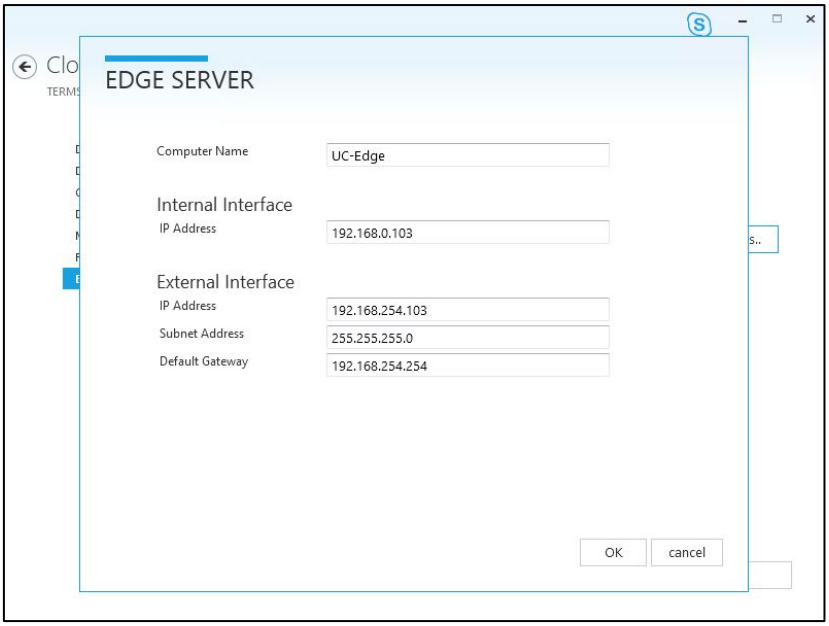


Figure 7-15: Changing the Edge Settings



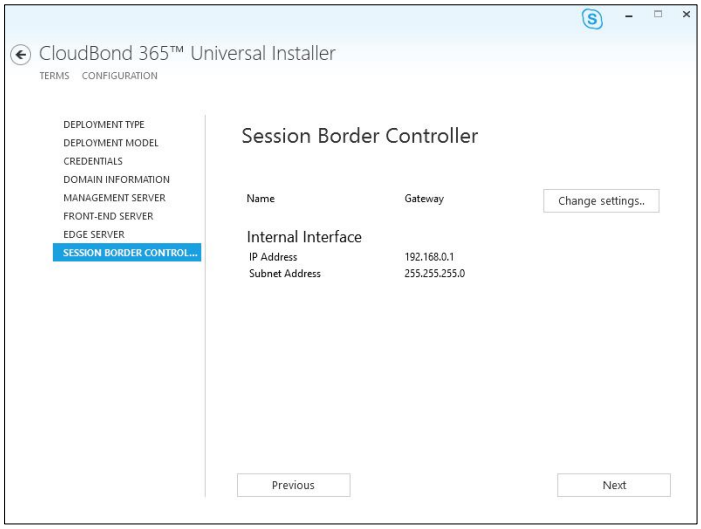
Note: To prevent complex networking scenarios during installation, the wizard only allows for a single public Edge IP Address and requires the Edge internal leg to be on the same subnet as the other servers installed. If different deployment scenarios are needed, it is just a small change to be made in Skype for Business Topology Builder after the installation wizard has finished.

For more information see *LTRT-26443 CloudBond 365 Certificates Configuration Note Ver. 7.0* Section 6.1.4 Edge Services and *LTRT-26531 Connecting the CloudBond 365 Edge Server to a Full DMZ Deployment Configuration Note*.

7.10 Session Border Controller

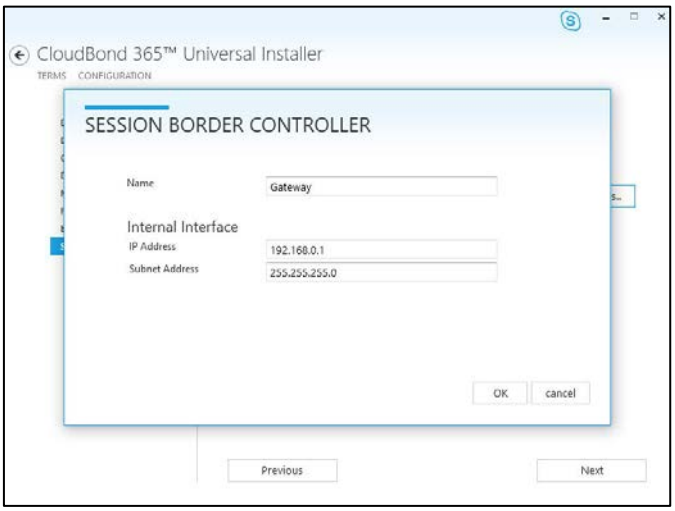
This option installs the AudioCodes SBC software on the nominated server. See the *AudioCodes Mediant Virtual Edition SBC Installation Manual* for more information.

Figure 7-16: SBC Settings



Note: The optional SBC is not available on CloudBond 365 Standard / Standard+ Box Edition (Mediant 800 OSN).

Figure 7-17: Changing the SBC settings

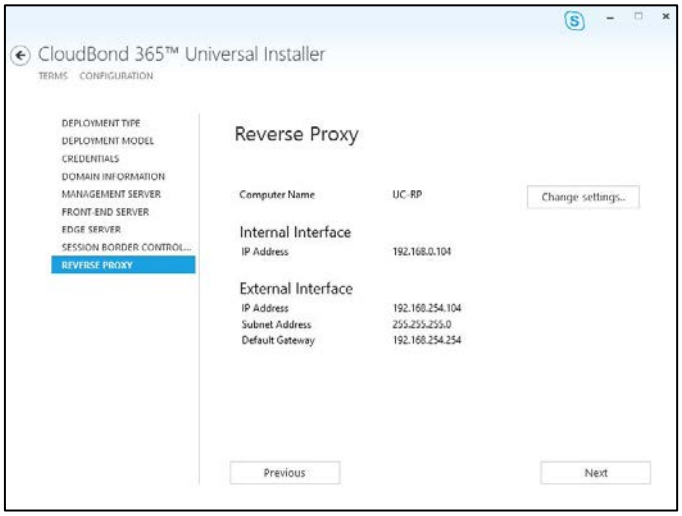


Note: There are many possible network configurations for the SBC. You may need to modify the Hyper-V network adapter requirements after software installation to meet your requirements.

7.11 Reverse Proxy Server

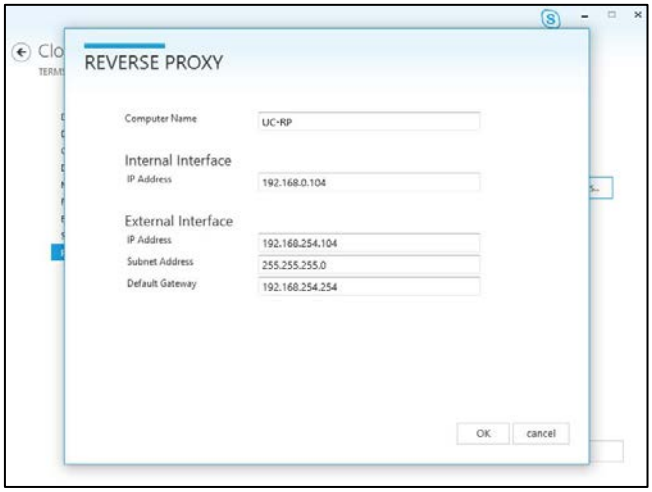
This option creates a Windows 2012 R2 virtual machine suitable for use as a Reverse Proxy using Internet Information Server and Application Request Routing (IIS + ARR). Further details on this Reverse Proxy solution can be found in the *AudioCodes CloudBond 365 Reverse Proxy using IIS & ARR* document.

Figure 7-18: Reverse Proxy Settings



Note: The optional RP is not available on CloudBond 365 Standard Box Edition (Mediant 800 OSN), or if the Branch / Paired Pool deployment type is chosen.

Figure 7-19: Changing the RP Settings



Note: There are many possible network configurations for the RP. You may need to modify the Hyper-V network adapter requirements after software installation to meet your requirements.

7.12 Summary

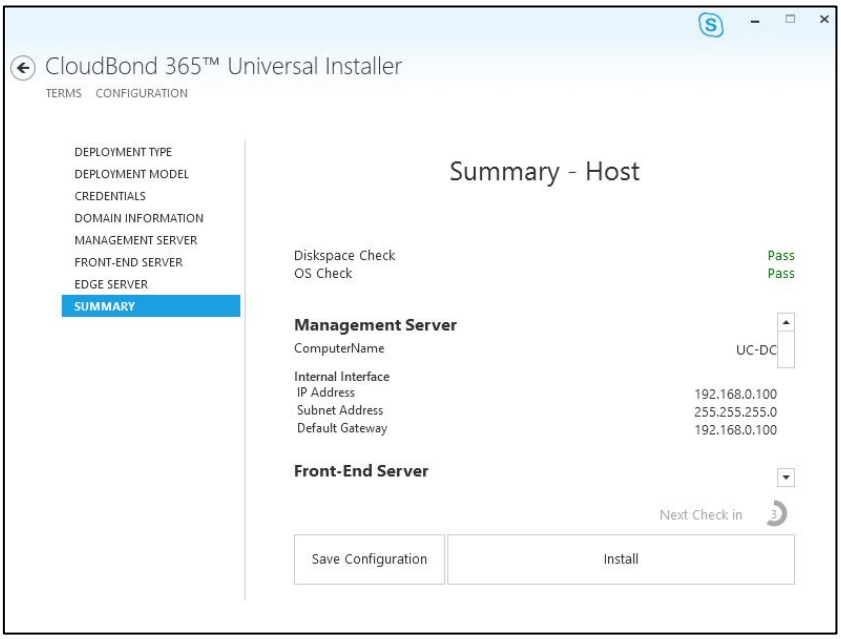
The Summary page shows details of the selections made during the Wizard, as well as various pre-checks performed on the hardware.

If all information meets requirements, an **Install** button will appear below.

The summary page allows you to manually save the entered configuration by clicking on the Save Configuration button. This will prompt you for a location to save the file.

Click the **Install** button to begin the Software Install process only once the checks show **Pass.** The OS Check specifically will sometimes need more time to be validated. The rotating wheel above the **Install** Button gives a time indication when the next validation check will be performed.

Figure 7-20: Wizard Summary



8 Branch / Paired Pool Deployment Type

A Branch / Paired Pool Appliance (BPA) deployment type is for adding a CloudBond 365 Skype for Business device to an existing CloudBond 365 or Microsoft Skype for Business deployment. It will create a Management Server with the SysAdmin suite, which can optionally be enabled as an additional DC. It will also install an FE server within the existing Skype for Business Topology, and optionally install an additional Edge server.

If you choose to install a Branch / Paired Pool Appliance deployment type, you will need to prepare some items before starting the configuration wizard.

- During the Configuration Wizard, the software must be able to contact the existing CloudBond 365 installation, and specifically the existing domain controller. You must ensure that the Host IP address, gateway, and DNS settings are correct before proceeding.

Note: If multiple Active Directory Sites exist within the environment, make sure that the correct IP Subnet information is configured to prevent installation failures. Active Directory assigns a domain controller for domain-based actions by checking the IP Subnet information and if a wrong domain controller is assigned (in a different subnet) you might experience Active Directory replication issues.

In such a case, one domain controller will know about the computer object that is currently being installed, but another domain controller does not know that computer object yet. Actions like *join domain* or *promote to domain controller* will fail due to the fact that the computer object is not found, or there are no logon servers to process the logon request.

By default, all domain controllers will replicate every 15 minutes within an Active Directory site and every 180 minutes between sites. More information on Active Directory replication can be found at:
https://technet.microsoft.com/en-us/library/cc961788.aspx.

- In addition to setting the correct IP information, an Ethernet cable must be connected to the front GE1 port of the Mediant 800 gateway, or to the Corporate LAN NIC of the HP Server when using Pro / Enterprise hardware.
- The configuration wizard will also ask you to supply a copy of the existing Topology as a zip file, created using the Export-csConfiguration command. It is a much smoother process if this Topology file is prepared ahead of time.

8.1 Planning Your BPA

There are many possible configuration combinations for CloudBond 365 BPA Deployments, depending upon network layout, WAN links, and desired outcomes.

Configurations can vary from the relatively simple, such as a Management Server with local FE at a branch location, to a Full DC with paired pool FE and alternate Edge connector at a remote site.

Exact details for each configuration are not covered in this guide. See the *Microsoft Skype for Business Planning information* for further details.

For a BPA install to be successful, you should plan ahead, at a minimum allowing for new server names and IP addresses for the Management Server and FE. If planning an additional Edge Server, consideration must be given to many aspects of Skype for Business External connectivity, including internet domain names, public geographic based DNS servers, hardware load balancers, federation requirements, etc.

Notes:

- The default server names and IP addresses presented by the Wizard are the same as those used for a Standalone Deployment Type. Rarely are these values suitable for a BPA deployment. You should be prepared to enter new values for Server Names and IP addresses, according to your planned configuration.
- As the BPA will be joined into an existing Active Directory forest topology, the server running the CloudBond 365 Hyper-V host will need to have a DNS IP address assigned that is capable of resolving a domain controller for the domain to which the BPA will need to be joined. The same DNS will need to be used in the Wizard on the Management Server Configuration page.

8.2 Preparing the Topology

Within the existing CloudBond 365 Topology, there will be a single site defined, containing the existing FE and Edge Servers.

To add a BPA system, it is necessary to add another FE server, and optionally, an Edge server definition within the Topology.

You may also wish to add the new servers to the existing Site, or create a new Site.

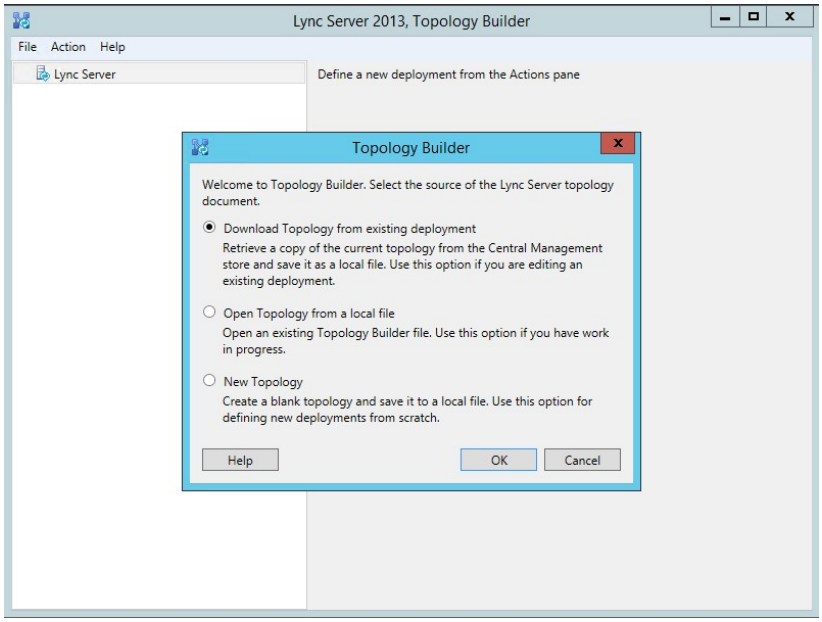
Note: Skype for Business Topology Sites are not related to AD Sites and Services, or to MS Exchange Sites. You may optionally wish to update your AD Sites and Services to match Skype for Business Sites for consistency.

8.2.1 Editing the Topology

To prepare the Topology file:

1. Logon to the existing CloudBond 365 Controller (or Skype for Business FE Server).
2. Open Topology Builder.
3. Download the current topology (and save it when it prompts you to).

Figure 8-1: Downloading Existing Topology



8.2.2 Adding a New Site (Optional)

Adding a new site to the Skype for Business topology is optional. You must add a new FE server to the existing topology, but that FE server may be within an existing site, or within a newsite.

Typically, you would add a new site for a “Branch” install, but add to an existing site for a central Paired Pool.

Note: The Skype for Business Topology uses “Branch Sites” for definition of Survivable Branch Appliances (SBAs). A BPA is not a SBA, and is defined within a Central Site, not within the Branch Sites area.

➢ To Add a new site:

1. Right-click the ‘Lync Server’ node and select ‘New Central Site’.

Figure 8-2: Existing Topology

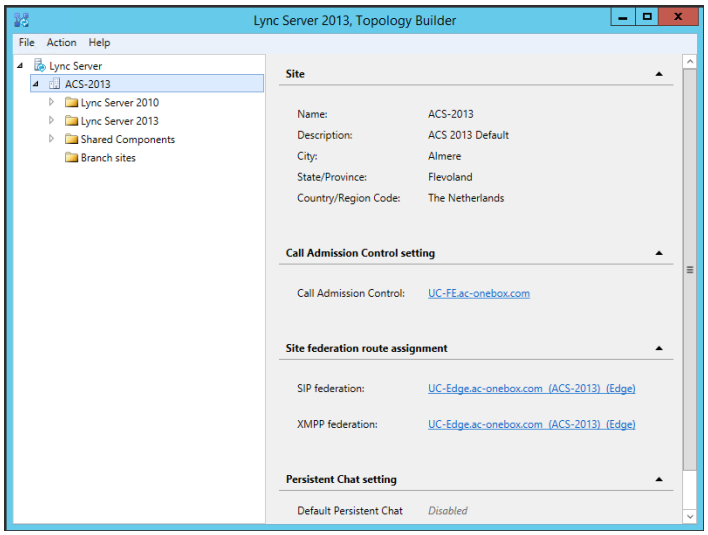
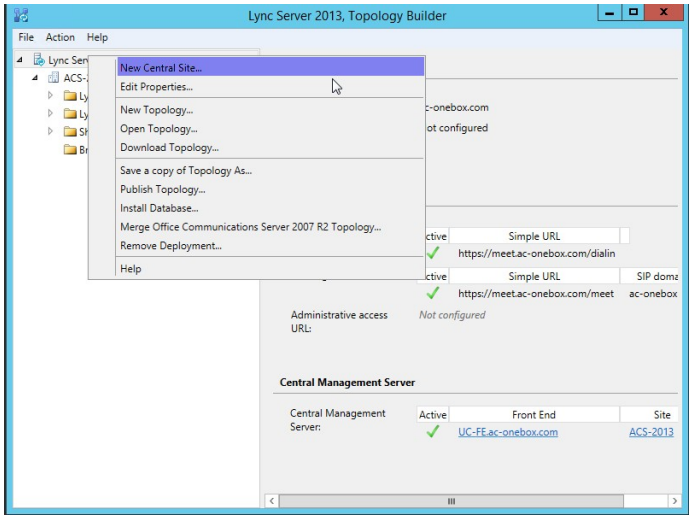
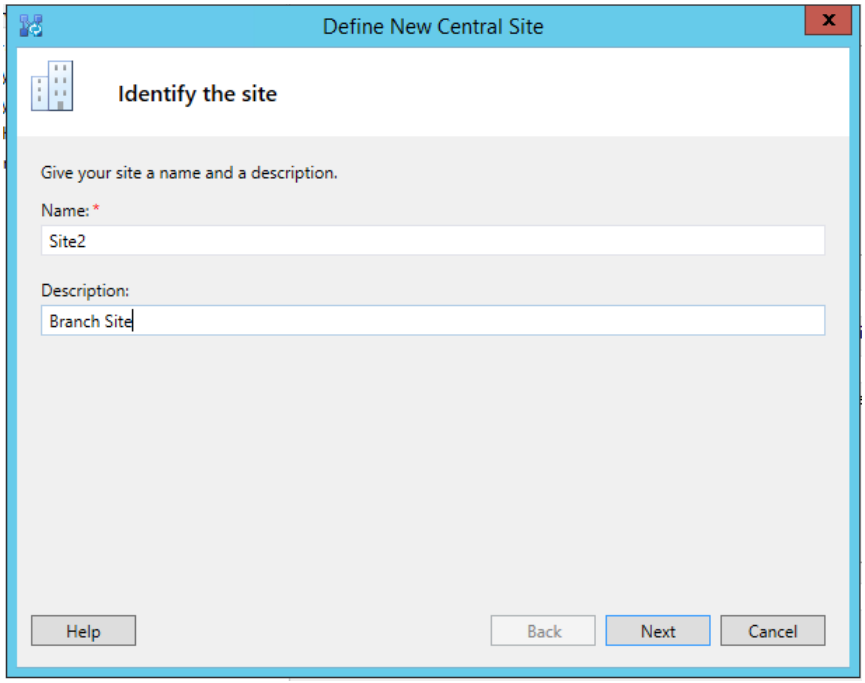


Figure 8-3: Adding New Central Site



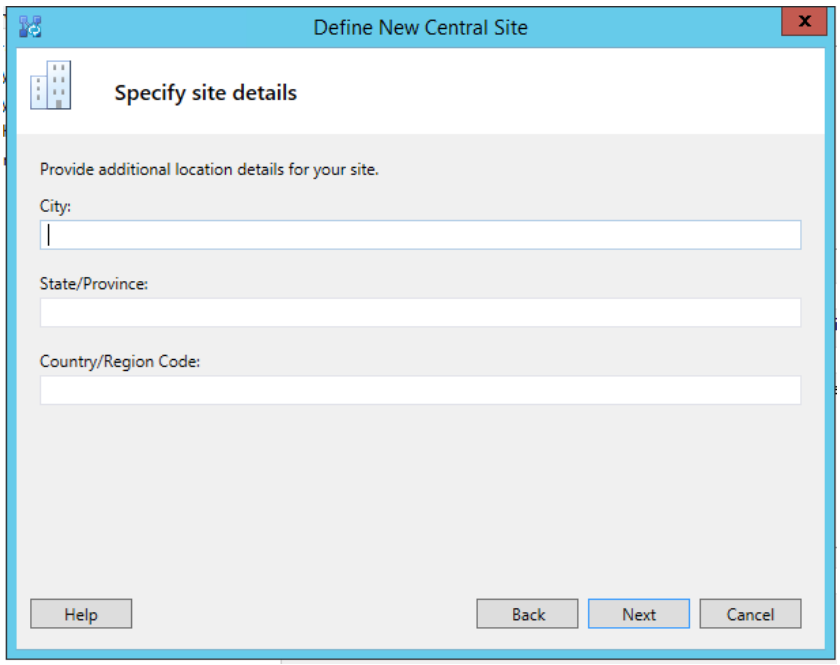
2. Give the new site a name (and optionally a description).

