Administration and Maintenance Manual

AudioCodes One Voice™ for Microsoft Skype for Business

CloudBond™ 365 and User Management Pack™ 365

Standard/Standard+ Box Edition
Pro Box Edition
Enterprise Box Edition
Virtualized Edition
User Management Pack 365

Version 7.4.5

AudioCodes

CLOUDBOND 365
Tomorrow's UC Today

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Date Published: April-26-2017

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Abbreviations and Terminology

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

Document Revision Record

LTRT	Description
26317	Initial release of this document.
26318	Update to General Access to SysAdmin, Editing an Individual User, Bulk Edit, Bulk Import and Lifecycle Management.

Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our Web site at http://www.audiocodes.com/downloads.

Related Documentation

Document Name
CloudBond 365 Installation Manual
EMS User's Manual

1 Introduction

This document describes the following subjects:

- **Part I:**The administration of the AudioCodes User Management Pack 365 (UMP 365) for Skype for Business (see page 13).
- **Part II:** The procedures for changing the AudioCodes CloudBond 365 Administrator password (see page 79).
- **Part III:** The various methods of connecting to the server desktops within AudioCodes CloudBond 365 (see page 105).
- **Part IV:** The IP Phones management module (see page 129).
- **Part V:** The Management of the CloudBond 365 devices using EMS (see page 185).
- **Part VI:** The configuration and use of the CloudBond backup and restore functionality (see page 203).

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Part I

User Management Pack 365 Administration Tool

2 Introduction (UMP 365)

This part describes the administration of the AudioCodes User Management Pack 365 (UMP 365) for Skype for Business. It also describes the Management Suite interface (SysAdmin) as well as day-to-day user administration procedures (moves, adds, changes). It is intended for System Administrators, to carry out day-to-day maintenance activities.

The User Management Pack 365 is a software application for managing Skype for Business users on premises or in Cloud PBX environment and is also part of the AudioCodes CloudBond 365 solution and applies to all CloudBond 365 editions - Standard, Standard+, Pro, Enterprise and Virtualized Edition.

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3 User Management Pack 365 and Skype for Business Administration

In a typical Skype for Business installation, day-to-day administration tasks can be quite complex to carry out. Skype for Business relies on user accounts being created using Active Directory utilities, then, for user accounts and other Skype for Business settings to be modified using the Skype for Business control panel, and for further tasks to be carried out within the Skype for Business Management Shell environment.

UMP 365 maintains the availability of all these Microsoft tools, but also provides a much simpler web based administration utility. UMP 365 does not attempt to remove or re-write these Microsoft tools, and they remain available for more advanced configuration items, or more experienced users.

UMP 365 provides a simplified web based administration utility with a strong focus on telephony and Hybrid Office 365 features that allows System Administrators to carry out day to day activities, without the need for complicated access to multiple Microsoft Tools.

The UMP 365 SysAdmin utility is a series of Web pages, which can carry out various tasks within the Skype for Business environment, such as adding and changing Skype for Business users, modifying user Call forwarding settings, and monitoring the status of Skype for Business and its component services.

The UMP 365 SysAdmin utility also provides an integrated tool for managing the AudioCodes IP Phones such firmware upgrades, generate IP Phones configuration files and monitor phone status.

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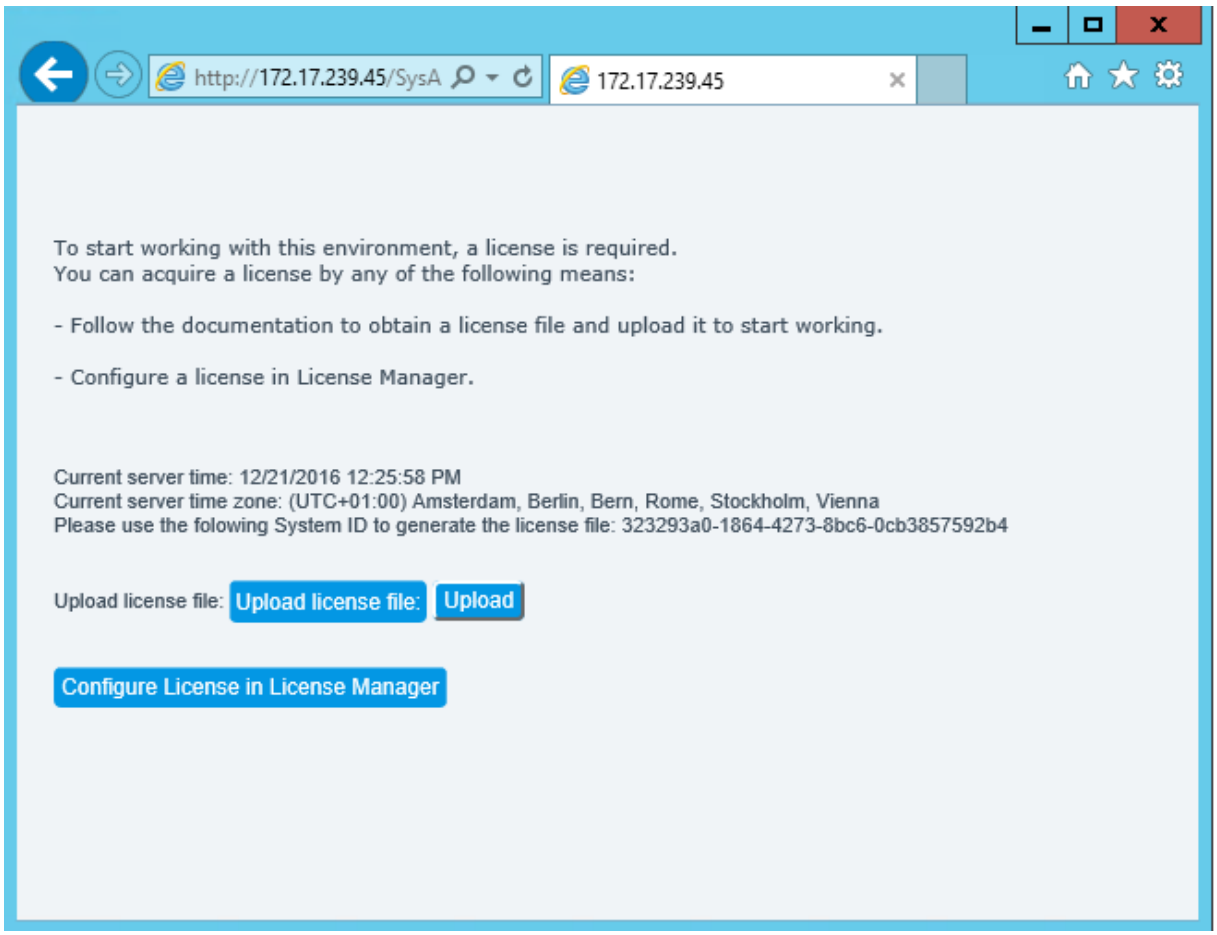
4 Getting Started

This chapter describes how to access the SysAdmin utility and how to obtain and install the license file.

4.1 Accessing SysAdmin for the First Time

On a new UMP 365 system, the first time the SysAdmin utility is accessed, you are required to upload and install a License file or obtain the license online from EMS license server. AudioCodes will supply either a demonstration, time limited, trial license, or a full license, with each system.

Figure 4-1: Sysadmin License Required



Note: The System ID required for Licensing is displayed on this "First Time" screen, and is also available on the **System Configuration** > **Licensing Information** if a License has already been installed.

Warning: For CloudBond 365 installations, before applying a CloudBond 365 license, it is important to ensure all CloudBond 365 servers (DC, FE, and Edge) all have the correct time zone and date / time set.

4.2 Installing the UMP 365 License

You can obtain the UMP 365 license in the following ways:

- Installing the UMP 365 License from a File
- Installing the UMP 365 License from the EMS License Server

4.2.1 Installing the UMP 365 License from a File

This section describes how to obtain the UMP license from a file.

➢ **To install the UMP 365 license from a file:**

1. Install the product according to the instructions in the Installation Manual.
2. Obtain your product's Fingerprint (Serial Number) according to the instructions in "Licensing the Product" section of the Installation Manual.

   Activate your product through AudioCodes License Activation tool at http://www.audiocodes.com/swactivation.

   You need your Product Key and Fingerprint (Serial Number) for this activation process.

   An e-mail will subsequently be sent to you with your Product License.
3. Install the Product License according to the instructions in "**Installing the Product License**" section of the Installation Manual.

The “Product Key” is a unique key that represents the UMP 365 / CloudBond 365 initial order and is used for online license generation. The “Product Key” is used for future orders for the same system, such as a license upgrade.

4.2.2 Installing the UMP 365 License from the EMS License Server

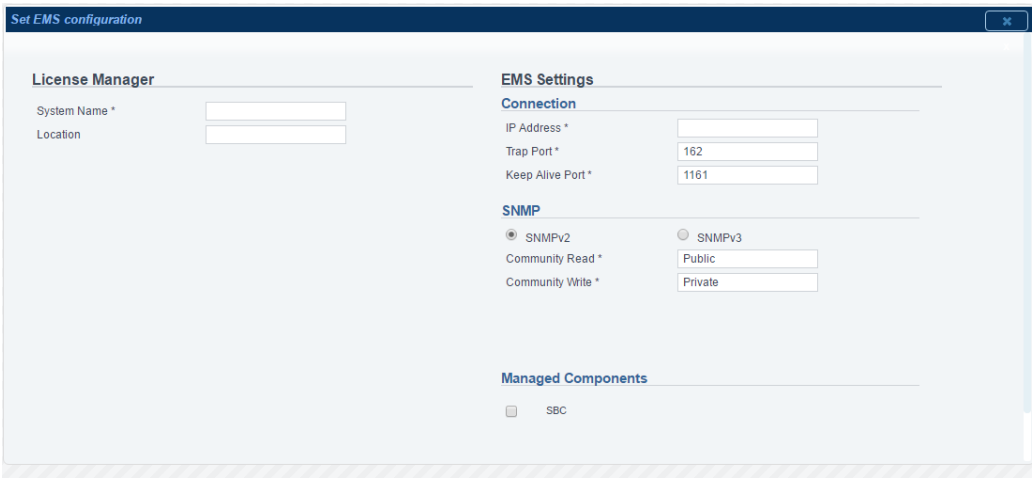
In order to obtain the license from the AudioCodes Element Management Server (EMS) license server, the CloudBond server must connects to the EMS via SNMP.

Follow the instructions below to retrieve your UMP 365 license from EMS:

➢ **To install the UMP 365 license from the EMS license server:**

1. Click the **Configure License in License Manager** button (see figure 3-1). The following screen is displayed:

Figure 4-2: Set EMS Configuration



2. System Info Settings:
   - System Name – The name of the system. In an environment with multiple CloudBond devices, this value must be unique.
   - Location – Optional field to describe the system location.
3. Configure the following connection settings:
   - IP Address – the IP address of the EMS server
   - Trap Port – Destination port to which to send traps (default value is 162)
   - Keep Alive Port – Destination port to send Keep-alive requests over SNMP (default is 1161)
4. Configure the SNMP user settings:

   All the settings of the SNMP protocol must be identical to the settings of the current CloudBond system in the EMS (to support connecting the CloudBond devices to the EMS using Auto detection, you should configure the default values in parenthesis).
   - SNMP V2:
     - Community Read – Access string for SNMP get requests ('public')
     - Community Write – Access string for SNMP set requests ('private')
   - SNMP V3:
     - Security Name – Identify the SNMP user ('OVOCUser')
     - Authentication Protocol - Protocol type that used to encrypt the Security Name field ('SHA').
     - Authentication Key – Security Name encryption key. The field is valid only if Authentication Protocol selected ('123456789').
     - Private Protocol – Protocol type that is used to encrypt the SNMP message ('AES-128').
     - Private Key – SNMP message encryption key. The field is valid only if Private Protocol selected ('123456789').
5. If you would like the EMS to monitor the SBC in your CloudBond system, select the **SBC** button.

   When you choose this option, the SBC in the CloudBond system is monitored in the EMS as part of the CloudBond system. SBC alarms will be displayed in the EMS as part of the CloudBond system.
6. Click **Apply**.

   The CloudBond 365 system connects to the EMS server.
7. Once the system is successfully detected in the EMS server, follow the instructions in the *EMS User's* manual to allocate a license from the EMS license pool.
8. After you have completed the license configuration in the EMS, the CloudBond system will retrieve the license from the EMS and you may login to the system.

4.3 General Access to SysAdmin

The UMP 365 SysAdmin utility is Web-based, and can be accessed via any Web browser. There is also an icon on the desktop for accessing SysAdmin.

Warning: The MS Skype for Business Control Panel (CSCP), which can be accessed from the SysAdmin Utility, is also web based, but requires MS Silverlight to be installed. For this reason, the Skype for Business Control Panel prefers to run in Internet Explorer, although it can be made to run adequately in Firefox.

The UMP 365 SysAdmin utility is installed on the CloudBond 365 Management Server. To access the SysAdmin utility, enter the following URL:

http://<CloudBond 365 ManagementServer>.<CloudBond 365 FQDN>/SysAdmin

where <CloudBond 365 ManagementServer> is the name of the CloudBond 365 Management Server, and <CloudBond 365 FQDN> is the domain specified for the CloudBond 365 Skype for Business Appliance.

For example, **http://UC-DC.cloudbond365.local/SysAdmin**.

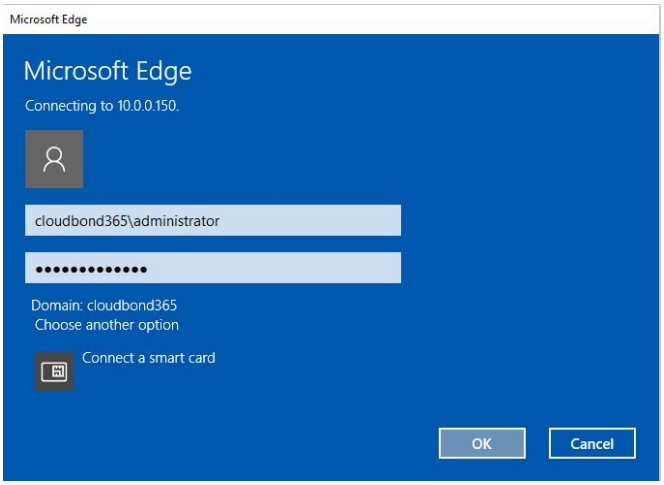
You can also use the IP address of the CloudBond 365 Management Server.

For example, **http://192.168.0.100/SysAdmin**.

When accessing the SysAdmin utility, you will be prompted to enter the user ID and password of the UMP 365 / CloudBond 365 administrator before proceeding. The user who administers the UMP 365 environment should be a member of the following UMP 365 Active Directory Domain Local security groups:

- **acs-admin**
- **super-Admin**
- **acs-FullAccess** allows the user to perform every aspect of management.
- **acs-ReadOnly** only allows the user to *view* management pages. Customization can be performed, but it is outside the scope of this document. Contact AudioCodes for your special access levels.

Figure 4-3: SysAdmin Authentication

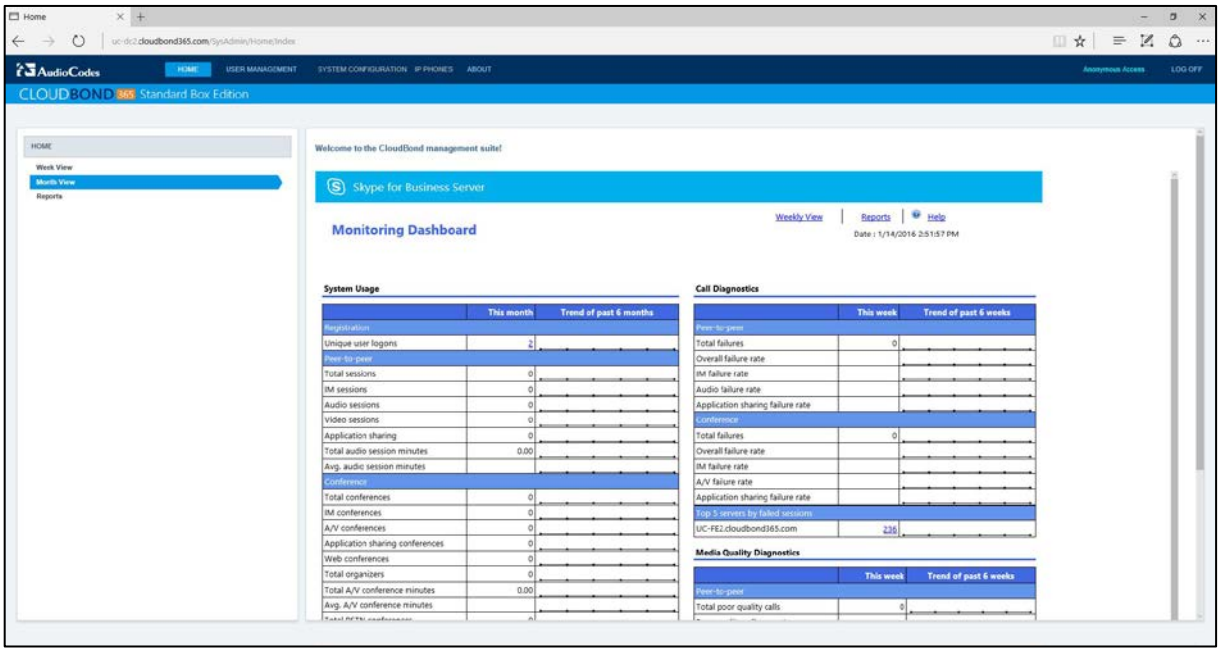


(You may be prompted a second time by the Skype for Business Monitoring and Reporting Tool for the same credentials).

4.4 SysAdmin Home Page

The SysAdmin Home page provides quick and convenient access to the Skype for Business Monitoring and Reporting tools, as well as Menu access to the remaining functions of the SysAdmin screens.

Figure 4-4: SysAdmin Home page



Use of the Skype for Business Monitoring and Reporting tool is not covered in further detail. Refer to http://technet.microsoft.com/en-au/library/gg558662.aspx for further information.

The SysAdmin utility provides very simple administration for Skype for Business users.
It allows:

- User Management
- Edit a user
- Remove user from Skype for Business
- Creating new local users
- Importing individual users from the Enterprise domain
- Bulk Edit of users
- Bulk Import of users
- Group Replication of users
- Distribution Lists
- Create Devices (Common Area Phones)

4.5 Properties of a Skype for Business User

Users of Skype for Business have corresponding entries within the CloudBond 365 Active Directory. These AD users have various properties, including generic AD properties, as well as Skype for Business specific properties created through the Skype for Business Schema additions. Microsoft accesses these properties through various tools, including the Active Directory Users and Computers utility, and the Skype for Business Control Panel.

The UMP 365 SysAdmin utility presents these properties in a single utility. The properties which may be assigned to a Skype for Business user in the SysAdmin utility are as follows:

4.5.1 Individual User Properties

- **Account Information**

  Account information generally corresponds to standard Active Directory fields.

  - First Name

    The users first or given name
  - Initials

    The user's initials (optional)
  - Last Name

    The user's last name
  - Full Name

    Full name of user account, usually constructed from first name, initials, last name
  - Sign-In Name

    Forms the first part of the user Skype for Business sign-in account. E.g. Sign-in Name @ Domain name
  - Domain Name

    Forms the last part of the user Skype for Business sign-in account. E.g. Sign-in Name @ Domain name
  - Registrar Pool

    The Skype for Business registrar server the users signs in to. May have additional option when High Availability or Resiliency options are deployed.
  - Mail

    User email address for MS Exchange integration
  - Preferred Language

    Informative only
  - Fax

    Allows maintenance of the Fax number associated with the user within the UMP 365. Fax applications uses this AD field to route faxes correctly to the corresponding email address.
  - Password

    Sets the login password for CloudBond 365 Local users.

- **Telephony Settings**

  Telephony Settings control how voice calls are controlled within Skype for Business

  - PC to PC

    Skype for Business client to Skype for Business client direct calls are supported only. This corresponds to the lowest CAL provided by Microsoft.

- Enterprise Voice

  Enterprise Voice calls allow users to make and receive calls from the PSTN, usually through a gateway or SIP trunk. This requires the highest CAL combination provided by Microsoft.

- Voice Policy

  Enterprise voice requires a voice policy and a dial plan to control which calls are permitted and how they are handled.

  - Description
  - Features
    - ✓ Enable Call Forward
      User is allowed to forward calls to another number or user
    - ✓ Enable Delegation
      Other users may send and receive calls for this user
    - ✓ Enable Call Transfer
      User may transfer calls to other users
    - ✓ Enable Team Call
      User may answer calls for other members on same team
    - ✓ Enable Call Park
      User may park a call and retrieve from another device
    - ✓ Enable Simultaneous Ringing of phones
      Incoming calls may be set to ring on multiple devices

- Dial Plan

  A dial plan controls which phone numbers can be entered and how they are translated for dialing.

  - Description

- Line URI

  Enter a unique, normalized E.164 number for this user. Format – TEL:+xxxxxx

- CloudPBX Voice Routing Policy

  Used by the Office 365 Hybrid Cloud PBX feature. Can be created in the UMP 365 management suite's System Configuration pages.

- Office365 Unified Messaging (UM) Policy
- User Pin reset

Note: Voice policies and Dial Plans are configured in Skype for Business' Control Panel.

■ **Group Management**

- CallPickupGroup ID

  Allows users to pick up calls within the specified group. Refer to System Configuration > CallPickup Groups

- GroupingID

  Allows restricting which contact groups a Skype for Business user can see. Refer to System Configuration > Grouping IDs

- Response Groups and Membership
  - Response Group
    A response group defined within Skype for Business
  - sipUser
    Appears when user is selected as a member of that response group
  - ServerPool
    The server pool the response group runs on.

Note: Response Groups are configured in the Skype for Business Control Panel.

Call Forwarding

These settings are normally configured independently in each end users Skype for Business Client. The options are identical to those presented in the Skype for Business client.

- Turn off call forwarding:
  A traditional PBX would describe this as “Call Forward No Answer”
- Ring for this many seconds before redirecting:
  Add a delay before the call is redirected
- Unanswered calls will go to:
  - Voicemail:
    Direct the call to Exchange UM Voicemail
  - Tel:
    Direct the call to a specified number
  - User:
    Direct the call to a specified user
- Turn on call forwarding:
  A traditional PBX would describe this as “Call Forward All”
  - Forward calls to:
    - ✓ Voicemail:
      Direct the call to Exchange UM Voicemail
    - ✓ Tel:
      Direct the call to a specified number
    - ✓ User:
      Direct the call to a specified user
- Simultaneous ring:
  - Tel:
    Simultaneous ring this number
  - User Delegates:
    Simultaneous ring for the users Delegated group
  - User Team-Call group:
    Simultaneously ring for the users Team-Call group
  - Ring for this many seconds before redirecting
    Add a delay before the call is redirected

- Unanswered calls will go to:
  - ✓ Voicemail:
    Direct the call to Exchange UM Voicemail
  - ✓ Tel:
    Direct the call to a specified number
  - ✓ User:
    Direct the call to a specified user

- **IP Phones**
  - The IP Phones tab lists all AudioCodes IP phones registered for this particular user.
- **External Access Policy**

  Select an external access policy:
  - Enable Federation Access:
    Enable communications with Federated (other external enterprise) users
  - Enable Public Cloud Access:
    Enable IM communications with Windows Live, Yahoo and AOL users. (Requires special configuration and licensing)
  - Enable Public Cloud Audio/Video Access:
    Enable Voice communications with Windows Live, Yahoo and AOL users. (Requires special configuration and licensing)
  - Enable Outside Access:
    Enable communications with External users (from this enterprise, but outside company network)
- **Conferencing Policy**

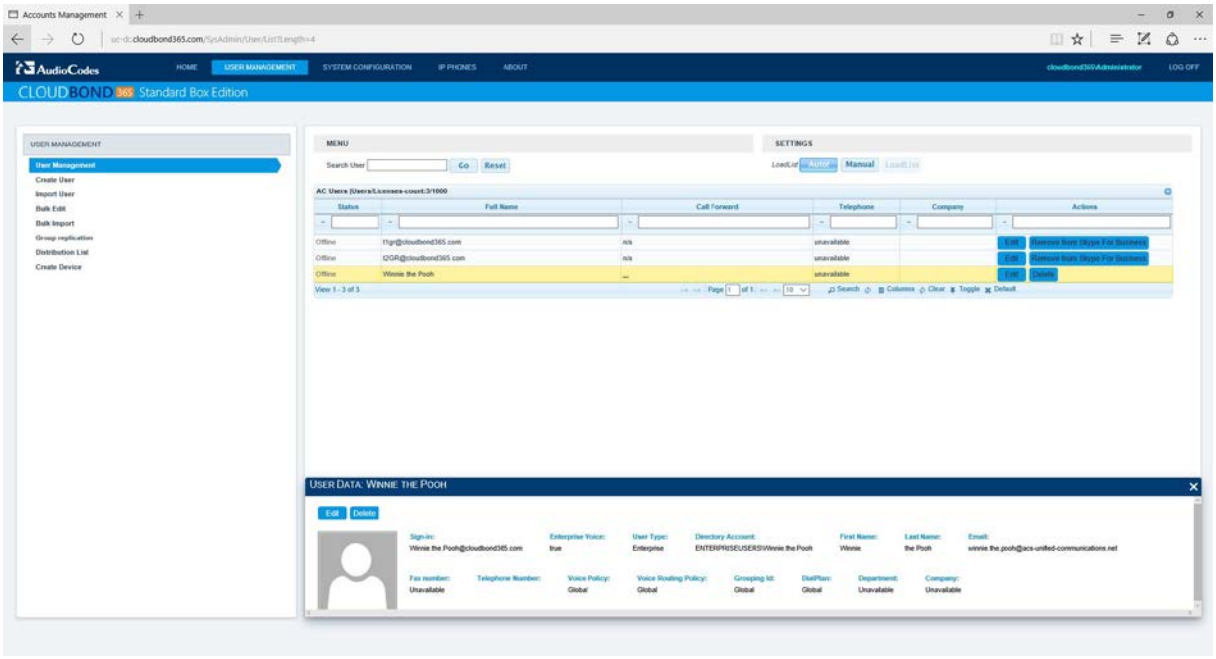
  Select a Conferencing policy.

Note: External Access and Conferencing policies are defined in the Skype for Business Control Panel.

4.6 User Management

The User Management page lists all users currently defined within the UMP 365. From this list, you can select a user for editing, or to remove them from Skype for Business. You can also modify the Call Forwarding settings for Enterprise Voice users.

Figure 4-5: User Management List



On this User Management List:

- Enter a user to search for, then click **Go**.
- Enter data in the search boxes to filter the displayed list.
- Click a user to highlight for Edit or Delete.
- Click in the Call Forward column to change Call Forward Settings for that user

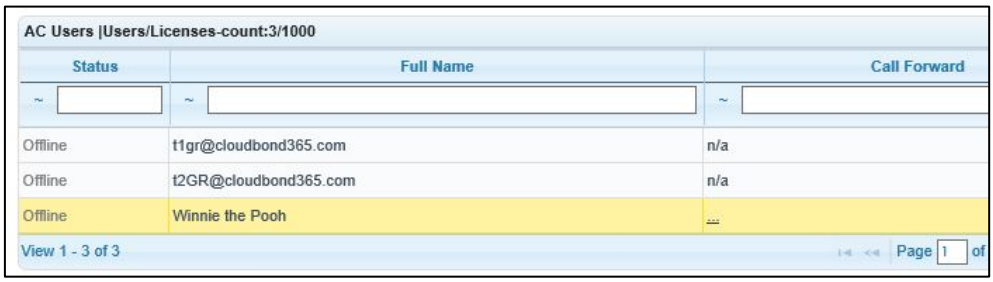
Change the page viewing options:

- Set the list refresh method to 'Auto' or 'Manual' in the Settings area.
- Change the number of entries displayed per page.
- Move forward and backward through multiple pages.
- Change the columns displayed or reset to default view.

4.6.1 Call Forward Settings

When users are enabled for Enterprise Voice, a … link in the Call Forward column may be selected to alter that users Call Forward and Simultaneous ring settings.

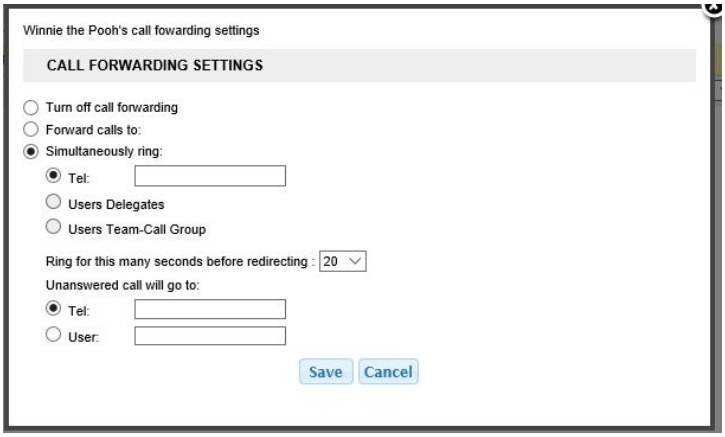
Figure 4-6: User list with Enterprise Voice call forwarding



The following show the various screens for entering call forwarding settings:

- **Simultaneous Ring**

Figure 4-7: Setting a User for Simultaneous Ring

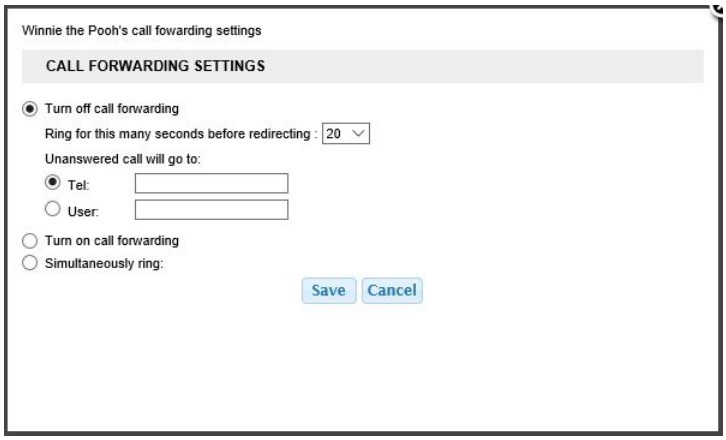


- **Call Forward (Call Forward All)**

Figure 4-8: Setting a user for call forwarding

- **Turn off Call Forward (Call Forward No Answer)**

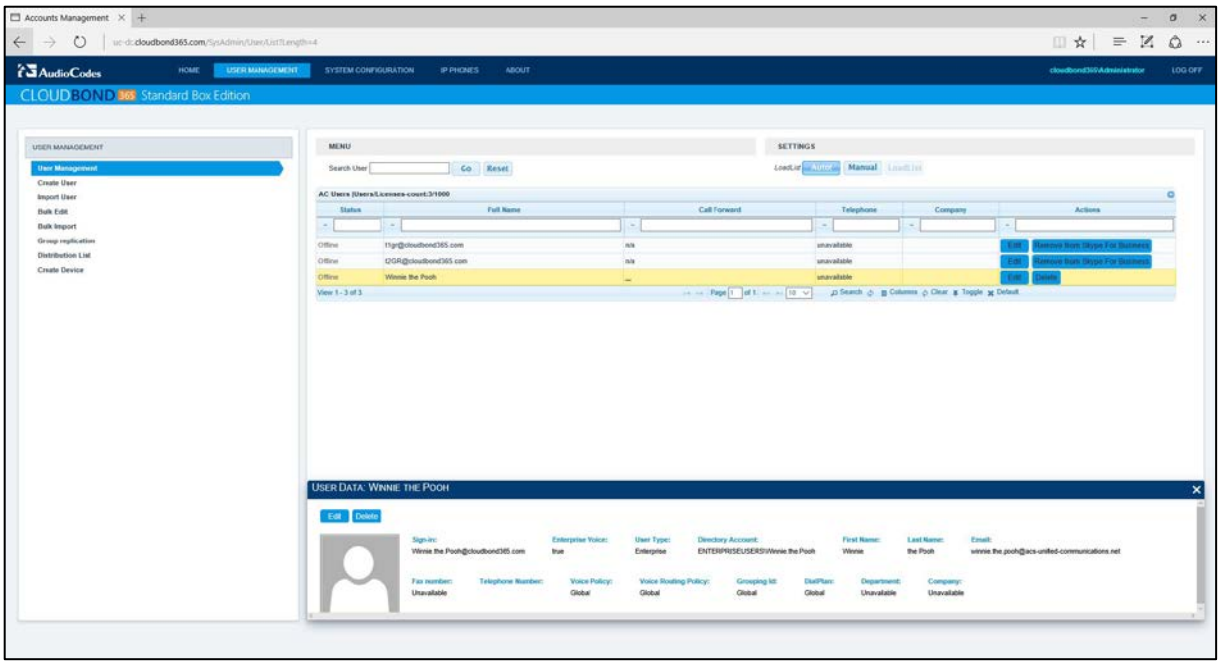
Figure 4-9: Setting a user for No Answer



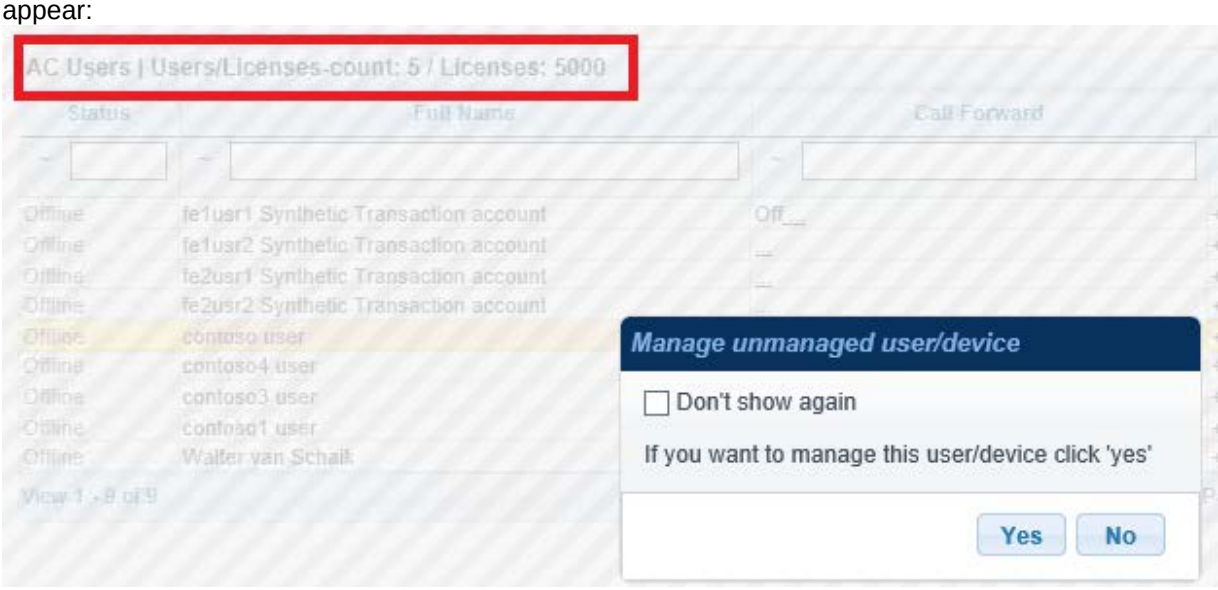
4.6.2 Editing an Individual User

When a user is selected, more details about that user are displayed at the bottom of the page, along with buttons to **Edit** or **Remove from Skype for Business**.