Figure 8-4: Defining a Central Site



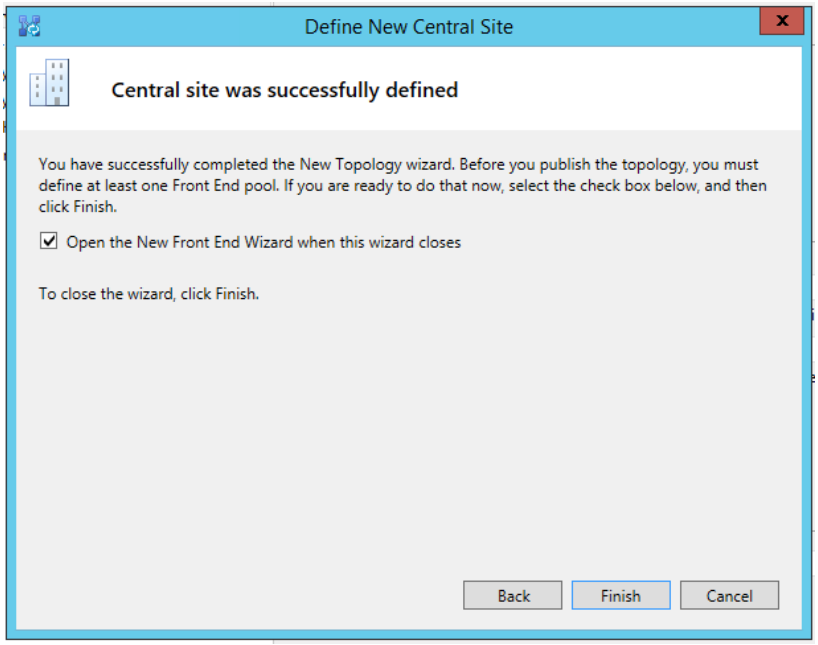
3. Enter the City, State/Province and Country/Region Code details.

Figure 8-5: Defining a Central Site



4. Leave the **Open the New Front End Wizard….** check-box selected and then click **Finish**.

Figure 8-6: Defining a Central Site



8.2.3 Adding a New Front-End Server

You must add a new Front-End server to the existing topology. As CloudBond 365 uses Skype for Business Standard Edition FE Servers, this means adding a new FE Pool to a site.

If you did not define a new site, you can add a new FE Pool by navigating to **Lync Server 2013 → Standard Edition Front End Servers** within an existing site, right clicking, and selecting **New Front End Pool**.

Figure 8-7: Creating New FE Pool

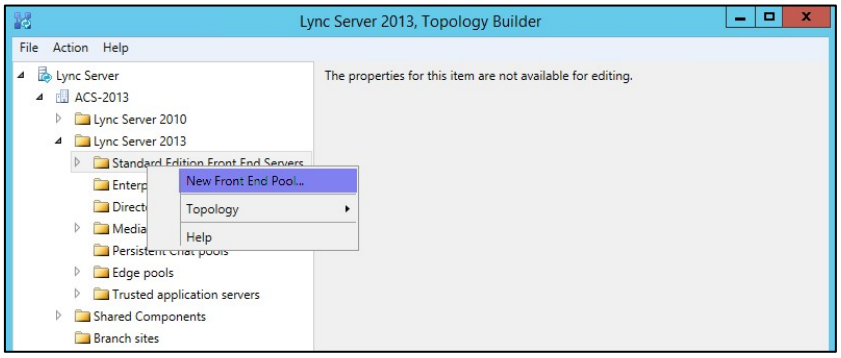
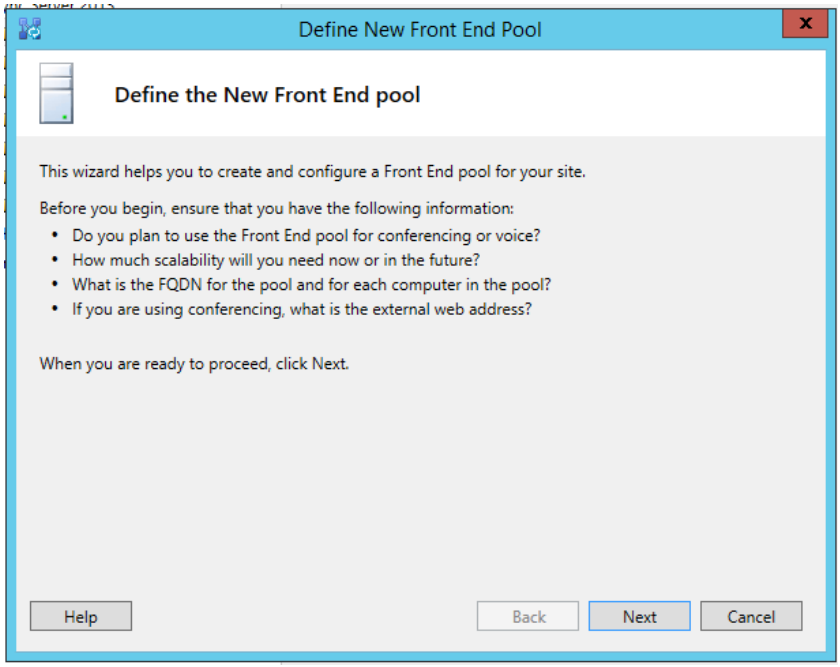


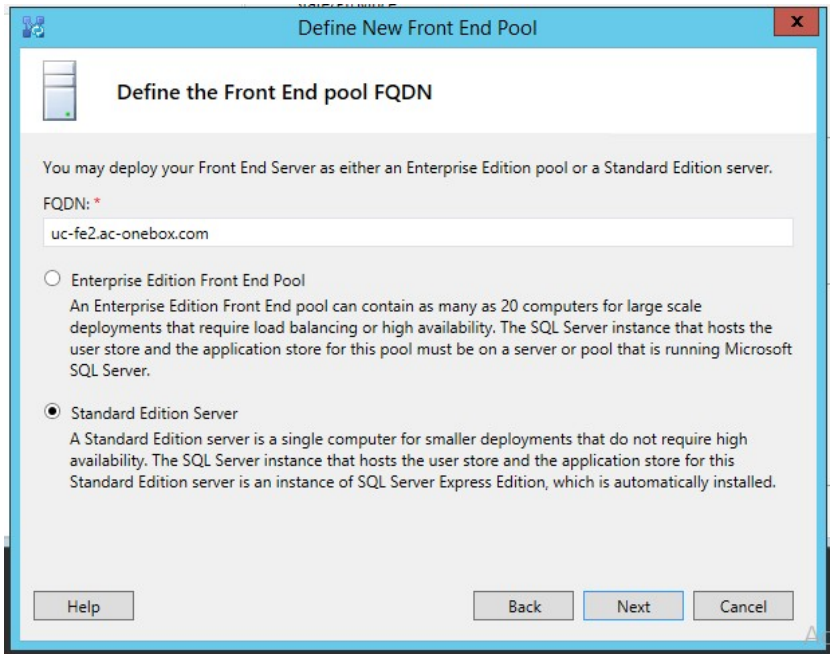
Figure 8-8: Creating New FE Pool



➢ **To define the new FE server:**

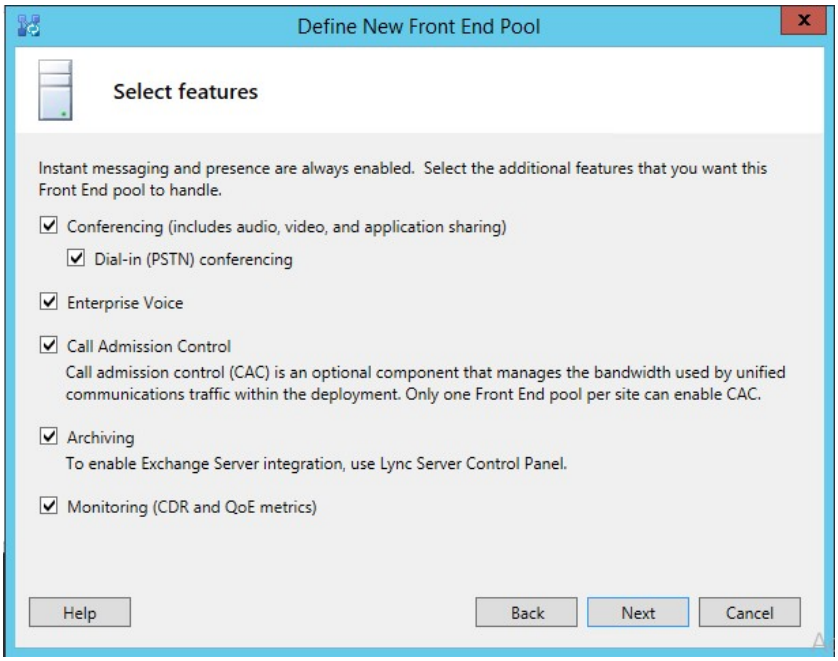
1. Define a new front-end server FQDN (example: uc-fe2.ac-onebox.com).
2. Make sure that the **Standard Edition Server** option is selected.

Figure 8-9: FE Server FQDN



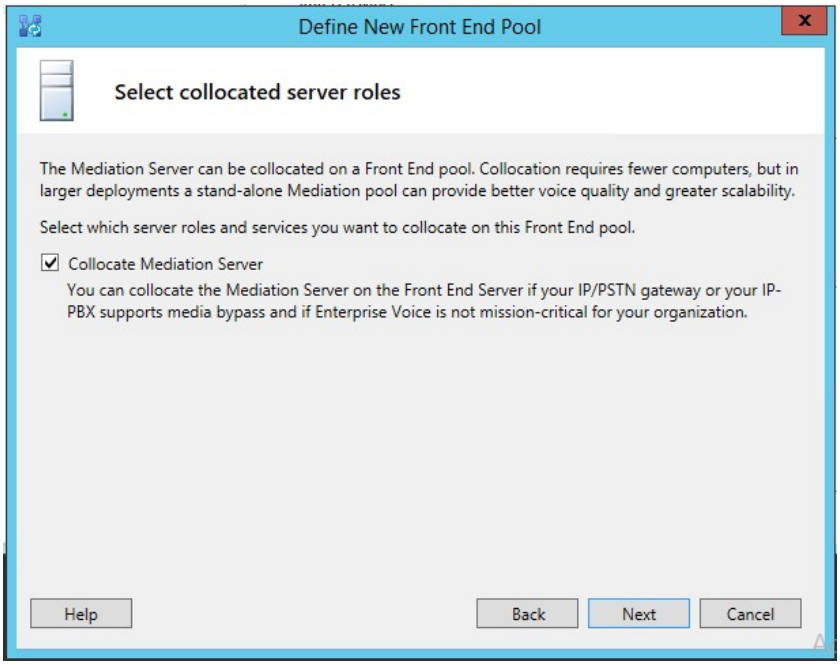
3. Select the features you want to use on this Front-End Server (we usually select all. Call Admission Control requires separate sites)

Figure 8-10: FE Server Features



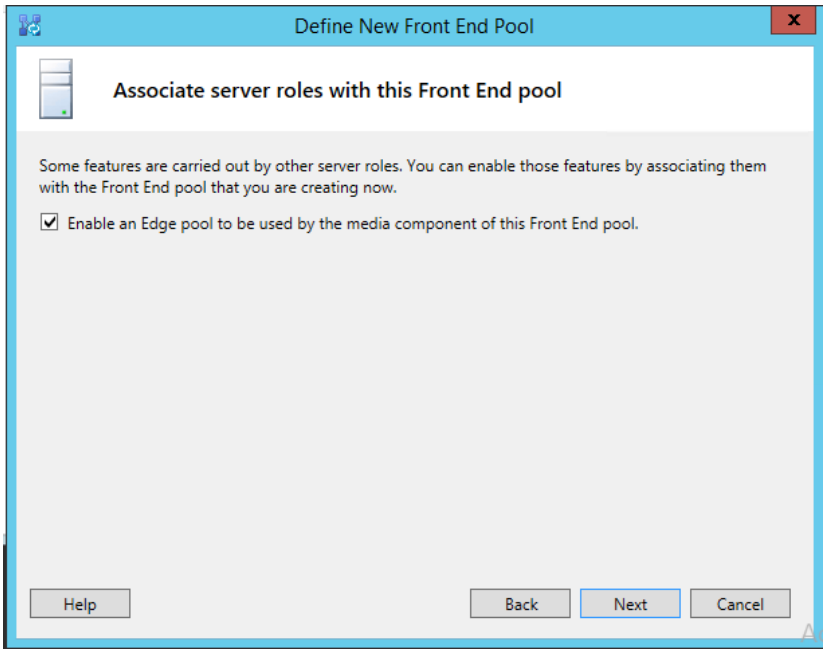
4. Leave the 'Collocate Mediation Server' check box enabled.

Figure 8-11: FE and Mediation Server



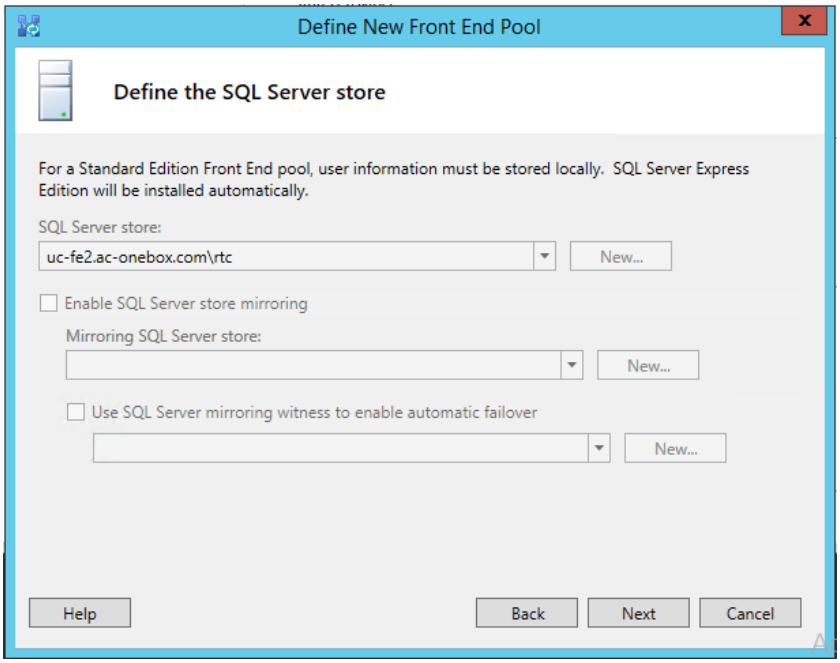
5. Leave the 'Enable and Edge pool to be used…' check box enabled.

Figure 8-12: FE and Edge



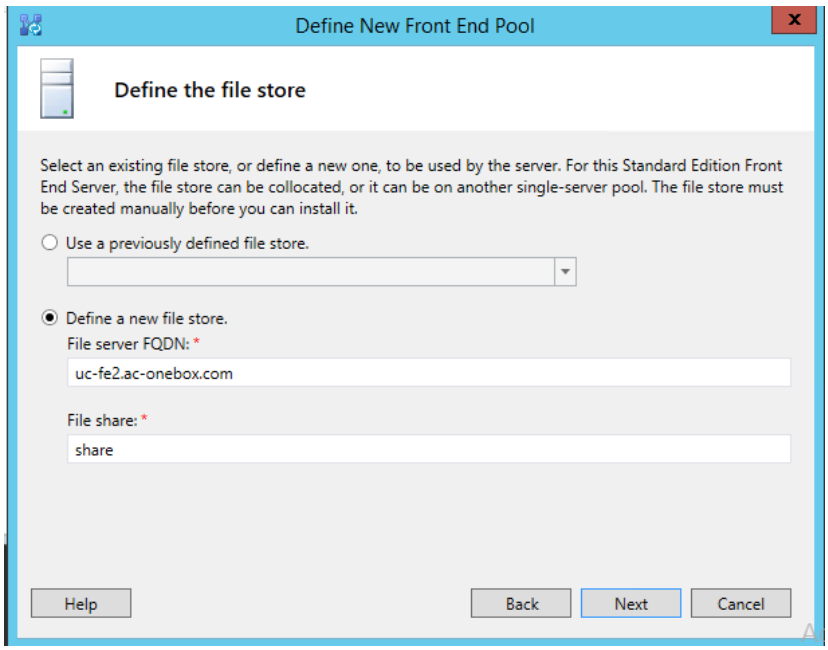
6. Leave the SQL Server store page as it is (it cannot be edited anyway).

Figure 8-13: FE SQL Store



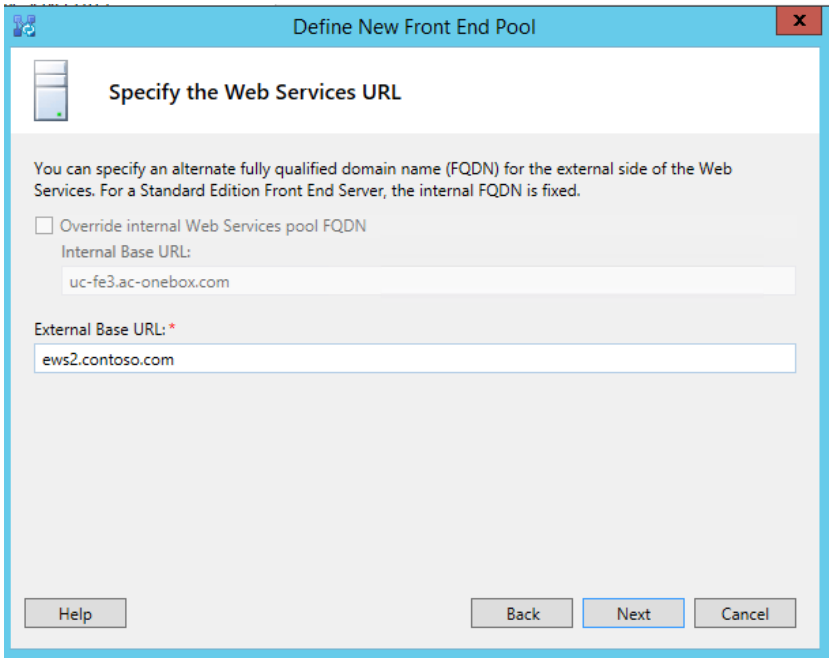
7. Leave the file store on default settings.

Figure 8-14: FE Local Store



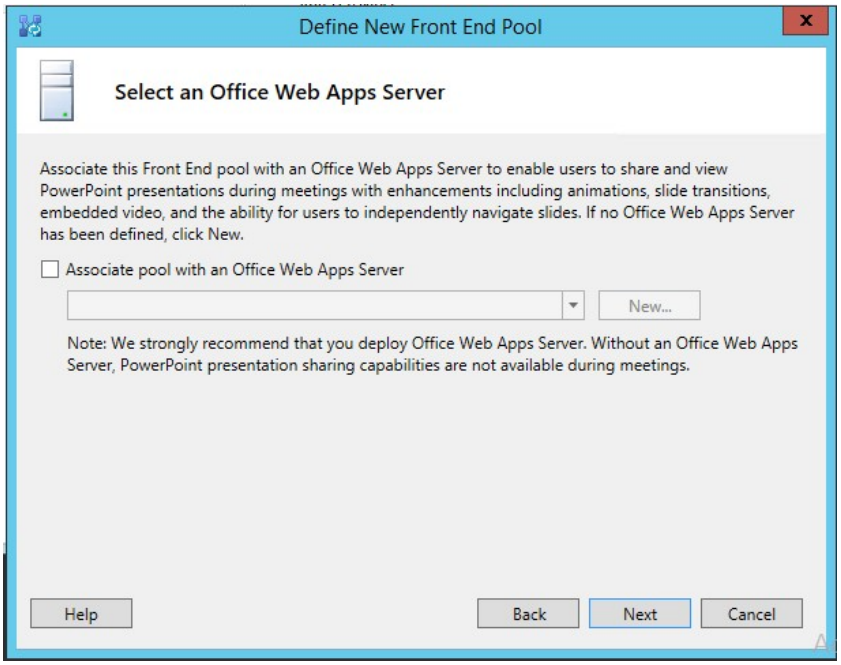
8. Define an 'External Base URL' (example: ews2.contoso.com).

Figure 8-15: FE External Web Access



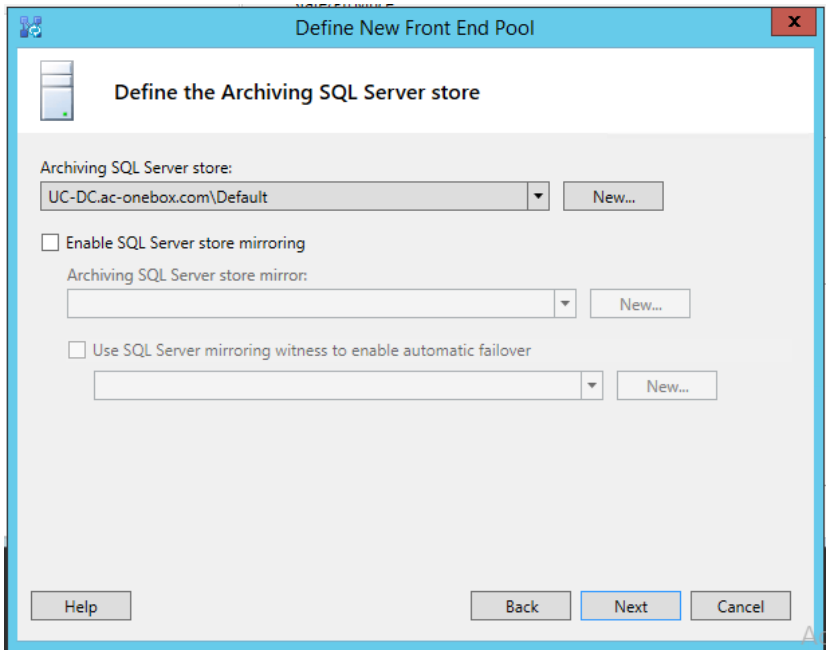
9. Clear the 'Associate pool with an Office Web Apps Server' check box.

Figure 8-16: FE OWA server



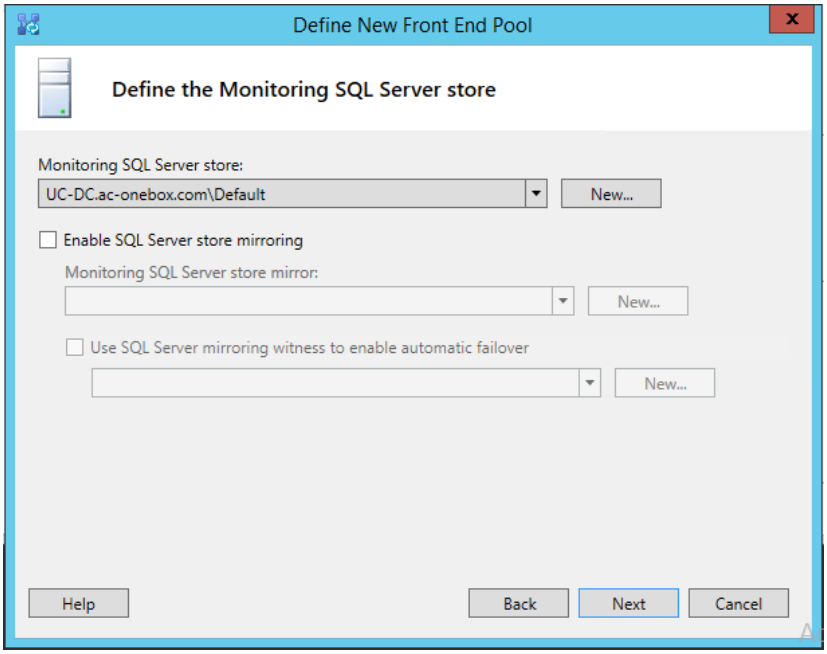
10. Either use the Archiving SQL Store already defined or define a new one (we usually use the existing one).

Figure 8-17: Archiving SQL Server



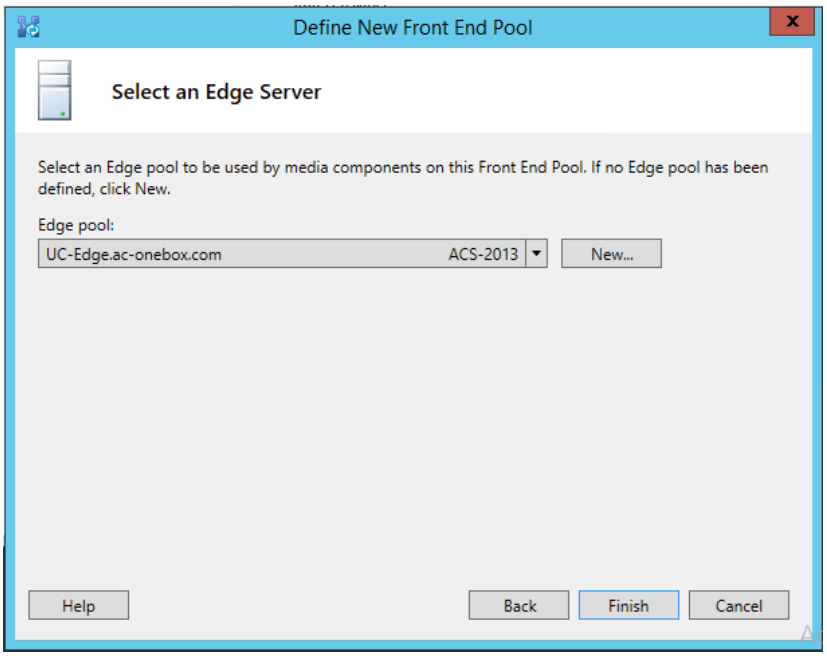
11. Same for the Monitoring SQL Server Store.

Figure 8-18: Monitoring SQL Server



12. Select the Edge pool to be used (Select the existing Edge Server, or click **New** to start the wizard for defining a new Edge Server).

Figure 8-19: Assigning Edge to FE



13. Click **Finish**.

8.3 Defining an Edge Server

You can optionally add a new Edge server to the existing topology.

If you did not define a new Edge Pool when defining the FE Server, you can add a new Edge Pool by navigating to **Lync Server 2013** > **Edge Pools** within an existing site, right clicking, and selecting **New Edge Pool**.

Figure 8-20: Defining a New Edge Pool

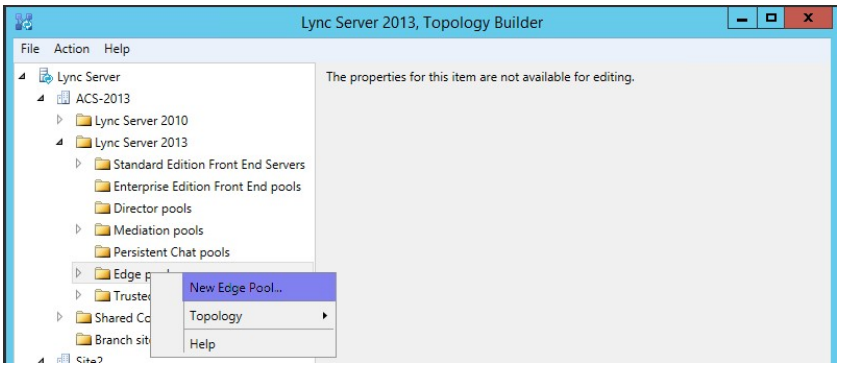
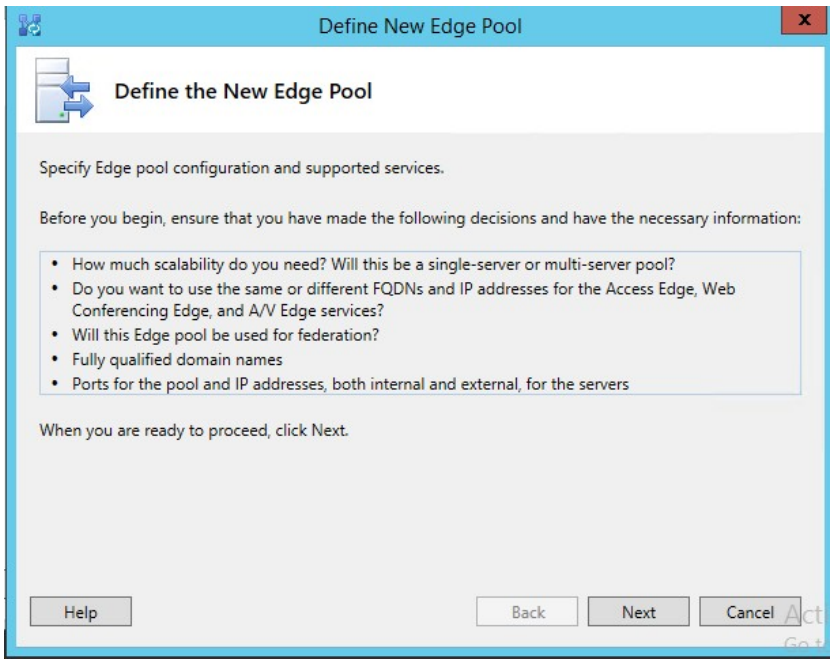


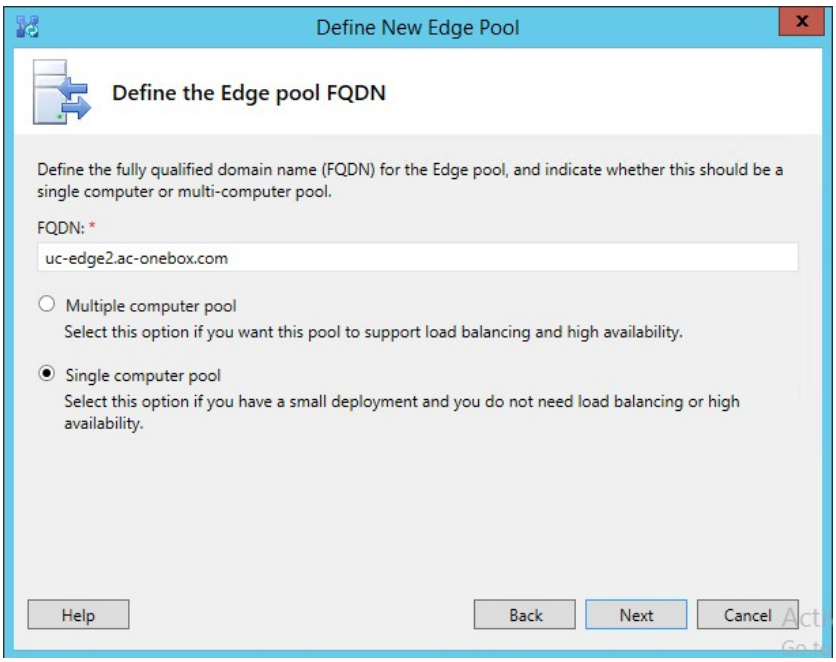
Figure 8-21: Defining a New Edge Pool



➢ **To define the New Edge Server:**

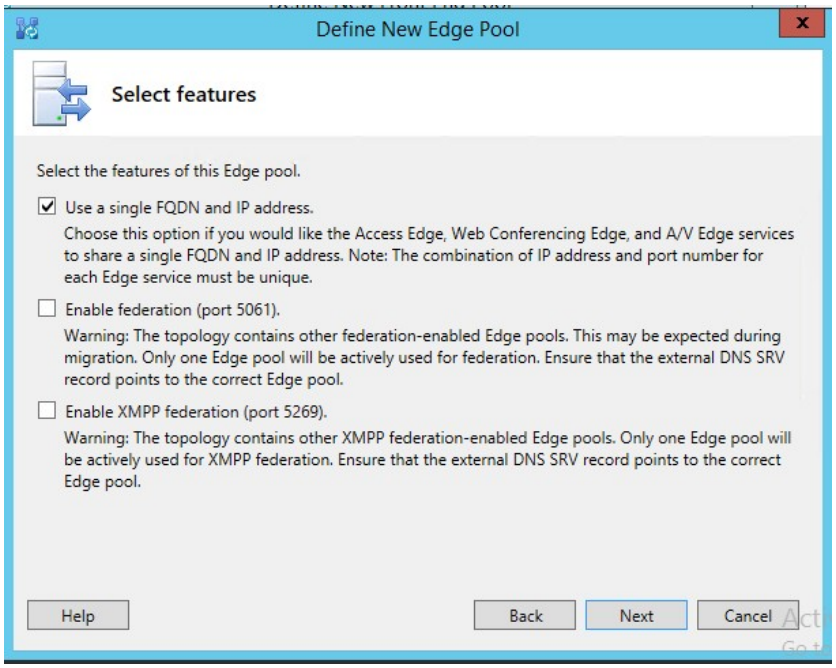
1. Specify the Edge server internal FQDN.

Figure 8-22: Define Edge Internal FQDN



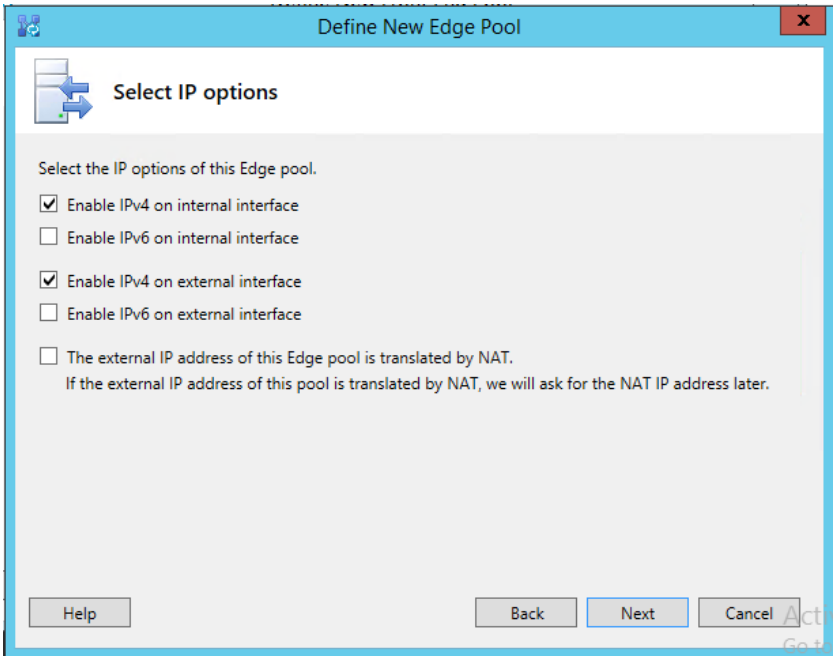
2. Select the features required.

Figure 8-23: Select Edge Features



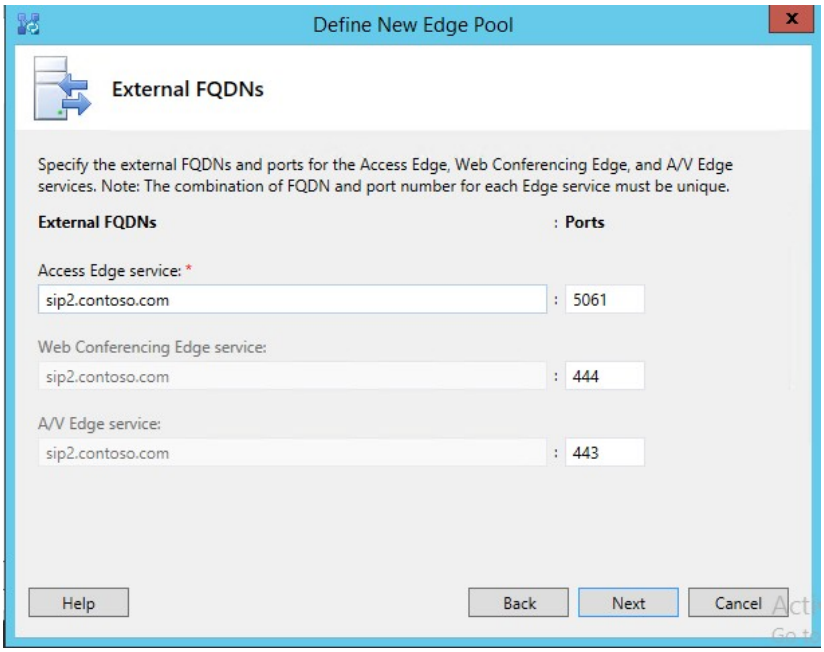
3. Select the IP Options required.

Figure 8-24: Select Edge IP options



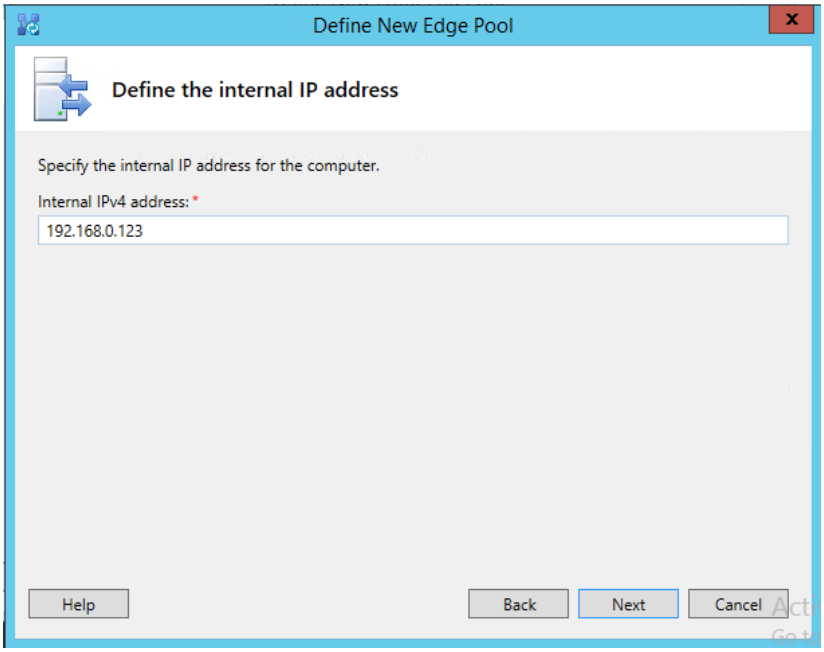
4. Specify the External FQDN.

Figure 8-25: Define Edge External FQDN



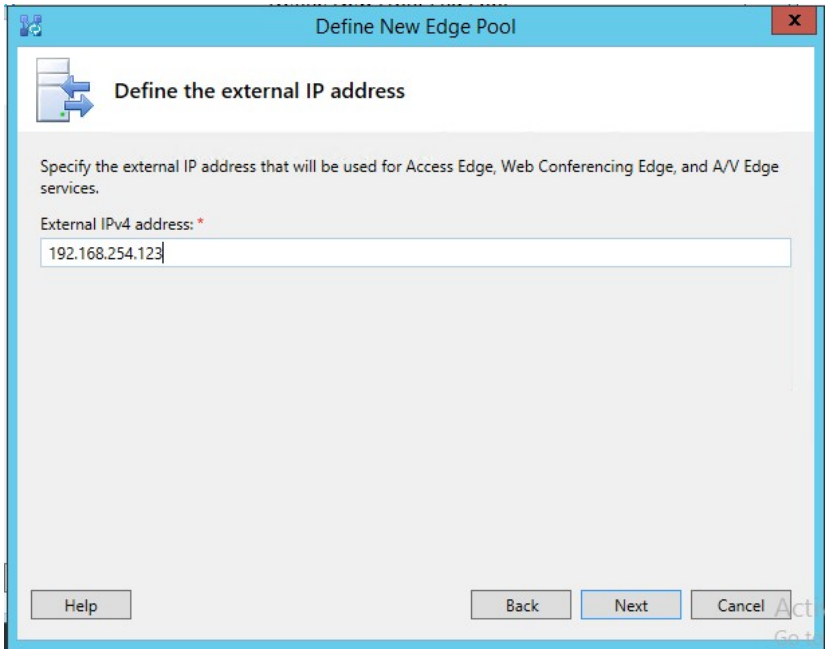
5. Specify the internal IP address.

Figure 8-26: Define Edge Internal IP address



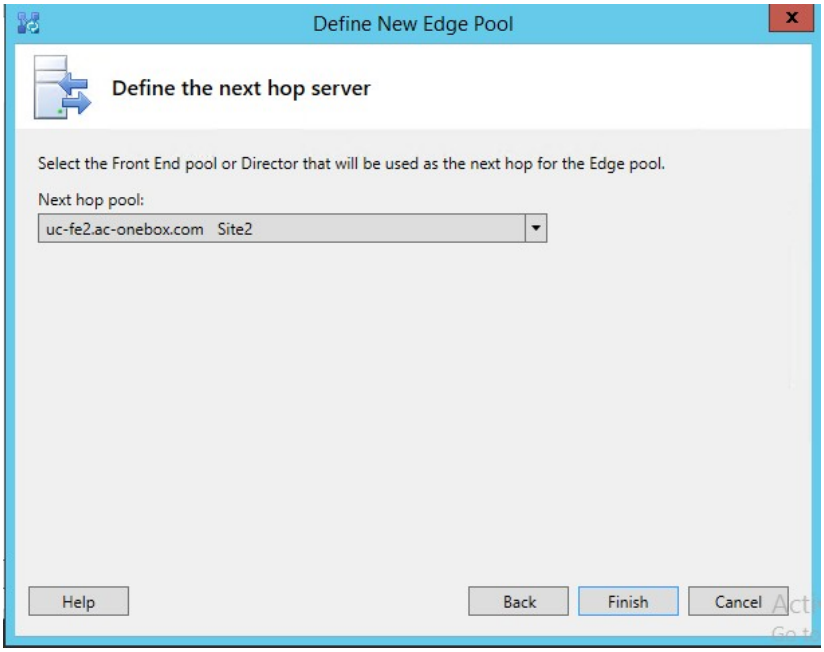
6. Specify the external IP address.