Figure 4-10: Selecting an Existing Skype for Business User for Modification



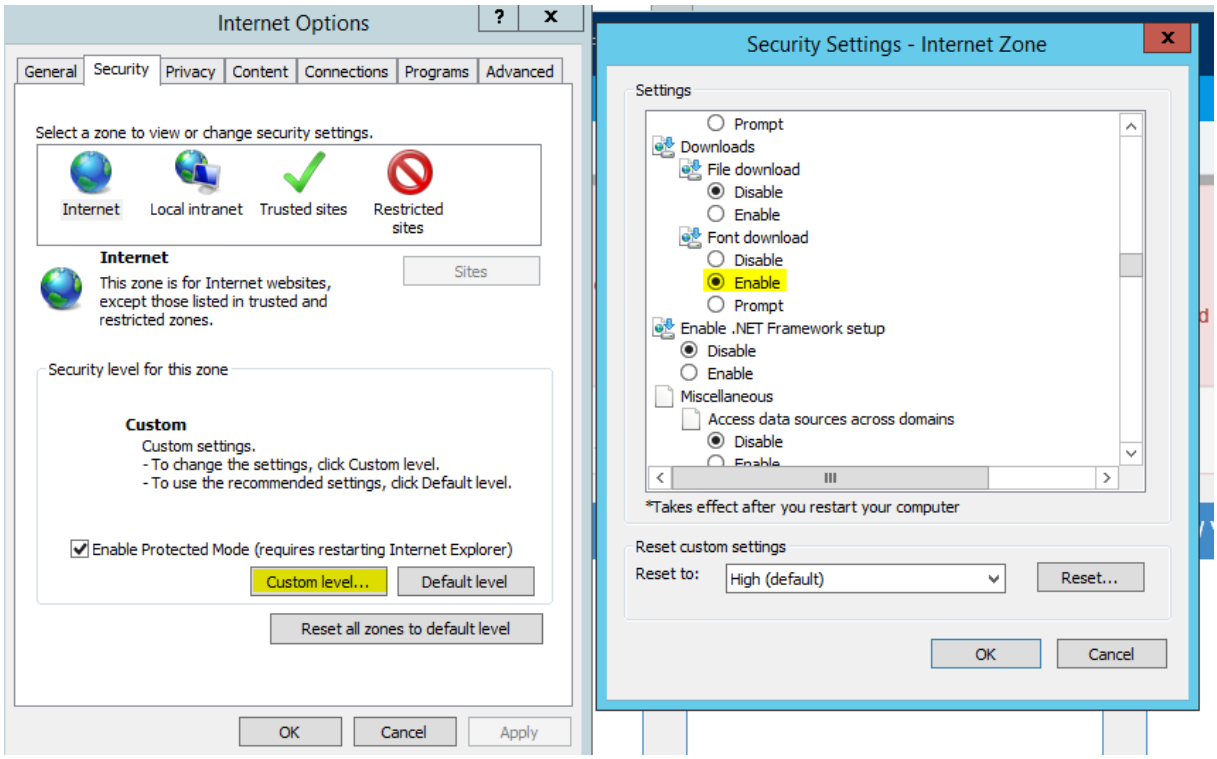
If a row is selected from an user that was not managed before, the following pop-up message will appear:



the available users within the license disappear to the background (in the above picture highlighted in red). When clicking Yes to manage and saving changes within the user edit page, this user will be counted as a licensed user.

Note: If Edit is selected, the individual user details are displayed on a new page, and can be modified. The general Account Information is displayed on top of the screen. In the lower section of the page, you may select individual sub-tabs to modify Telephony (Enterprise Voice), Group Management, Call Forwarding, and Policies. You can also Reset the user's password if it was a locally created user.

Figure 4-11: Enabling Font Download



The Edit window as shown in Figure 4-10 is a floating window that might pop-up over the user-list if a full list is shown. Depending on the Internet security settings, the “X” character for closing the window might not be visible. To resolve this issue, please change the Internet security settings for the particular zone, by **enabling** the **Font download**, which is disabled by default on servers.

4.6.2.1 Editing an Individual User (Telephony Settings)

Within Telephony tab, you can choose between PC-to-PC (Skype for Business peer to peer calls), or Enterprise Voice (full PSTN access).

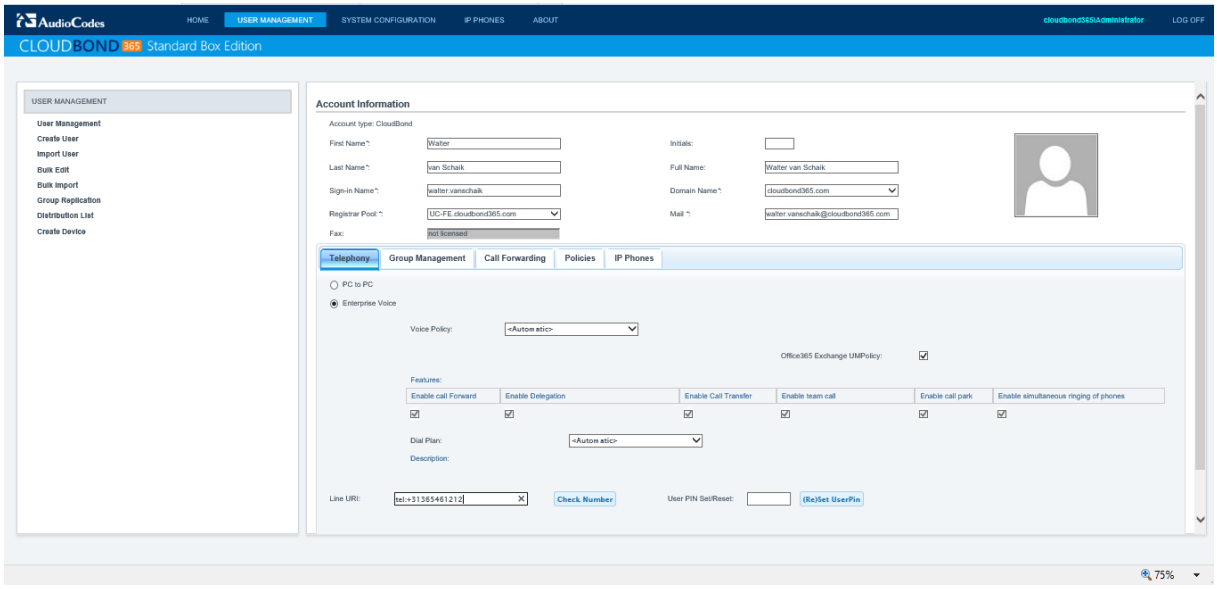
If Enterprise Voice is selected, then you may select a Voice Policy and Dial Plan from those already defined within Skype for Business. Details of the selected Voice Policy will be displayed.

If Enterprise Voice is selected, you must also allocate a Line URI in E.164 format. i.e., Tel:+xxxxx.

You can set/reset the user PIN using the "User PIN Set/Reset" field.

For users with Office 365 Unified Communication, you can enable/disable their Voicemail using the "Office365 Exchange UMPolicy" check box.

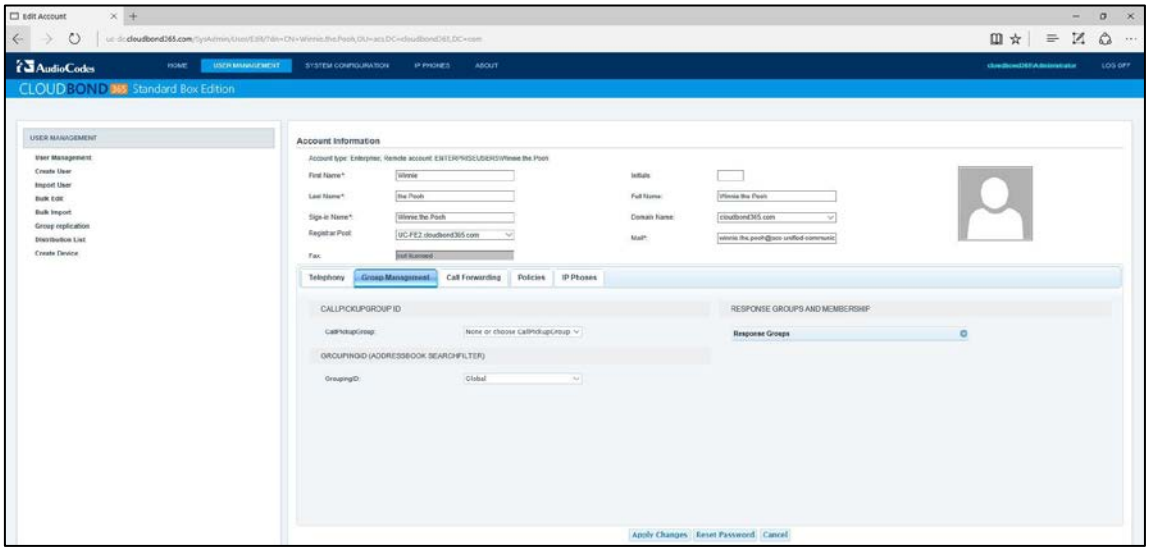
Figure 4-12: Editing an Individual User (Telephony)



4.6.2.2 Editing an Individual User (Group Management)

The Group Management tab allows you to allocate a user to existing CallPickup Groups, GroupingIDs, and Response Groups defined within Skype for Business. For example, if you already have a Sales group defined, you can tick the appropriate selection box, and add the user to the group, without needing to use the Skype for Business control panel.

Figure 4-13: Editing an Individual User (Groups Management)



The CallPickupGroup allows you to select from groups already defined on the System Configuration → CallPickup Groups page. Callers within a pickup group can pick up a call which is ringing on another user's extension within the group.

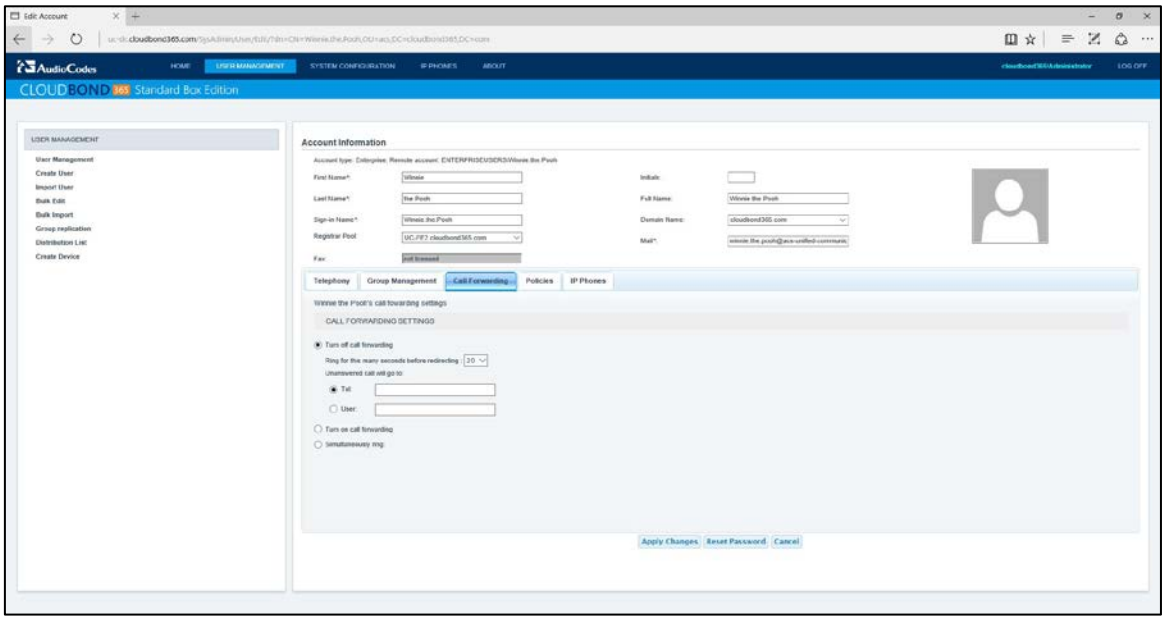
The GroupingID allows you to select from a User Group already defined on the System Configuration → Grouping IDs page. Users within a GroupID are restricted to search results within that group when locating contacts using the Skype for Business client.

4.6.2.3 Editing an Individual User (Call Forwarding)

The Call forwarding tab allows you to set or change the call forwarding options for a user. Similar functionality is available from the User Management list by clicking the … link in the Call Forwarding column.

Typically a Skype for Business User would set their own call forwarding option from their Skype for Business Client. However, there are frequent times when a user cannot perform this task themselves, so the facility has been added to the SysAdmin web pages.

Figure 4-14: Editing an Individual User (Call Forwarding)



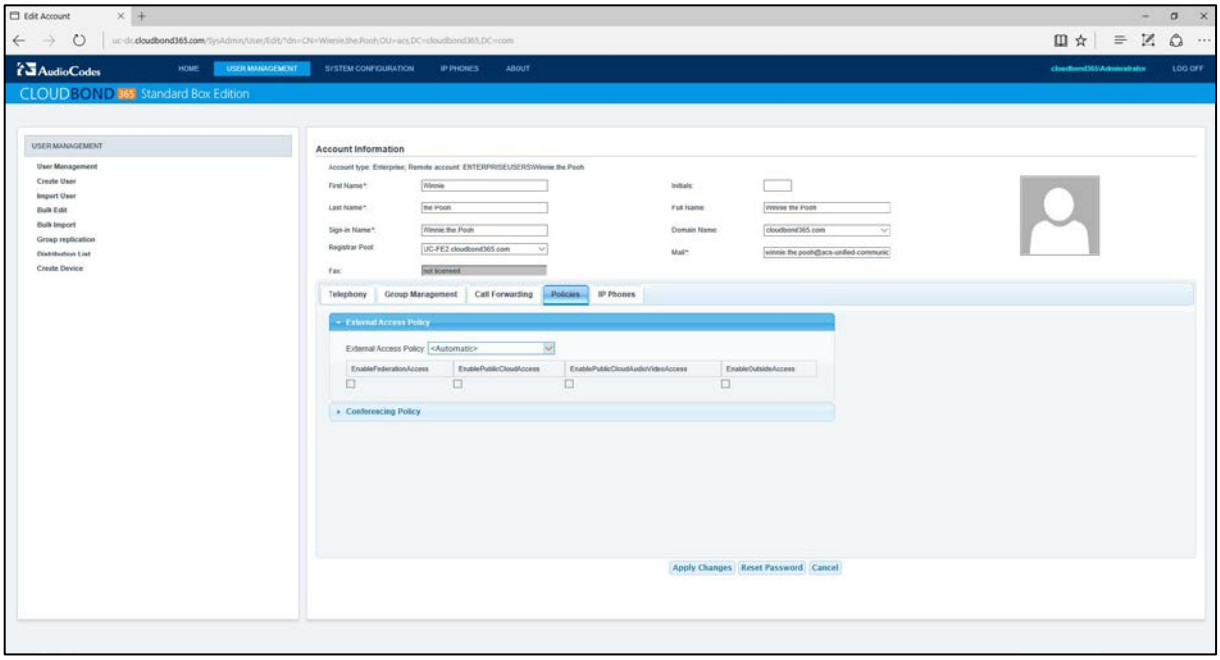
After completing any changes to the Users settings, click **Apply Changes** or **Cancel**.

4.6.2.4 Editing an Individual User (Policies)

The **Policies** tab allows you to determine which existing Skype for Business policies cover this user's External access and Conferencing features.

These External Access and Conferencing policies are defined in the Skype for Business Control Panel.

Figure 4-15: Editing an Individual User (Policies)



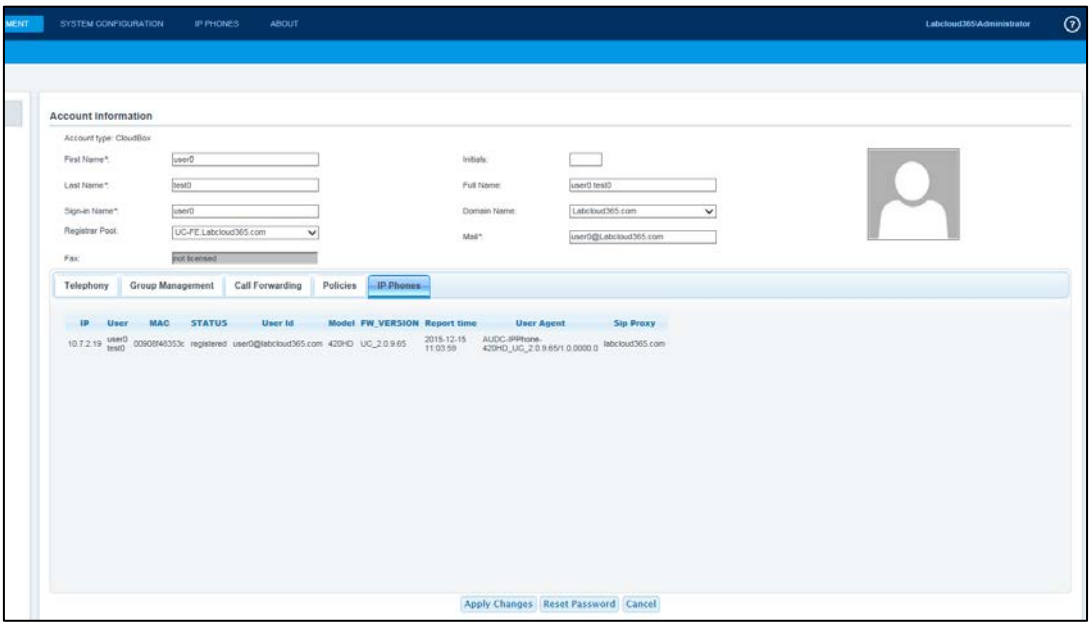
Once you have completed any changes to the Users settings, click **Apply Changes** or **Cancel**.

4.6.2.5 Individual User IP Phone Settings

The IP Phone tab allows you to see the AudioCodes IP Phone settings registered for the specific user such phone model, MAC address, firmware version, status and more.

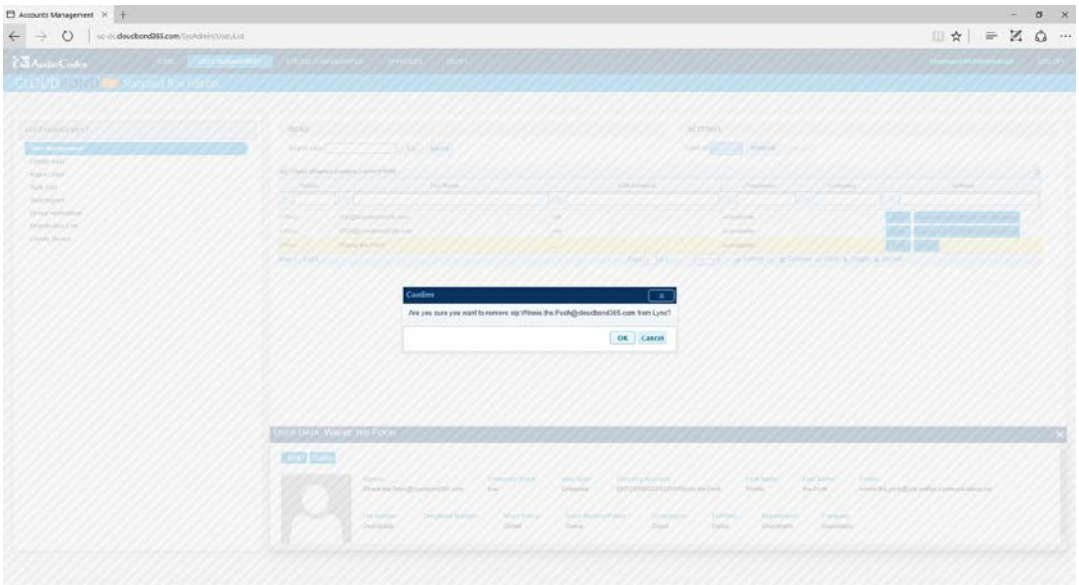
This is very useful for remote management and troubleshooting when needed.

Figure 4-16: IP Phone User Settings



4.6.3 Deleting an Individual User

Figure 4-17: Removing a Skype for Business user

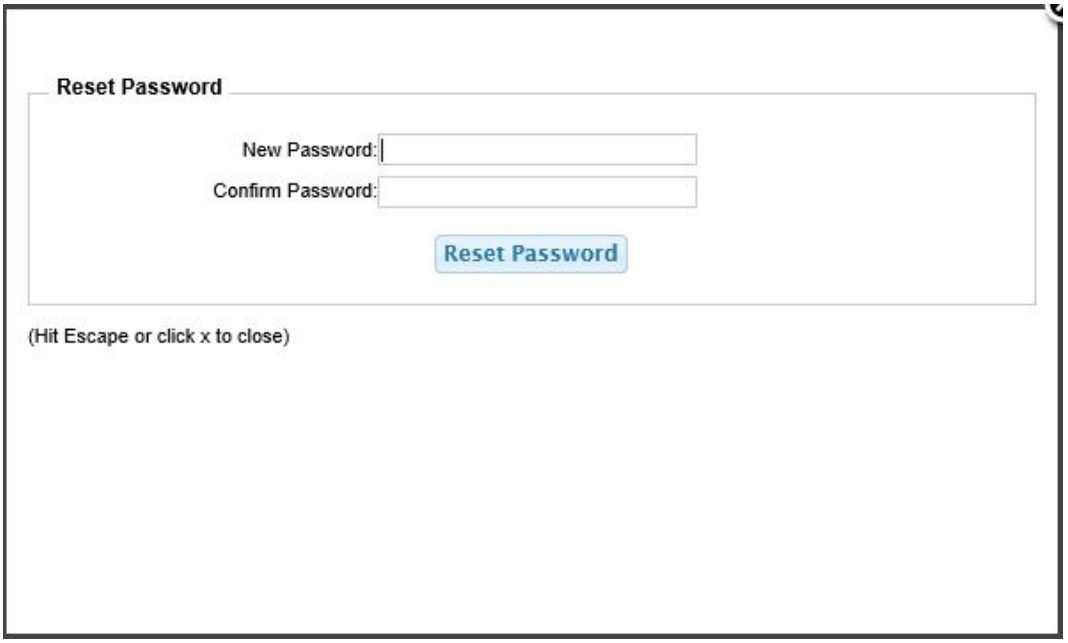


If you remove a user from Skype for Business, a popup confirmation box is displayed. Click **Yes** to confirm removal, or **No** to cancel. Removing a user from Skype for Business does not remove them from the Enterprise Active Directory.

4.6.4 Resetting a Local User Password

When editing an individual Local user, it is possible to reset their password. The ***reset password*** button at the bottom of the page allows entry of a new password.

Figure 4-18: Resetting a Local User Password



Note: Resetting passwords is possible for Local CloudBond 365 users only.

Note: The password selected must comply with the domain password complexity group policy. Failure to meet the complexity requirements will result in an error.

4.7 Create User (Local user)

Selecting **Create User** allows you to enter details for a user not in the Enterprise Active Directory. This allows you to create temporary accounts, accounts for visitors and contractor who do not need network privileges, or even accounts for external parties. These users are Local to the CloudBond 365 domain only.

The Create User page has several sub tabs for different attributes of the CloudBond 365 user, e.g., Telephony, Response Group, Call Pickup, Call Forwarding, User Permissions, and Policies. An account is created for these users within the CloudBond 365 Active Directory, but not within the Enterprise Active Directory.

To create an account for an Enterprise Active Directory user, use the Import user pages.

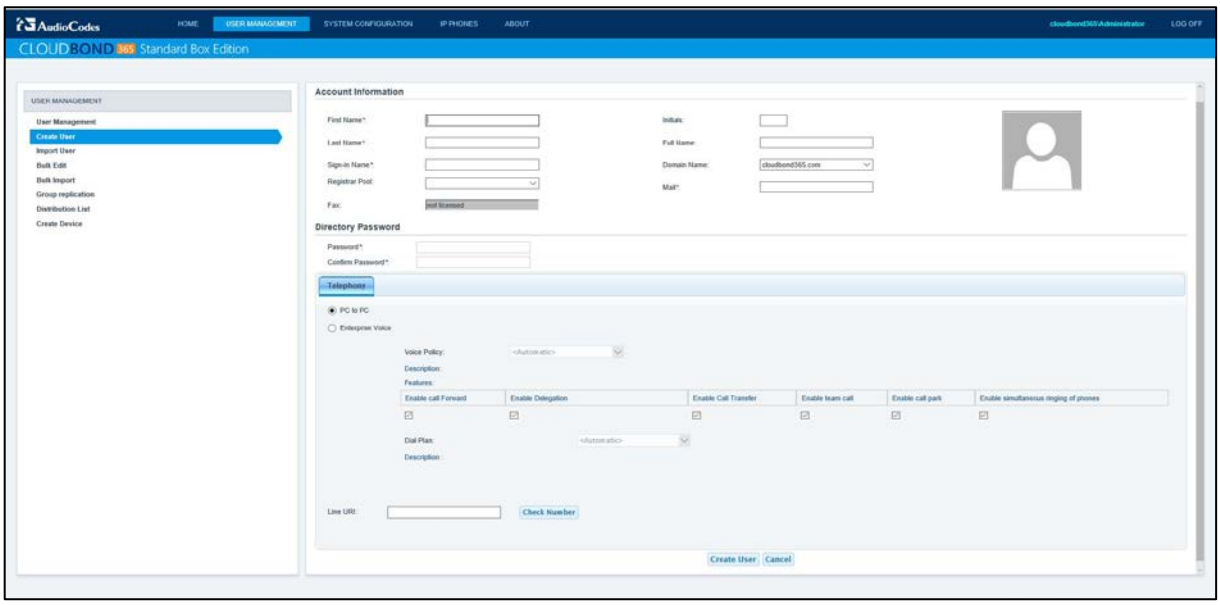
Enter details for the user, and then click **Create User** at the bottom of the page.

Note: Sign-in Name, Mail, and passwords are mandatory fields.

Note: Some fields (e.g., the Registrarpool, PSTN Gateway and (Sip-)domain information) are stored in a Web cache, which is refreshed every few minutes. This means that some recent changes in the Skype for Business or Active Directory backend environment are not directly visible within the administration pages, but will automatically show up after a maximum of 10 minutes. If immediate access is required, an IISRESET needs to be performed on the CloudBond 365 management server hosting the administration Web pages.

4.7.1 Create User (Telephony)

Figure 4-19: Create a User (Telephony)



See Section 4.6.2 on page 30 for more details.

Note: The password selected must comply with the domain password complexity group policy. Failure to meet the complexity requirements will result in an error.

4.8 Import User

The Import User page allows Active Directory users from the Enterprise Domain to be imported into the CloudBond 365 Domain and configured for use within Skype for Business. Use the Remote Domain and Search User fields to locate an Enterprise User, then click corresponding **Import** action link to import the user to CloudBond 365.

Figure 4-20: Import User: Select Source Domain

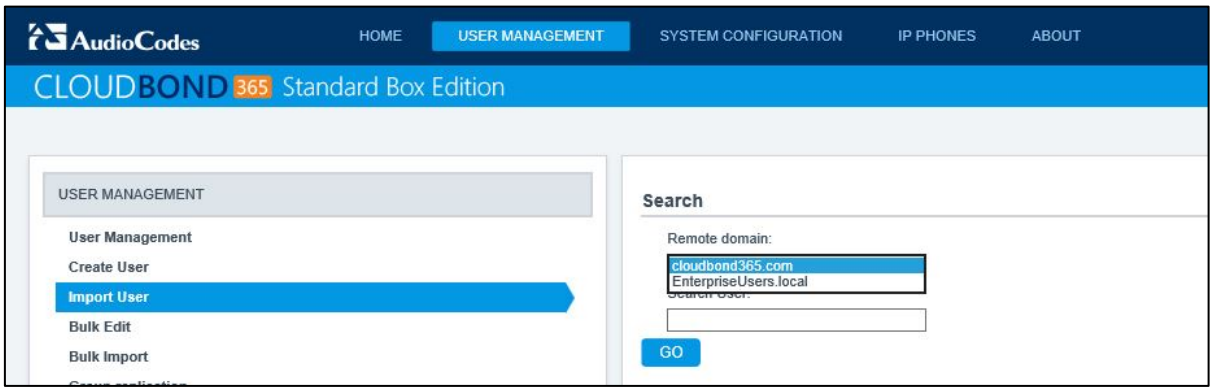
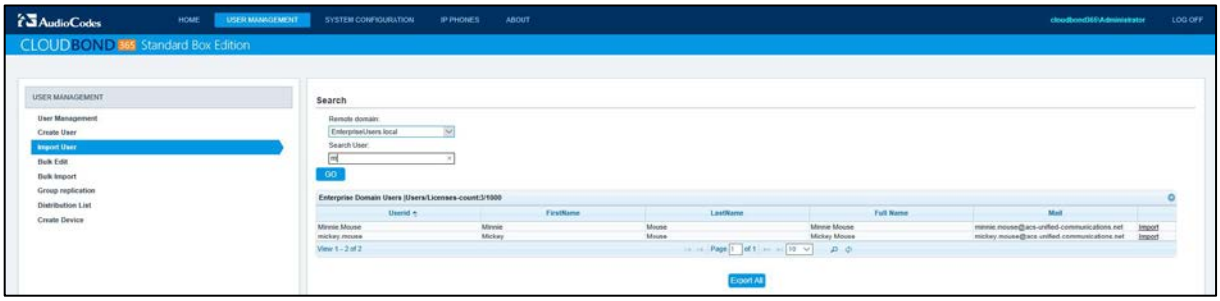


Figure 4-21: List of Enterprise Users to Import

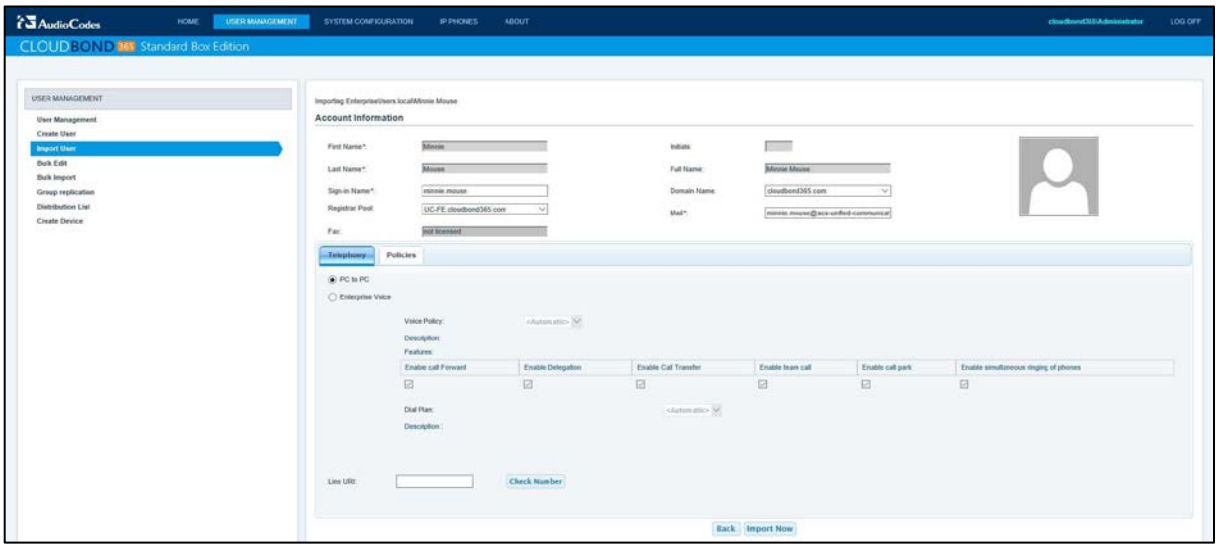


Note: The mail attribute is required for User Import. If it is not set in the user Active Directory, it can temporarily be added on the User Import page, to be able to continue the import. However, once the ACSUserReplication scheduled task runs, it overwrites the CloudBond Active Directory mail attribute again with the empty entry from the user forest. This causes the Skype for Business client's inability to contact the Exchange Web Service (EWS) for features like Calendar Integration and Conversation History. This implies that for a full-featured client experience, the mail attribute should be populated after import as well, within the user Active Director environment.

Note: Some fields (like the Registrarpool, PSTN Gateway and (Sip-)domain information for example) are stored in a web cache, which will be refreshed only every few minutes. This means that some recent changes in the Skype for Business or Active Directory backend environment are not directly visible within the administration pages, but will automatically show up after maximum 10 minutes. If immediate access is required, an IISRESET needs to be performed on the CloudBond 365 management server hosting the administration web pages.

An individual User Import page will appear with settings for this user. Modify the individual settings to meet requirements, then click **Import Now** to add the user to CloudBond 365, or **Back** to cancel the import. Individual user settings are discussed in Section 4.6.2 on page 30.

Figure 4-22: Import an Individual User

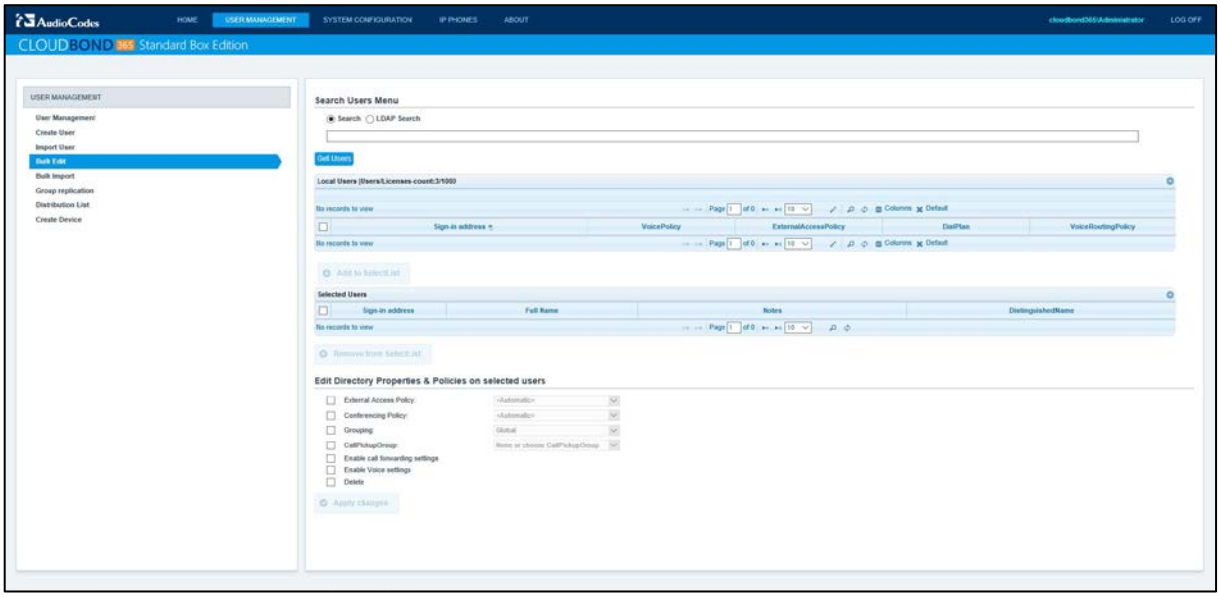


Note: Remember to change the **Domain Name** field if appropriate. This field is used for sign in on Skype for Business clients, and usually matches the customer external domain.

4.9 Bulk Edit

The Bulk Edit page allows you to make changes to multiple Skype for Business users, or even delete multiple users.

Figure 4-23: Bulk Edit

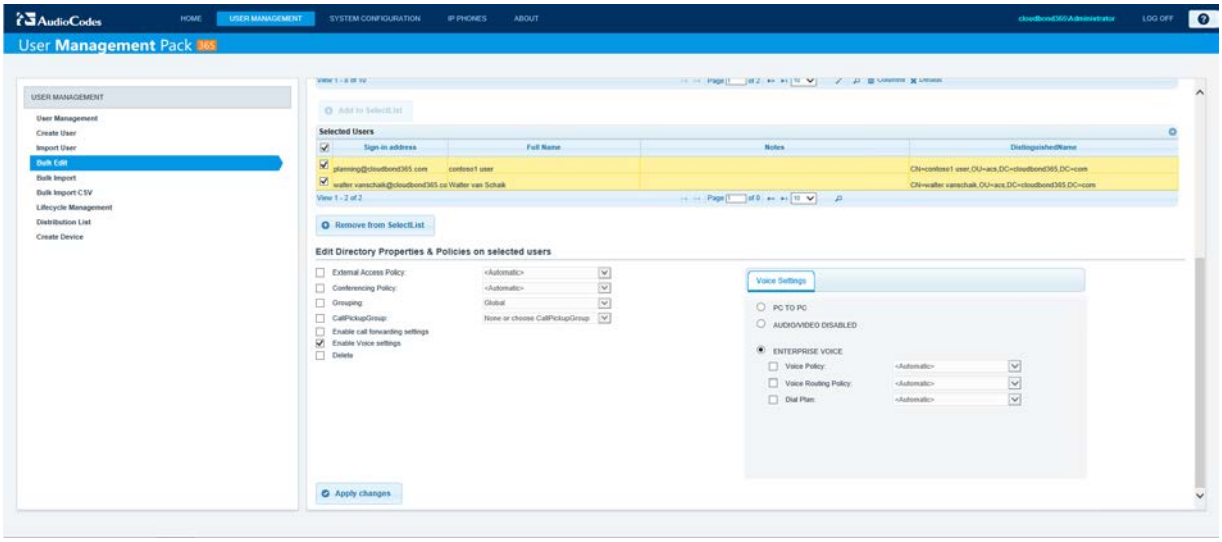


➢ To make bulk edits:

1. Enter any search criteria if required.
2. Click **Get Users**.
3. The Local UMP 365 Users list will be populated from users already in CloudBond 365.
4. Tick the desired users and click **Add to Select List**.

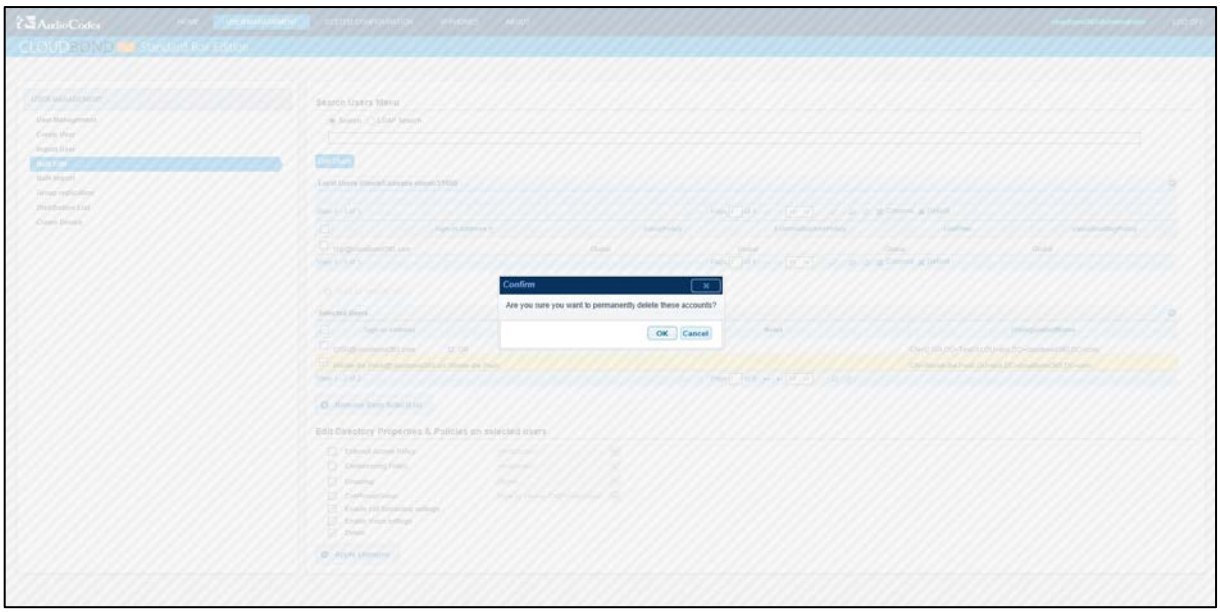
5. The Selected Users list will be populated. You may unselect users if desired.
6. Make any desired changes to the Directory Properties & Policies.
7. Click **Apply Changes**.

Figure 4-24: Bulk Edit Selected Users



8. If you select **Delete**, the following confirmation will be displayed

Figure 4-25: Bulk Delete



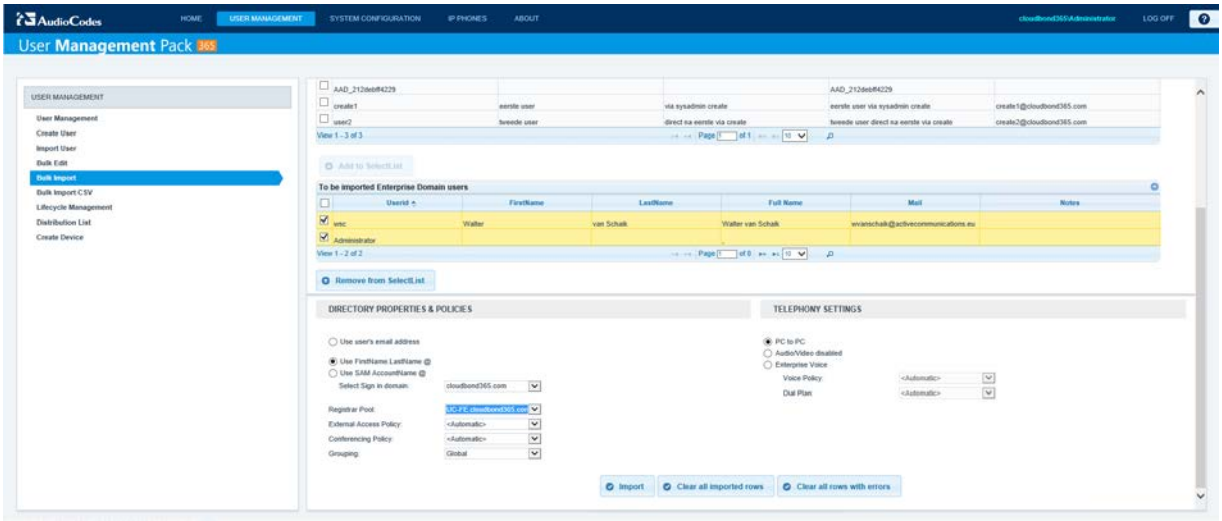
4.10 Bulk Import

Bulk import allows multiple user accounts to be imported from the Enterprise Active Directory in one action. The common Skype for Business properties for all imported users can be set.

Note: It is not possible to Bulk Import users from the Enterprise Domain unless they already have an email address assigned. Email address is a mandatory field for CloudBond 365, and the bulk import utility will not allow setting of individual user values.

Note: Some fields (e.g., the Registrarpool, PSTN Gateway and (Sip-)domain information) are stored in a Web cache, which is refreshed every few minutes. This means that some recent changes in the Skype for Business or Active Directory backend environment are not directly visible within the administration pages, but will automatically show up after a maximum of 10 minutes. If immediate access is required, an IISRESET needs to be performed on the CloudBond 365 management server hosting the administration Web pages.

Figure 4-26: Bulk Import of Selected Users



➢ **To perform a bulk import:**

1. Select an Enterprise domain.
2. Apply search criteria if required.
3. Click **Get Users**.
4. In the Enterprise Domain Users list, tick those users to be imported, and click **Select Users**. The selected users will be moved to the **To Be Imported** list. (You can unselect users from this list).
5. Set any Directory Properties and Telephony Settings for these users. N.B. You cannot set individual setting for users here, such as Line URI. Line URI must be unique per user.

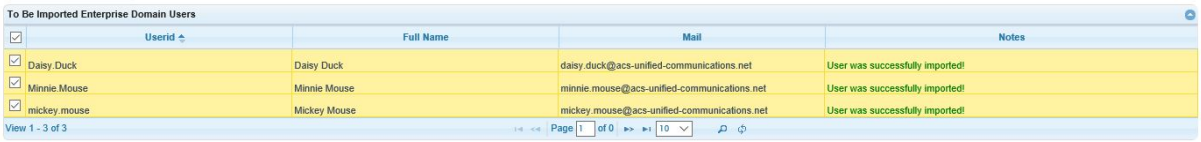
6. Click **Import** at the bottom of the page.

Note: The UserId field may or may not match the email prefix, depending upon the corporate standards employed. The Directory Properties and Policies allow you to combine the appropriate prefix with the selected domain suffix, to determine the Skype for Business SIP address / sign-in address.

Note: The 'Enterprise domain' drop-down box contains cached information to speed up loading of the Web page. This implies that it can take up to 10 minutes before a newly connected Active Directory forest (by means of a forest trust) becomes visible. If it does not appear, there might be a trust error in communicating with the remote domain. Trust errors are not logged to the screen, but can be found in the c:\acs\logs\sysadmin.log file, where the 'The specified forest does not exist or cannot be contacted' message will be logged.

The **To Be Imported** list will be updated with the results of the import.

Figure 4-27: Results of bulk import



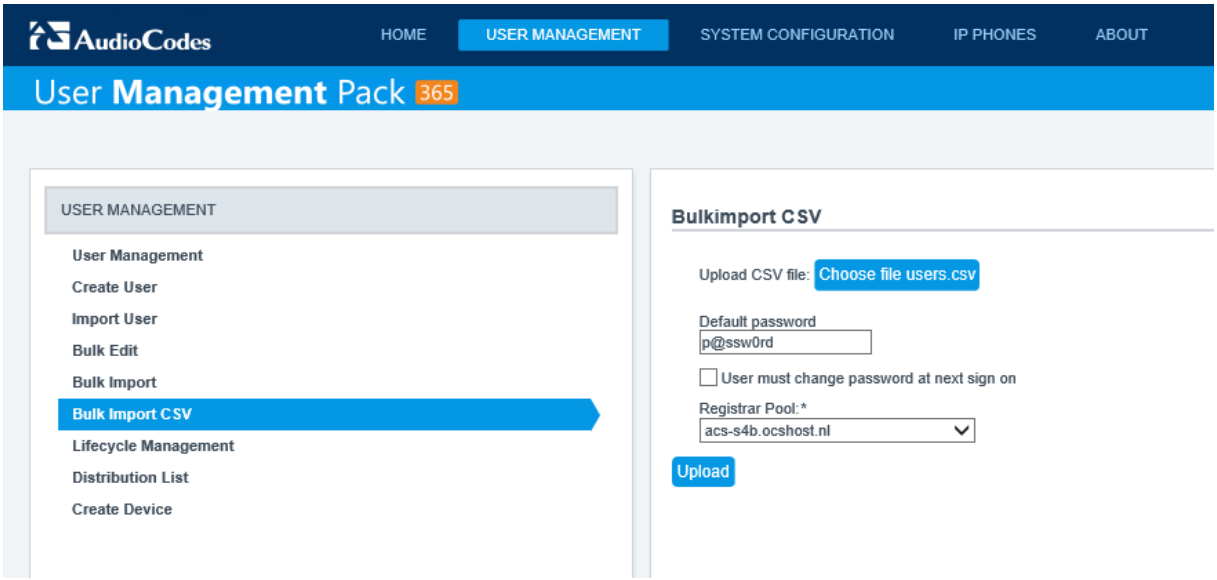
4.11 Bulk Import CSV

The Bulk Import CSV feature allows an administrator to import a large number of users into the local Active Directory and Skype for Business environment where the UMP is installed. This feature is especially useful when Skype for Business is installed as a legacy PBX replacement and in green field deployments, where no existing users exist within an Active Directory environment.

➢ **To use the Bulk Import from CSV feature:**

1. Select **User Management** > **Bulk Import CSV**.
2. Use the **choose file users.csv** button to browse for a CSV file containing the users. Once you have selected a file, the name of the file is appended in the button text.

Figure 4-28: Bulk Import CSV



3. In the “Default password” box, set the default password for all users to be added and specify whether the users should change their passwords at next sign-on by selecting the checkbox.
4. Select a registrar pool in the “drop-down” box and click the **Upload** button to start the import process.

The imported CSV file should contain a header row with at least the following three attributes:

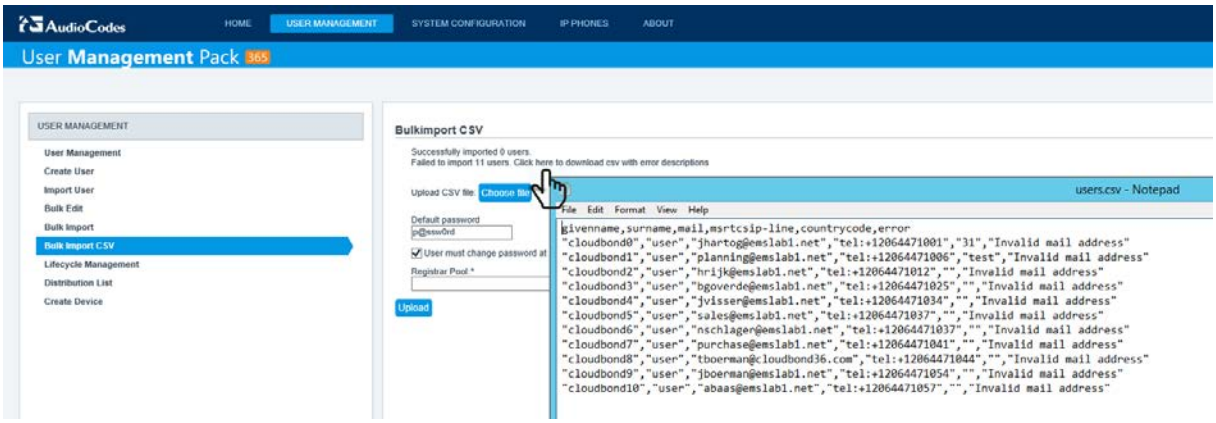
- Given name, representing the users first name
- Surname, representing the users last name
- Mail, representing the users email address that will be used to generate the SIP-address.

Additional attributes (representing Active Directory attributes) can be added to the csv file. To do this, you need to append the header row with the particular attribute that you wish to add. For example, the attribute “msrtcsip-line” can be added to the csv file and the import will also set the Skype for Business telephone number on user import.

On completion, a status message will appear at the top of the page indicating the number of successfully imported and failed users. To correct the import failures, the administrator can click the “here” link to open a csv file indicating the import errors. This csv file can be corrected and then reused for the next import session.

In the example shown below, the error indicates an incorrect email address, which in this case was caused by the fact that the email address domain name space is not one of the supported SIP domain name spaces within this Skype for Business environment.

Figure 4-29: Bulk Import CSV Error



4.12 Lifecycle Management

Lifecycle Management allows automated management of users from the Enterprise Active Directory to Skype for Business. Any users who are members of the specified Enterprise AD security groups will be automatically imported as Skype for Business users.

This will allow the Enterprise domain admin to import users into Skype for Business, simply by adding the users to the security group within the Enterprise AD.

Note: The Lifecycle management feature supports nested security groups, where users belonging to a specific group which is a group that is a member of the replicated security group, will also be automatically administered.

The groups will be assigned templates. A scheduled task will apply the policies according to these templates. The list is read top-down so if a user is a member of multiple security groups, the policies from the lowermost group will be applied and will overwrite any policies that would have been assigned by a group above.

Note: Group replication takes place as a scheduled task. An administrator can alter the frequency of replication be changing the Scheduled Task.

Warning: The Group replication scheduled task should only run on one Management server in a multi-server environment. If multiple Management servers are installed for redundancy, the scheduled tasks on the redundant servers should be disabled and only enabled if the Primary server fails to prevent Stale objects from being created in the Active Directory.

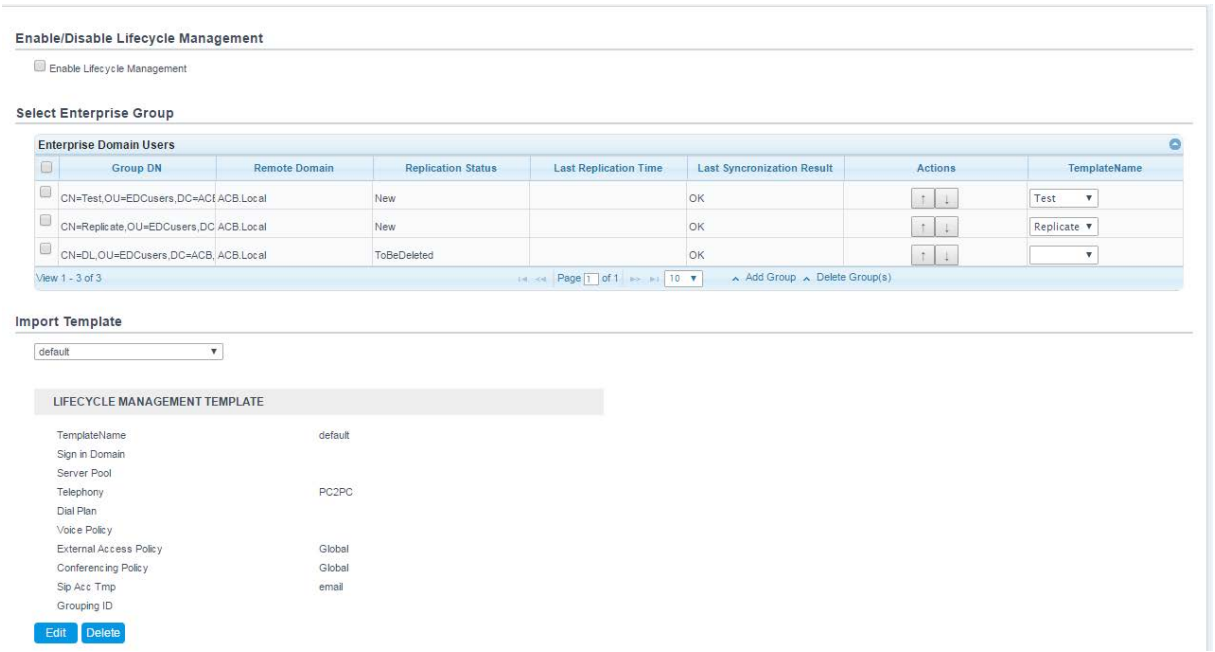
Note: Users imported through import or bulk import will not be part of group replication, even if they are added at a later stage to the user active directory forest.

➢ To enable Lifecycle Management:

1. Have the Enterprise Domain Administrator create one or more universal security groups, and add Enterprise domain users to those groups.
   - In the SysAdmin Lifecycle Management page, tick **Enable** Lifecycle Management
   - Click the **Add Group** link

to add a new group to the list
2. Select an Enterprise Domain and Enterprise Group from the drop down lists to add to the Select Enterprise Group list.
3. Add further security groups if required.
4. Ensure the check box of the required groups is selected.
5. Select a template to use for Importing Users.
6. Reorder the groups as required using the up and down arrow buttons .

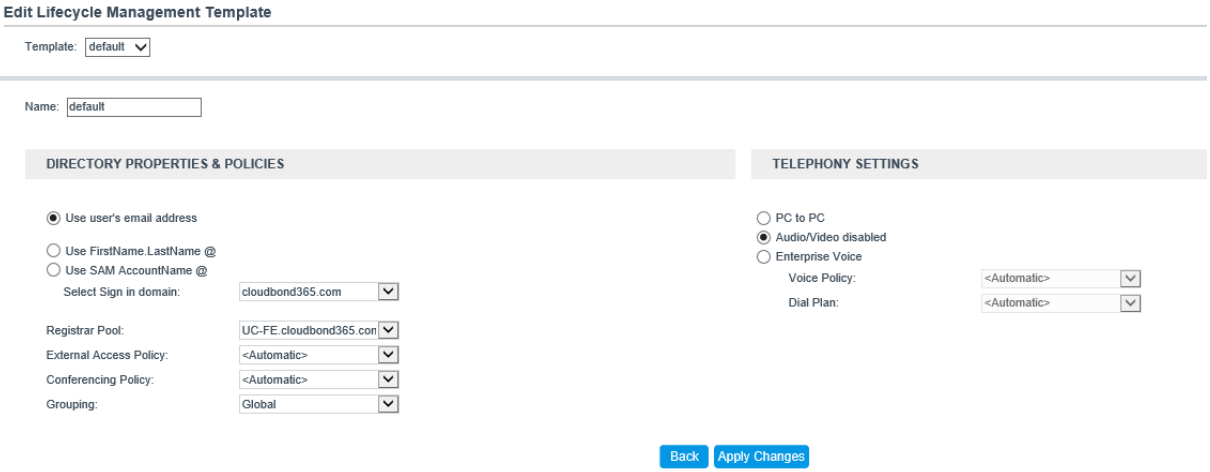
Figure 4-30: Lifecycle Management page



➢ To add additional templates:

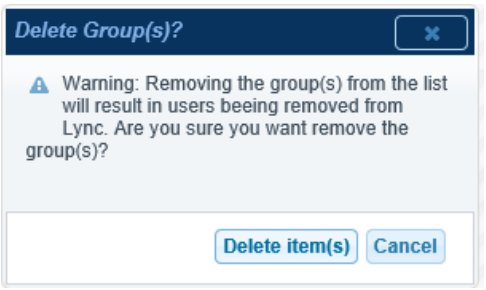
1. In the template section, click the **Edit** button; the page in which templates can be added or changed opens.
2. From the dropdown, select the template whose policies can be changed.
3. To save the changes as a new template, change the content of the 'Name' field and click **Apply changes**.
4. Click the **Back** button to return to the group replication page. Changes on the group replication page are saved instantaneously and will not require a Save action.

Figure 4-31: Add a New Template File



5. You can remove a security group from replication by selecting it and then Clicking **Delete Group(s)**.

Figure 4-32: Deleting a Security Group from Group Replication



Warning: Removing a security group from Group Replication will also remove the corresponding users from Skype for Business.

Warning: If you remove a user from a security group in the customer forest, this user will be automatically removed from Skype for Business if the following entry is added to the <appSettings> section in the C:\acs\AcsGroupReplication\AcsGroupReplication.exe.config file:

<add key="DeleteEnabled" value="True" />.

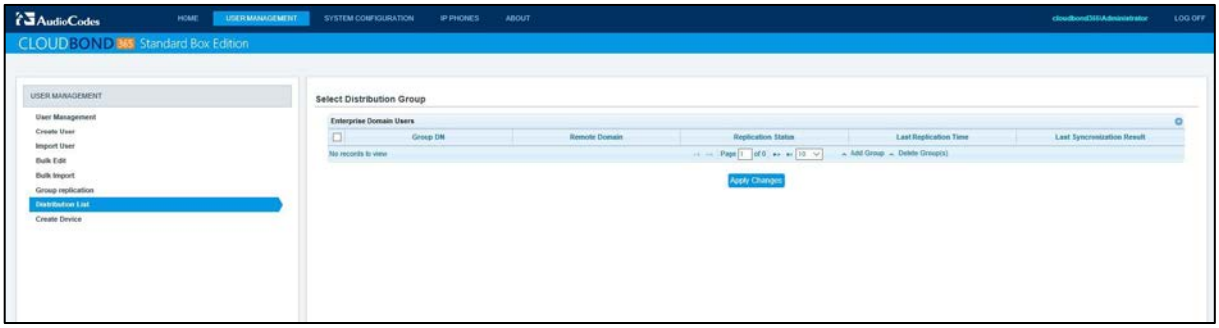
The default System Settings is to not delete the user.
This implies that the Buddy List and Skype for Business Scheduled Meetings will be deleted for these users as well. Consequently if such a user was deleted by mistake and then later re-added to the security group, the Buddy List and previously scheduled meetings will also be removed.

4.13 Distribution List

The distribution list option replicates mail enabled distribution groups from the Enterprise AD. A mail enabled group can then be searched for in the Skype for Business client and added to the buddy list. The buddy list shows the members of the group. This way it is easy to pre- populate buddy lists.

Adding and deleting Distribution Lists is performed identically to that for Group Replication (see the previous section).

Figure 4-33: Distribution List



4.14 Create Device

The Create Device option allows the creation of Analog Devices or Common Area Phones in the Skype for Business environment, without the need to use the Skype for Business Server Management Shell, or manually create AD contact objects.

Common Area Phones are objects within Skype for Business that represents physical handsets. These devices are typically not associated with an individual user.

Analog Devices are objects within Skype for Business that represent analog devices connected to Skype for Business through a media gateway. These objects include analog handsets, fax machines etc.

Note: Some fields (like the Registrarpool, PSTN Gateway and (Sip-)domain information for example) are stored in a web cache, which will be refreshed only every few minutes. This means that some recent changes in the Skype for Business or Active Directory backend environment are not directly visible within the administration pages, but will automatically show up after maximum 10 minutes. If immediate access is required, an IISRESET needs to be performed on the CloudBond 365 management server hosting the administration Web pages.