Figure 8-27: Define Edge external IP address



7. Specify the FE pool for this Edge server.

Figure 8-28: Specify the Associated FE Server



8. Click **Finish**.

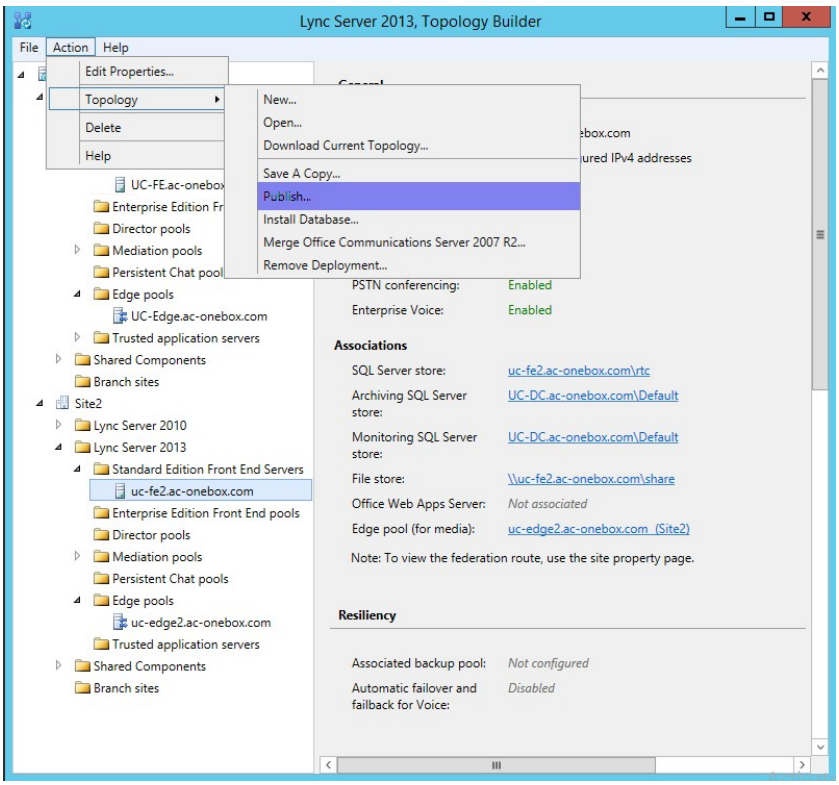
Note: To prevent complex networking scenarios during installation, the wizard only allows for a single public edge IP Address and requires the Edge internal leg to be on the same subnet as the other servers installed. If different deployment scenarios are needed, it is just a small change to be made in Skype for Business Topology Builder after the installation wizard has finished.

For more information see *LTRT-26443 CloudBond 365 Certificates Configuration Note Ver. 7.0* Section 6.1.4 Edge Services and *LTRT-26531 Connecting the CloudBond 365 Edge Server to a Full DMZ Deployment Configuration Note*.

8.3.1 Publish the Topology

1. Click **Action** at the top of Topology Builder.
2. Open the **Topology** sub-menu.
3. Click **Publish,** and then click **Next** in the wizard that pops up.

Figure 8-29: Publish the Topology



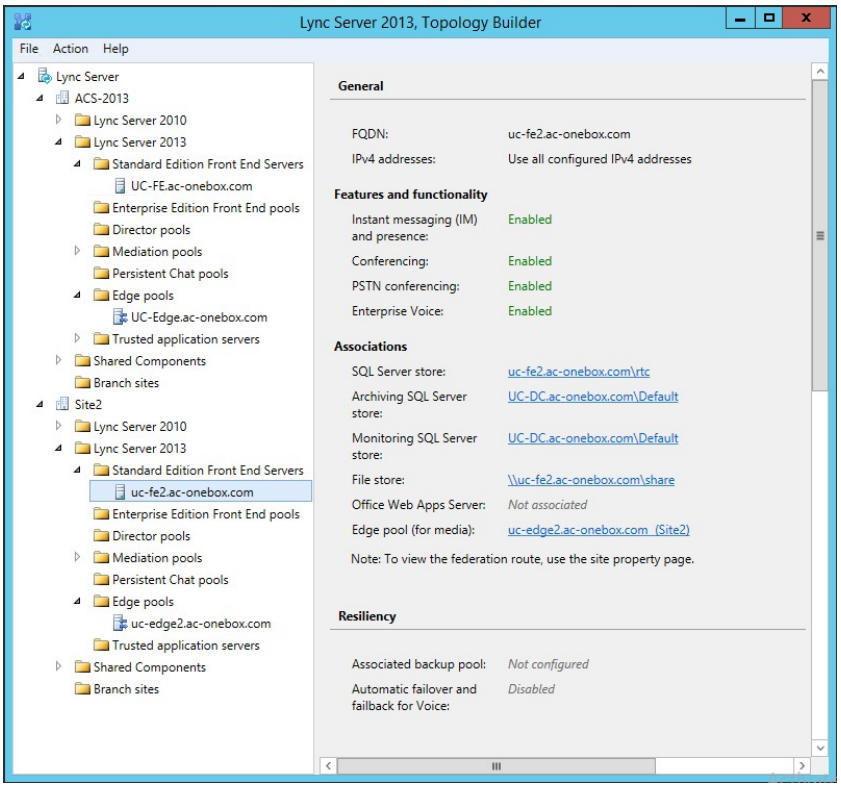
4. You will receive a warning that the machine(s) you just defined cannot be found in Active Directory, Click **Yes to All**.

Figure 8-30: Warning - Servers do not Exist

5. During 'Enabling topology' it will encounter errors, the summary screen will show status: Completed with warnings.
6. If you view logs for publishing you will find that the warning generated comes from the fact that the machines do not exist yet. This warning can be safely ignored.

7. Click **Finish**; You now have a second Central Site defined in your topology and are ready to export the file.

Figure 8-31: Finished Topology Changes

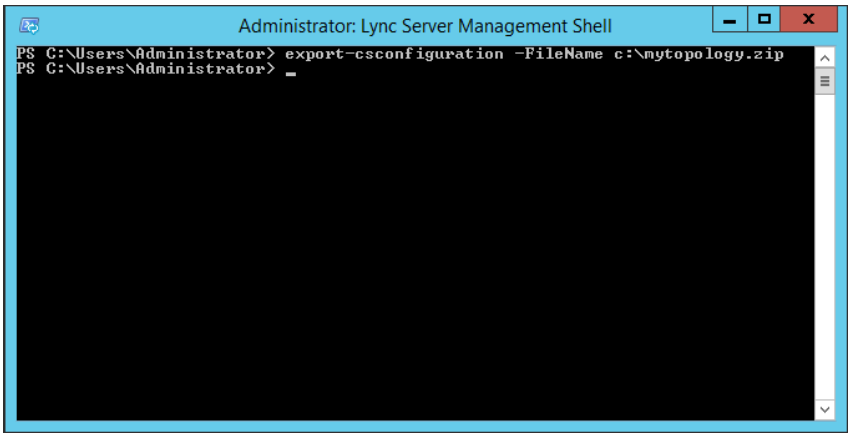


8.4 Exporting the Topology

➢ **To prepare the Topology file:**

1. Log on to the existing CloudBond 365 Controller (or Skype for Business FE Server).
2. Open the Skype for Business Management Shell.
3. Enter the command Export-CsConfiguration –Filename c:\mytopology.zip.
4. Copy the mytopology.zip file to a convenient location on the new host operating system.

Figure 8-32: Exporting the Topology



8.5 Commencing the BPA Configuration

To commence the remaining installation steps, mount the ISO image from the Recovery partition, and start the Configuration Wizard as described in Section 5 on page 27.

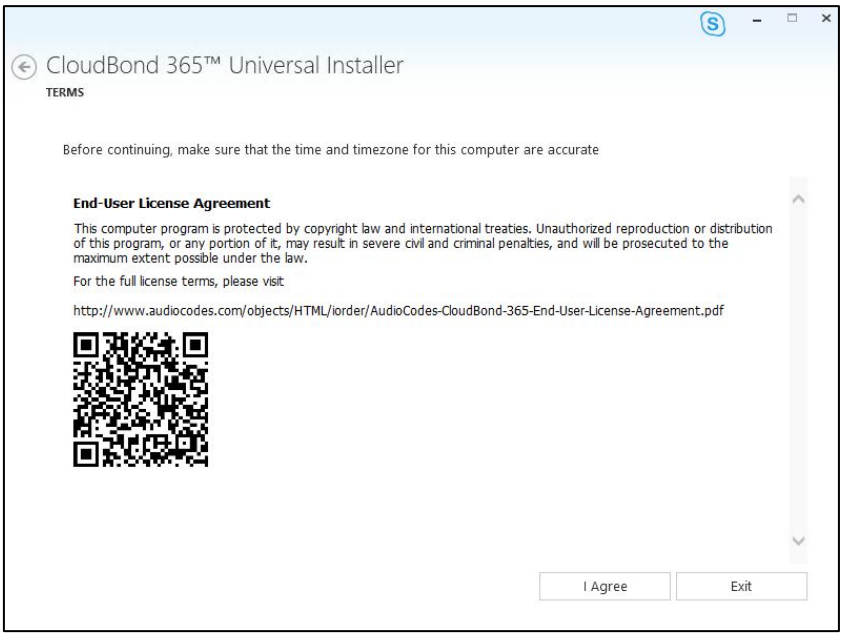
Ensure that there is network connectivity between the new BPA Hardware, and the existing CloudBond 365 servers.

8.6 License Agreement

If you are running the Configuration Wizard for the first time, or an existing configuration file is not found, a license agreement page is presented. You must agree to the license terms before proceeding with the software installation.

This page offers a short copy write text, a link to the full license agreement, and a QR code which contains said link. Click I Agree to continue setup, or Exit to abort.

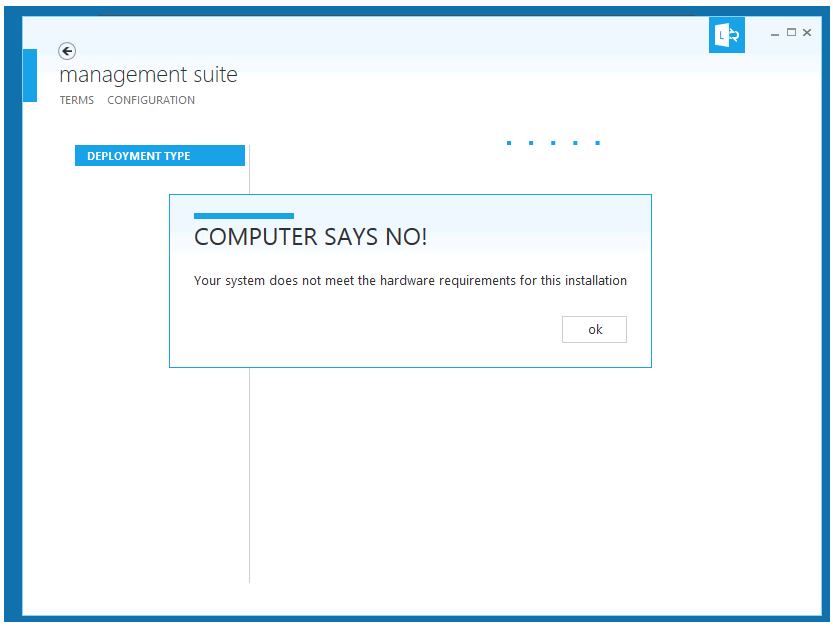
Figure 8-33: License Agreement



8.7 Hardware Check

The Configuration Wizard will first verify the hardware platform that it is running on. The hardware detected will influence the options presented within the Configuration Wizard. When the system running the setup does not meet the hardware requirements, the following message is shown.

Figure 8-34: Hardware Check

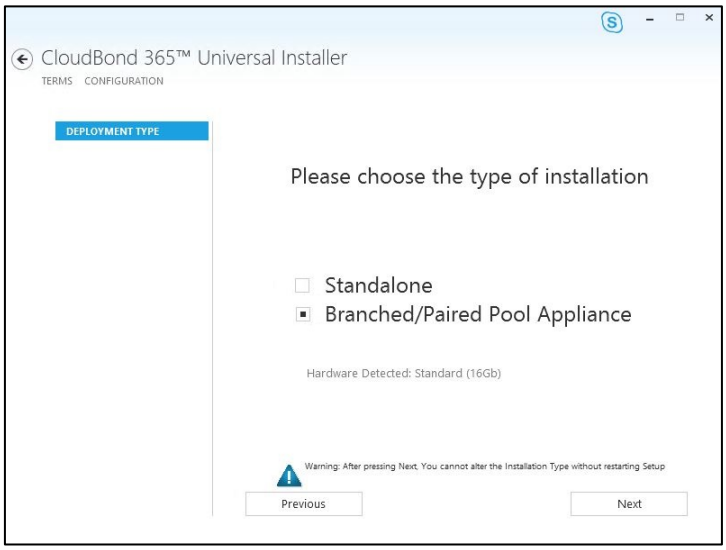


8.8 Deployment Type

You must choose the Branch / Paired Pool Appliance (BPA) Deployment Type. This page also shows which hardware level was detected.

Once a Deployment Type is chosen, it is not possible to change the Deployment Type without restarting the Configuration Wizard.

Figure 8-35: Deployment Type



8.9 Deployment Model

There are currently three Deployment Models on the Configuration Wizard to choose from:

- Virtual Edition
- Hyper-V Host with Virtual Machines
- Co-Located Hyper-V / Domain Controller with Virtual Machines

Notes:

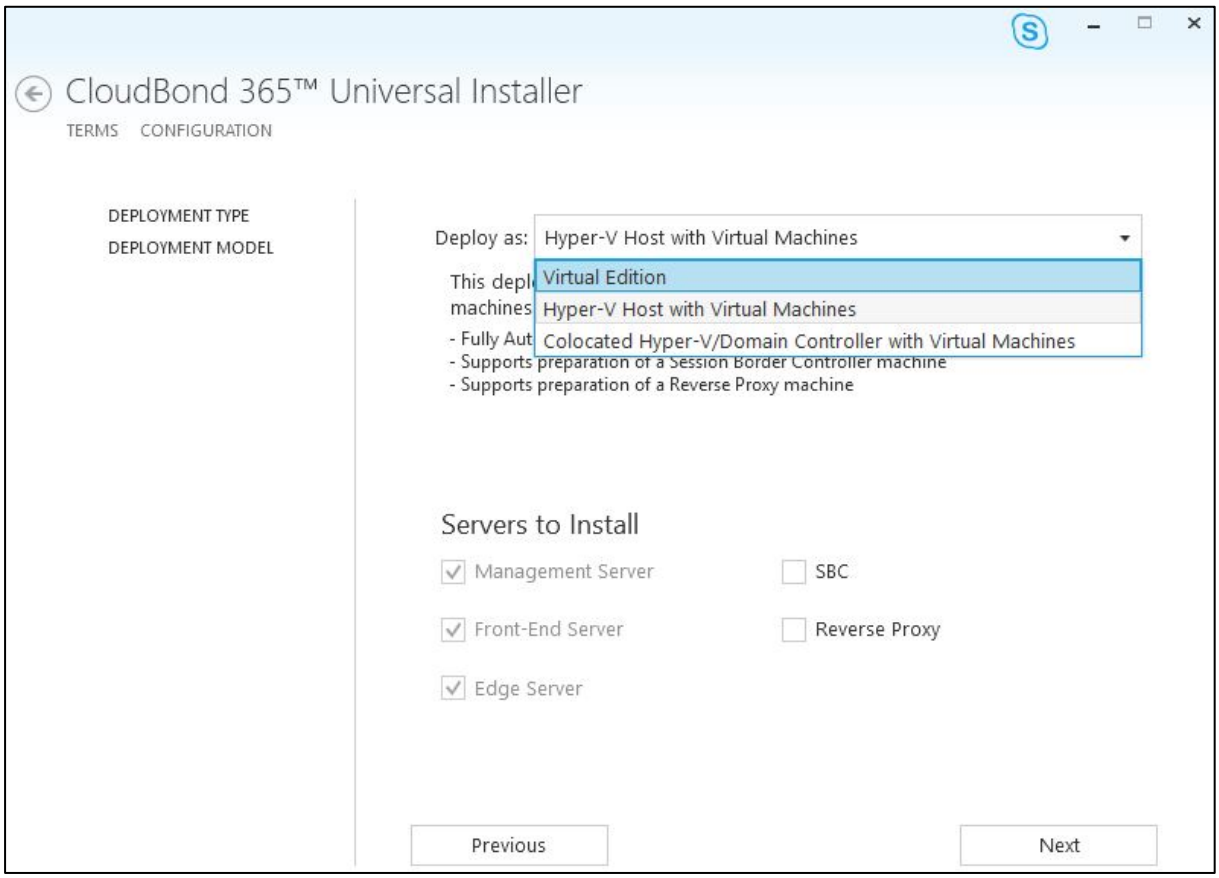
- The hardware detected by the Configuration Wizard determines which Deployment Models are available. For example, on a Mediant 800 OSN with 16/32GB RAM, only the Co-Located Hyper-V / Domain Controller with Virtual Machines is offered.
- The optional SBC and RP are unavailable on CloudBond 365 Standard Box Edition hardware.

8.9.1 Virtual Edition

The Virtual Edition allows you to install the CloudBond 365 application onto your own (virtual) hardware. This installation should be started three times on individual Windows Server 2012 R2 Operating System environments, in the following order:

- On the server that will be hosting the CloudBond 365 management server
- On the server that will be hosting the CloudBond 365 FrontEnd server
- On the server that will be hosting the CloudBond 365 Edge server

Figure 8-36: Deployment Model – Virtual Edition

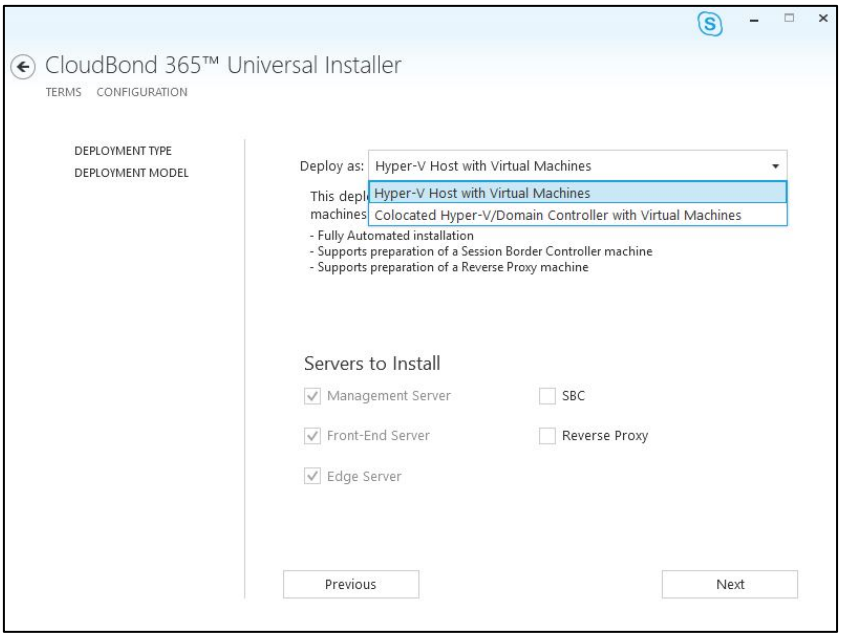


8.9.2 Hyper-V Host with Virtual Machines

The Hyper-V Host with Virtual Machines installs Hyper-V on the selected host machine, and the three CloudBond 365 Servers (Controller, FE, and optional Edge) as three separate virtual machines within Hyper-V.

This option is suitable for CloudBond 365 Pro, and CloudBond 365 Enterprise. (e.g. AudioCodes HP Servers).

Figure 8-36: Deployment Model - Pro and Enterprise

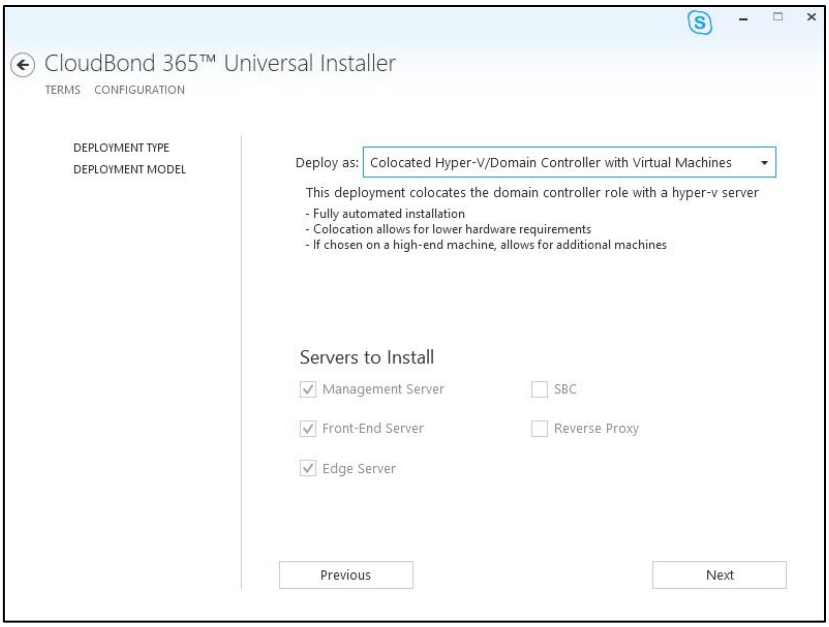


8.9.3 Co-located Hyper-V / Domain Controller, with Virtual Machines

The Co-Located Hyper-V / Domain Controller with Virtual Machines installs the CloudBond 365 Controller (DC) and Hyper-V within the host machine, with the remaining CloudBond 365 Servers (FE and optional Edge) as Hyper-V virtual machines.

This option is suitable for CloudBond 365 Standard / Standard+ Box Edition (e.g. AudioCodes Mediant 800B OSN server).

Figure 8-37: Deployment Model - Mediant 800



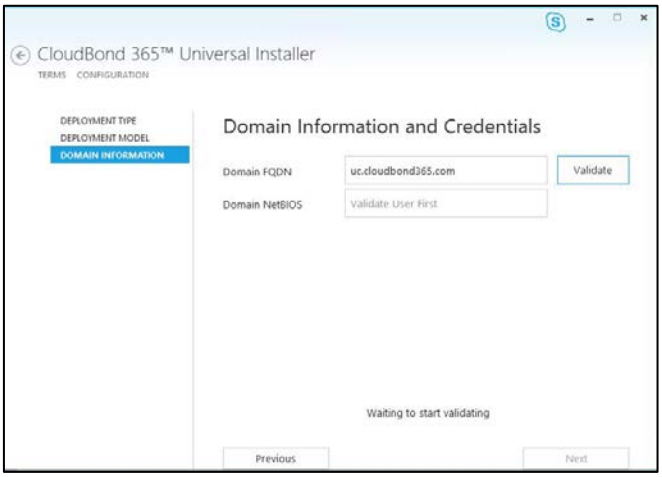
8.10 Domain Information and Credentials (Branch / Paired Pool Deployment)

If performing a Branch / Paired Pool deployment, you will be asked to change and verify the domain, and, administrator login credentials for the existing CloudBond 365 Administrator, to verify you have the required permissions to continue the installation process.

The configuration wizard uses a multistep process to verify first, the domain details, and secondly the administrator credentials in that domain. The wizard will validate the information provided, and also that the user is a member of specific Skype for Business security groups with sufficient privileges to perform the installation.

Click **Validate** to verify the Domain Information you entered is correct.

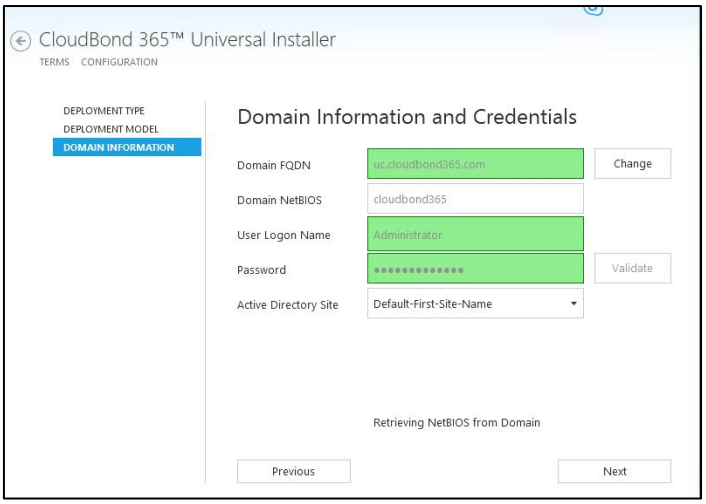
Figure 8-38: Validate Domain



If the domain validation is successful, it will be highlighted in green.

Click **Validate** to confirm the Administrator Credentials you entered.

Figure 8-39: Domain and Credentials Validated



If the credential validation is successful, it will be highlighted in green and the NetBIOS field will be populated. Click **Next** to continue the installation.

8.11 Management Server

If you selected a Branch / Paired Pool Deployment Type, you will be asked to specify the new Management Server information. If installed as a second Domain Controller, it provides resiliency within the Branch, should the WAN link to the existing CloudBond 365 system be lost.

You will also need to select whether the Domain Controller is a:

- No Domain Controller (Management Suite only)
- Full Domain Controller (Read / Write)

The wizard will automatically create a new Domain controller with the information specified, and insert it into the existing Active Directory Resource Forest. It will also install the SysAdmin suite onto the Controller.

Figure 8-40: Domain Controller (BPA)

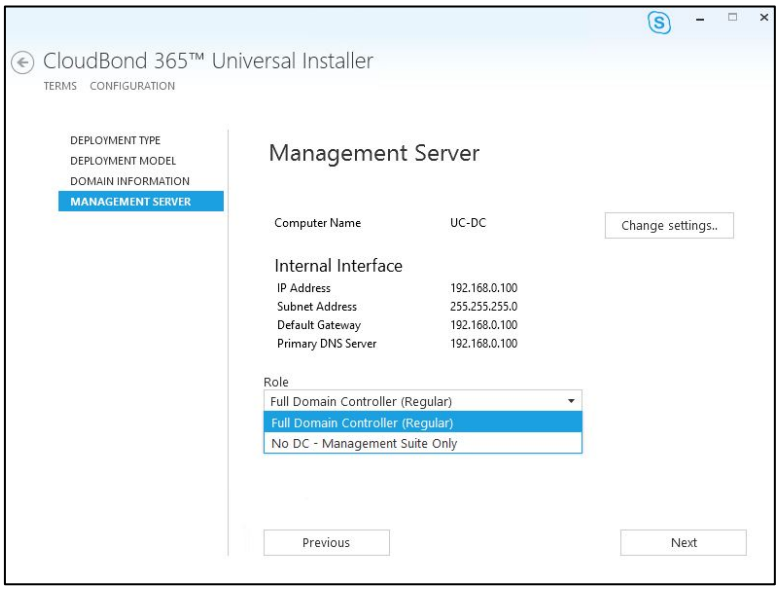
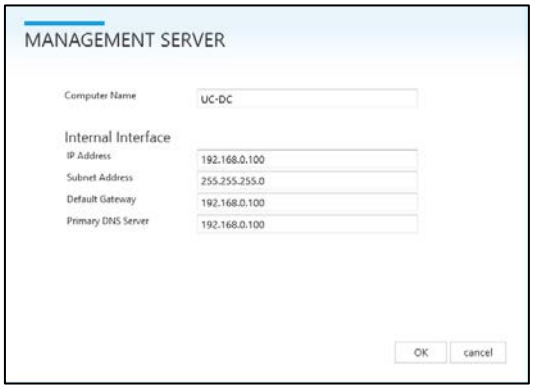


Figure 8-41: Changing the Controller Settings



Note: As the BPA will be joined into an existing Active Directory forest topology, the Management Server DNS Server IP address needs to be a DNS server that is capable of resolving a domain controller for the domain to which the BPA will need to be joined.

8.12 Front-End Server

For all deployment types, you will be asked to specify the details for the Front-End server.

Figure 8-42: Front-End server

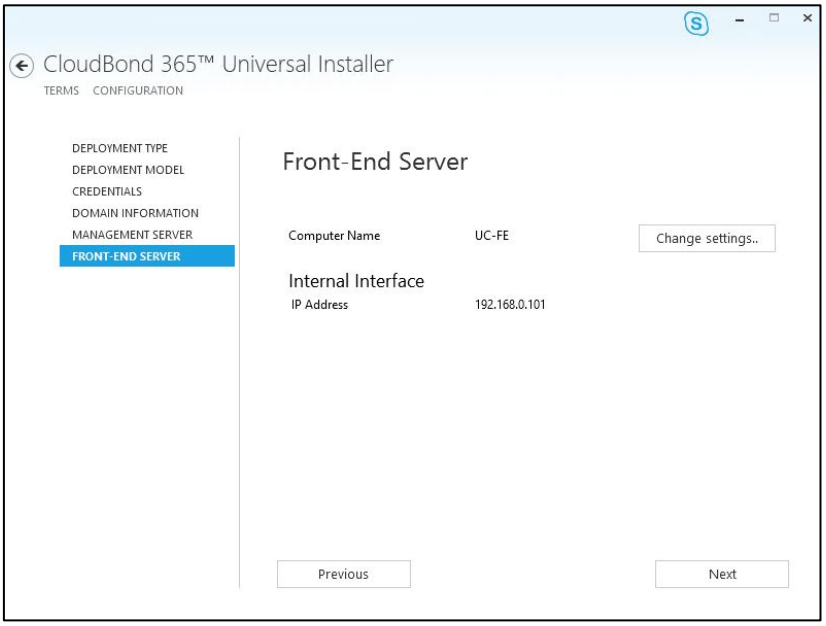
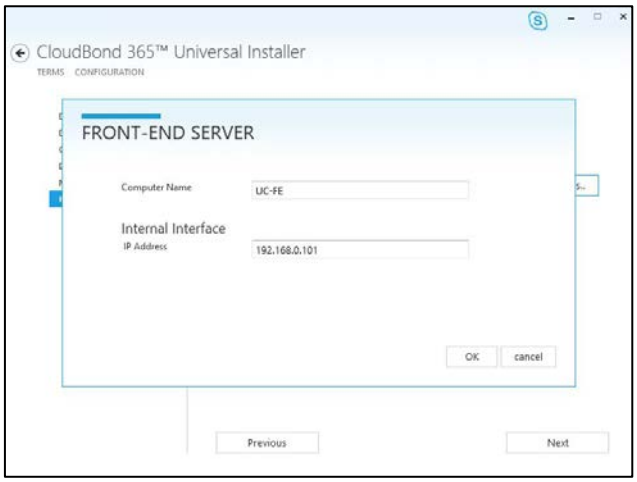


Figure 8-43: Changing the FE Settings



8.13 Edge Server

For Branch / Paired Pool deployment type, installation of the additional Edge server is optional.

Figure 8-44: Edge Server (BPA)

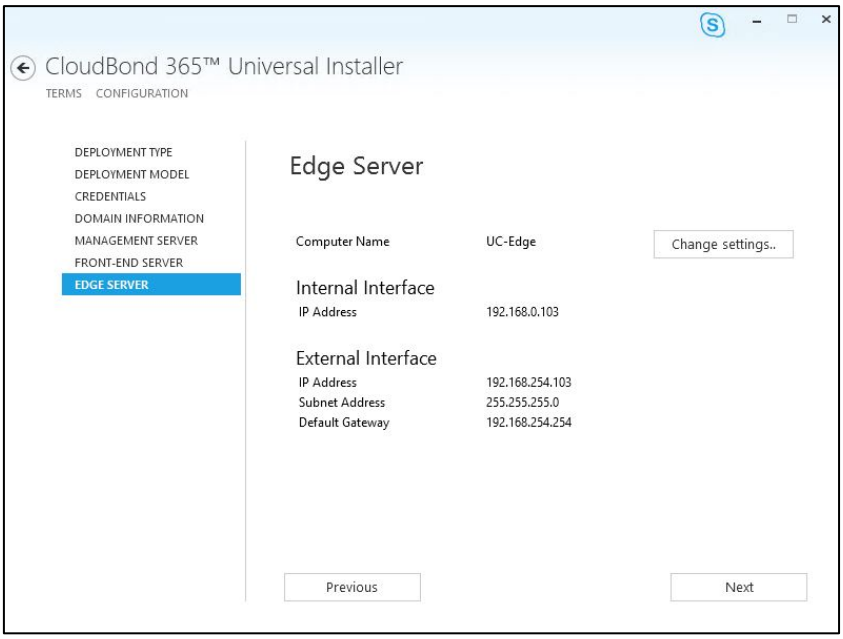
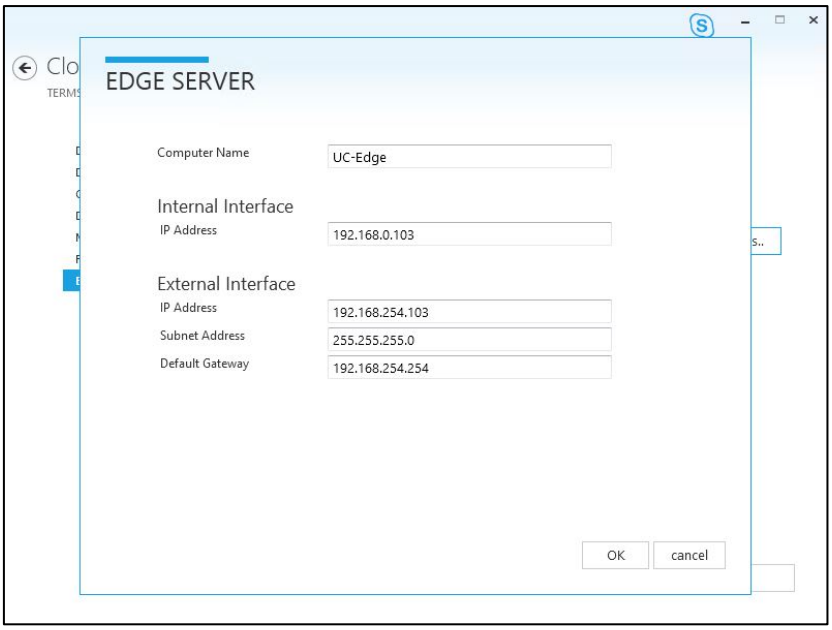


Figure 8-45: Changing the Edge Settings



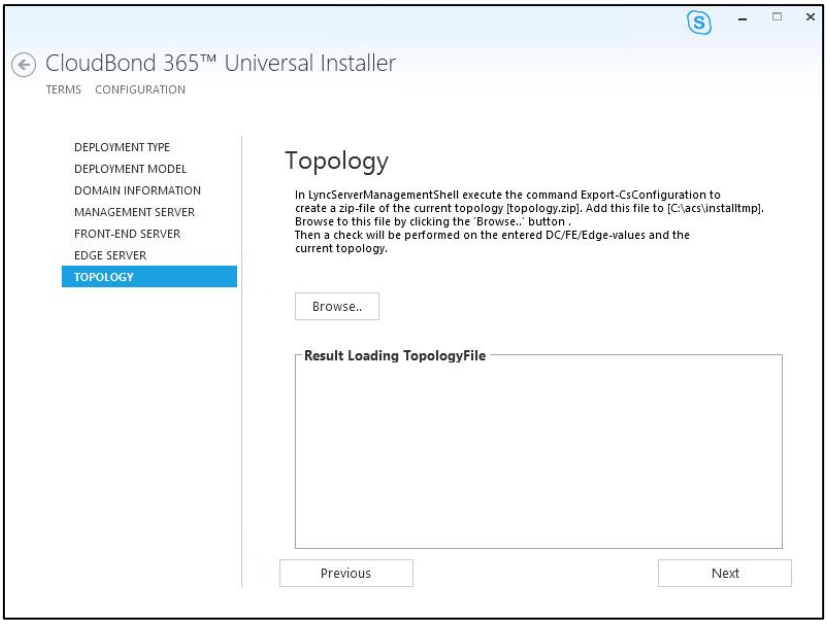
Note: To prevent complex networking scenarios during installation, the wizard only allows for a single public edge IP Address and requires the Edge Internal leg to be on the same subnet as the other servers installed. If different deployment scenarios are needed, it is just a small change to be made in Skype for Business Topology Builder after the installation wizard has finished. For more information see LTRT-26443 CloudBond 365 Certificates Configuration Note Ver. 7.0 section **6.1.4 Edge Services** and LTRT-26531 Connecting the CloudBond 365 Edge Server to a Full DMZ Deployment Configuration Note.

8.14 Topology

If installing a Branch / Paired Pool deployment, you will be asked to provide a copy of the existing topology in a zip file.

This can be retrieved from the existing CloudBond Controller using the Skype for Business Management Shell command **Export-csConfiguration** as describer at the start of this chapter.

Figure 8-46: Loading the Topology



The wizard will scan the topology for information and report results.

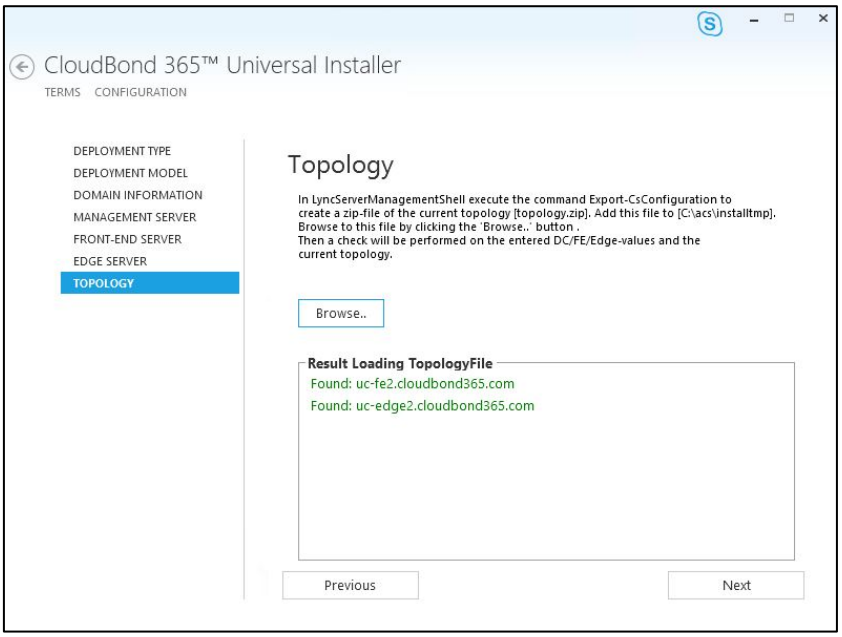
8.14.1 Topology Scan Results

The Wizard will scan the supplied topology file and attempt to match the required FE and Edge servers against the data you have entered so far.

If it fails to find matching entries, it will highlight the results in Red. You may need to return to the existing CloudBond 365 installation, and modify the topology, or change the data you have entered in the BPA wizard by going to previous screens.

If the wizard is able to match your entries against the topology, the results will be highlighted in green, and you may proceed with the installation.

Figure 8-47: Topology Scan Results – Pass



8.15 Summary

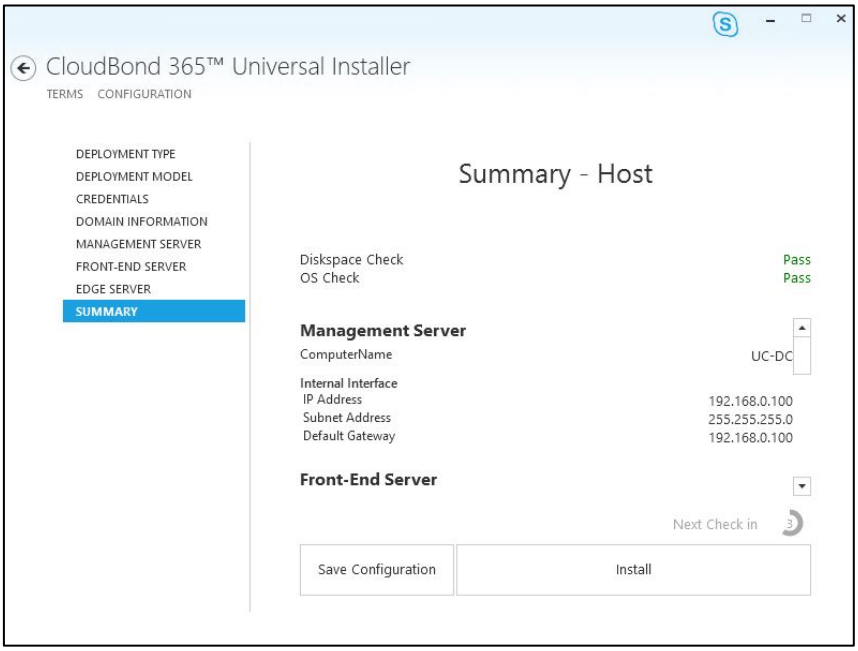
The Summary page shows details of the selections made during the Wizard, as well as various pre-checks performed on the hardware.

If all information meets requirements, an **Install** button will appear below.

The summary page allows you to manually save the entered configuration by clicking the Save Configuration button. This will show display a standard “Save As” dialog, allowing you to specify where the file is saved.