Figure 4-34: Creating Common Area Phone

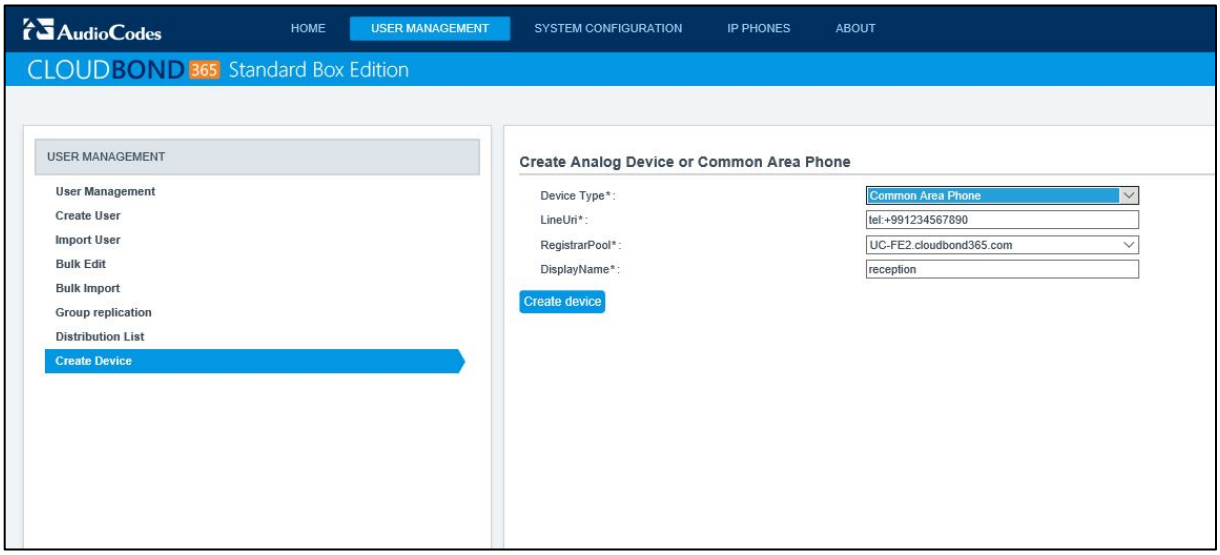
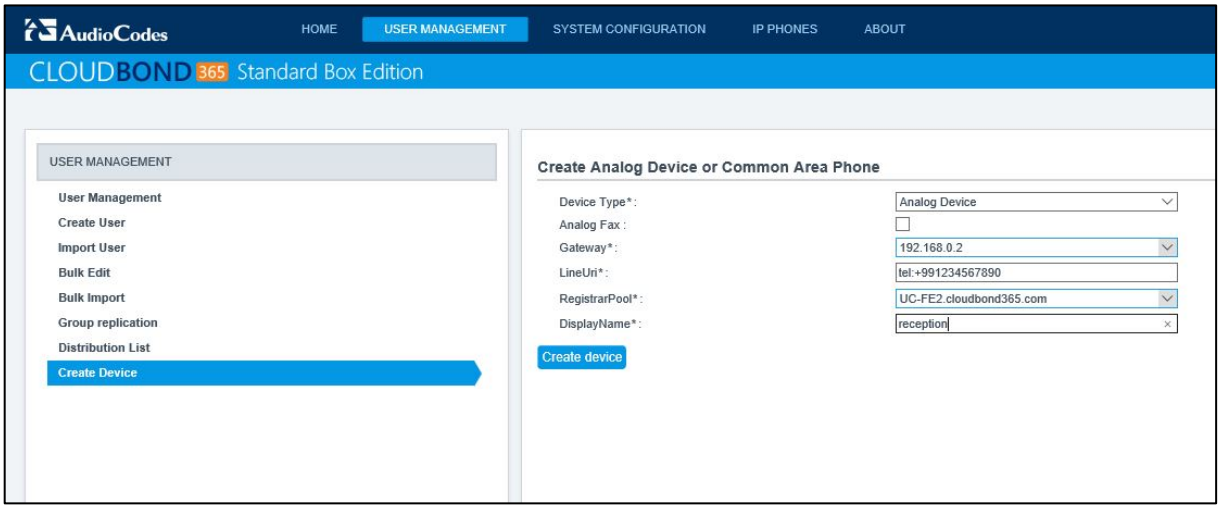


Figure 4-35: Creating Analog Device



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5 System Configuration

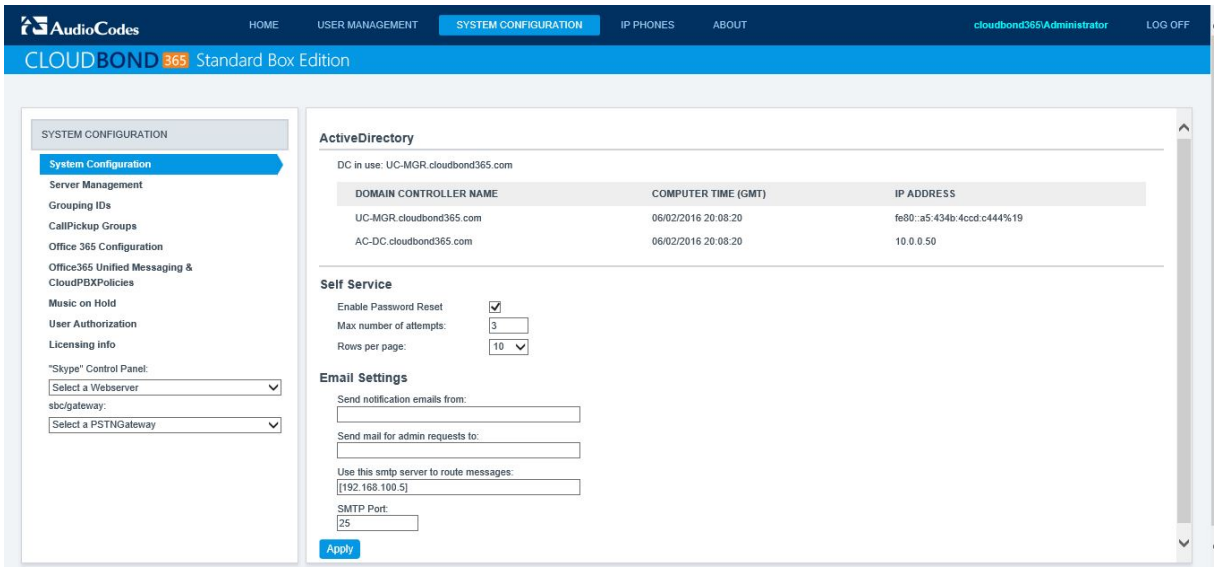
The UMP 365 Utility contains several System Configuration pages which provide a large amount of information about the current state of the CloudBond 365 Skype for Business Appliance. These information pages are very useful for determining the configuration of CloudBond 365, as well as diagnosing any faults.

Some of the System configuration pages also contain settings which can be updated.

5.1 System Configuration

The System Configuration page contains general information about the CloudBond 365 Skype for Business Appliance and uptime. It also allows settings for the Self Service password reset page to be configured.

Figure 5-1: System Configuration page



5.2 Self Service

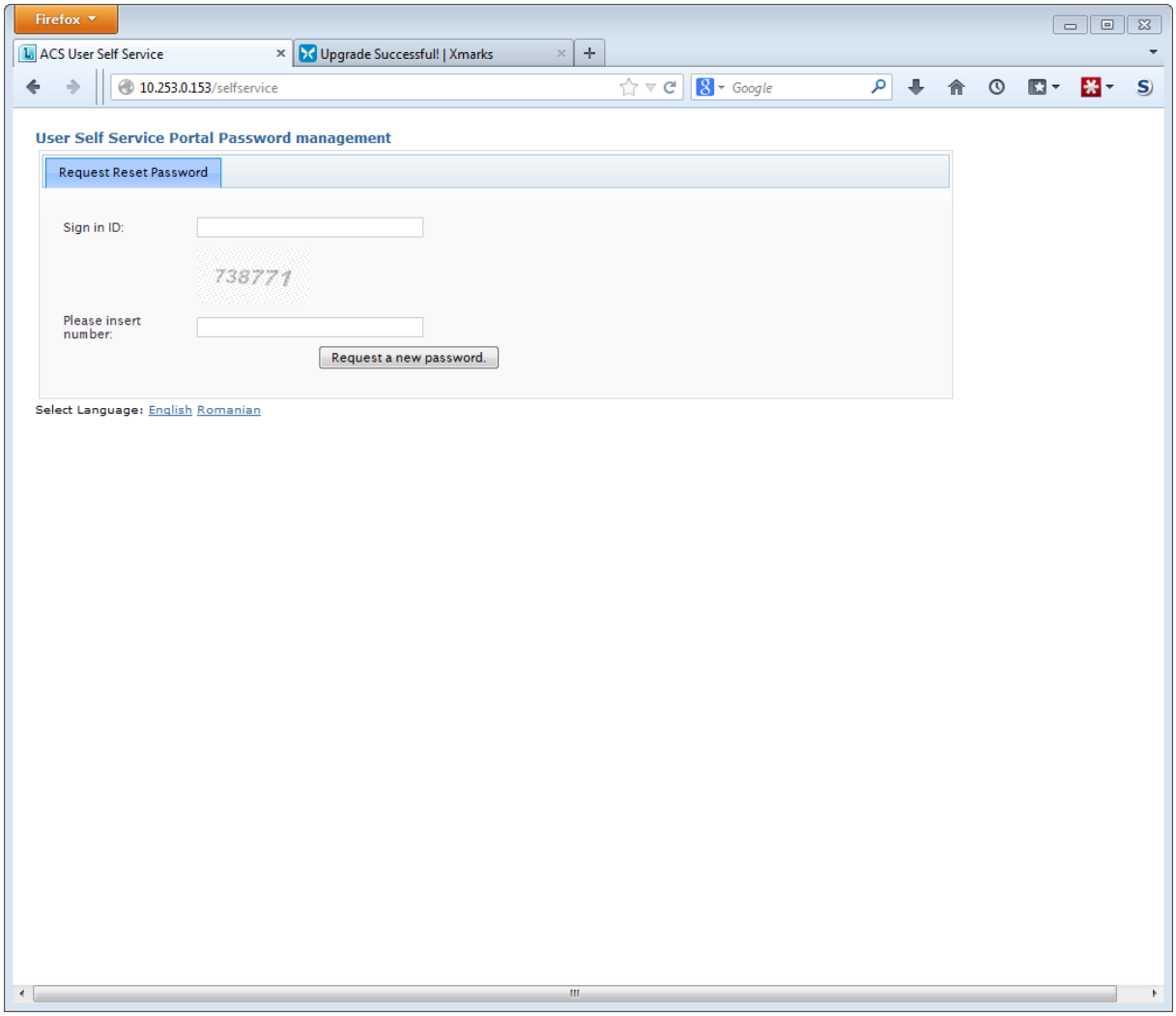
The UMP 365 contains a Self Service password reset feature for CloudBond 365 users.

Note: This feature is intended for CloudBond 365 when deployed in Standalone mode, or for use of Local CloudBond 365 users. Users imported or replicated from the customer domain via forest trust should not use this feature.

Note: For this feature to work, it must be enabled as described on the previous page, and also have the Email configuration completed, as described in the following section.

This web page will generate an email with password reset instructions.

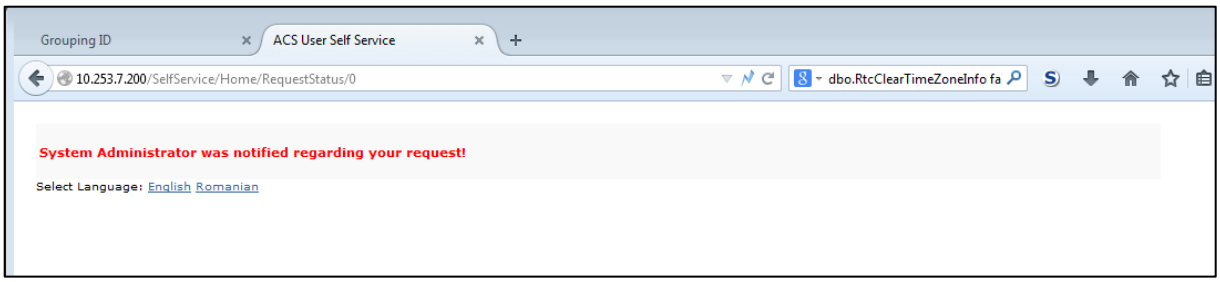
Figure 5-2: Self Service Password Reset



The Self Service password reset page can be accessed by Skype for Business users. The Web URL is http://<CloudBond 365 Controller>.<CloudBond 365 FQDN>/Selfservice
e.g., **http://uc-dc.ac-onebox.com/SelfService** or **http://192.168.0.100/SelfService**

Note: To make this feature more useful, make the Self Service page available to external users via a Reverse Proxy.

Figure 5-3: Self Service Password Request



5.3 Email Configuration

You can configure email server settings on the System Configuration page, to be used by the Self Service application. UMP 365 will only send email message by means of a server that is configured for relaying.

Note: If an IP address is entered in the "Use this SMTP server to route messages" instead of a Fully Qualified Domain Name, it needs to be between the "[" and "]" brackets.

5.4 Server Management

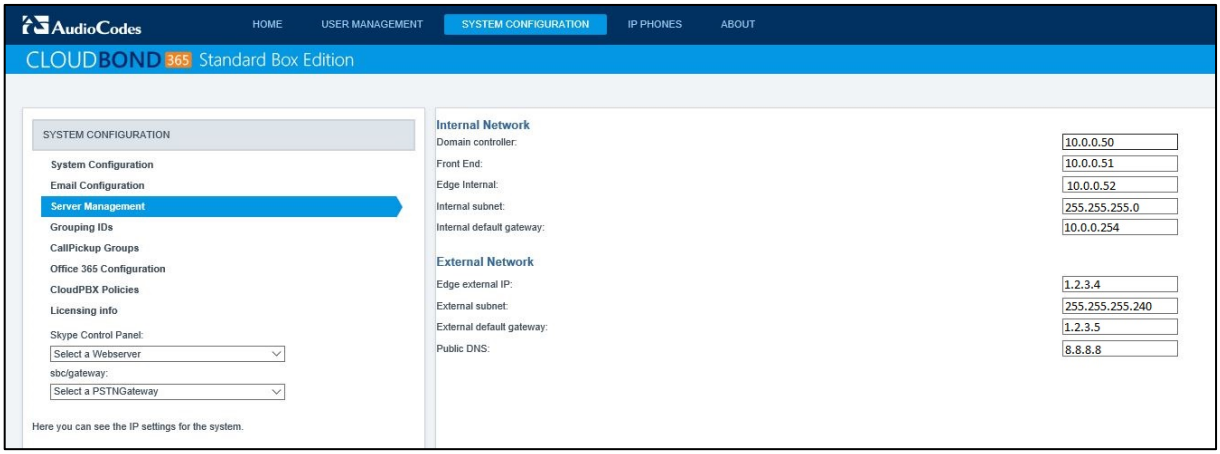
The server management pages provide a quick method to change the Network IP settings for each server within the CloudBond 365 system. The page is designed for simple IP Networks. These networks require the CloudBond 365 Controller, Front End, and Edge internal network interfaces to be on a common subnet.

Note: Server Management pages are only available in the 'Co-Located DC and Hyper-V Host' deployment model. These pages are therefore typically only available to CloudBond 365 Standard Box Edition. For CloudBond 365 Pro and Enterprise Box Editions, see *AudioCodes CloudBond 365 Manual IP Address Configuration Guide.*

The Server Management master page allows you to quickly set the IP addresses of the CloudBond 365 servers.

Enter the required IP addresses and click **Update**. The system will validate the new IP addresses, then update each server in the correct sequence, along with the topology and DNS records.

Figure 5-4: Server Management (Master)



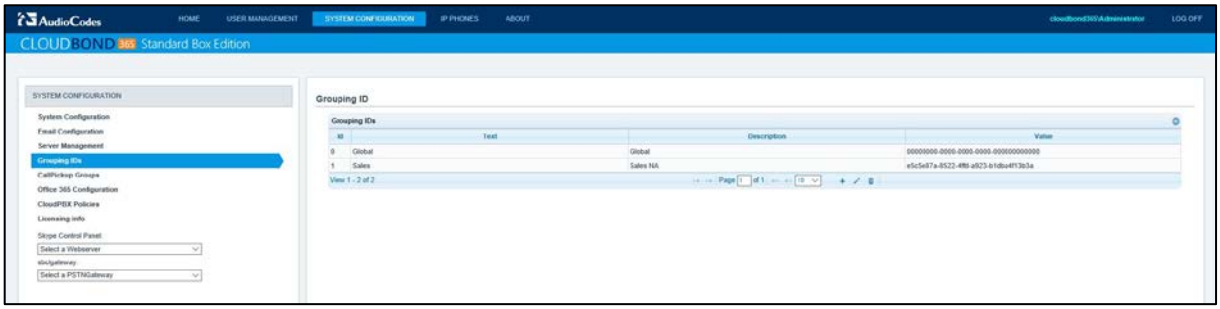
Warning: If you have already deployed the CloudBond 365 system to an enterprise network, you may need to adjust the DNS settings used in the Enterprise network to match the changes. e.g., Stub Zones used to provide Forest Trust.

5.5 Grouping IDs

Grouping IDs allow Skype for Business contacts to be separated and segregated into groups. This allows you to restrict which Skype for Business users can see which contacts within the Skype for Business environment.

Grouping IDs defined on this page are available to be applied to individual users in the User Management pages.

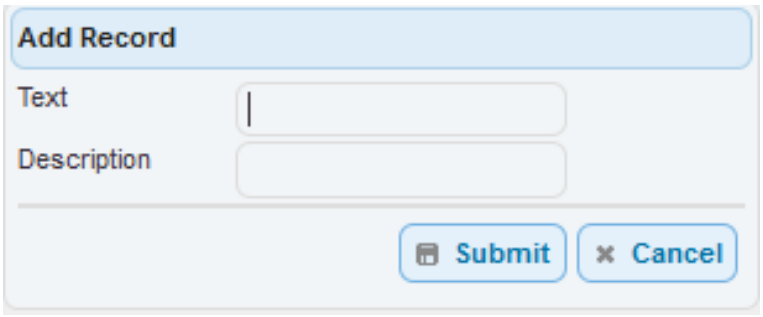
Figure 5-5: CloudBond 365 Grouping IDs



➢ **To add a new Grouping ID:**

1. Click the **+** icon.
2. Enter **Text** (name) and **Description**.
3. Click **Submit**.

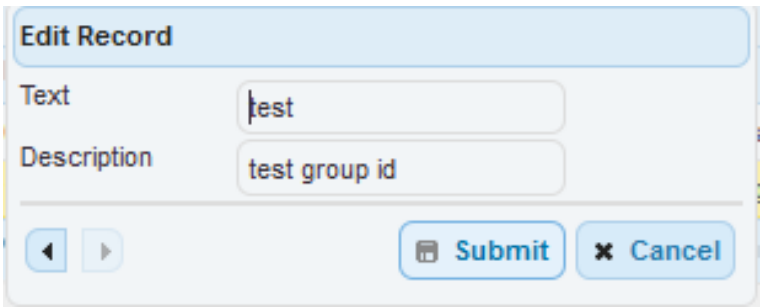
Figure 5-6: Adding a Grouping



➢ **To Edit a Grouping ID:**

- Click the **Pencil** icon.

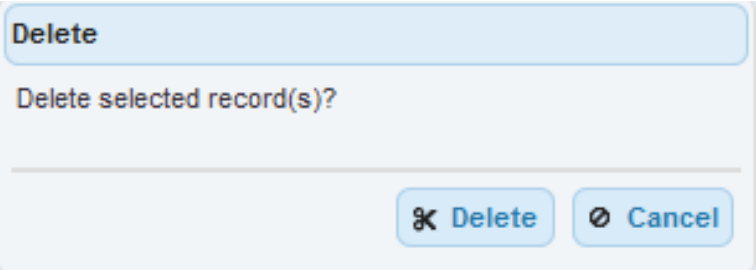
Figure 5-7: Editing a Group Record



➢ **To Delete a Grouping ID:**

- Click the **Trash** icon.

Figure 5-8: Deleting a Record

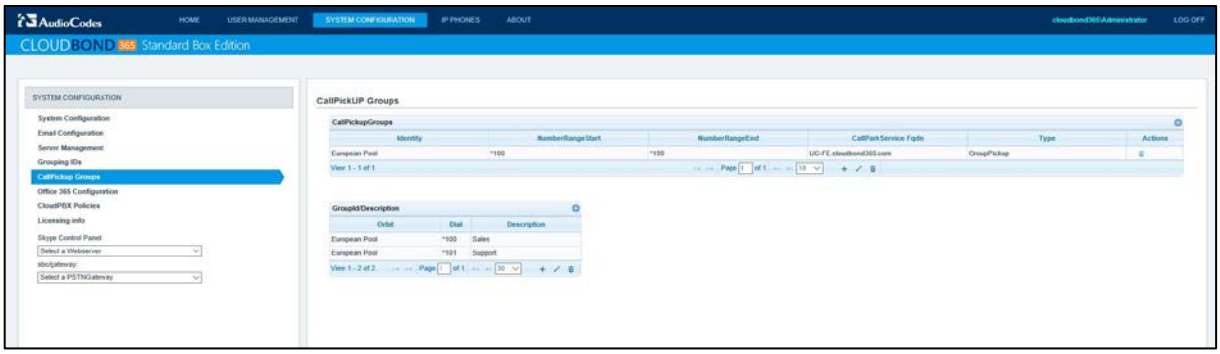


5.6 CallPickup Groups

CallPickup Groups are a feature of Skype for Business which allows members of the group to pickup calls ringing on another extension within the group.

To make configuration of CallPickup Groups easier, the feature has been added to the SysAdmin Web pages.

Figure 5-9: Defining CallPickup Groups



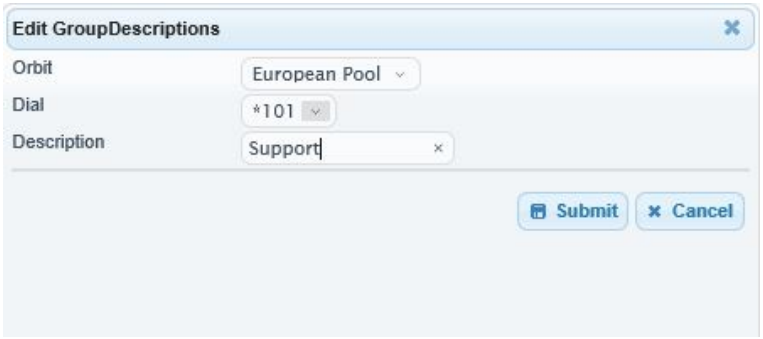
➢ **To configure a CallPickup group:**

1. Create a new call park orbit in the top section (CallPickupGroups). The orbit should contain enough extensions to support the number of simultaneous calls for the group. Click the + to create a new orbit.

Figure 5-10: Defining the CallPickup Orbit

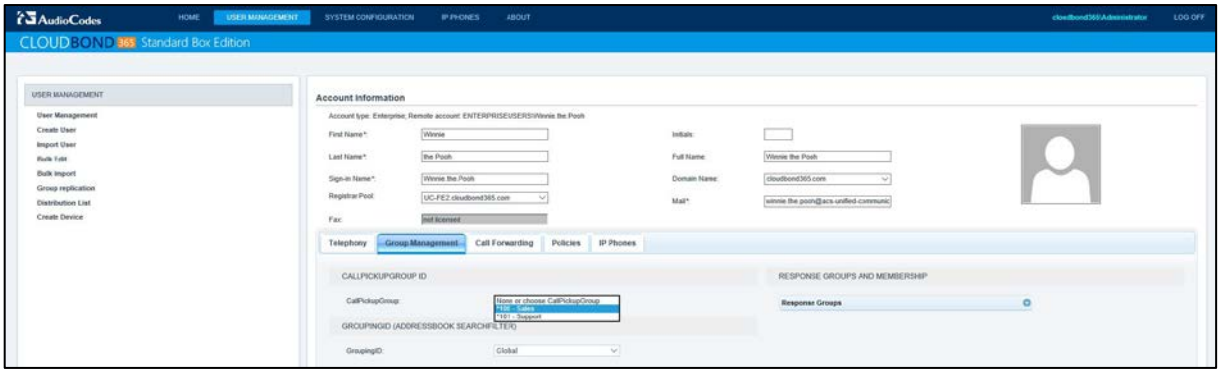
2. Create a group id and assign it to the orbit. The Call Pickup Group ID is allocated to all users within the group. As part of the ID, you must select a pickup code from one of the orbit numbers.

Figure 5-11: Defining the Call Pickup Group ID



3. Edit the selected Skype for Business users, and assign them to the CallPickupGroup ID under the Group Management tab.

Figure 5-12: Assigning the Call Pickup ID to a User



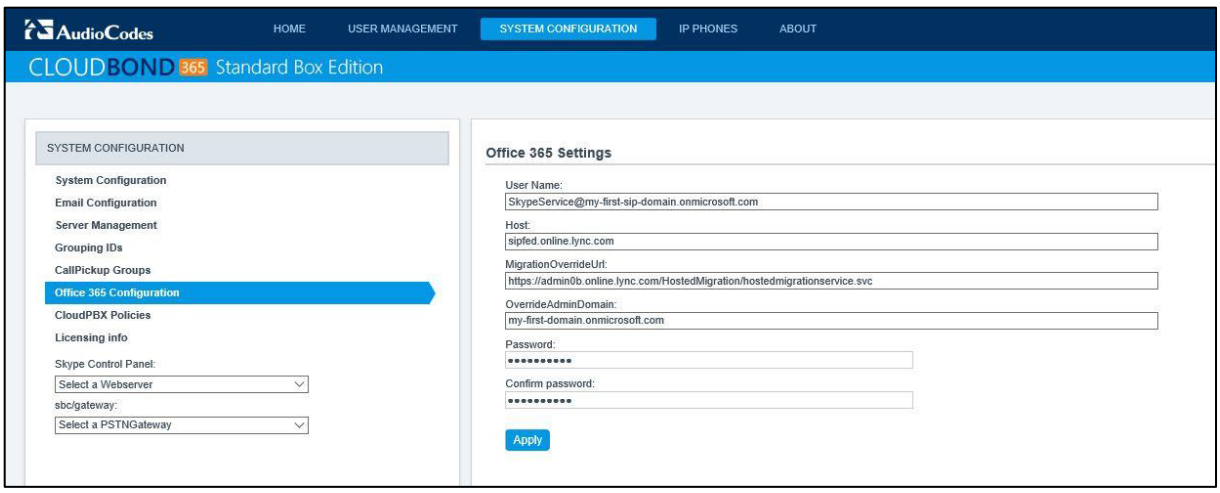
5.7 Office 365 Configuration

Refer the A*udioCodes CloudBond 365 Installation Manual* document for details on how to configure Office 365 integration with UMP 365. This document also contains information on how to obtain values required for the Office 365 Configuration screen within the UMP 365.

After completing the pre-requisite setup steps for Office 365 Integration, the process can be completed by supplying the following information on the SysAdmin page:

- **User Name:**
  - The login name of your Office 365 Administrator
- **Host:**
  - The location where your Office 365 environment is hosted
- **Migration Override URL:**
  - Refer to the document *AudioCodes CloudBond 365 Installation Guide*
- **Override Admin Domain:**
  - Your original Office 365 domain prior to applying vanity domain names
- **Password:**
  - The Office 365 Administrator password

Figure 5-13: Office 365 Connector Settings



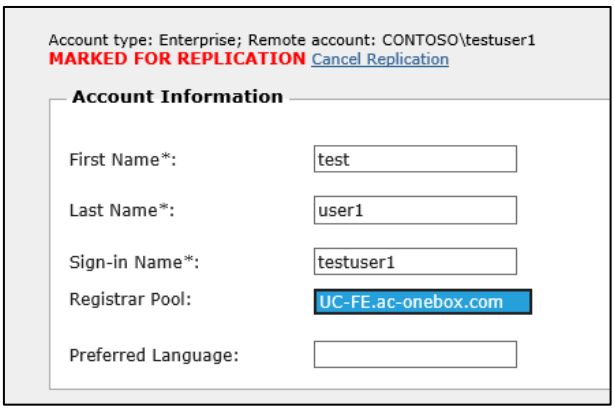
Once the Office 365 connector is fully configured and the first synchronization has been performed, it is possible to assign users to each system (CloudBond 365 or Office 365).

➢ **To change a user's assigned system:**

1. Select the user in the User Management List.
2. Click **Edit**.
3. Change the users Registrar Pool.
4. Save your changes.

Assigning a destination Frontend pool to a user:

Figure 5-14: Assigning a user to a FE pool



5.7.1 Office 365 Unified Messaging (UM) and Cloud PBX Policies

To be able to support the Office 365 Unified Messaging (UM) and Cloud PBX feature, Voice Routing Policies need to be created to hold the PSTN Usage records that are allowed to be called by Cloud PBX users with On-Premise PSTN breakout.

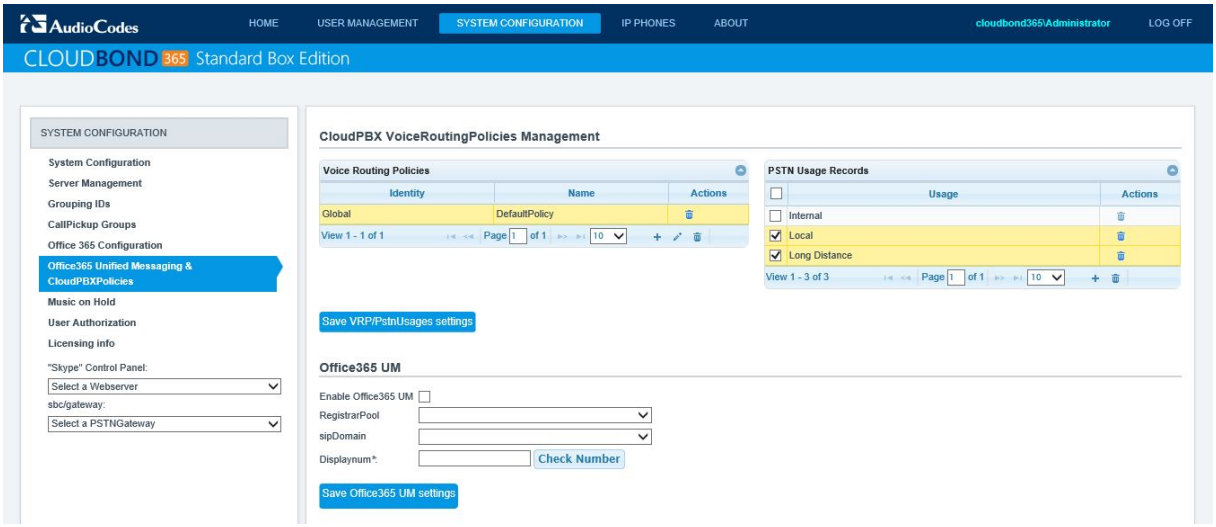
The Voice Routing Policies are created in the CloudPBX VoiceRoutingPolicies Management screen. Once created, they can be assigned to the PSTN Usage Records.

Note: UMP 365 provides native integration to Office 365 Unified Messaging (UM) by means of an intuitive interface. Once the prerequisites of Office 365 integration as outlined in the *AudioCodes CloudBond 365 Office 365 Integration Configuration Note Ver. 7.2* are configured, you can use this capability.

➢ **Do the following:**

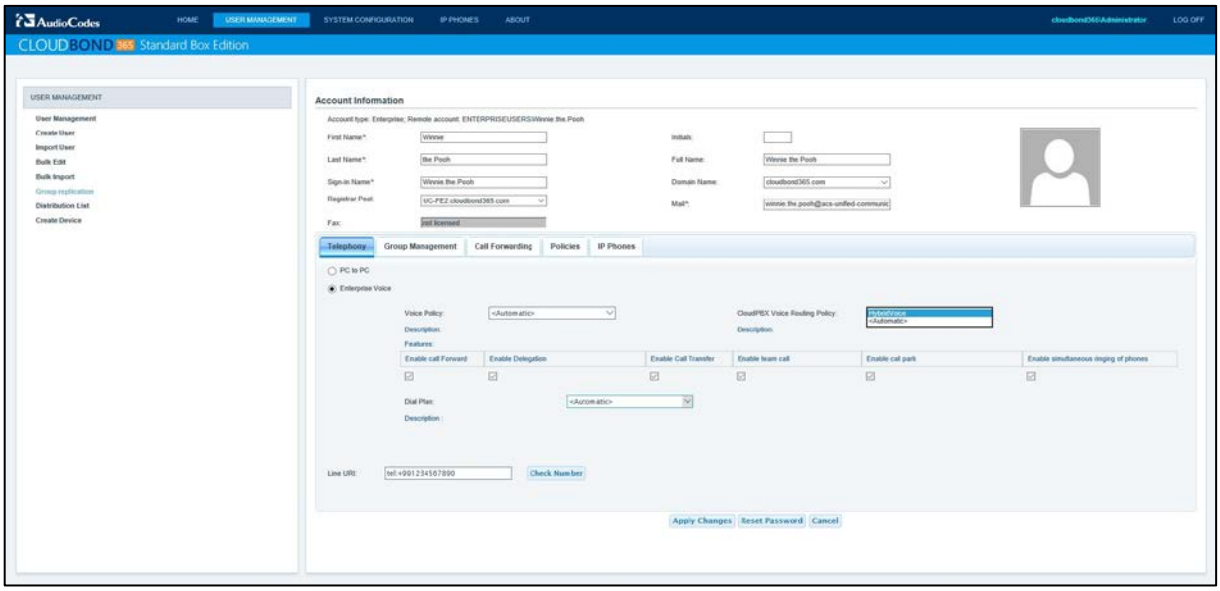
1. Select / create a Voice Routing Policy.
2. Select the check boxes for the PSTN Usage records to bind to this policy.
3. Click **Save VRP/PstnUsages settings** to save the settings to the backend environment.