Click the **Install** button to begin the Software Install process only once the checks show **Pass**. The OS Check specifically will sometimes need more time to be validated. The rotating wheel above the **Install** Button gives a time indication when the next validation check will be performed.

Figure 8-48: Wizard Summary



Warning: After the installation is finished, scheduled tasks will have been created on the management server. If multiple management servers are installed in the environment for redundancy, the scheduled tasks on the redundant servers should be disabled and only enabled if the primary server goes down to prevent duplicated objects from being created in the Active Directory.

9 Software Install

When all Configuration Wizard options are completed, the installation program starts installing the Skype for Business software components according to the inputted settings.

9.1 Deployment Model using Hyper-V

If you selected a Deployment Model of **Hyper-V Host with Virtual Machines** or

Co-Located Hyper-V / Domain Controller with Virtual Machines, installation will continue automatically on the current hardware platform, requiring minimal intervention. Software installation can take between 3-8 hours, depending on the options chosen.

9.2 Deployment Model using the Virtual Edition

If you perform a Deployment Model of **Virtual Edition**, Hyper-V and Windows operating systems will not be installed. You'll be required to create your own Windows Server 2012 R2 virtual servers and assign to them IP addresses that will match the IP addresses you'll specify in the installation wizard.

You'll be required to log on to each of the three servers (DC, FE, and Edge) and perform the configuration on each. Once configured on the DC, the configuration can be saved and loaded for re-use on the FrontEnd and Edge servers:

Figure 9-1: Configuring DC, FE, and Edge Servers

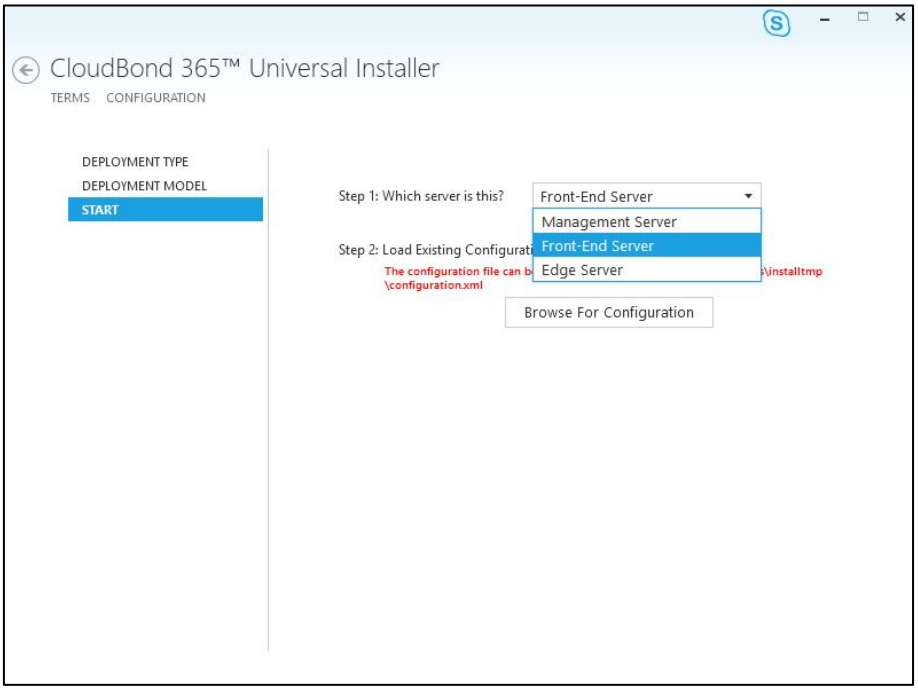
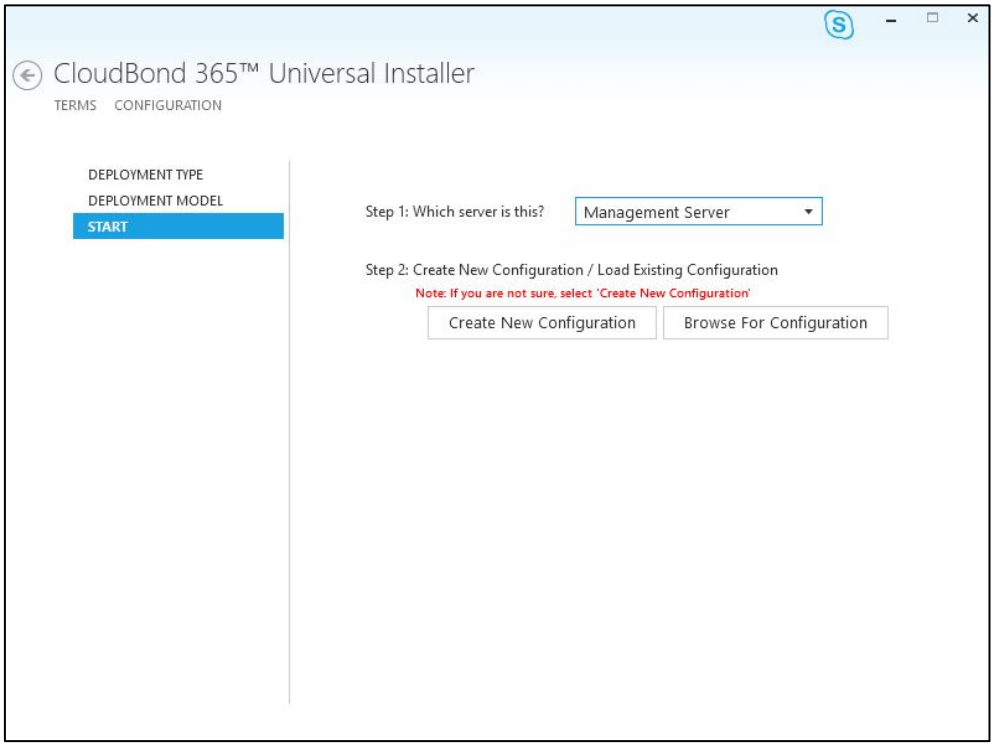
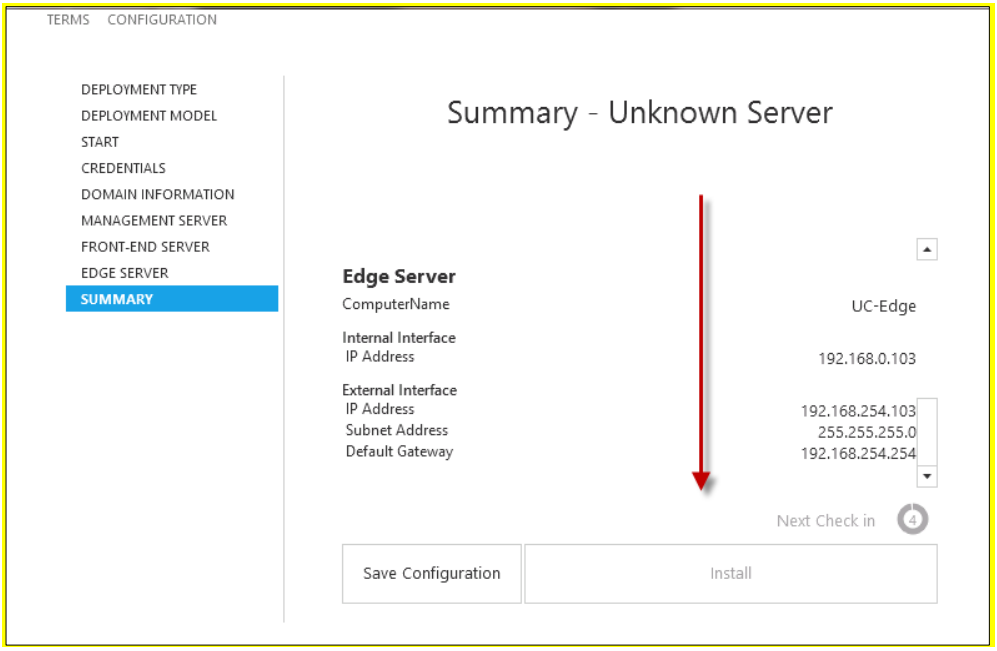


Figure 9-2: Configuring DC, FE, and Edge Servers



The installation wizard checks the machine IP with the IP defined in the wizard, to determine which server role will be installed. If there's an IP address mismatch between the wizard and the virtual machine, the **Install** button will be grayed out and the server role is displayed as 'Unknown Server' on the Summary page.

Figure 9-3: Summary – Unknown Server



9.3 Installation Steps

The software installer will perform many steps on each server to build the CloudBond 365 system. The steps will vary depending upon the options chosen in the Configuration Wizard. The major steps include:

- Creating Hyper-V Virtual machines as required
- Installing Windows 2012 R2 on each VM where needed
- Creating a Domain Controller
- Installing a Skype for Business Standard Edition Front End Server
- Installing a Skype for Business Consolidated Edge Server
- Installing Skype for Business utilities on the DC
- Installing SysAdmin and other CloudBond 365 components
- Installing the SBC software if required

The order of building each server VM is important. For example, the FE cannot be installed before the DC build is complete. The servers will be installed in the following order:

- DC
- FE
- Edge
- SBC
- RP

The Host waits for all VMs to complete before continuing. Each individual server waits for the previous server to complete before continuing.

9.4 Installation Progress

The following screenshots provide examples of the progress visible on each server component of the CloudBond 365 system.

Figure 9-4: Typical Automated Installer screen

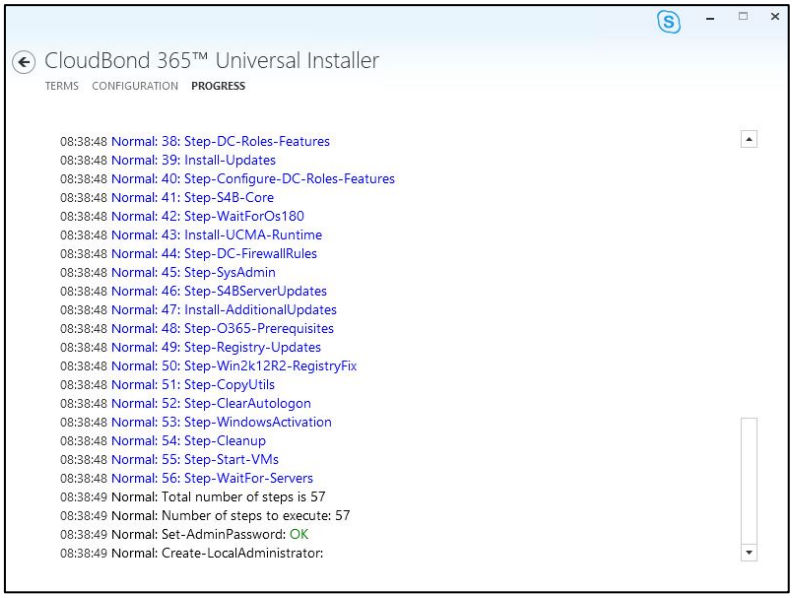
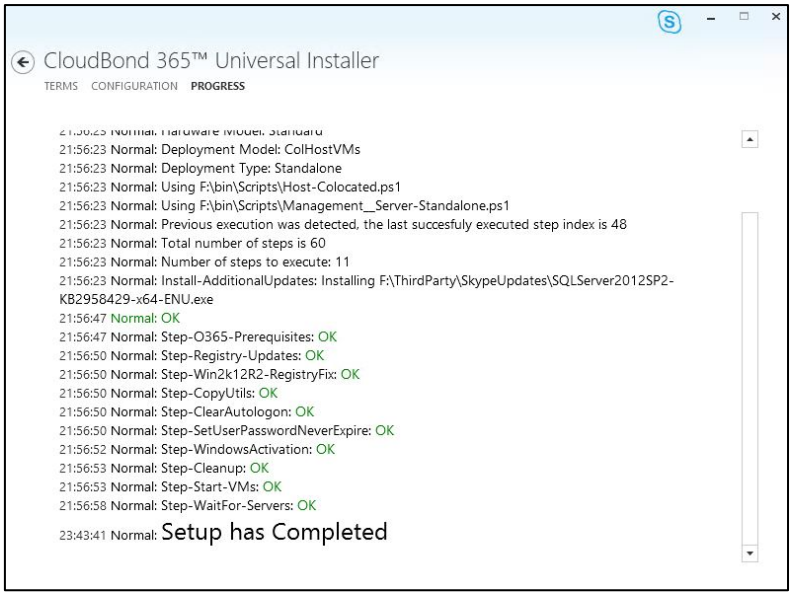


Figure 9-5: Setup has been completed on one of the VMs



10 Setup Complete

When the Hyper-V Host server installation is finished and it can communicate to the virtual servers over IP, it will report **Setup has Completed** on the install screen.

You should now proceed with the post-install steps, which include:

- Installing a license code into the CloudBond 365 management suite web pages
- Completing any configuration steps for the SBC and reverse proxy
- Following the *AudioCodes CloudBond 365 Deployment Guide* to connect to the customer domain.
- Perform any local customer Skype for Business configuration required.
- Activating Windows 2012 R2 licenses
- Update Windows and Skype for Business updates
- Update HP servers latest service pack updates

If you installed a Branch / Paired Pool Appliance, and wish to configure a paired pool, proceed to the next chapter.

Note: After the CloudBond 365 software has been installed as a BPA or Software Only installation, the Edge server computer IP address is not registered into DNS dynamically as the Edge server role is installed on a computer that is not domain joined. This means that you will need to add the Edge internal IP address to the internal DNS servers manually.

Note: After CloudBond 365 software has been installed, you may need to adjust DNS settings to match your network environment. You may either follow the deployment guide to set up DNS, or set the DNS server on the CloudBond 365 Controller (UC-DC) to forward requests to the internet. See Appendix G on page 109 for more details.

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11 Paired Pools – Post Install

After the BPA software install completes, you may wish to modify the topology so that each FE server has resiliency by Pairing with the other FE server.

A paired pool of servers should only be established after both servers and installed and functioning.

To pair FE servers, they must be of the same type. For CloudBond 365, this means both FE servers must be Skype for Business Standard Edition FE Servers. You cannot pair a Skype for Business Standard Edition FE Pool with a Skype for Business Enterprise Edition FE Pool.

There is a good article about Paired Pool setup at:

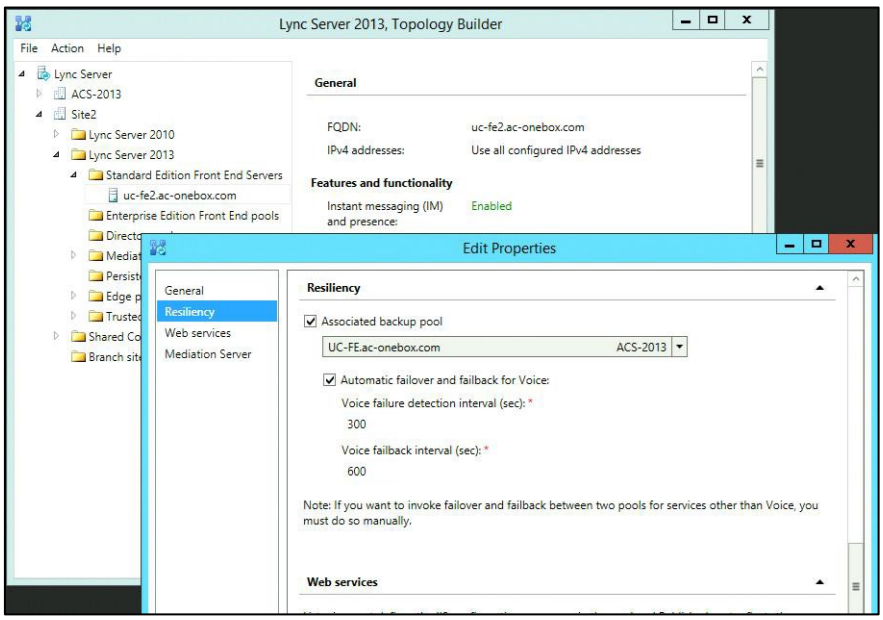
http://www.gecko-studio.co.uk/dont-play-with-fire-play-with-pool-pairing-configuring-testing/

11.1 Pairing Pools in Topology

➢ **To pair two FE servers:**

1. Log on to a CloudBond 365 DC.
2. Open the Skype for Business Topology Builder.
3. Right-click an existing Standard Edition FE Server, and select properties.
4. Navigate to the **Resiliency** section.
5. Enable an Associated backup pool, and select the paired FE server.
6. Select **Automatic failover and failback for Voice**.
7. Click **OK**.

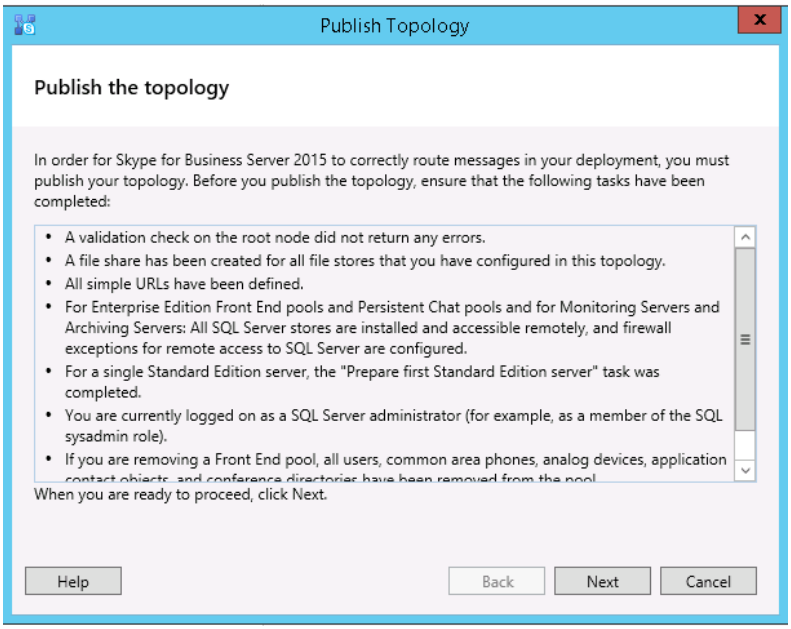
Figure 11-1: Edit Properties



8. Publish the topology.

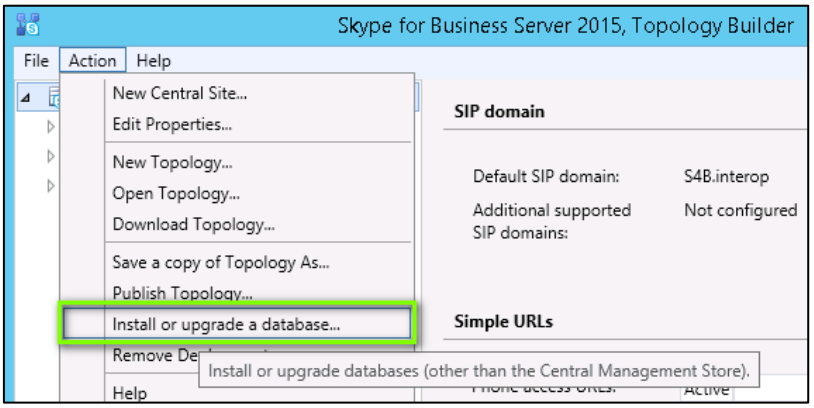
9. On each FE server, run the Skype for Business Deployment Wizard.

Figure 11-2: Publish Topology



10. Click **Install or update database**.

Figure 11-3: Install or Update Database



11. With the Get-CsManagmentReplicationStatus command, make sure the CMS is updated on all servers.

Figure 11-4: Making Sure the CMS is Updated on all Servers

```
PS C:\Users\eu.lyncadmin.DAYCO> Get-CsManagementStoreReplicationStatus


UpToDate            : True
ReplicaFqdn         : TR-SRVEDGE.$Fqdn .LOCAL
LastStatusReport    : 5/18/2016 11:46:43 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : TR-SRVFREN.$Fqdn ).LOCAL
LastStatusReport    : 5/18/2016 11:46:42 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : IV-SRVEDGE.$Fqdn ).LOCAL
LastStatusReport    : 5/18/2016 11:46:41 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : IV-SRVFREN.$Fqdn ).LOCAL
LastStatusReport    : 5/18/2016 11:46:48 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0
```

12. On each FE server (not in parallel), run the Skype for Business Deployment Wizard.

13. In the Skype for Business Deployment Wizard, Run 'Step 2' as shown in the figure below.

Figure 11-5: Install or Update Database

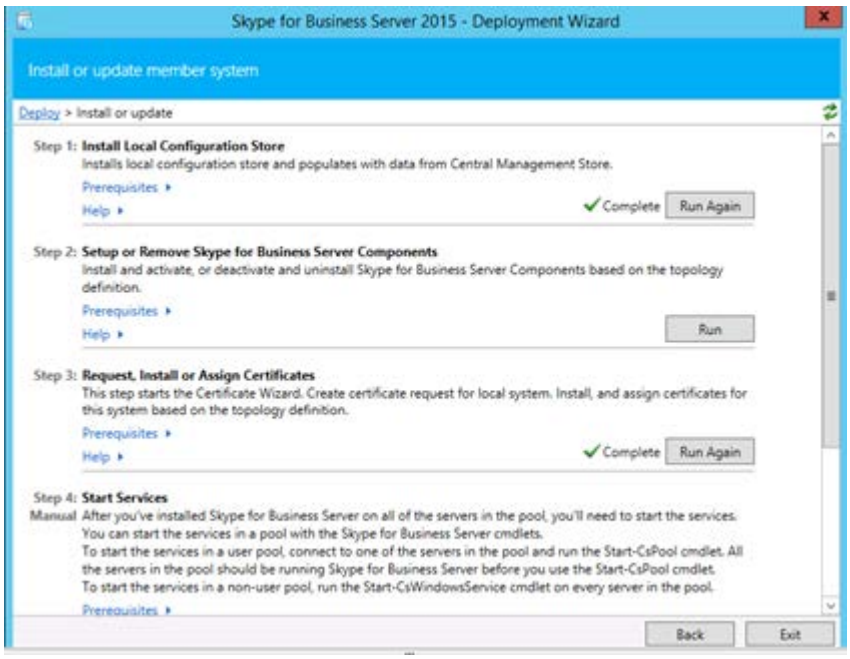
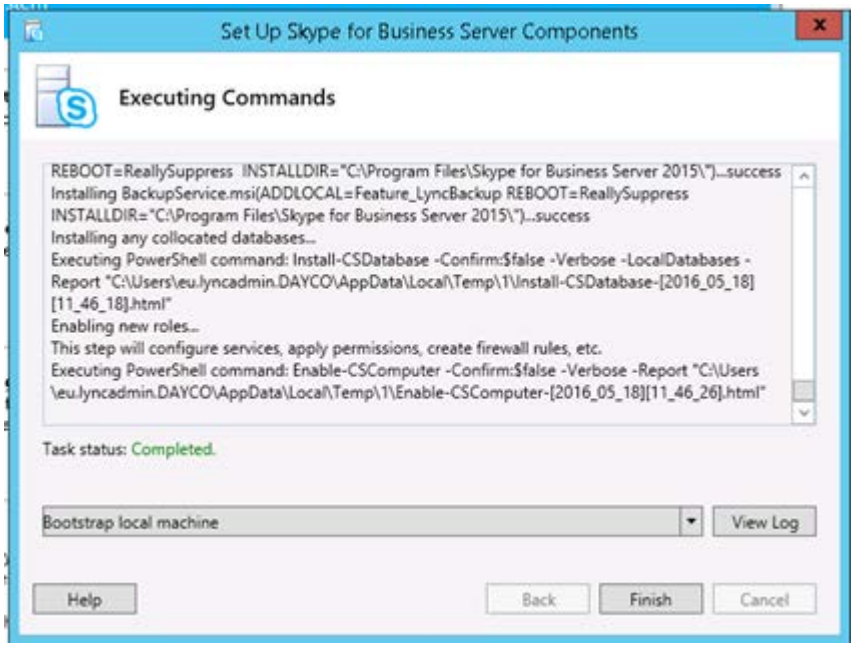
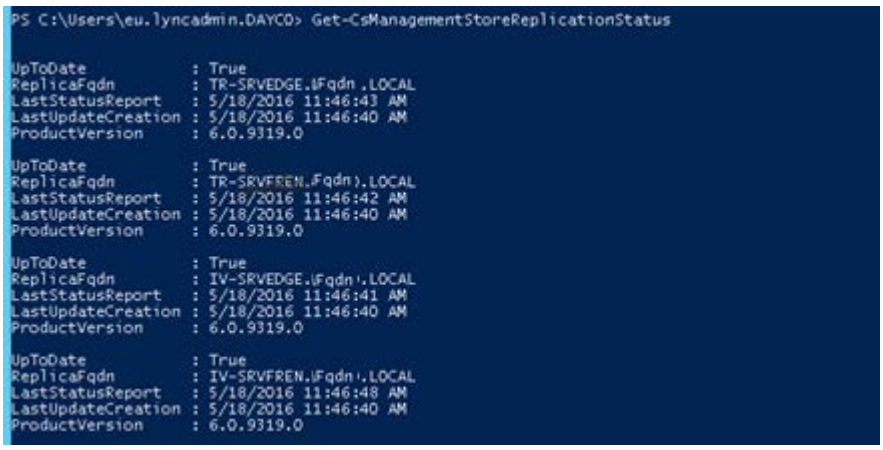


Figure 11-6: Executing Install or Update Database



14. With the Get-CsManagmentReplicationStatus command, make sure the CMS is updated on all servers.

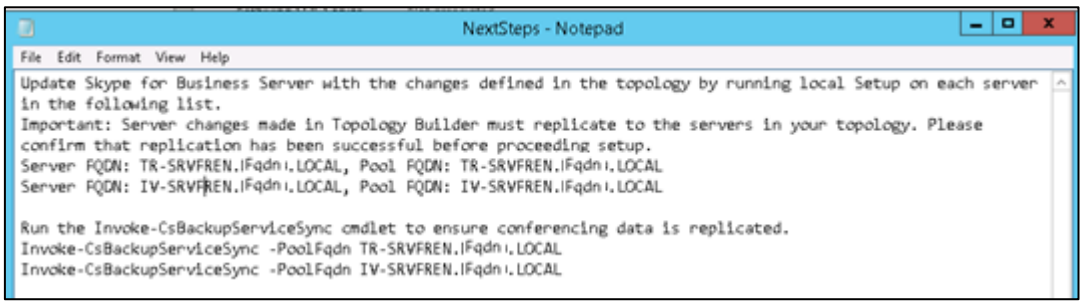
Figure 11-7: Making Sure the CMS is Updated on all Servers



```
PS C:\Users\eu.lyncadmin.DAYCO> Get-CsManagementStoreReplicationStatus

UpToDate            : True
ReplicaFqdn         : TR-SRVEDGE.(Fqdn).LOCAL
LastStatusReport    : 5/18/2016 11:46:43 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : TR-SRVFREN.(Fqdn).LOCAL
LastStatusReport    : 5/18/2016 11:46:42 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : IV-SRVEDGE.(Fqdn).LOCAL
LastStatusReport    : 5/18/2016 11:46:41 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0

UpToDate            : True
ReplicaFqdn         : IV-SRVFREN.(Fqdn).LOCAL
LastStatusReport    : 5/18/2016 11:46:48 AM
LastUpdateCreation  : 5/18/2016 11:46:40 AM
ProductVersion      : 6.0.9319.0
```

15. Run the Invoke-CsBackupServiceSync cmdlet on each server to make sure conferencing data is replicated. The following commands are listed in the to-do list after publishing the topology:

Figure 11-8: Commands Listed in the To-Do List after Publishing the Topology



```
NextSteps - Notepad
File  Edit  Format  View  Help
Update Skype for Business Server with the changes defined in the topology by running local Setup on each server
in the following list.
Important: Server changes made in Topology Builder must replicate to the servers in your topology. Please
confirm that replication has been successful before proceeding setup.
Server FQDN: TR-SRVFREN.(Fqdn).LOCAL, Pool FQDN: TR-SRVFREN.(Fqdn).LOCAL
Server FQDN: IV-SRVFREN.(Fqdn).LOCAL, Pool FQDN: IV-SRVFREN.(Fqdn).LOCAL

Run the Invoke-CsBackupServiceSync cmdlet to ensure conferencing data is replicated.
Invoke-CsBackupServiceSync -PoolFqdn TR-SRVFREN.(Fqdn).LOCAL
Invoke-CsBackupServiceSync -PoolFqdn IV-SRVFREN.(Fqdn).LOCAL
```

16. Check the Pool-Pairing status (FinalState) with Get-CSBackupServicesStatus:

Figure 11-9: Checking the Pool-Pairing Status (FinalState)

```
PS C:\Users\eu.lyncadmin> Get-CsBackupServiceStatus -PoolFqdn tr-srvfren.dayco.local

ActiveMachineFqdn                    OverallExportStatus          OverallImportStatus BackupModules
-----------------                    -------------------          ------------------- -------------
TR-SRVFREN.{Fqdn}.LOCAL                        FinalState                   NormalState {UserServices.PresenceFocu...

PS C:\Users\eu.lyncadmin> Get-CsBackupServiceStatus -PoolFqdn iv-srvfren.dayco.local

ActiveMachineFqdn                    OverallExportStatus          OverallImportStatus BackupModules
-----------------                    -------------------          ------------------- -------------
IV-SRVFREN.{Fqdn}.LOCAL                        FinalState                   NormalState {UserServices.PresenceFocu...

PS C:\Users\eu.lyncadmin>
```

11.2 Pairing Pools in DNS

To complete the setup of a paired pool, the DNS records will need to be reviewed and modified so that users can locate the surviving Front End pool in the event of a failure.

The most common way to do this is to add a weighted SRV record pointing to the second FE server. When this method is used, all Skype for Business clients will initially contact the first FE pool indicated by the SRV records. The first FE pool will redirect clients homed on the second FE to that FE Pool, thus some minor additional traffic is encountered by the First FE pool. During a failure, the clients will use the second weighted SRV record to locate the surviving FE Pool.

You may choose other methods to control client logins, such as geographic DNS records. These will redirect client logins to their local FE pool and minimize traffic.

11.3 Failing Over

Paired pools offer automatic failover for Enterprise Voice traffic, but not for other features of Skype for Business. Failover between servers is a manual process. After a server fails, and before manual failover is completed, clients will experience restrictions and limited functionality.

Microsoft documentation for the failover process can be found at: https://technet.microsoft.com/en-us/library/jj204678%28v=ocs.15%29.aspx

In the following command examples, it is assumed that uc-fe.ac-onebox.com has failed, and must be switched to the surviving uc-fe2.ac-onebox.com

11.3.1 Edge Pool Next Hop

If an Edge server uses the failed FE pool as the next hop, and that edge server has not failed and is still available, you will have to change the Edge server to use a surviving FE pool as the next hop.

```
Set-CsEdgeServer -Identity EdgeServer:uc-edge.ac-onebox.com -
Registrar   Registrar:uc-fe2.ac-onebox.com
```

11.3.2 Central Management Store

If your CMS is located on the failed FE server, you will need to fail it over to the remaining server. You can check the CMS location with *Get-CsManagementConnection.*

In the Skype for Business Management Shell on the surviving FE server, enter the commands:

```
Get-CsManagementConnection
Invoke-CsManagementServerFailover –BackupSqlServerFQDN uc-fe2.ac-
onebox.com –BackupSqlServerInstance rtc -force
```

11.3.3 Users

To failover the users, enter the command:

```
Invoke-CsPoolFailOver -PoolFqdn uc-fe.ac-onebox.com -DisasterMode
```

11.4 Failing Back

Once the failed server has been recovered and brought back online, you can fallback the users and CMS as required.

Note that the CMS location does not need to be changed and can remain in its current location if desired.

11.4.1 Edge Pool Next Hop

If an Edge server next hop pool was changed, you can optionally change the Edge next hop value back to its original location. For a paired pool within the same site, this may not be required, but if the FE and Edge are now on separate sites, the next hop should be returned to minimize cross WAN traffic.

```
Set-CsEdgeServer -Identity EdgeServer:uc-edge.ac-onebox.com -
Registrar   Registrar:uc-fe.ac-onebox.com
```

11.4.2 Central Management Store

To return the CMS to its original location, in the Skype for Business Management Shell on the repaired a FE server, enter the commands:

```
Get-CsManagementConnection
Invoke-CsManagementServerFailover –BackupSqlServerFQDN uc-fe.ac-
onebox.com
 –BackupSqlServerInstance rtc -force
```

11.4.3 Users

To return users to their original home pool, on the repaired FE server, enter the command:

```
Invoke-CsPoolFailBack -PoolFqdn uc-fe.ac-onebox.com
```

A Installing the Product License

CloudBond 365 uses an Enterprise License model i.e. a single CloudBond 365 license is used for one or more CloudBond 365 servers that are installed in the same company domain and share the same Active Directory (AD). The Enterprise License will store the total number of users of all CloudBond 365 servers that share the same AD.

The Enterprise License is based on a unique “System ID” (Fingerprint) which is based on an AD contact field. The “System ID” key is available the first time you try to login to the CloudBond 365 using the CloudBond 365 sysadmin.

Figure A-1: Uploading License File

The “System ID” is also available in the CloudBond 365 management tool **System Configuration** -> **Licensing Info** page.

The first time a CloudBond 365 system is ordered for an enterprise the AudioCodes system generated a unique “Product Key” that represents the customer enterprise system. The Product key is sent to the customer/channel upon system ordering via email.

To activate your CloudBond 365 system you will need both a “Product Key” and a “System ID” (Fingerprint). Once you have both keys you can activate your product through AudioCodes License Activation tool at http://www.audiocodes.com/swactivation.

An e-mail will subsequently be sent to you with your Product License.

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B Activating Windows

CloudBond 365 is supplied with Windows 2012 R2 Standard Edition OEM licenses, with the Microsoft Product License code stickers attached to the server hardware.

If you are performing a Bare Metal installation, or rebuilding an existing CloudBond 365 system, you may need to activate windows when the software installation is complete.

You will need to Activate the Host server, as well as each Virtual Machine.

To activate windows, you may start the Activation process by running *slui.exe*, or opening the Sever Manager utility and clicking the **Product ID** field.

Note: Make sure your host server and all virtual machines have Internet access when activating the Windows license.

The Windows activation key is a 25 character key available on the Windows license sticker attached to the server and named 'Product Key' e.g., *abcd-12345-efghi-6789-jklmn*.

Each Windows 2012 R2 OEM sticker is allowed to activate one physical server (i.e., Host) and two additional virtual machines running on the same physical sever. In the case of CloudBond 365 Pro with three stickers, it allows to activate the host and six virtual machines.

The CloudBond 365 Standard Box Edition contains one Windows 2012 R2 OEM license that allows you to license the Host, FE and Edge servers.

Figure B-1: CloudBond 365 Standard Box Edition

The CloudBond 365 Standard+ Box Edition contains two Windows 2012 R2 OEM license stickers that allows you to license the Host, FE and Edge servers with the first sticker product key. The second sticker product key is for licensing the Reverse Proxy server.

The CloudBond 365 Pro and Enterprise Box Editions contain three Windows 2012 R2 OEM license stickers that allows you to license the Host, DC and FE servers with the first sticker product key. The second sticker product key is for licensing the Edge and Reverse Proxy servers. The third sticker is available for licensing additional verified applications to be installed on the server.

Figure B-2: CloudBond 365 Pro and Enterprise Box Editions

Figure B-3: Activation using Server Manager

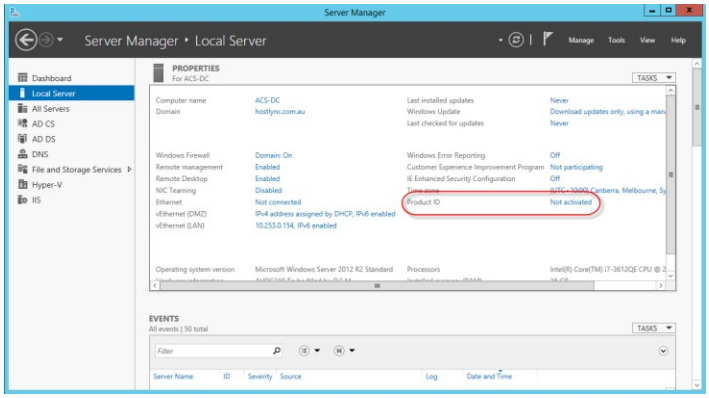


Figure B-4: Entering the Product Key

Note: It is recommended that you photograph or copy the Windows product key slickers and save them in a safe place to be used in the future, 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 installation.

C Running Windows Updates

Microsoft periodically releases new hotfixes for the Windows operating system to solve security issues and bug fixes.

It is recommended to follow the Microsoft recommendation and have your CloudBond Windows operating system up-to-date with the latest hotfixes.

Refer to the Microsoft best practice guidelines regarding Windows Update: https://technet.microsoft.com/en-us/library/dn518337%28v=ocs.15%29.aspx

Note: If any unsupported or unapproved hotfix is found by the AudioCodes team, AudioCodes will officially publish a Product Notice regarding this issue.

Windows updates are configured to "automatically download updates" on all Windows Servers (Controller, Front End, and Edge) installed as part of a CloudBond 365 system.

Note: Downloaded updates are not automatically installed. The Administrator should manually run the update at a convenient time e.g., after working hours.

You may modify these Windows Update settings to suit your requirements, or manually install updates at a convenient time.

To manually install updates, open the Server Manager Utility, then select the Last Installed Updates field.

Note: Ensure that DNS forwarding has been set correctly prior to attempting a Windows Update. See Appendix G on page 109 for more details.