Figure 5-15: Voice Routing Policies and PSTN Usages



After the Voice Routing Policies have been created, they can be assigned to the user on the **Telephony** tab in User Edit mode (see Section 4.6.2 on page 30 for more information):

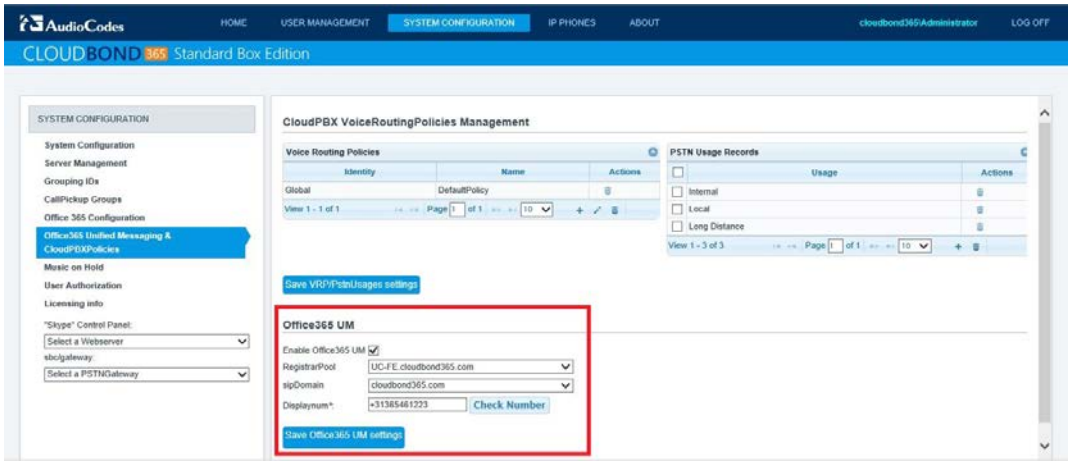
Figure 5-16: Voice Routing Policies Assigned to User



➢ **To enable the Office 365 UM feature:**

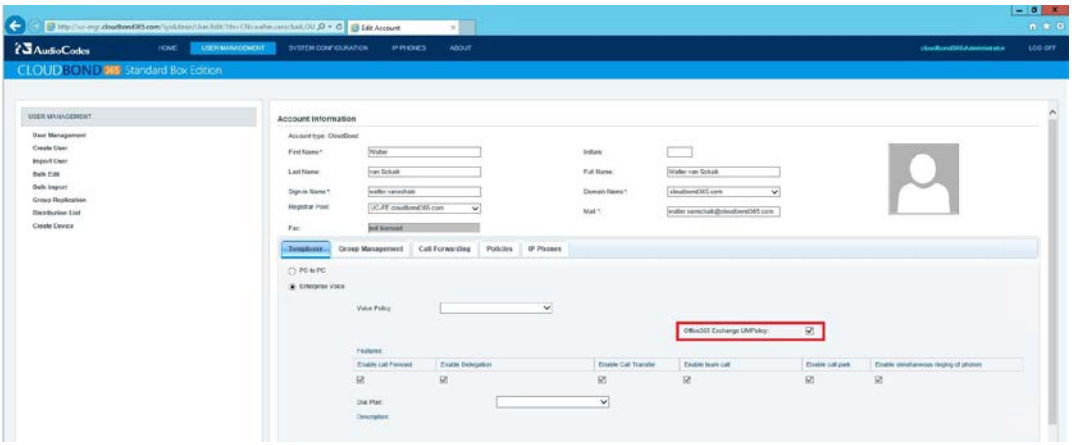
1. Open the Office 365 Unified Messaging & CloudPBX Policies page under the System Configuration menu.
2. Select the 'Enable Office 365 UM' check box.
3. From the 'RegistrarPool' drop-down list, select a Registrar pool.
4. From the 'sipDomain' drop-down list, select a sipDomain.
5. In the 'Displaynum*' field, enter the telephone number to be used.

Figure 5-17: Office365 UM



Once enabled, users can be assigned Office 365 UM capabilities in the User Edit screen by enabling the 'Office365 Exchange UM policy' checkbox.

Figure 5-18: Office365 Exchange UMPolicy



5.8 Music on Hold

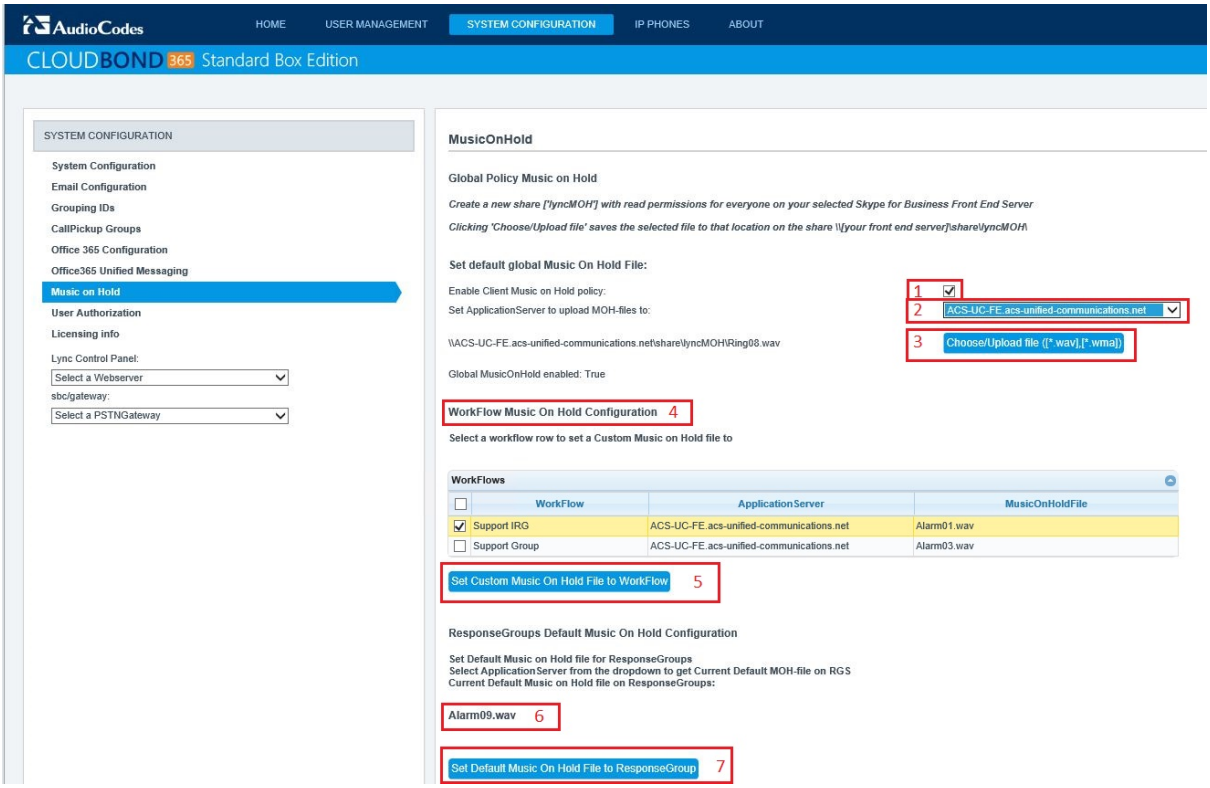
Music on Hold (MoH) files can be centrally administered using the Music on Hold page under the System Configuration menu in the sysadmin web pages:

Before you start managing MoH, create a new share ['lyncMOH'] with read permissions for everyone on your selected Skype for Business Front End Server.

➢ **To configure MoH (refer to the corresponding numbers in Figure 5-13):**

1. Select the 'Enable Client Music on Hold policy' check box.
   When selected, the global client policy entry EnableClientMusicOnHold is enabled. If this option is cleared, the EnableClientMusicOnHold entry is disabled. If a MusicOnHoldAudioFile entry is present and this option is disabled, then the file will not be removed from the policy.
2. From the 'Set ApplicationServer to upload MOH-files' drop-down list, select the Front End Application server that will be used to store the MoH file.
3. Use the button to browse for and upload a MoH file to the server.
4. In the WorkFlows table, select the check box for the WorkFlow entry to set a custom MOH file.
5. Use the browse button to browse to a MoH file to upload for the selected workflow.
6. Displays the current assigned MoH file for response groups.
7. Allows changing the default MoH file for response groups.

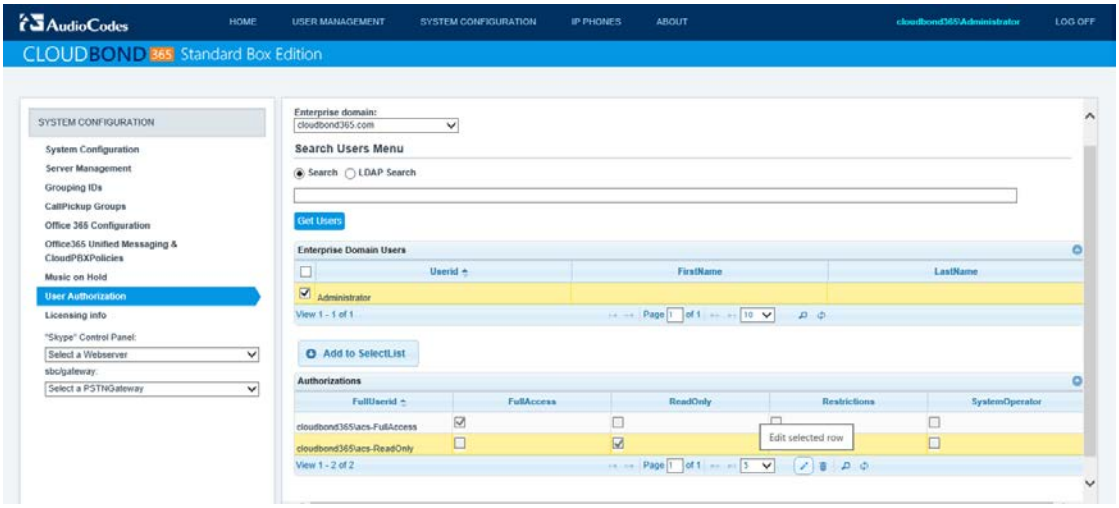
Figure 5-19: Music on Hold



5.9 User Authorization

Access to the Management Pack application (SysAdmin) can be given to users from the CloudBond 365 or Enterprise Forests in the User Authorization page.

Figure 5-20: User Authorization

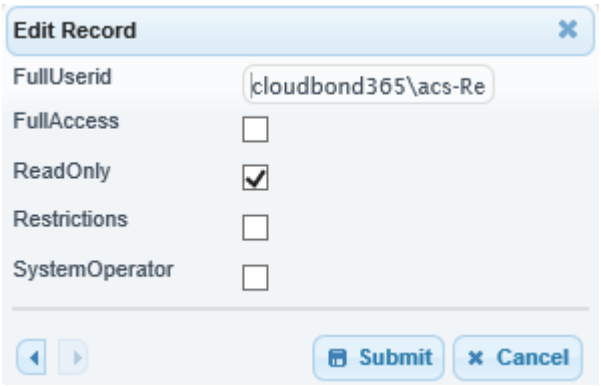


By default, the following security groups are created:

- ACS-FullAccess – allows the administrator to perform any change using the UMP 365 Web Admin
- ACS-ReadOnly – allows the administrator view only capabilities with no ability to set any changes.

To edit a user's authorization, select the user (group) and then click the Pencil icon in the Status bar at the bottom of the screen. A popup allows you to select the appropriate level of access:

Figure 5-21: Edit Record



When the **Restrictions** check box is selected, another selection box is displayed, where you can limit the administration based on sipDomains or RegistrarPools.

When selecting the **SystemOperator** check box, access is only given to the **System Configuration** pages by default.

5.10 Skype for Business Control Panel (Quick Access)

The Skype for Business Control Panel is one of the many administration and configuration tools provided by Microsoft to manage the Skype for Business environment. The Skype for Business Control Panel is based on Silverlight, so is best run from Internet Explorer.

A quick link to the Control Panel is available within UMP 365, should you need to perform some detailed or advanced configuration.

Note: The Skype for Business Control Panel is available from each FE server in your CloudBond 365 system. Choose an FE Server from the drop down list.

Figure 5-22: Select a FE Server for Skype for Business Control Panel

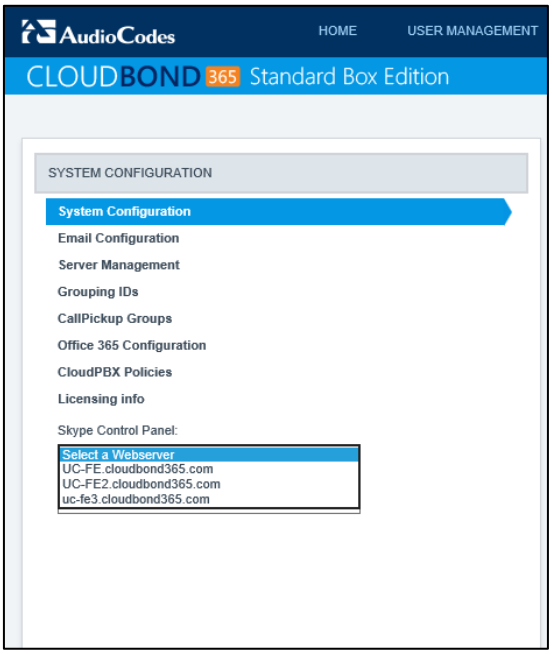
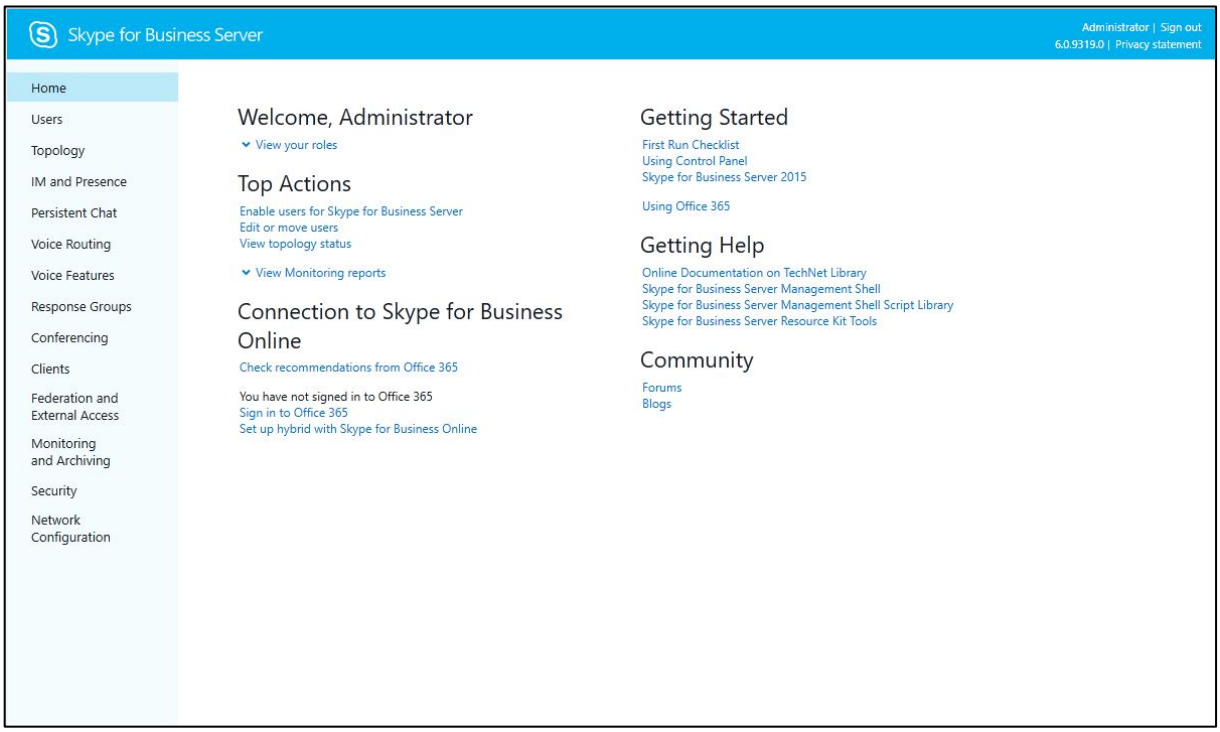


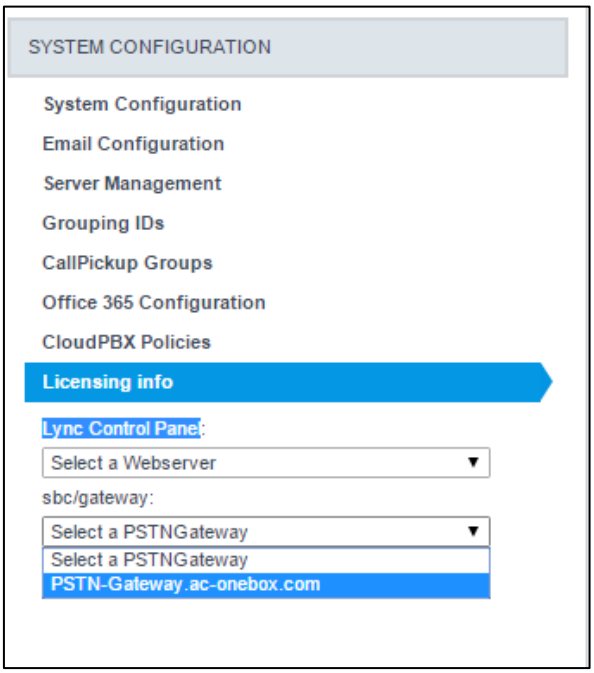
Figure 5-23: Skype for Business Control Panel



5.11 SBC / Gateway Administration Panel (Quick Access)

The SBC / Gateway Administration Panel allows you to set and manage the AudioCodes SBC/GW configuration for setting PSTN or SIP trunk connectivity. A quick link to the Administration Panel is available within UMP 365, should you need to perform some detailed or advanced configuration. Choose the SBC/GW Server from the drop-down list.

Figure 5-24: Select an SBC/GW Server for SBC/Gateway



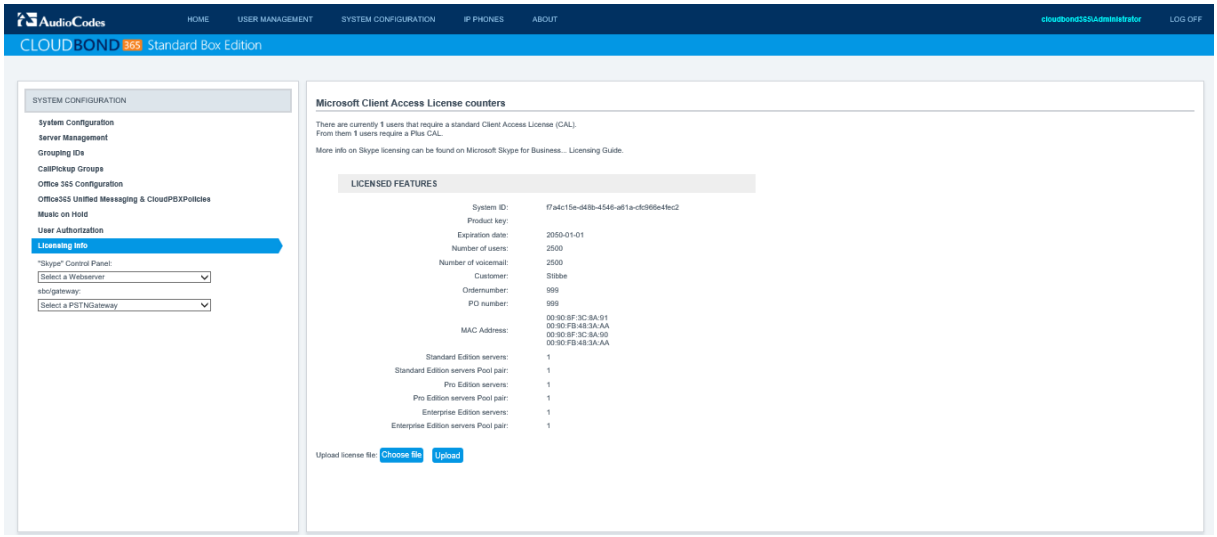
5.12 Licensing Information

The Licensing Information page displays information about your system license, including:

- Number of users
- Number of servers
- When the license will expire

This page also allows the installation of a new license, by simply browsing to the new license file, then clicking **Upload**. A system without a license file installed will not operate. UMP 365 will cease to operate once the license date expires.

Figure 5-25: UMP 365 License



5.13 Monitoring CloudBond 365 in EMS

The CloudBond 365 system can be monitored remotely by the EMS server. This monitoring includes the following features:

- Display the CloudBond system info and status:
  - The type of the CloudBond system
  - Health status of the system
  - Name of the system
  - Location of the system
  - Skype for Business version
  - Sip domains
  - Number of users
- Display the CloudBond system components

  The CloudBond 365 status screen in the EMS contains all the components of the CloudBond environment with the following information:
  - Name
  - Component health status
  - Type
  - FQDN
  - IP Addresses
  - Serial number (if applicable)
  - OS version
  - SfB CU version (if applicable)
  - Component up time
- The following types of alarms and events are raised on the CloudBond 365 system and displayed in the EMS alarm browser:
  - Alarms about services that down in the components
  - Alarms about performance counter threshold exceed in the components
  - Events from components event log
  - Alarms about license problems
  - Alarms from SBC – (if monitored)

Note: To increase the efficiency of the alarm reporting, the monitoring parameters may be manual configured according to system activity.

- Obtain the license from EMS license pool:

  This option replaces the need for a file license. The CloudBond system retrieves its license from a license pool in the EMS. All the license management is done from the EMS server.

5.13.1 Configuring the CloudBond 365 and EMS Server Connection

This section describes how to manage the connection settings between the CloudBond devices and the EMS server. If you initially obtained your CloudBond license from the EMS server, you already initially configured most of these settings in Section 4.2.2.

➢ **To configure the CloudBond 365 EMS server connection:**

1. Open the EMS Settings screen (**System Configuration** > **EMS Settings**).
2. Configure the following connection settings:
   - IP Address – the IP address of the EMS server
   - Trap Port – Destination port to which to send traps (default value is 162)
   - Keep Alive Port – Destination port to send Keep-alive requests over SNMP (default is 1161)
3. Configure the SNMP user settings:

   All the settings of the SNMP protocol must be identical to the settings of the current CloudBond system in the EMS. Note that if you wish to connect the CloudBond 365 devices to the EMS with auto detection, then you must use the default settings shown below in parenthesis:
   - SNMPv2:
     - Community Read – Access string for SNMP get requests (default 'public')
     - Community Write – Access string for SNMP set requests (default 'private')
   - SNMPv3:
     - Security Name – Identify the SNMP user ('OVOCUser')
     - Authentication Protocol - Protocol type that used to encrypt the Security Name field ('SHA').
     - Authentication Key – Security Name encryption key. The field is valid only if Authentication Protocol selected ('123456789').
     - Private Protocol – Protocol type that is used to encrypt the SNMP message ('AES-128').
     - Private Key – SNMP message encryption key. The field is valid only if Private Protocol selected ('123456789').
4. If you would like the EMS to monitor the SBC in your CloudBond system, select the **SBC** button.

   When you choose this option, the SBC in the CloudBond system is monitored in the EMS as part of the CloudBond system. SBC alarms will be displayed in the EMS as part of the CloudBond system.
5. Configure the System Info settings:
   - **System Name** – The name of the system. In an environment with multiple CloudBond devices, this value must be unique.
   - **Location** – Optional field to describe the system location.
6. Enter the Login URL – the URL of the CloudBond admin login page. When you enter this URL, you can access the CloudBond management login page from the EMS. The link from the EMS is valid only when the Admin user has HTTP/S access to the CloudBond Management Admin.

Figure 5-26: EMS Settings-SNMPv2

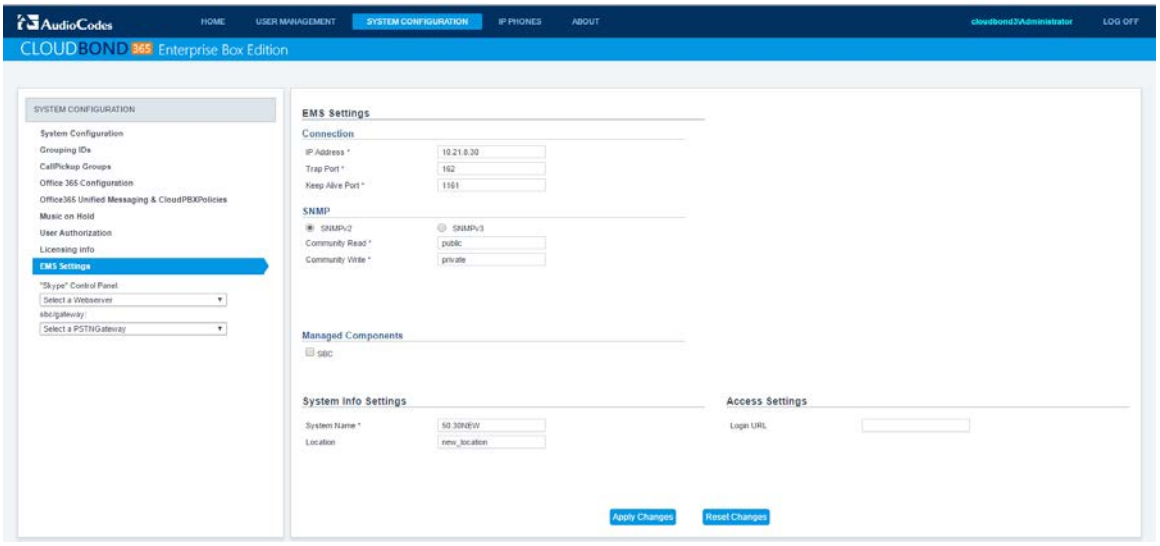
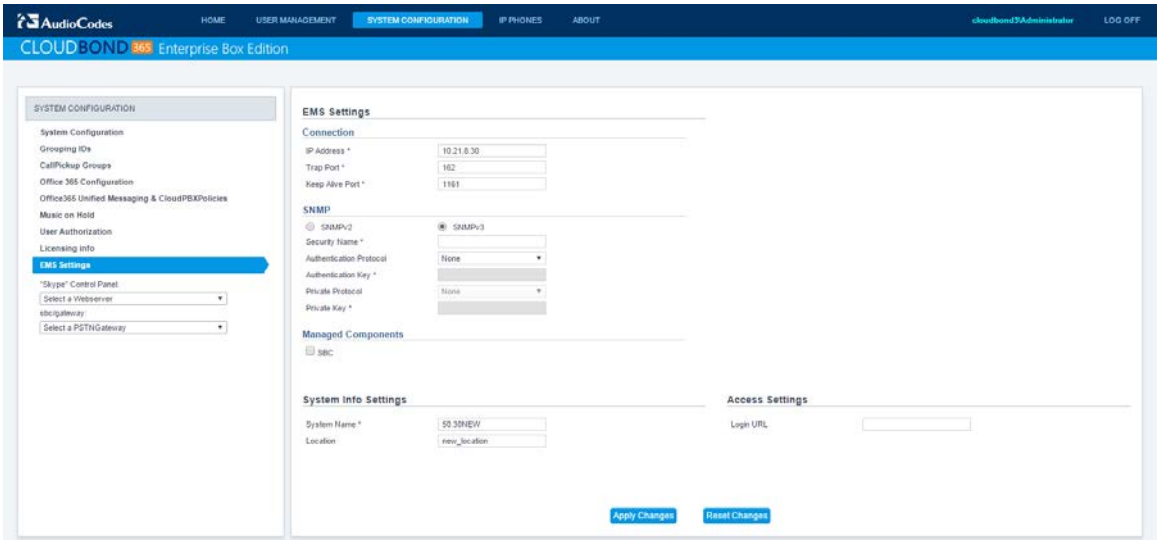


Figure 5-27: EMS Settings-SNMPv3



6 IP Phones

The UMP 365 contains several IP Phones Configuration pages which allows the system administrator to monitor and manage AudioCodes Skype for Business IP Phones. The IP Phone manager is very useful for managing IP Phones and as well as diagnosing any faults.

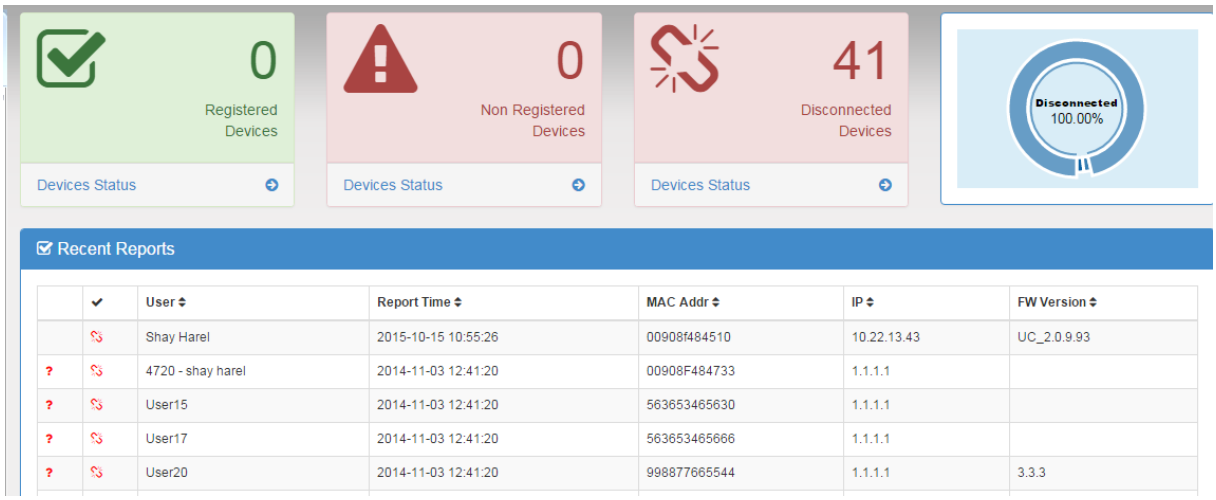
6.1 Dashboard

The Dashboard page lets you quickly identify the following:

- Which phones in the network are registered
- Which phones in the network are non-registered
- The number of registered and non-registered phones (in terms of SIP registration)
- The percentage of registered phones
- The MAC and IP address of each phone
- The time the information was reported
- The firmware version

See Introduction to the IP Phone Manager Admin on page 131 for more information.

Figure 6-1: IP Phones Dashboard

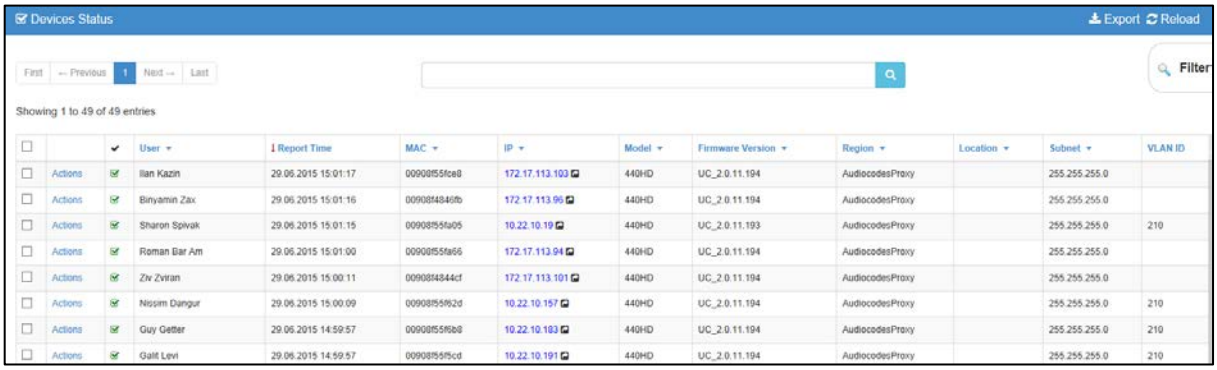


6.2 Status

The Devices Status page lets you check a phone's status.

Refer to the Introduction to the IP Phone Manager Admin on page 131 for more information.

Figure 6-2: IP Phones Status



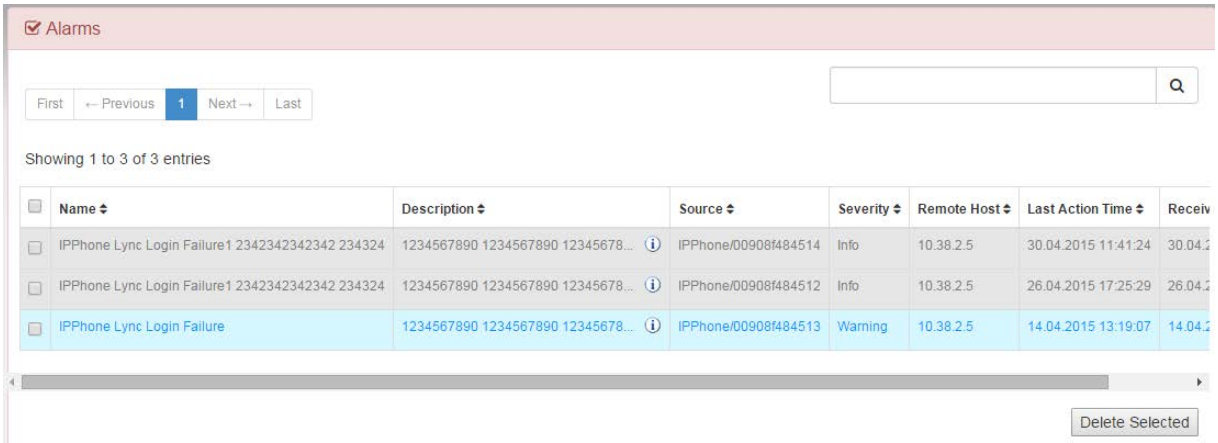
6.3 Alarms

The Alarms page displays the following information:

- Each phone alarm in the network
- A description of each alarm
- The MAC address of the phone (source)
- The alarm severity
- The IP address of the phone
- The last action time
- The date and time of receipt of the alarm

Refer to the Introduction to the IP Phone Manager Admin on page 131 for more information.

Figure 6-3: IP Phones Alarms

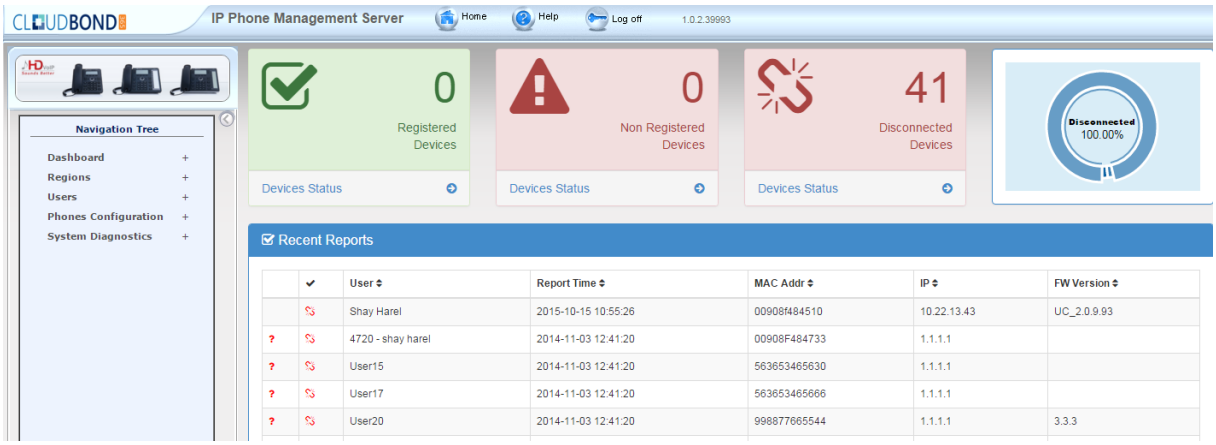


6.4 IP Phone Management Server

The IPP Manger opens in a new browser tab the entire IPP Manger admin with all advances features and capabilities.

Refer to the Introduction to the IP Phone Manager Admin on page 131 for more information.

Figure 6-4: IP Phones Manager



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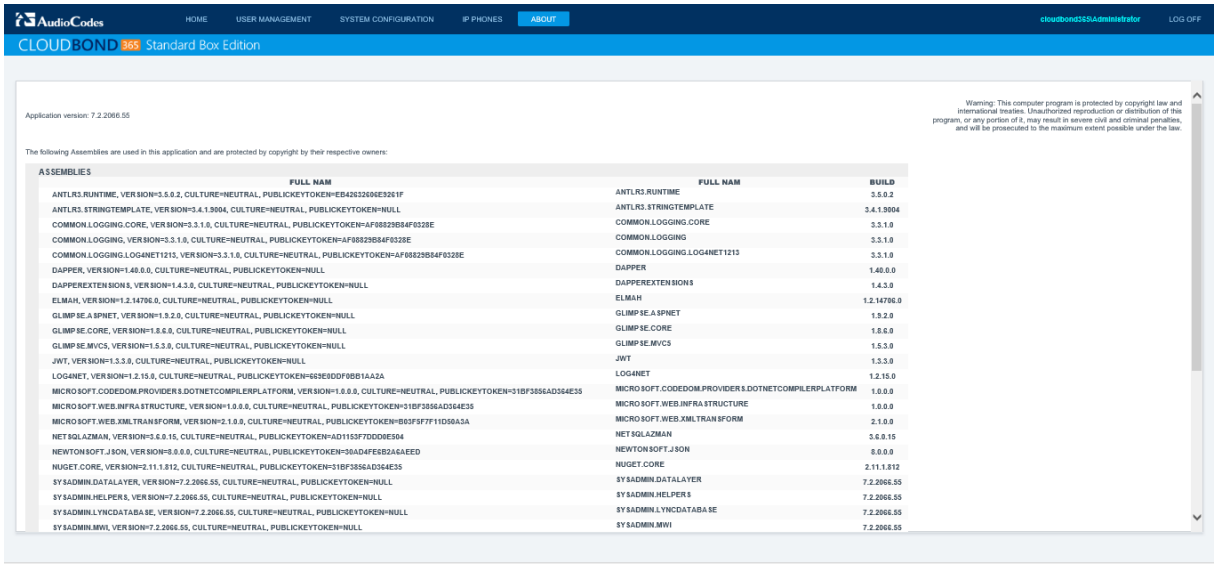
7 About

The UMP 365 About page supplies debug information about various UMP 365 / CloudBond 365 components and their build numbers.

Figure 7-1: About Page



Note: When placing a support call, you must supply the Application Version number of your system. e.g., CloudBond 365 v5.5.1626.585.

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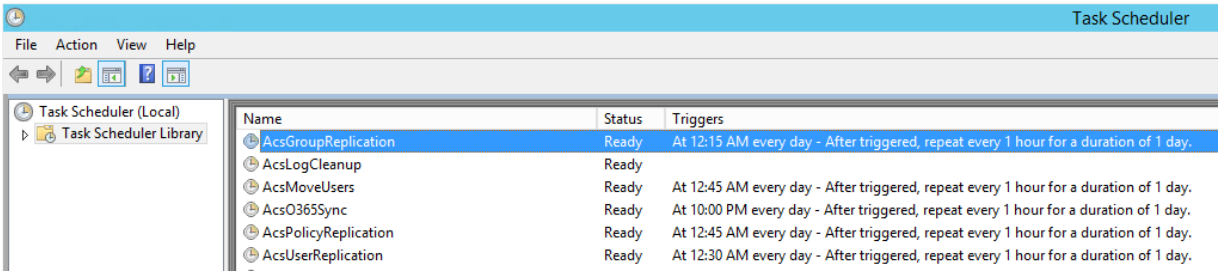
8 Scheduled Tasks

The User Management Pack 365 application creates six scheduled tasks that can be managed using the Windows “Task Scheduler” application.

Figure 8-1: Scheduled Tasks



This chapter explains the purpose of these scheduled tasks.

8.1 AcsGroupReplication

AcsGroupReplication is part of the Lifecycle Management feature and takes care of the automatic creation and removal of user objects in the local Active Directory resource forest.

8.2 AcsLogCleanup

AcsLogCleanup is a scheduled task that removes log files in the c:\acs\logs folder that are older than 14 days.

8.3 AcsMoveUsers

When a users registrarpool is changed in the User Management Pack 365, the move to the destination pool is cached. The scheduled task ‘AcsMoveUsers’ takes care of the actual user move between the pools for moves both between two pools on premises or between Office365 and on premises in a hybrid deployment.

8.4 AcsO365Sync

AcsO365Sync should only be enabled in hybrid (Split-Domain) deployments with Office365. This scheduled task reads all Office 365 Skype enabled user objects and creates corresponding identities for them in the resource forest where the UMP is installed.

8.5 AcsPolicyReplication

AcsPolicyReplication is part of the Lifecycle management feature and takes care of the policy assignment defined in the group replication templates. If enabled, it will undo all manual changes on an account and restore the settings to what is defined in the template.

8.6 AcsUserReplication

AcsUserReplication is part of the AD Connector and takes care of user attribute replication between all connected user forests and the resource forest where the User Management Pack 365 is installed. It replicates the following user attributes from the customer user forest(s) to the UMP resource forest:

- c (countrycode like NL for Netherlands)
- co (country in full like Netherlands)

- company
- countryCode
- department
- description
- displayName
- facsimileTelephoneNumber
- givenName (first name)
- homePhone
- initials
- ipPhone
- l (city)
- mail
- manager
- mobile
- pager
- physicalDeliveryOfficeName
- proxyAddresses (only the EUM and SMTP entries)
- sAMAccountName
- sn (Last Name)
- st (State)
- telephoneNumber
- title
- thumbnailPhoto
- userPrincipalName

If write permissions in the customer user forest(s) are given to the service account that is used to run the scheduled task named AcsUserReplication, the following attributes will be synchronized back from the UMP resource forest towards the customer user forest(s):

- msRTCSIPUserEnabled
- msRTCSIPOptionFlags
- msRTCSIPDeploymentLocator
- msRTCSIPLine
- msRTCSIPPrimaryUserAddress
- proxyAddresses (only the sip entry)

Note: The msRTCSIP attributes are only required in Office365 Hybrid deployments, where DirSync or AzureADSync are used for account synchronization from the user forest to Office 365. With the release of Microsoft's AzureADConnect in October 2015, the resource forest model is fully supported and if configured correctly, there is no longer the need to populate the msRTCSIP attributes.

Part II

Changing Administrator Password

9 Introduction

This part describes the procedures for changing the AudioCodes CloudBond 365 Administrator password. If you decide to change this password, keep in mind that this account is also used as a service account in the background. Therefore, if you change this password, you must also change the password in the following locations:

- Domain Controller
- Internet Information Services (IIS) Manager
- Domain Controller Windows Services
- Front End Windows Services
- Edge Windows Services
- Branch Pool Appliance (BPA)

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10 Changing Password on Domain Controller

The procedure below describes how to change the AudioCodes CloudBond 365 Administrator password on the Domain Controller for the following:

- CloudBond 365 Standard/Standard+ Box Edition
- CloudBond 365 Pro and Enterprise Box Editions

10.1 CloudBond 365 Standard/Standard+ Box Edition

For CloudBond 365 Standard/Standard+ Box Edition installed on the AudioCodes Mediant 800 server, the domain controller resides on the **Host server**. The password change applies to the host server and the domain controller's Administrator's account.

➢ **To change the CloudBond 365 Standard/Standard+ Box Edition Administrator password on the domain controller:**

1. Press Ctrl-Alt-Delete.
2. Select the **Change a password…**option.
3. In the appropriate fields, enter the following:
   - Old Password
   - New Password
   - Confirm Password
4. Press **Enter**.

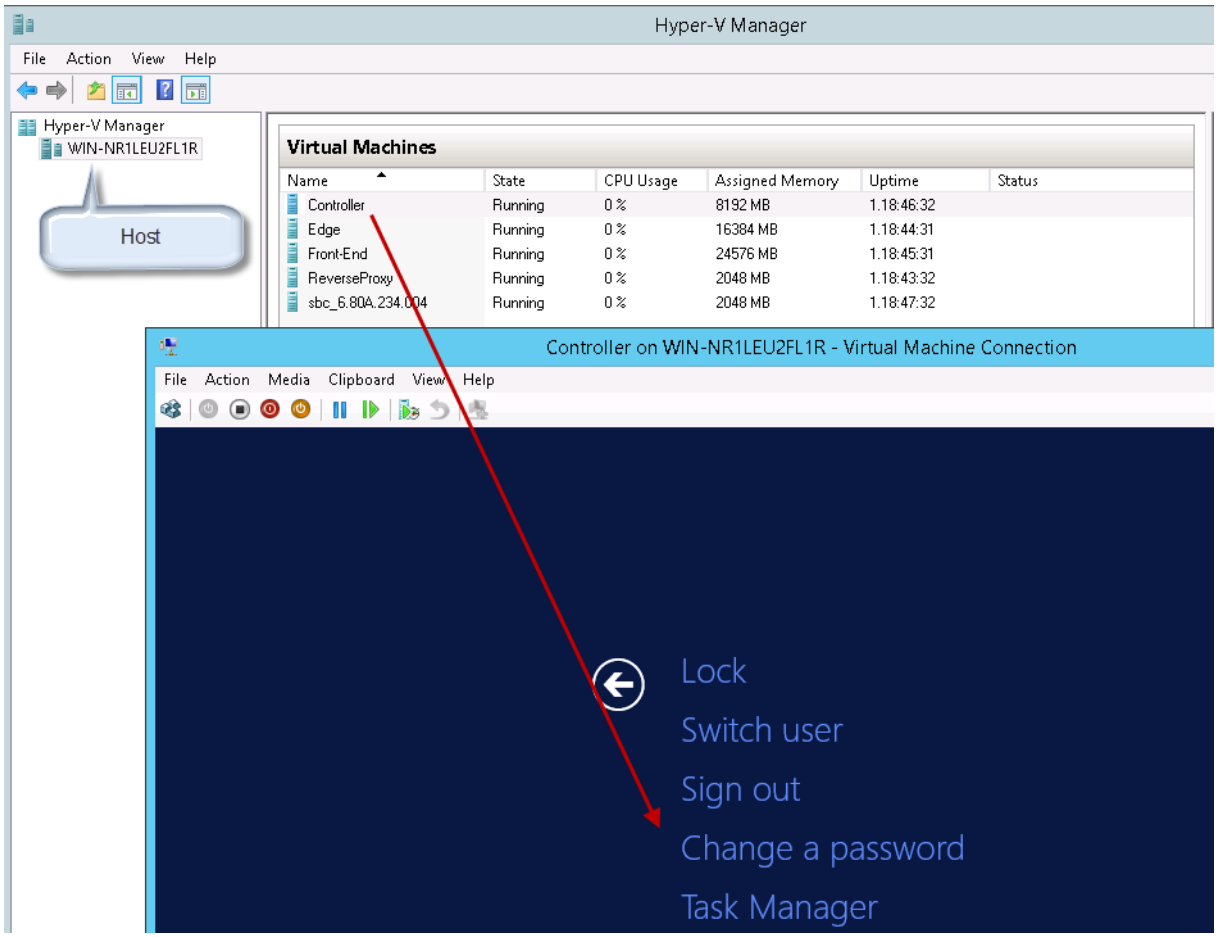
10.2 CloudBond 365 Pro and Enterprise Box Editions

For CloudBond 365 Pro and Enterprise Box Editions installed on HP servers, the domain controller is configured as a separate virtual server. The domain Administrator's password should therefore be changed on the domain controller's virtual server first.

➢ **To change the CloudBond 365 Pro and Enterprise Box Editions Administrator password on the Domain Controller:**

1. Open Hyper-V Manager.
2. Select the domain controller.

Figure 10-1: Changing Password on Domain Controller - Pro and Enterprise Box Editions



3. Press Ctrl-Alt-Delete
4. Select the **Change a password** option.
5. In the appropriate fields, enter the following:
   - Old Password
   - New Password
   - Confirm Password
6. Press **Enter**.

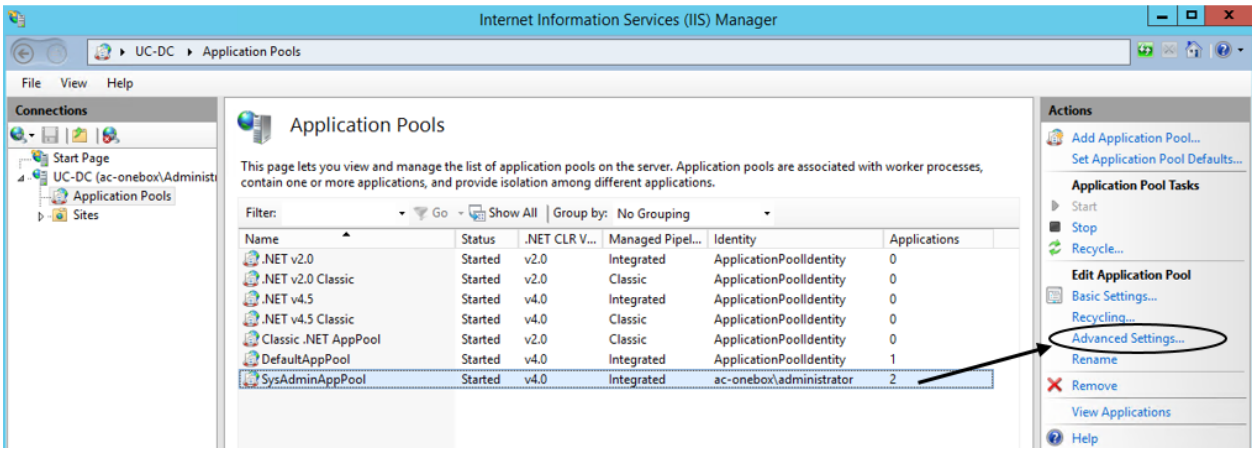
11 Changing Password on IIS Manager

The procedure below describes how to change the CloudBond 365 Administrator password on the Internet Information Services (IIS) Manager.

➢ **To change CloudBond 365 Administrator password on the IIS Manager:**

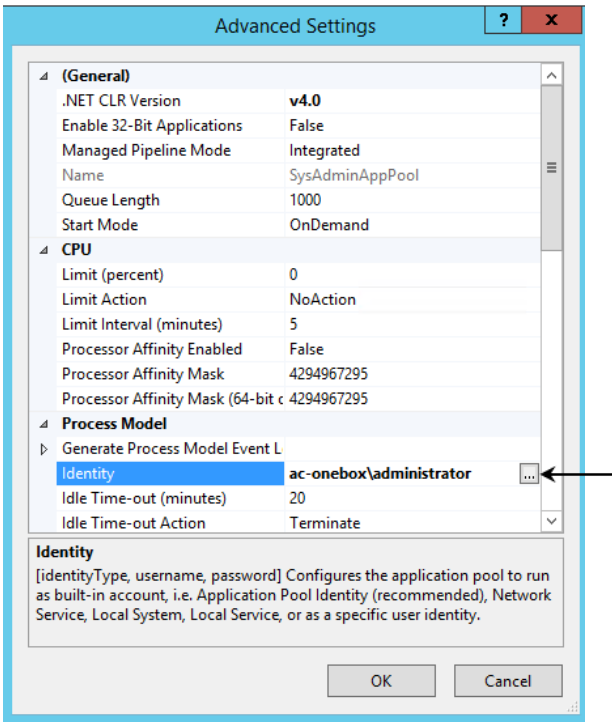
1. On the CloudBond 365 domain controller, open the IIS management console *(%windir%\system32\inetsrv\InetMgr.exe)*
2. Under the Server node, select **Application Pools**; the following page appears:

Figure 11-1: Changing Password on IIS Manager



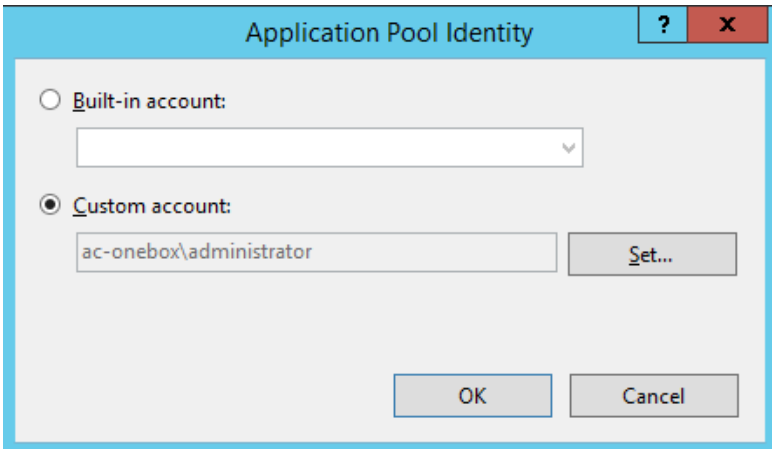
3. Select **SysAdminAppPool**.
4. In the 'Actions' pane, click **Advanced Settings**; the following page appears:

Figure 11-2: Advanced Settings



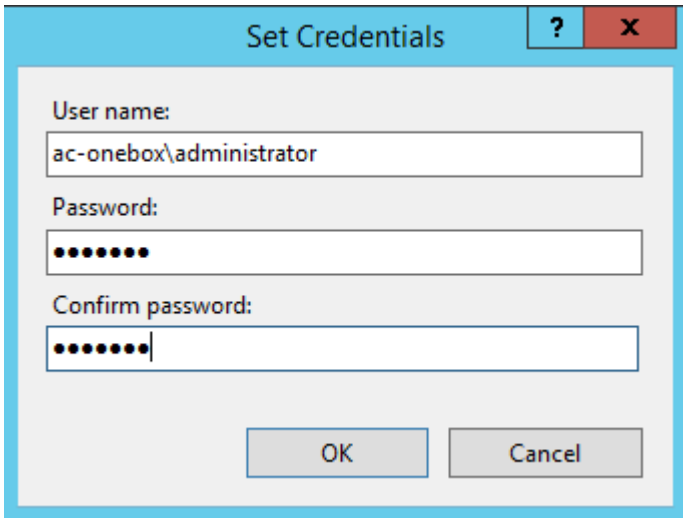
5. Click the **Browse** button (**…**) corresponding to the 'Identity' account; the following screen appears:

Figure 11-3: Application Pool Identity



6. Click the **Custom account** option and then click **Set…**.'; the following screen appears:

Figure 11-4: Set Credentials



7. In the 'User name' field, enter the account in **<domain>\administrator** format.
8. Enter the new password in the 'Password' and 'Confirm password' fields, and then click **OK**.
9. Click **OK** on the previously opened screens (Application Pool Identity and Advanced Settings).

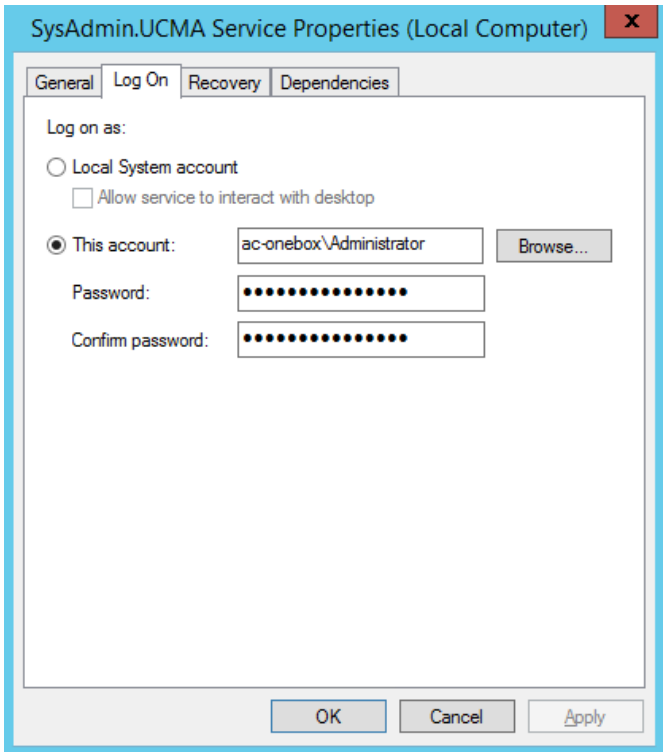
12 Changing Password on Domain Controller Windows Services

The procedure below describes how to change the AudioCodes CloudBond 365 Administrator password in Domain Controller Windows Services.

➢ **To change the CloudBond Administrator password on Domain Controller Windows Services:**

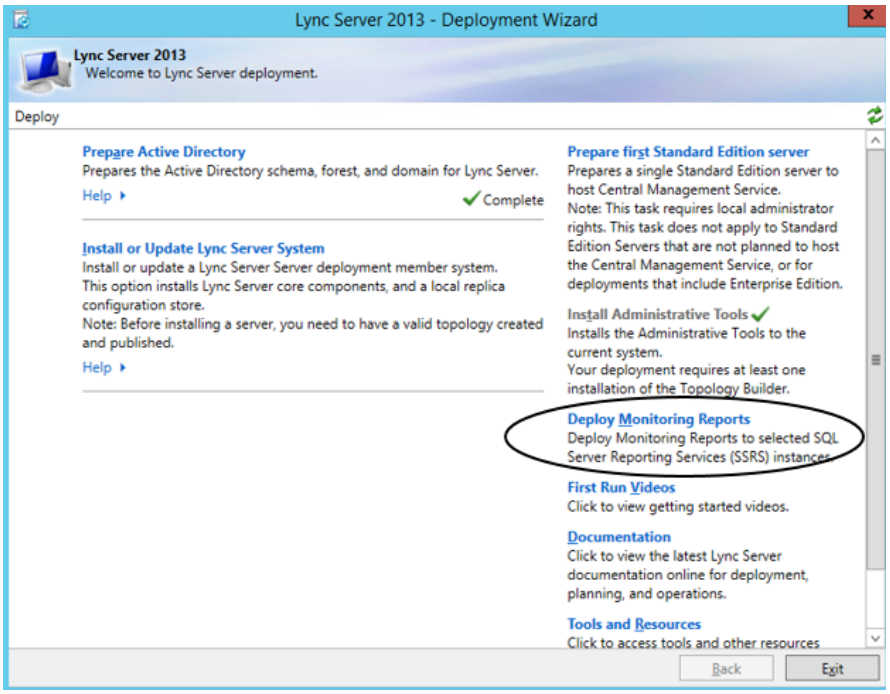
1. In the CloudBond Domain Controller, open the Services Management console.
2. Change the password in the following services:
   - SQL Server (MSSQLSERVER)
   - SQL Server Agent (MSSQLSERVER)
   - SQL Server Reporting Services (MSSQLSERVER)
   - SysAdmin.UCMA Service

Figure 12-1: SysAdmin.UCMA Service



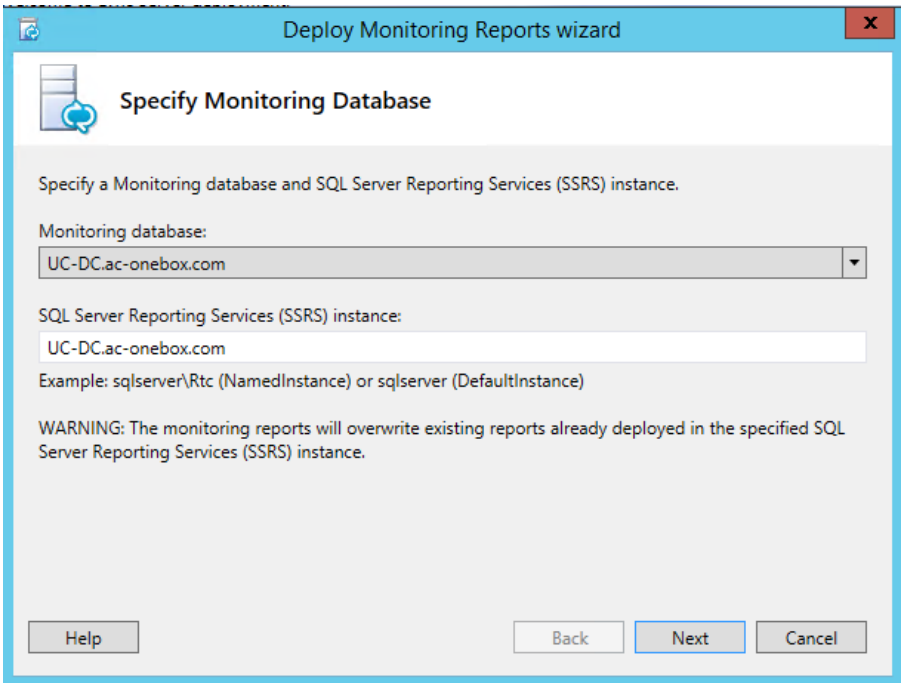
3. Run the 'Lync Server Deployment Wizard'.

Figure 12-2: Lync Server Deployment Wizard



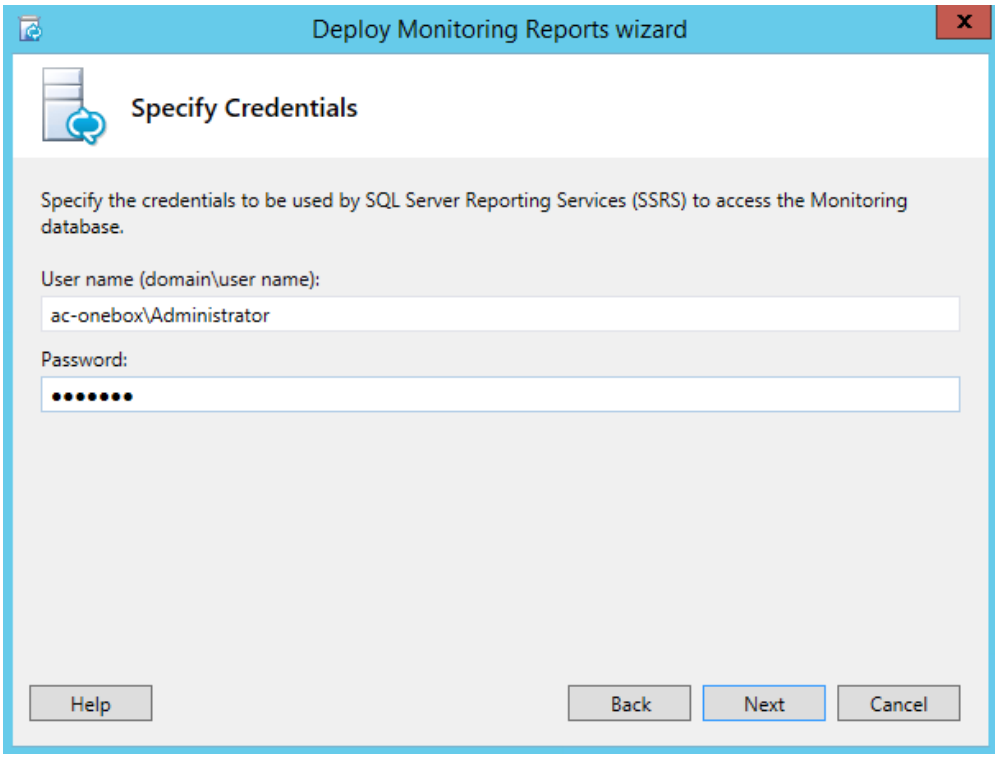
a. From the Welcome to Lync Server deployment page, click **Deploy Monitoring Reports**; the following screen appears:

Figure 12-3: Deploy Monitoring Reports Wizard



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

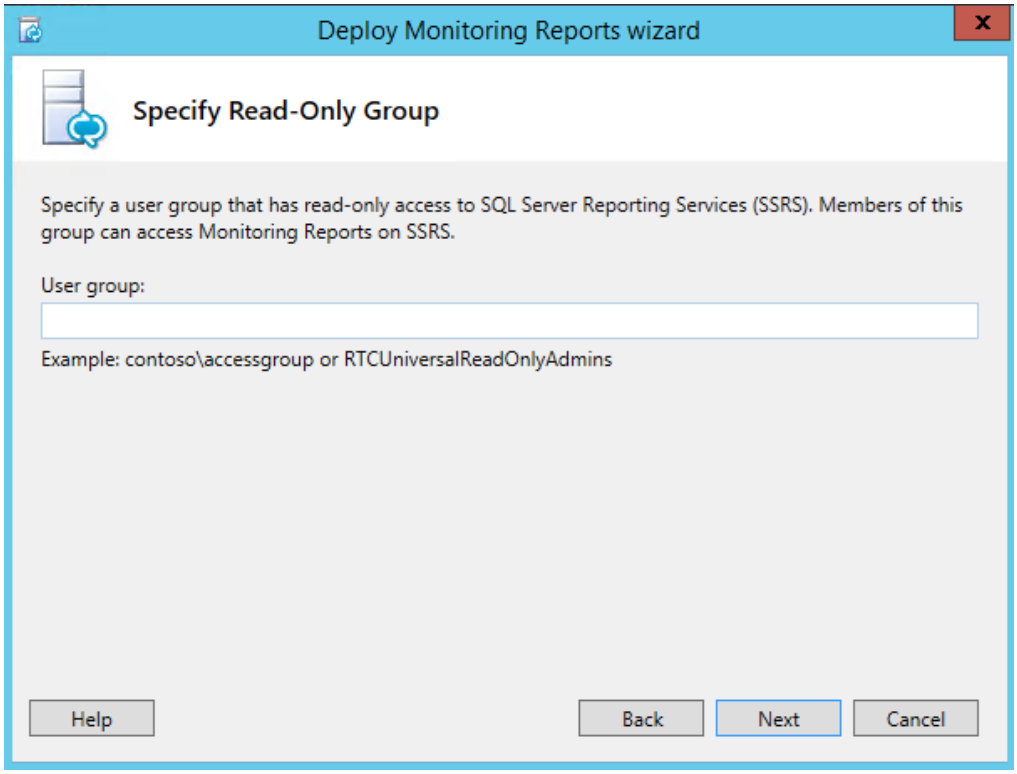
Figure 12-4: Specify Credentials



c. In the 'User name' field, enter the account in **<domain>\administrator** format.