Figure C-1: Accessing Windows Updates

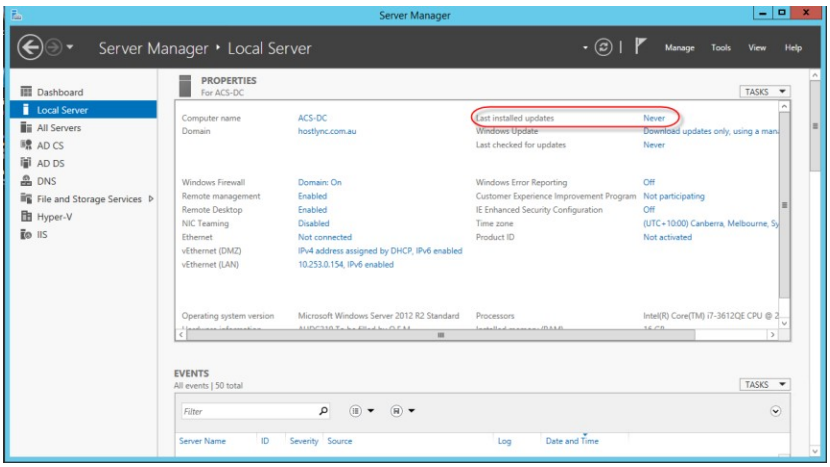


Figure C-2: Checking for new updates

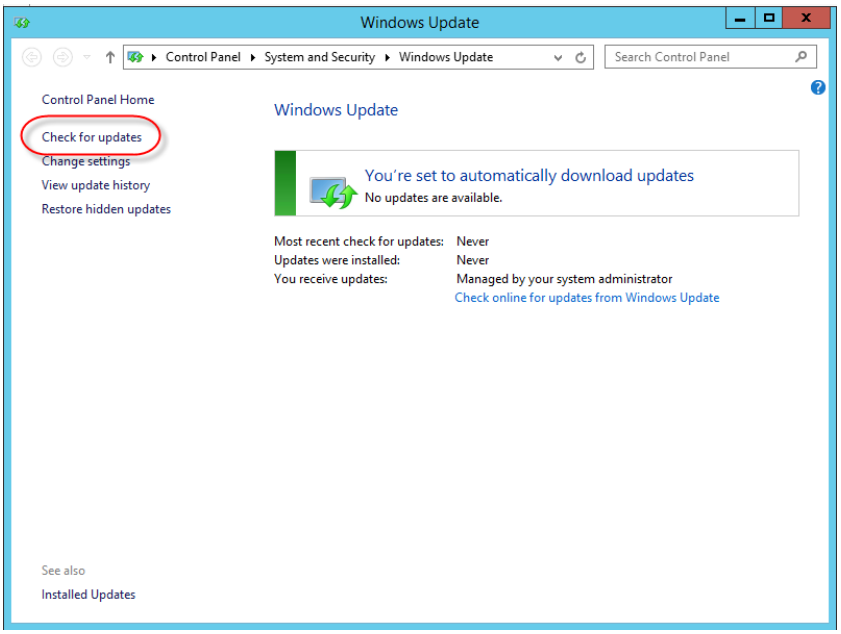


Figure C-3: Checking for New Updates

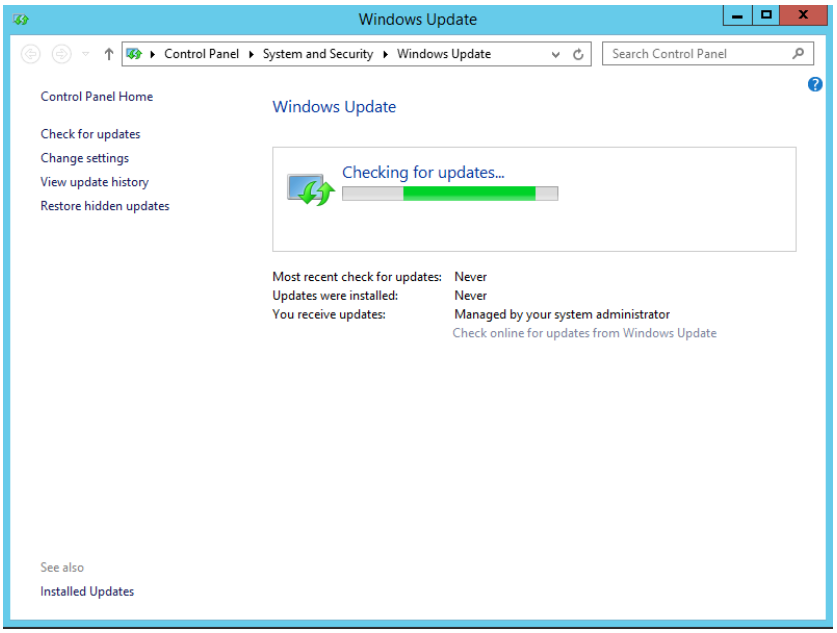


Figure C-4: New Updates found

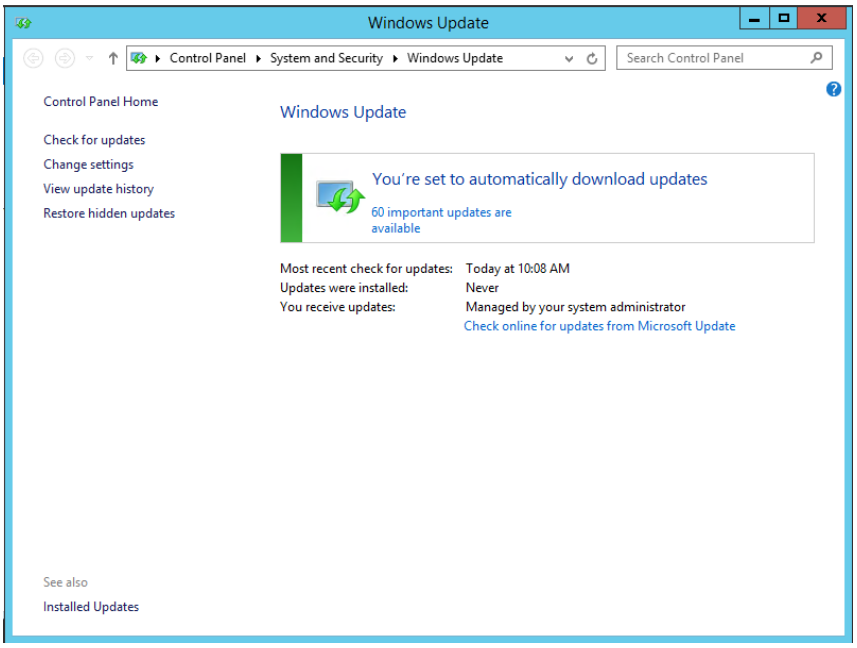
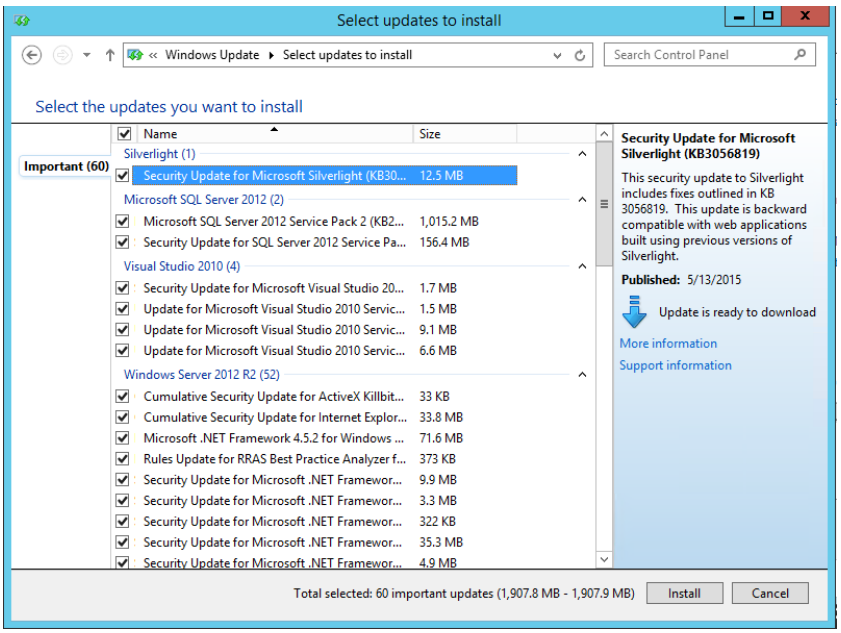


Figure C-5: Selecting and Installing Update



Unless you wish to avoid a specific update, it is generally easiest to accept the default selections and click Install.

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D CloudBond Infrastructure Updates

The CloudBond 365 system is built on top of different infrastructure modules such as Mediant 800, HP server, server BIOS and firmware, Windows OS, hardware and software drivers, Hyper-V, CloudBond 365 applications, etc. CloudBond was fully tested to operate and best perform with all infrastructure modules and together with CloudBond software applications.

It is not allowed to self-upgrade any of the CloudBond infrastructure or application modules without AudioCodes official instruction or without consulting an official AudioCodes representative.

D.1 Skype for Business Cumulative Update

Microsoft periodically releases a Cumulative Update (CU) of fixes for the Skype for Business different roles. AudioCodes periodically tests and verifies each released CU and publishes its recommendation, whether or not a new CU is approved for the CloudBond system.

It is recommended not to install a CU on the CloudBond 365 unless it has been approved by AudioCodes.

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E Antivirus Application

No antivirus application is installed with CloudBond 365. To protect your CloudBond 365 system, it is advised to install an antivirus application. Make sure you install a Microsoft-verified antivirus application for Skype for Business.

Antivirus applications may influence and degrade system performance. Refer to Microsoft instructions for installing the antivirus application on Skype for Business severs at https://technet.microsoft.com/en-us/library/mt629173.aspx.

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F Running the Skype for Business Deployment Wizard

Normally, the Software Install Wizard will perform all Skype for Business Deployment steps for you automatically.

If creating a paired pool for resiliency purposes, this can only be done after the software install has been completed. For Paired Pools, it is necessary to run the Skype for Business Deployment wizard on each server, so that Topology Changes (paired pools) take effect.

To run the deployment wizard (on each FE and Edge server), locate the Skype for Business Deployment Wizard on the **Start** menu, and open the Utility.

Figure F-1: Skype for Business Deployment Wizard

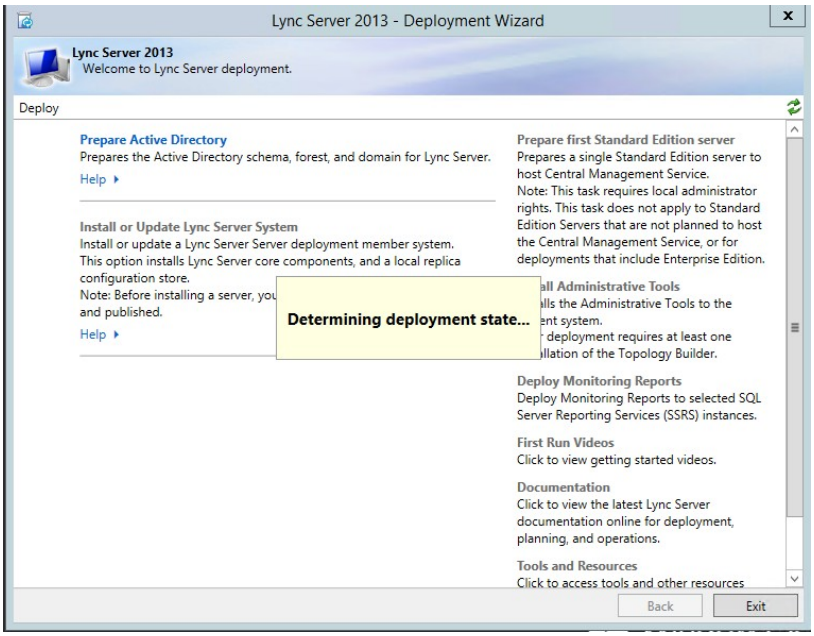


Figure F-2: Setup or Remove Components

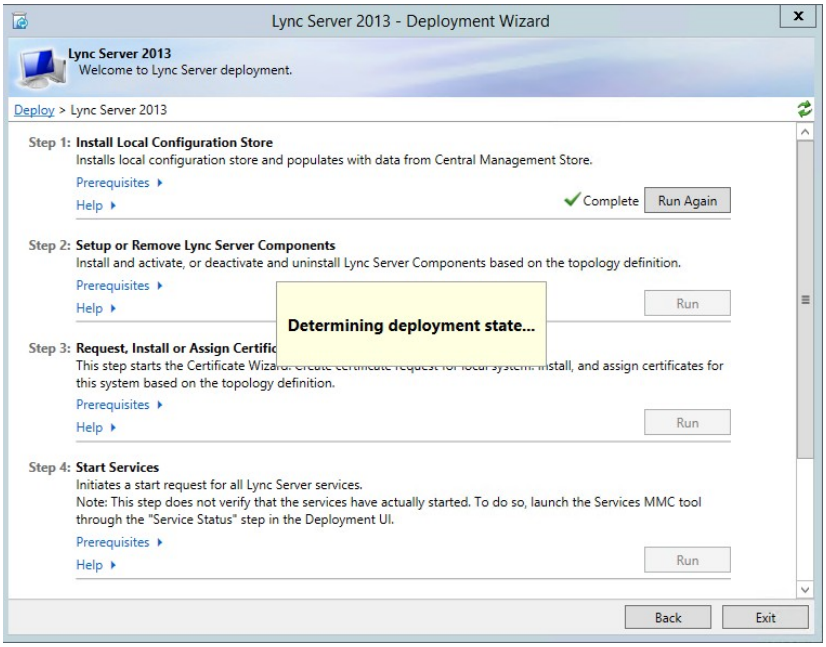


Figure F-3: Updating the Skype for Business Deployment

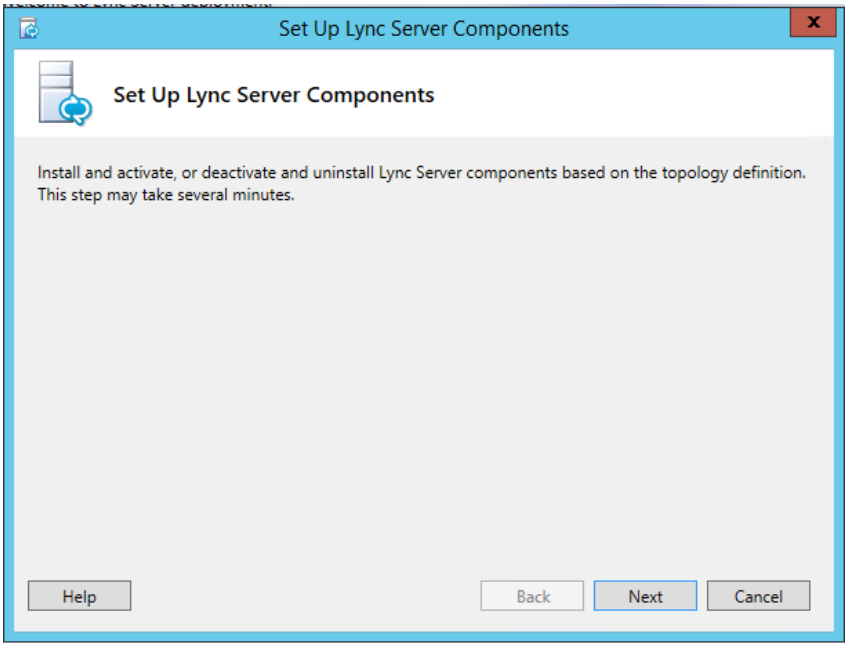
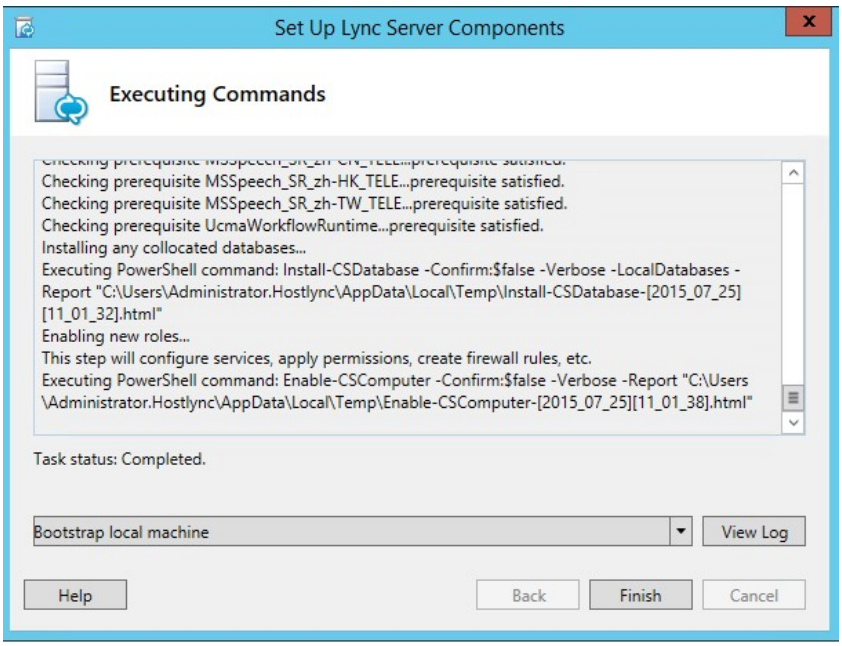


Figure F-4: Skype for Business Deployment Results



G Forwarding DNS Requests

The CloudBond 365 controller (UC-DC) acts as the DNS master for the CloudBond 365 system. It can resolve all necessary DNS lookup requests within the CloudBond 365 system. However, the DNS server on UC-DC is unable to resolve external DNS requests by itself. The DNS server must forward any unknown request to another, more authoritative DNS server.

If following the deployment guide, and establishing a forest trust with your corporate domain, DNS requests would normally be forwarded to the corporate DNS server as the more authoritative server.

If you are deploying the CloudBond 365 system in a standalone mode, with no forest trust, DNS requests would normally be forwarded to the Internet (DNS specified by your ISP), as the more authoritative server.

1. Log on to UC-DC using remote desktop
2. Open the Administrative tools and DNS mmc
3. Right click the DNS server name and select properties
4. One the Forwarders tab, add the IP address of the more authoritative DNS server
5. Close the DNS mmc

DNS requests from the CloudBond 365 servers will now be passed to the CloudBond Controller (UC-DC) as normal. If the request is for an external name, the UC-DC DNS server will be unable to resolve the request, and will relay the request to the more authoritative DNS server for resolution.

Note: Failure to set DNS forwarding correctly will cause Windows Updates to fail.

Figure G-1: Start -> Administrative Tools

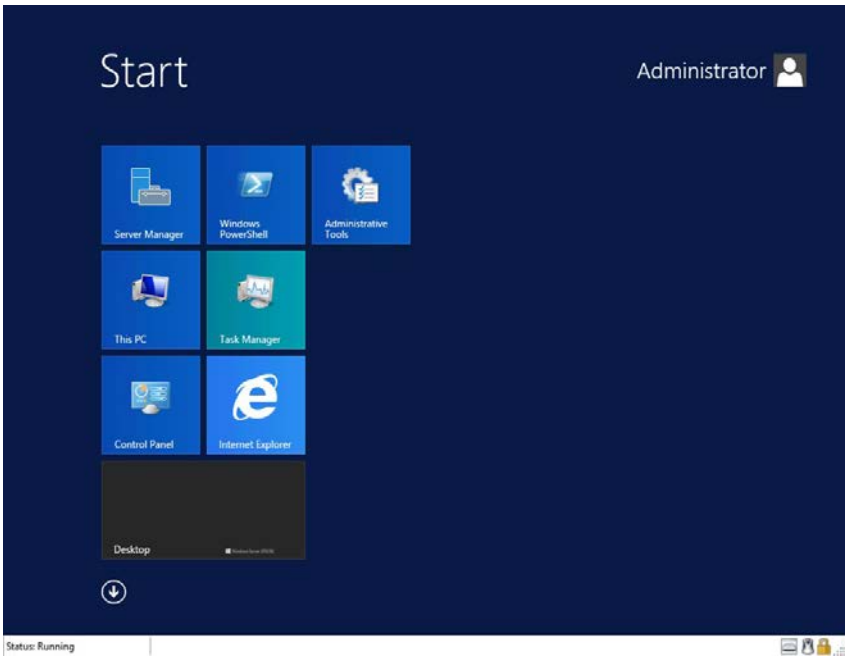


Figure G-2: DNS MMC Tool

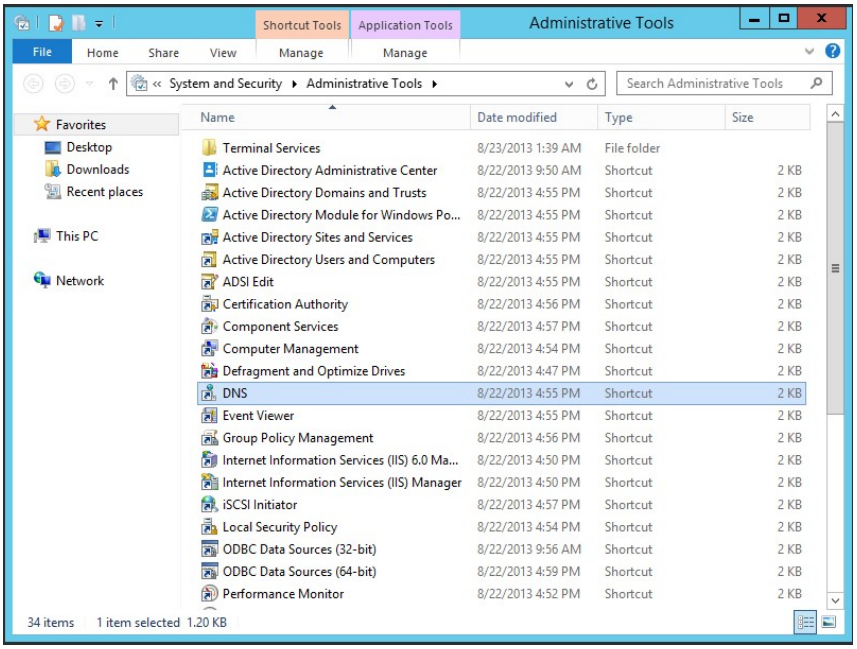


Figure G-3: Setting DNS Server Properties

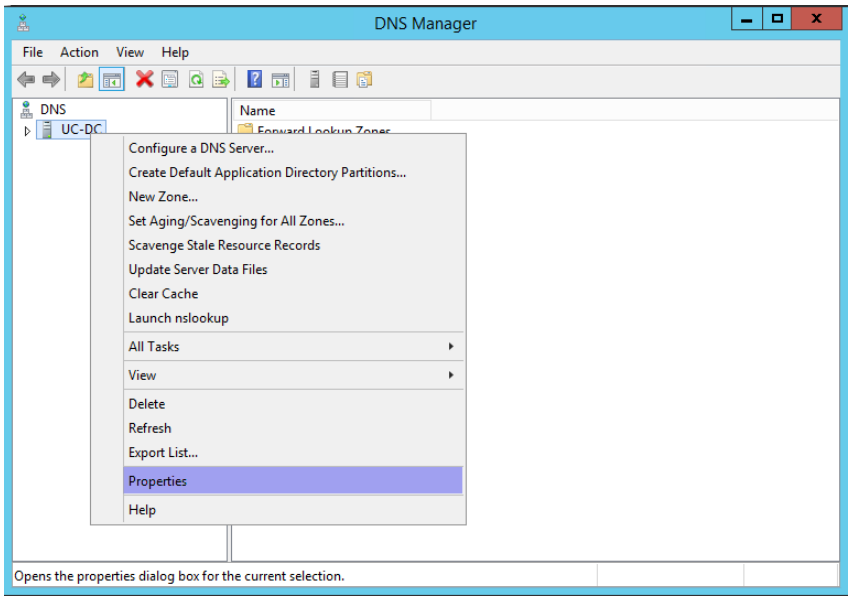
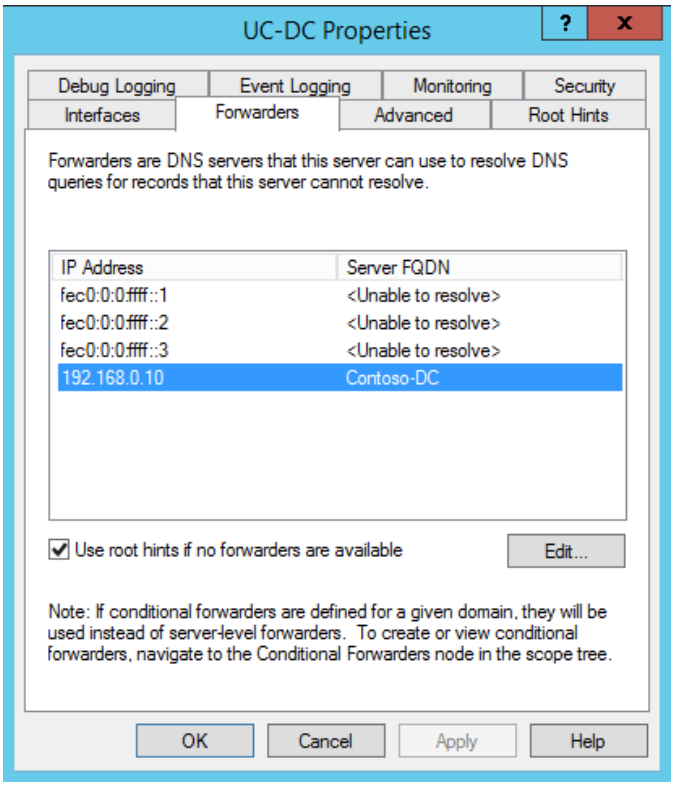


Figure G-4: Adding Corporate DNS to Forwarders



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