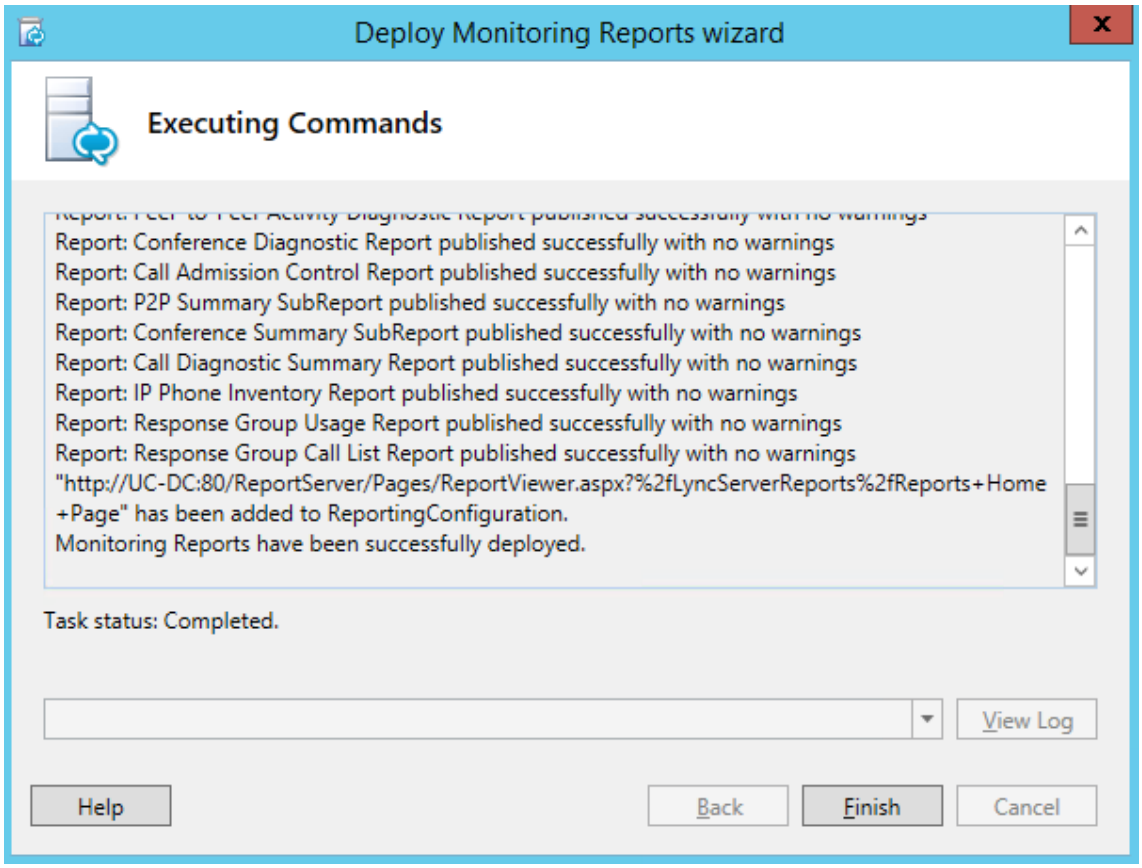
d. In the 'Password' field, enter your password, and then click **Next**; the following screen appears:

Figure 12-5: Specify Read-Only Group



e. In the 'User group' field, enter a user group that has read-only access to SQL Server Reporting Services (SSRS); and then click **Next**; the following screen appears:

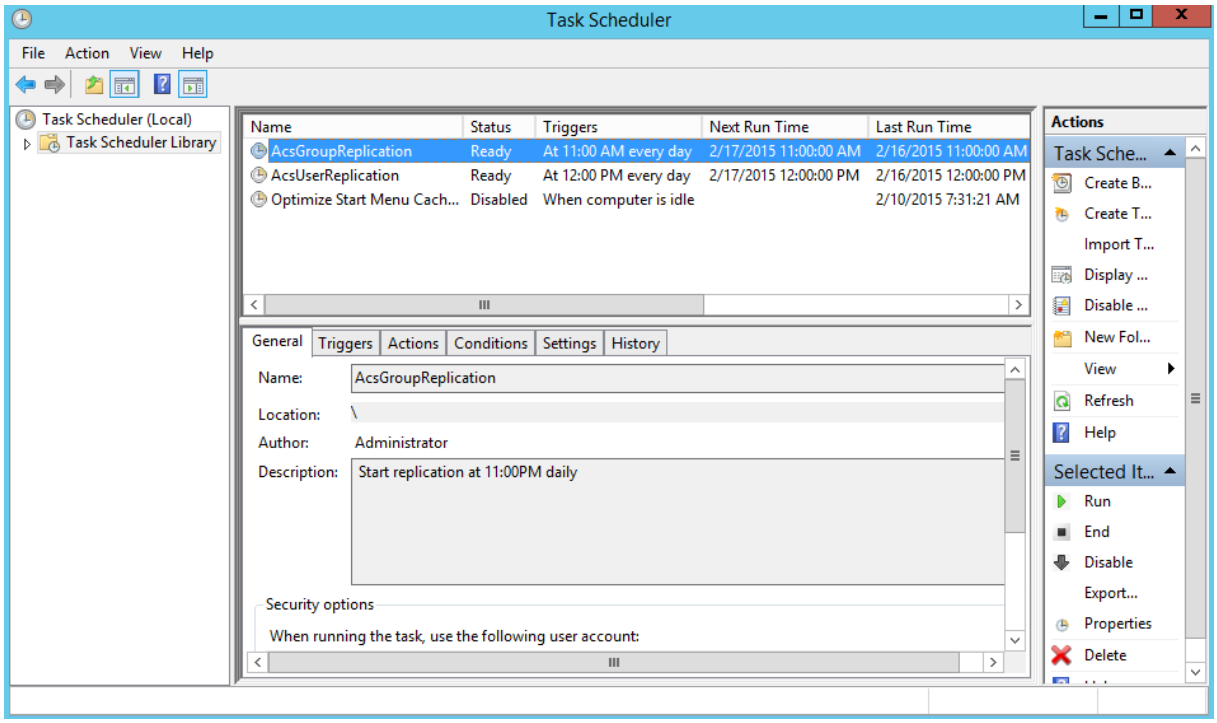
Figure 12-6: Executing Commands



f. Click **Finish**.

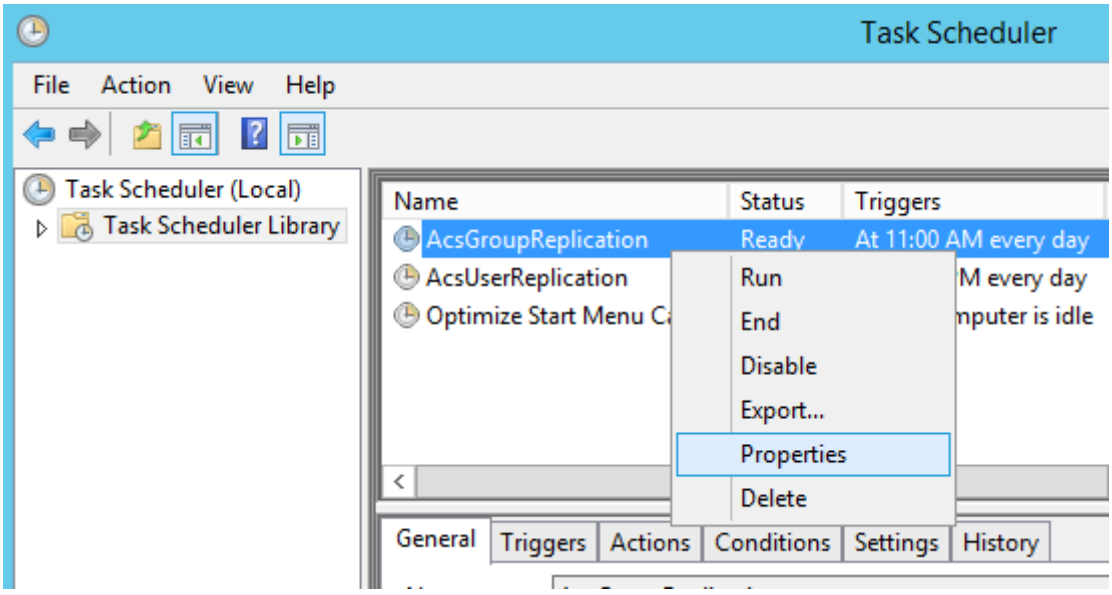
4. Open the **Task Scheduler**; the following screen appears:

Figure 12-7: Task Scheduler



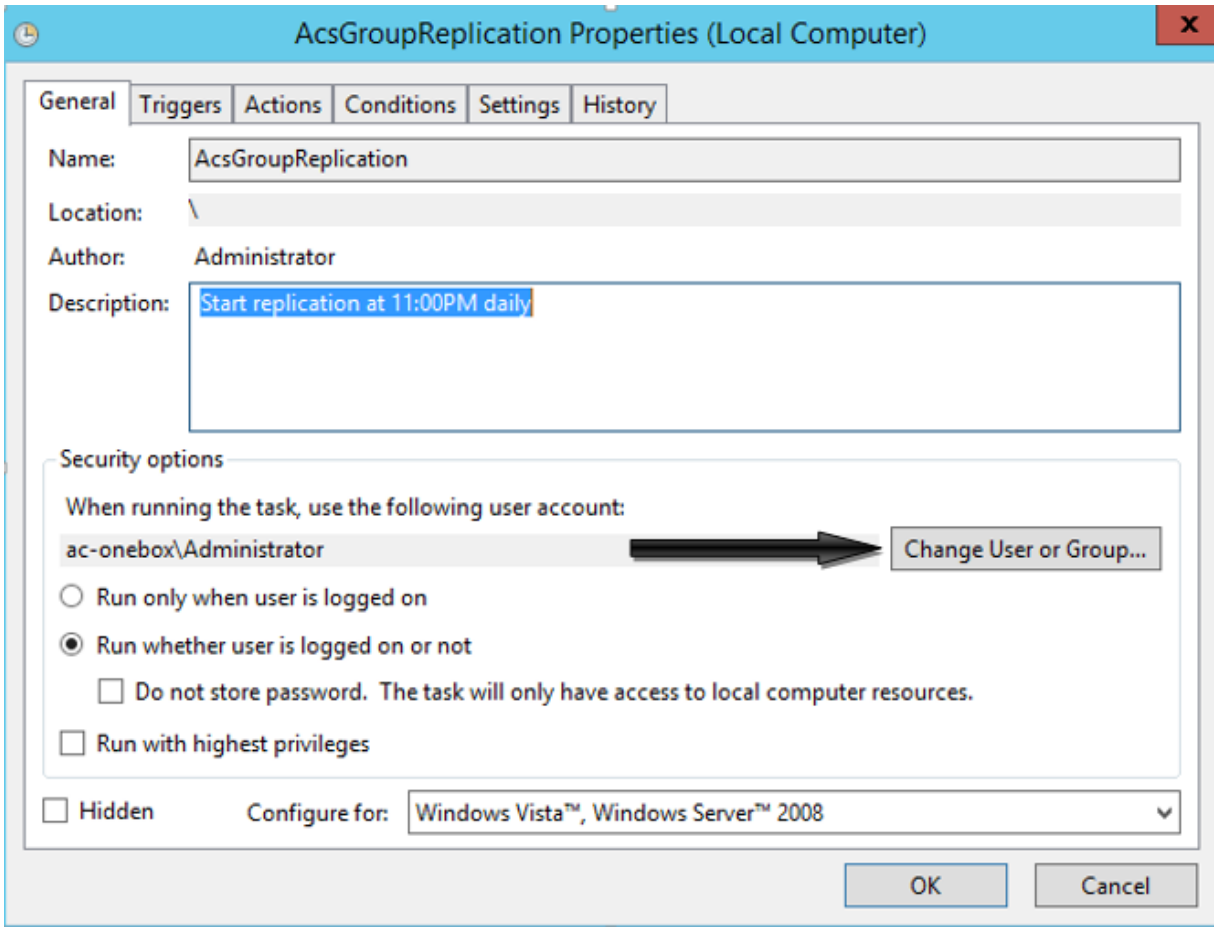
5. Right-click on the **ACSGroupReplication** rule and select **Properties**.

Figure 12-8: ACSGroupReplication Rule - Properties



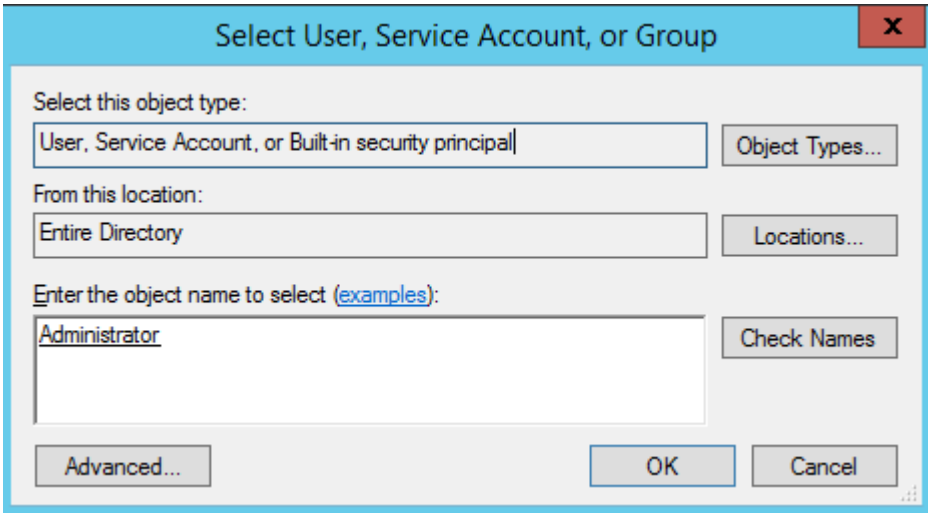
6. Click **Change User or Group**.

Figure 12-9: ACSGroupReplication Properties



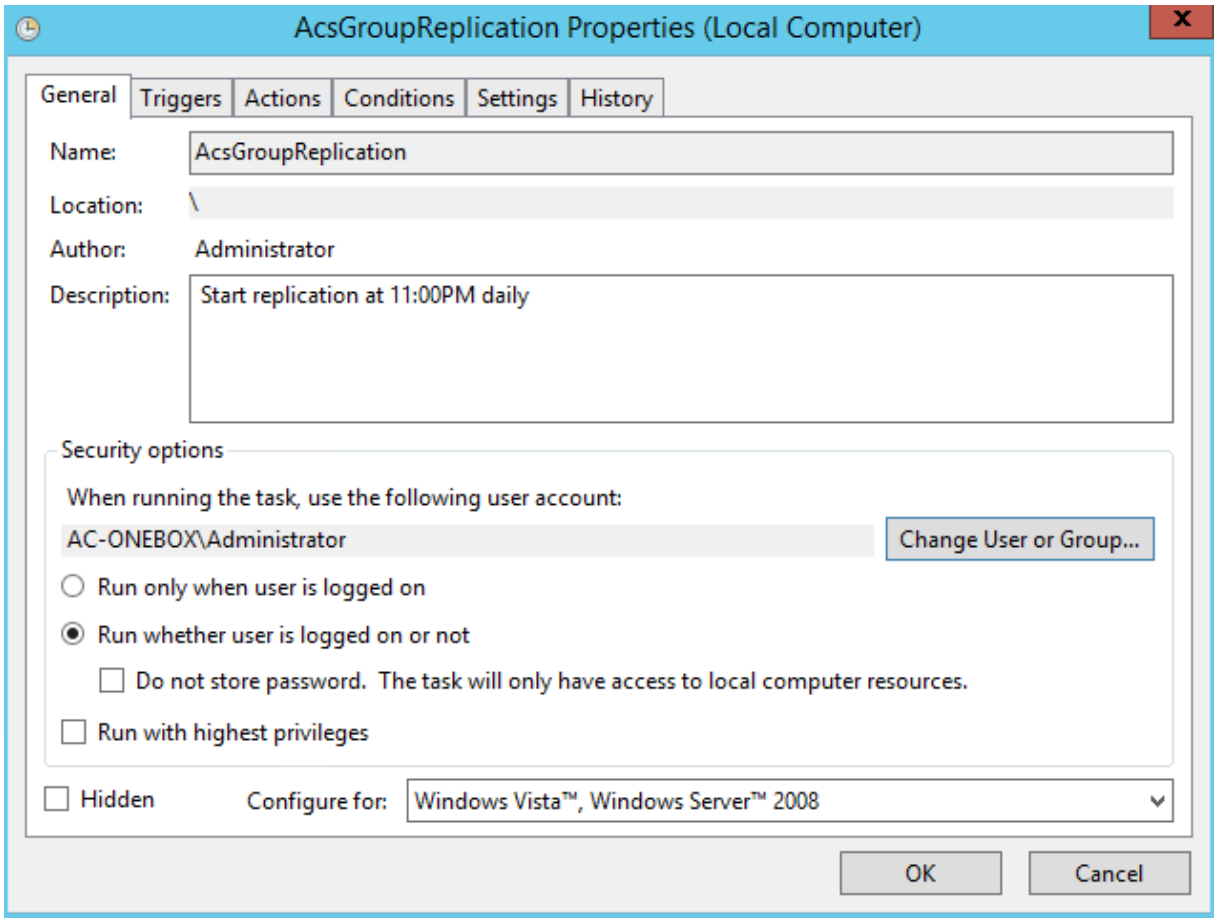
7. In the 'Enter the object name to select' field, enter "Administrator", and then click **Check Names**:

Figure 12-10: Select User, Service Account, or Group

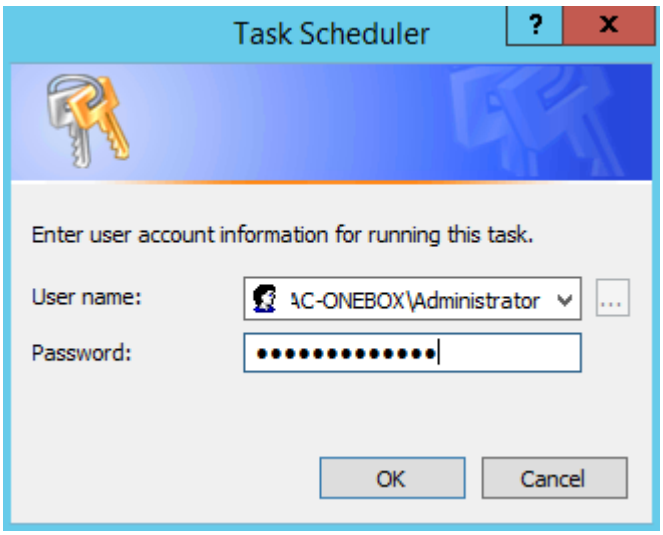


8. Click **OK**; the following screen appears:

Figure 12-11: ACSGroupReplication Properties (Local Computer)



9. Click **OK**.
10. In the 'Password' field, enter the new administrator password, and then click **OK**:



11. Repeat steps 5 - 10 for the **AcsUserReplication** rule, by first right-clicking on the **AcsUserReplication** rule and selecting **Properties** (see **Figure 12-7: Task Scheduler**).

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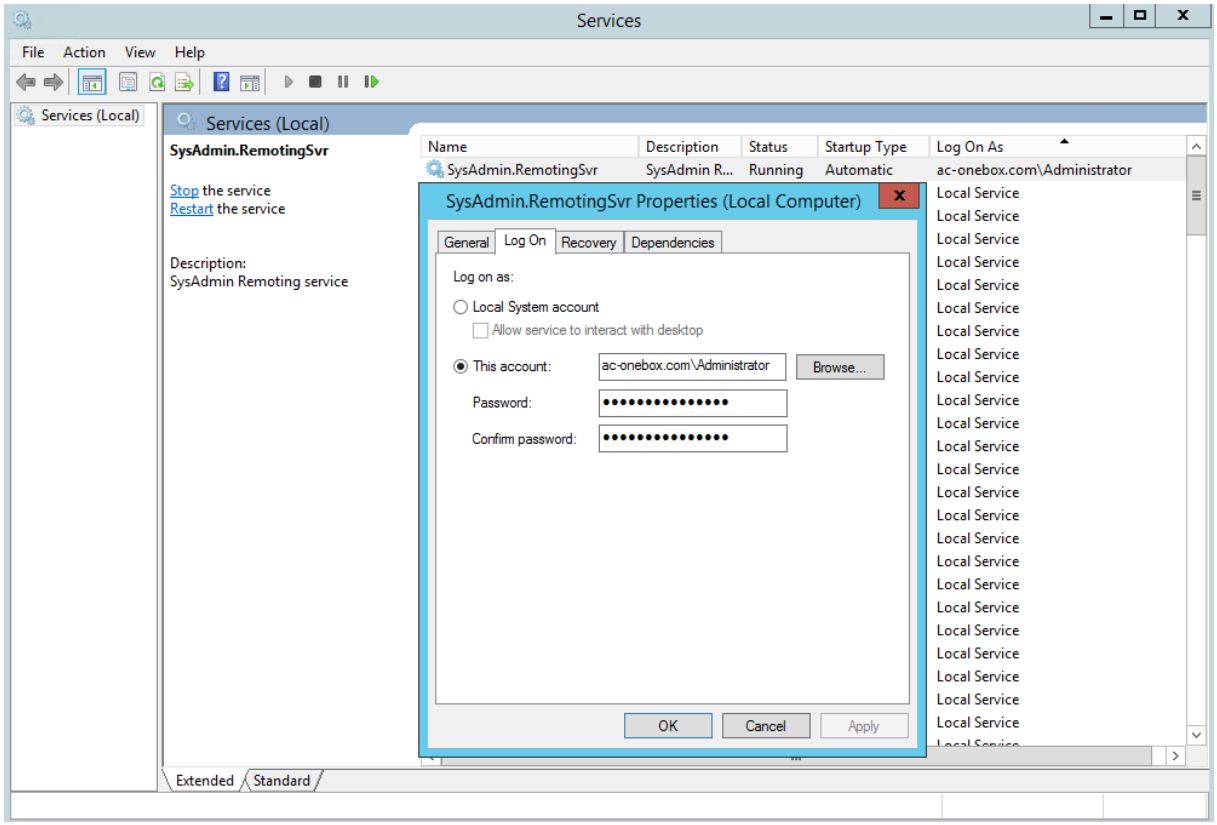
13 Changing Password on Front End

The procedure below describes how to change the AudioCodes CloudBond 365 Administrator password in the Front End Windows Services.

➢ **To change the CloudBond Administrator password in the Front End Windows Services:**

1. From the CloudBond Front End windows services, open the Services Management console.
2. Click **SysAdmin.RemotingSvr**.
3. Click the **Log On** tab.
4. Click the **This account** option.
5. In the 'Password' and 'Confirm password' fields, enter the new password.
6. Click **OK**.

Figure 13-1: SysAdmin.RemotingSrv Properties (Front End)



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14 Changing Password on Edge Server

The procedure below describes how to change the AudioCodes CloudBond 365 Administrator password in Edge Windows Services.

Please note that the Edge Administrator account is a local user as the Edge server is not part of the Domain. This means that changing the default password for the Administrator in the domain, does not automatically change the password for the Administrator on the Edge machine. Both administrator accounts can have different passwords.

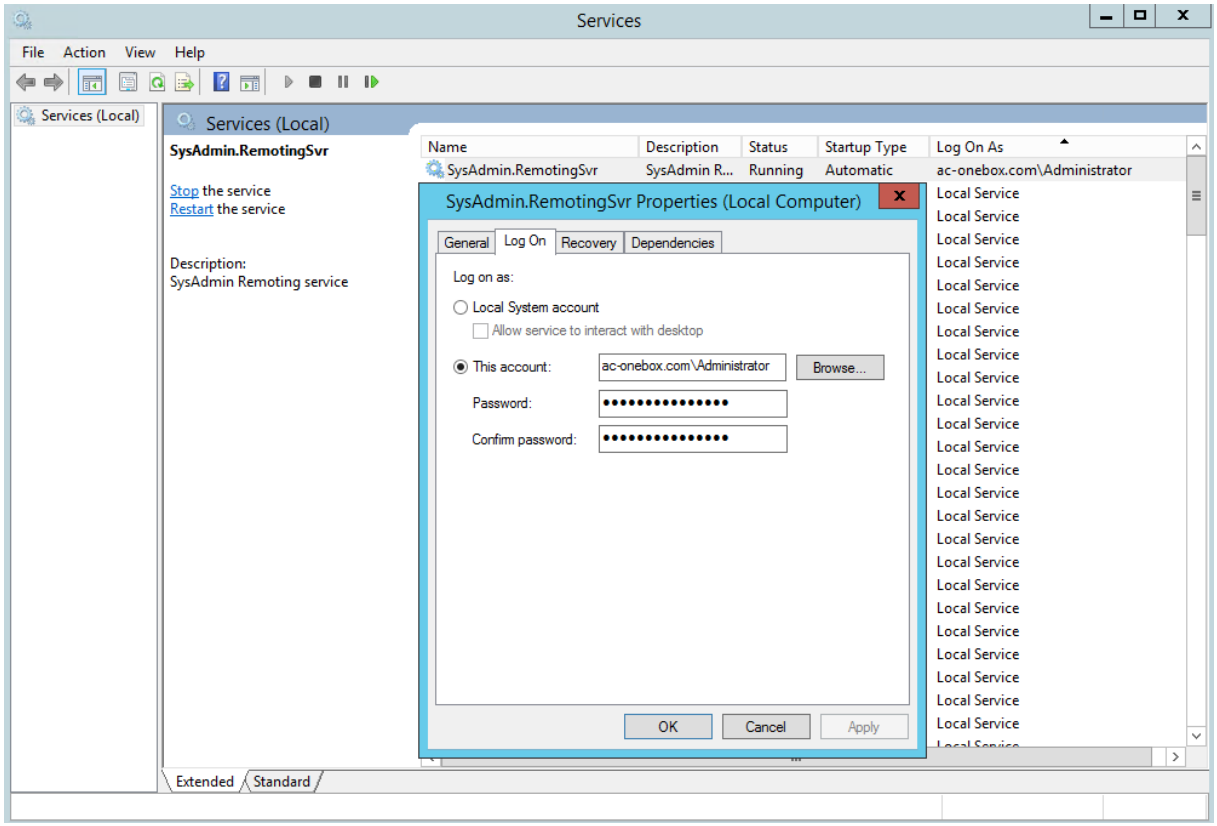
However, if you would like to adapt local administrator's password with the new domain Administrator's password you need to:

Change local administrator's password by pressing CTRL+Alt+Del and then 'Change Password' and then correlate the credentials of Edge Windows services with the new Administrator's password.

➢ **To change the CloudBond Administrator password on the Edge Windows Services:**

1. From the CloudBond Edge Services, open the Services Management Console.
2. Click **SysAdmin.RemotingSvr**.
3. Click the **Log On** tab.
4. Click the **This account** option.
5. In the 'Password' and 'Confirm password' fields, enter the new password.
6. Click **OK**.

Figure 14-1: SysAdmin.RemotingSrv Properties (Edge Windows)



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15 Changing Password on BPA

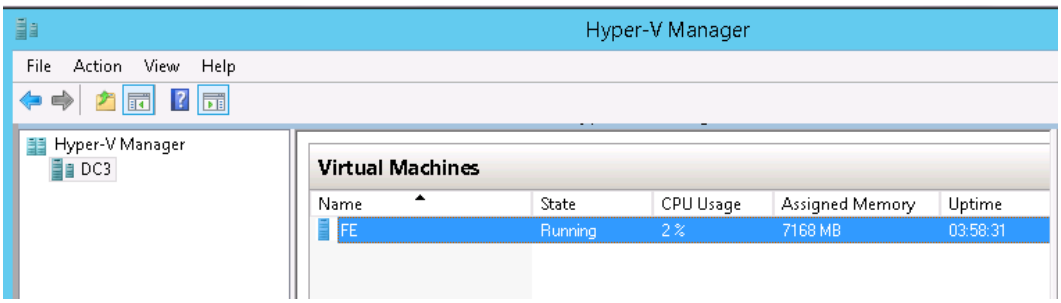
In a CloudBond 365 Branch Pool Appliance (BPA) deployment, there is one primary domain controller and a secondary domain controller. To change the Administrator's password on the primary domain controller, perform the procedures in Sections 10 to 14.

If you need to change the Administrator's password on the paired CloudBond 365 server, perform the procedures in Sections 10 to 14.

Note: Not all components on the secondary CloudBond 365 server are mandatory and therefore do not require a password change.

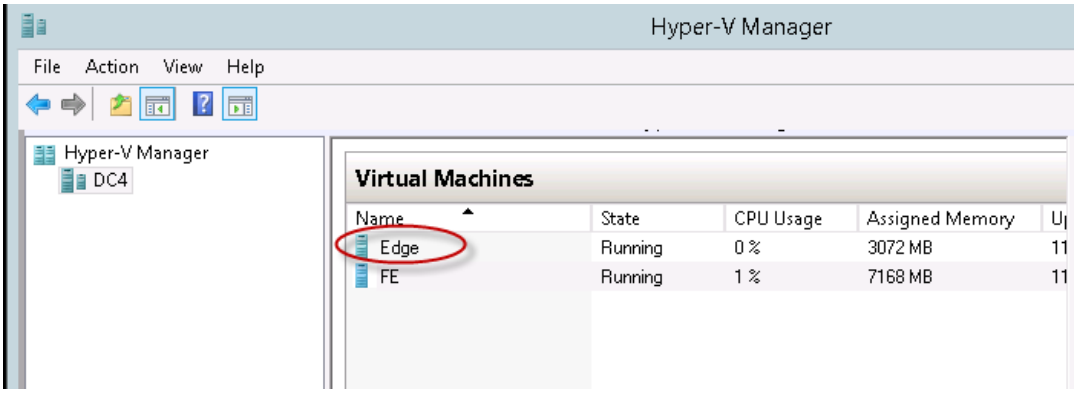
In the following screenshot, the CloudBond server (DC3) server does not have an Edge server:

Figure 15-1: Paired Domain Controllers with No Edge Server



On a paired CloudBond 365 installed on a Mediant 800 server, the Edge server is not mandatory. paired CloudBond 365 may use the Edge server of the primary CloudBond 365 server). In this case, Edge server adjustments described in Section 14 are not relevant.

Figure 15-2: Paired Domain Controllers with an Edge Server



On a paired CloudBond 365 installed on a Mediant 800 server, there is no database and therefore SQL services described in Section 12 - 2 are not relevant.

On a paired CloudBond 365 installed on a Mediant 800 server, there is no database and therefore SQL services described in Section 12 - 3 are not relevant.

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16 Changing EMS Agent Password

In case your AudioCodes CloudBond 365 is managed by the AudioCodes Element Management System (EMS) you will need to update the password that is used by the EMS Agent.

➢ **To change the EMS Agent password:**

1. Connect to the CloudBond 365 Domain Controller (DC) server
2. Open the command shell from the **Start** menu.
3. Run the command:

   C:\Program Files\Audiocodes\MainAgent\Scripts\change_user_and_password.bat `<new_username> <new_password>`

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17 Verifying Password Change

When verifying a password change:

- Ensure that you can successfully log in to CloudBond's sysadmin tool.
- Verify that you can successfully create a new user
- Ensure that you can successfully log in to CloudBond's domain controller through Remote Desktop Connection.

For BPA setup, verify that any change you perform on one server is successfully replicated on the secondary server.

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Part III

Connecting to Servers

18 Introduction

This part describes various methods of connecting to the server desktops within AudioCodes CloudBond 365™.

This process is necessary to perform some Skype for Business specific tasks, such as Adding or Changing a SIP domain via Skype for Business Topology Builder.

This guide provides information such as:

- How to use the rear KVM ports on AudioCodes CloudBond 365 Standard/Standard+ Box Editions
- How to use the rear KVM ports on AudioCodes CloudBond 365 Pro and Enterprise Editions
- How to access virtual machine desktops via Hyper-V
- How to enable RDP on each server
- How to start an RDC session on your local PC
- How to connect to the AudioCodes CloudBond 365 Controller server
- How to end your RDP session

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19 CloudBond 365 Desktop Access

CloudBond 365 will occasionally require access to the Desktop / Console environment of the various components servers (Host, Controller, Front-End, Edge, Reverse Proxy, SBC).

CloudBond 365 provides a Web based management suite (SysAdmin) to reduce the need for such access on a day to day basis. However, there are still times when access to desktop utilities are required. For example:

- Setting time and time zone on each server
- Initial Deployment of CloudBond 365
- Accessing Skype for Business Topology Builder
- Accessing Skype for Business Management Shell
- Accessing Skype for Business Deployment Wizard
- Debugging activities

The above activities are infrequently carried out, and are usually associated with initial installation, or with major configuration changes.

The most common, infrequent, tasks can usually be carried out on the Controller server alone.

The Deployment Wizard must be run on the FE and Edge servers independently. It cannot be run remotely.

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/Standard+ Editions (e.g., AudioCodes Mediant 800B OSN server).

Note: The SBC is a Linux based server. Hyper-V can be used to view its console, but an RDP connection cannot be established to this server.

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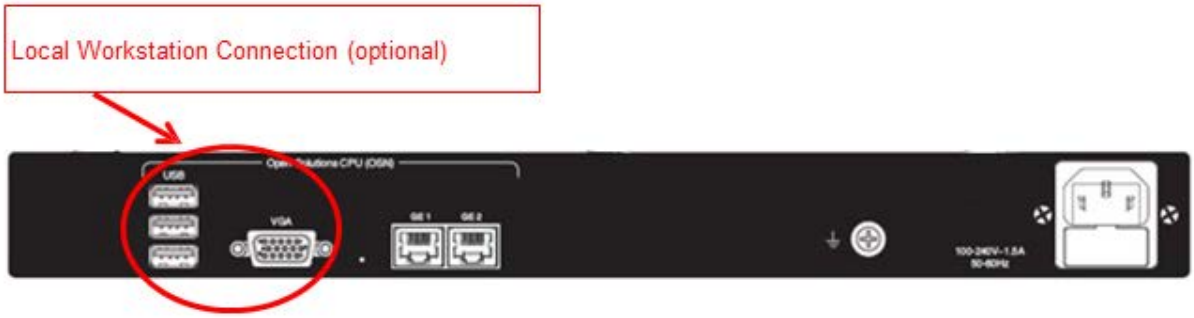
20 Rear KVM Ports

One method of accessing the CloudBond 365 server Desktops is by using the rear KVM (Keyboard, Video, Mouse) ports on the physical CloudBond 365 device. The KVM device may be a specific KVM appliance within a server rack servicing several devices, or it may be a dedicated monitor, keyboard and mouse. Each customer will have different requirements.

Depending upon where the device is located, this may or may not provide convenient access. During initial installation and deployment, it may be more convenient to enable Remote Desktop (RDP) Access, as described in the following chapter. To enable RDP, you will first need to use the rear KVM ports. After enabling RDP, the rear KVM equipment can then be disconnected.

20.1 CloudBond 365 Standard/Standard+ Editions

Figure 20-1: CloudBond 365 Standard/Standard+ Editions Rear View

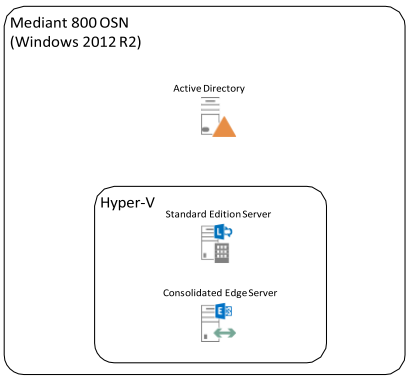


The CloudBond 365 Standard Edition device uses the **Co-Located Hyper-V / Domain Controller with Virtual Machines** deployment model. This deployment model installs the CloudBond 365 Controller (DC) and Hyper-V within the host machine, with the remaining CloudBond 365 Servers (FE and Edge) as Hyper-V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

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

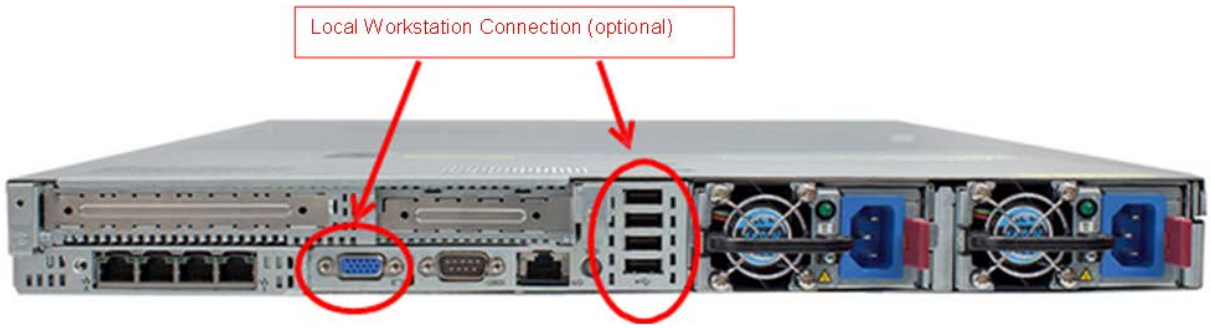
With this Deployment model, the rear KVM ports connect directly to the CloudBond 365 Controller (UC-DC). The controller runs Hyper-V, so Hyper-V manager can be used to provide access to the Front-End (FE) and Edge server desktops.

Figure 20-2: Co-located DC and Hyper-V



20.2 CloudBond 365 Pro-Enterprise Edition

Figure 20-3: Rear View

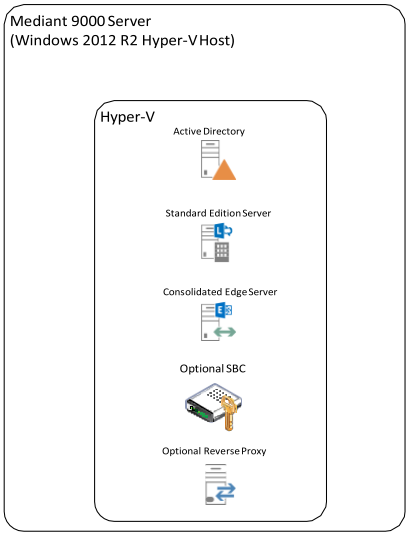


The CloudBond 365 Pro and Enterprise Edition devices will typically use the **Hyper-V Host with Virtual Machines** deployment model. This deployment model installs Hyper-V on the selected host machine, and the three CloudBond 365 Servers (Controller, FE, and Edge) as three separate virtual machines within Hyper-V.

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

With this deployment model, the rear KVM ports provide access to the Hyper-V host only. To access the CloudBond 365 server Desktops, the Hyper-V Management Utility must be used.

Figure 20-4: Hype-V Host with Virtual Machines



21 Remote Desktop Protocol (RDP)

21.1 What is RDP?

Remote Desktop Protocol is a Microsoft desktop remote control protocol that allows you to connect with the desktop of a remote server or workstation, and operate the desktop as though you were physically present at the remote machine. A similar but independent protocol is also used to allow Desktop connection to Hyper-V guest Virtual Machines on the Host computer.

The client and server components, collectively known as Remote Desktop Services are supplied with recent versions of Windows, including Windows Vista, Windows 7, Windows 8, Windows 2003, Windows 2008, and Windows 2012.

The client for the RDP protocol is Remote Desktop Connection (mstsc.exe). This is a descendant of Microsoft Terminal Services Client, and can still be seen in the client executables name. RDC allows you to connect to another computer running the RDP Server role. RDC can connect to multiple servers simultaneously.

The server (host) component for the RDP protocol is configured through properties of the local computer or server. Typically these settings are found under Remote -> Remote Desktop, and specify whether RDP is enabled, and who can connect.

Remote Desktop Services also allow several other features beside just controlling the Desktop. Local resources, such as hard drives, sound devices, printers, the clipboard etc. can be made available to the remote host whilst the RDP session exists.

There are also some restrictions in place during an RDP session. These are typically minor, but in some circumstances may impact your work.

For example, RDP starts a new login session per user on the remote server. It does not let you view the physical console.

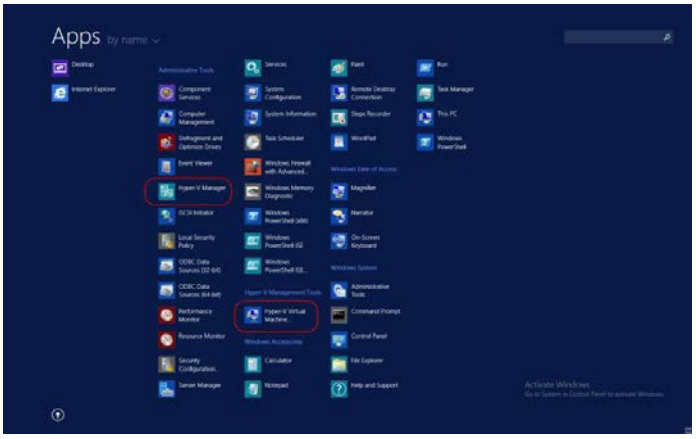
Console level access is not exactly the same as being at the physical console. (System tray icons may behave differently).

You cannot access the power button, or eject and insert CD's etc.

21.2 Access Virtual Machine Desktops using Hyper-V

If the server is acting as a Hyper-V host, then the **Hyper-V Virtual Machine Connection** or **Hyper-V Manager** utilities can be used to gain RDP like access to the guest Virtual Machine consoles. No further configuration is required to access this facility.

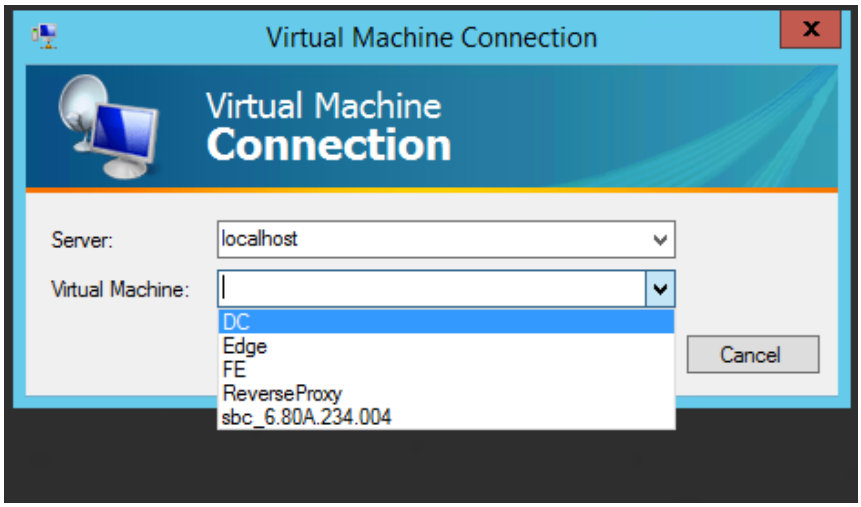
Figure 21-1: Hyper-V Host Desktop



21.2.1 Hyper-V Virtual Machine Connection

Hyper-V Virtual Machine Connection is the simplest method to use. Simply locate the utility in the start menu, Select the Host Server, then select the virtual machine. You will then be presented with the VM's login screens.

Figure 21-2: Hyper-V Virtual Machine Connection

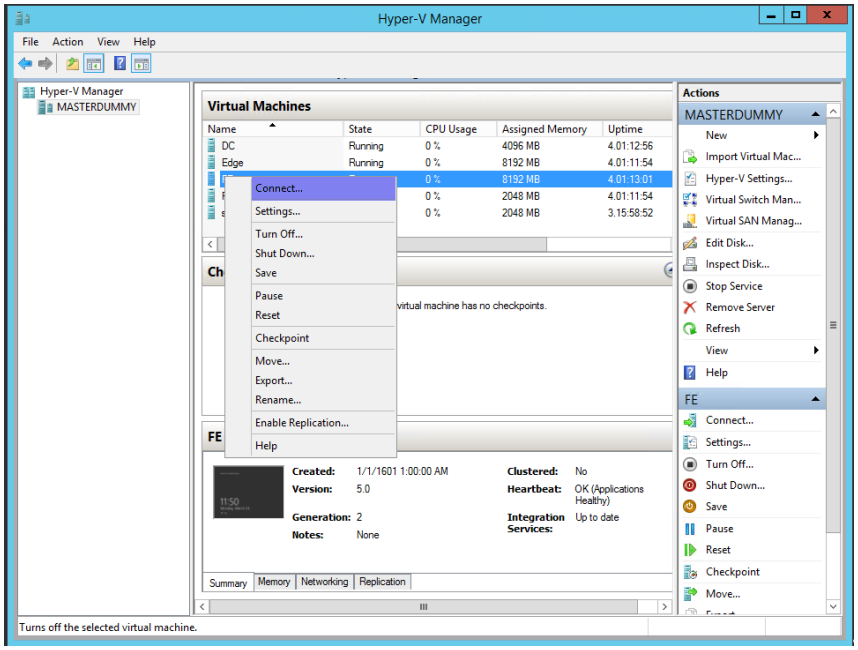


21.2.2 Hyper-V Manager

You can also use the Hyper-V Manager utility to access a virtual machine Desktop.

Locate the Hyper-V Manager in the start menu, then, in the list of virtual machines, either right click and choose Connect, or just double click the appropriate Virtual Machine.

Figure 21-3: Virtual Machines



21.2.3 Login Process

Once the connection to the VM is established, you will see the usual login screens. Tip: In full screen mode, use Ctrl-Alt-End, not Ctrl-Alt-Del.

Figure 21-4: Full screen Mode - Login Screen

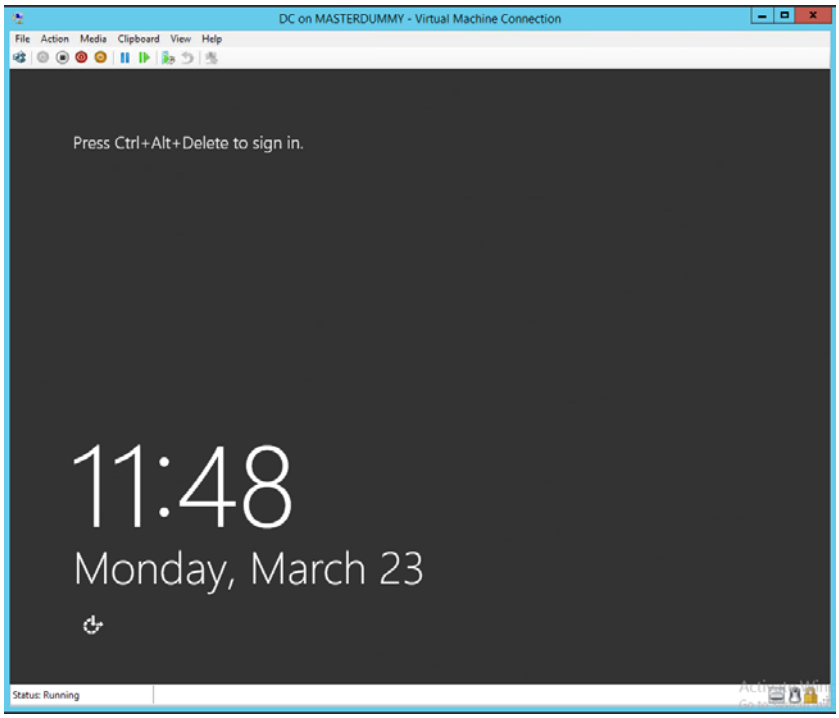
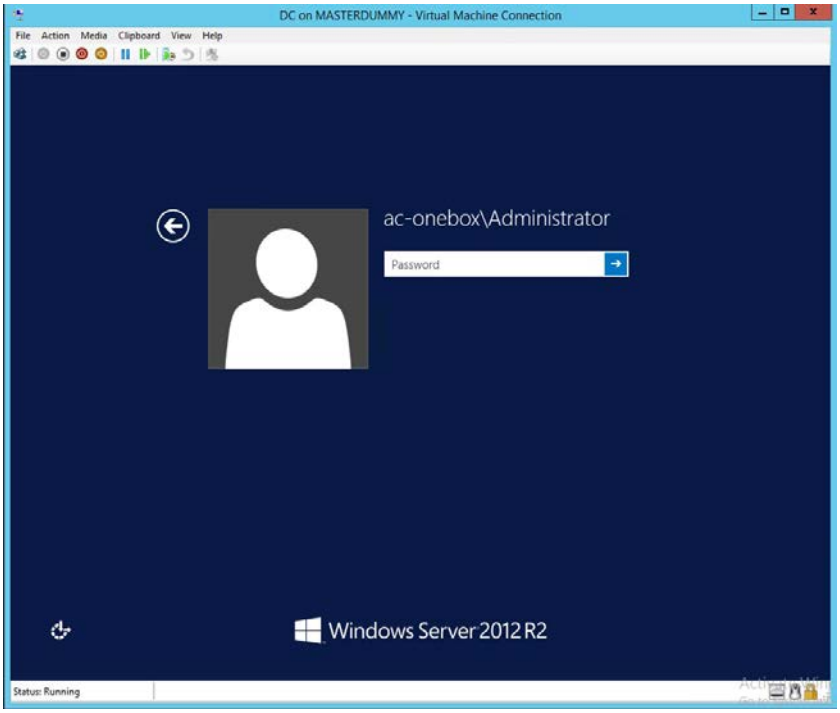


Figure 21-5: Login Screen – Username/Password



21.3 Enable RDP on Each Server

The RDP Server component is typically disabled by default on most windows versions for security reasons. If you wish to allow remote Desktop access directly to a server, you will need to enable and configure remote desktop services.

You may also need to modify the servers default firewall configuration.

Warning: Special care should be taken when enabling RDP on servers exposed to an external (untrusted) network, such as the Edge server which is connected to the DMZ.

Microsoft defaults for Windows Firewall rules typically split RDP access into two security sets based on network Profile. The first set of rules cover Domain and Private networks, the second set covers Public Networks. When enabling RDP Services, typically only the first set is enabled through the firewall. The public network access through the firewall is disabled by default.

Depending upon your network configuration, you may need to enable Public network profile access.

The Edge server is not a domain Member Server, so its internal network profile is usually classed as Public.

You should consider the following items prior to enabling RDP:

- IT policies and procedures
- Convenience of access to physical KVM ports
- Deployment model used: (**Co-Located Hyper-V / Domain Controller with Virtual Machines** or **Hyper-V Host with Virtual Machines**)
- Frequency of using Desktop access to perform tasks

You may elect to:

- Restrict desktop access to physical KVM ports only
- Allow RDP access to Hyper-V host server only
- Allow RDP access to the Controller server only (UC-DC)
- Allow RDP access to each individual server
- A combination of the above.

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22 Configuring Remote Desktop

This chapter describes the easiest method to configure the Remote Desktop Services.

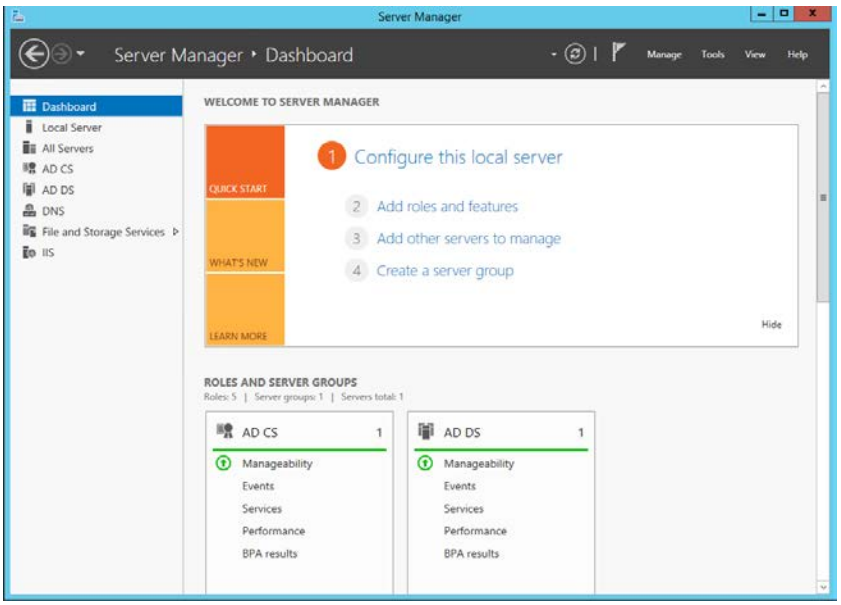
➢ **To configure Remote Desktop Services:**

1. Locate and start Server Manager.

Figure 22-1: Server Manager Icon on Desktop

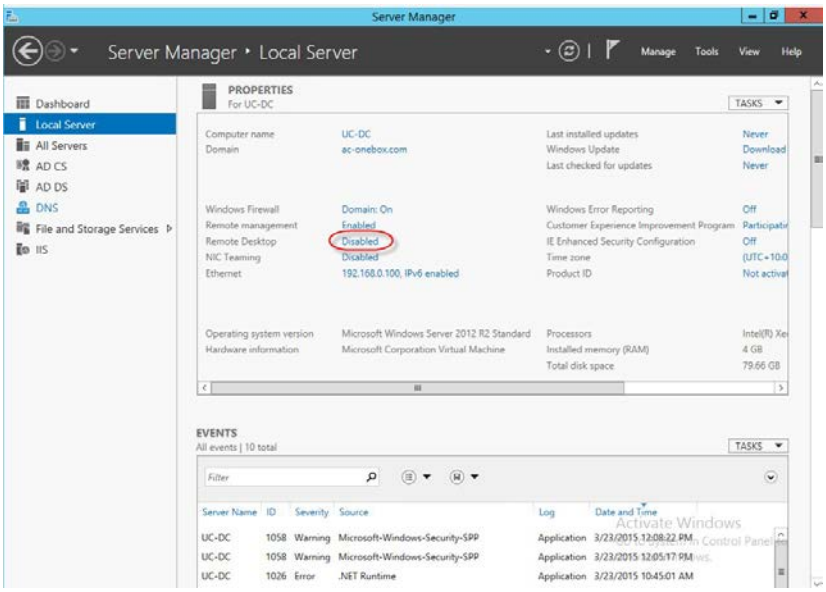
2. Select Local Server.

Figure 22-2: Server Manager Dashboard



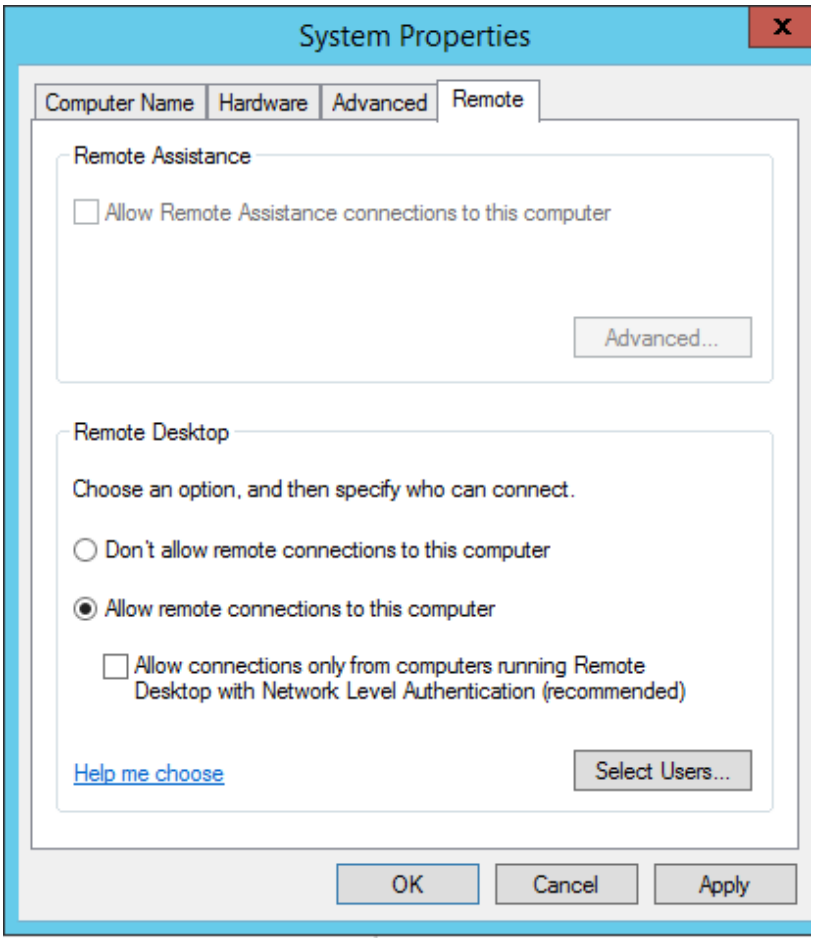
3. Find the Remote Desktop entry and click on Disabled link.

Figure 22-3: Server Manager - Local Server



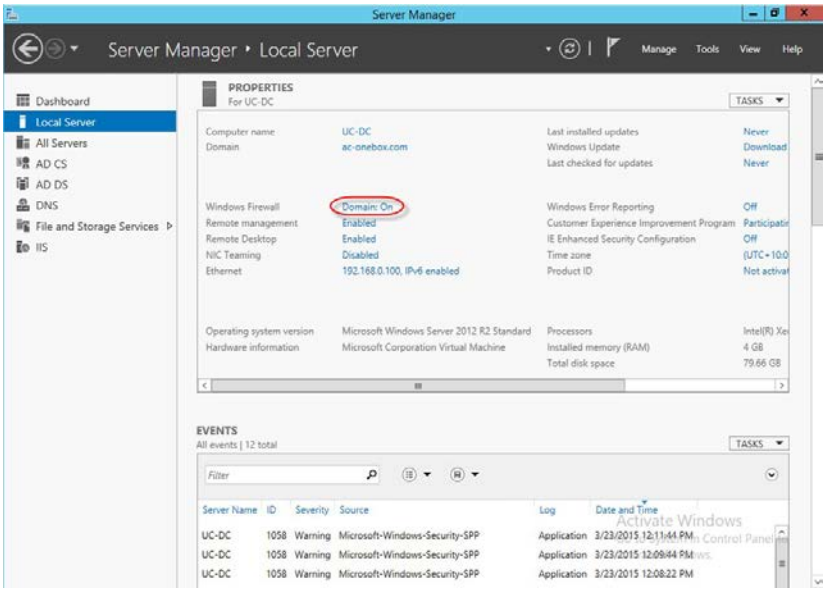
4. Select Allow Remote connections to use this computer.

Figure 22-4: Enable Remote Desktop



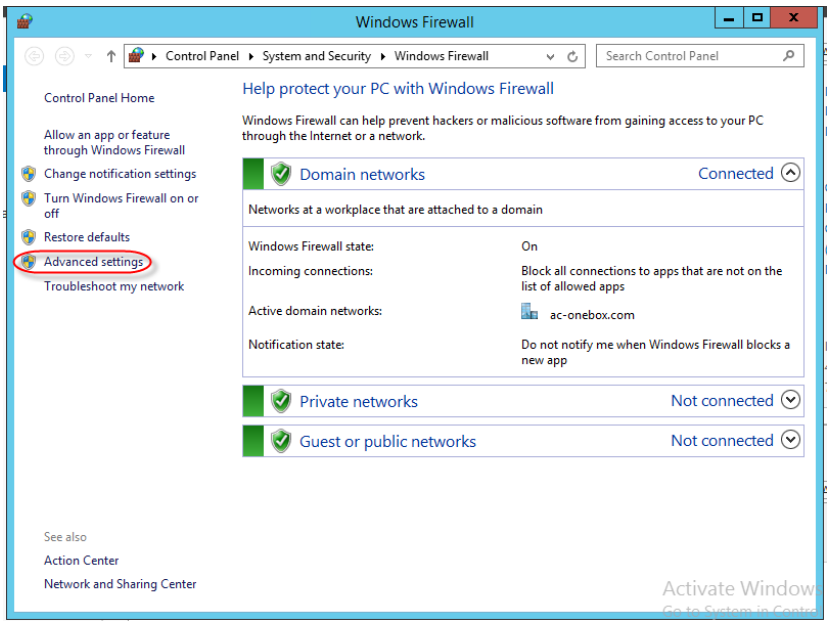
5. Click **OK**.
6. In Server Manager, find **Windows Firewall**, and then click on its link.

Figure 22-5: Server Manager - Windows Firewall



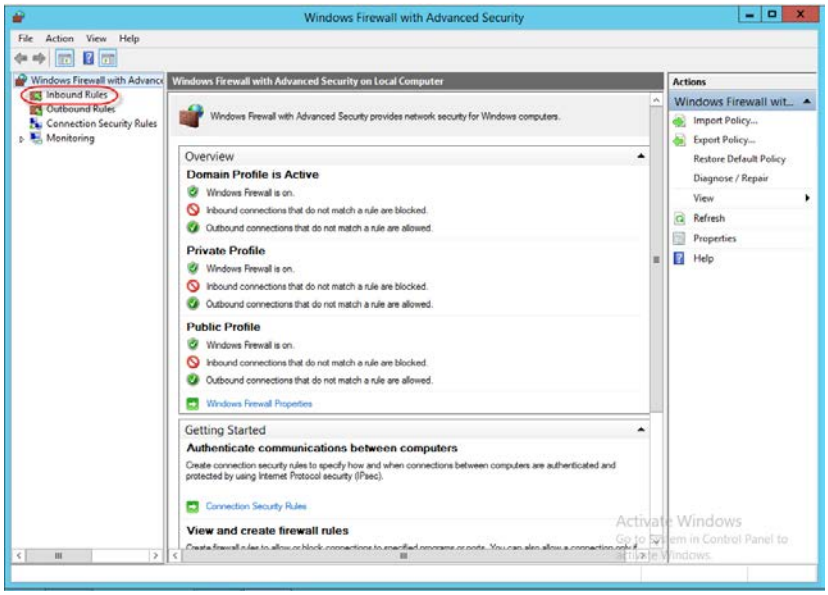
7. Click **Advance Settings**.

Figure 22-6: Windows Firewall Settings



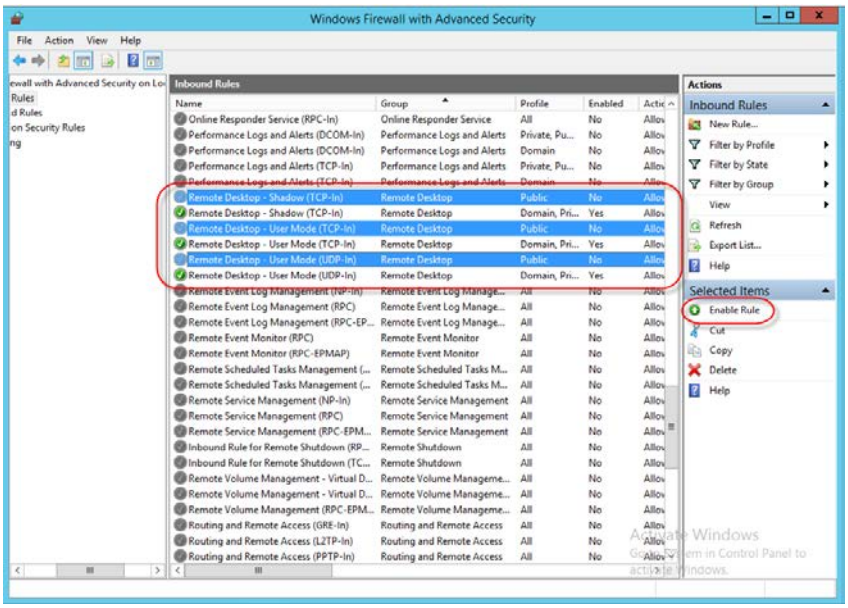
8. Click **Inbound Rules**.

Figure 22-7: Advanced Windows Firewall Settings



9. Scroll down until you locate the Remote Desktop Rules.

Figure 22-8: Inbound Rules - Remote Desktop

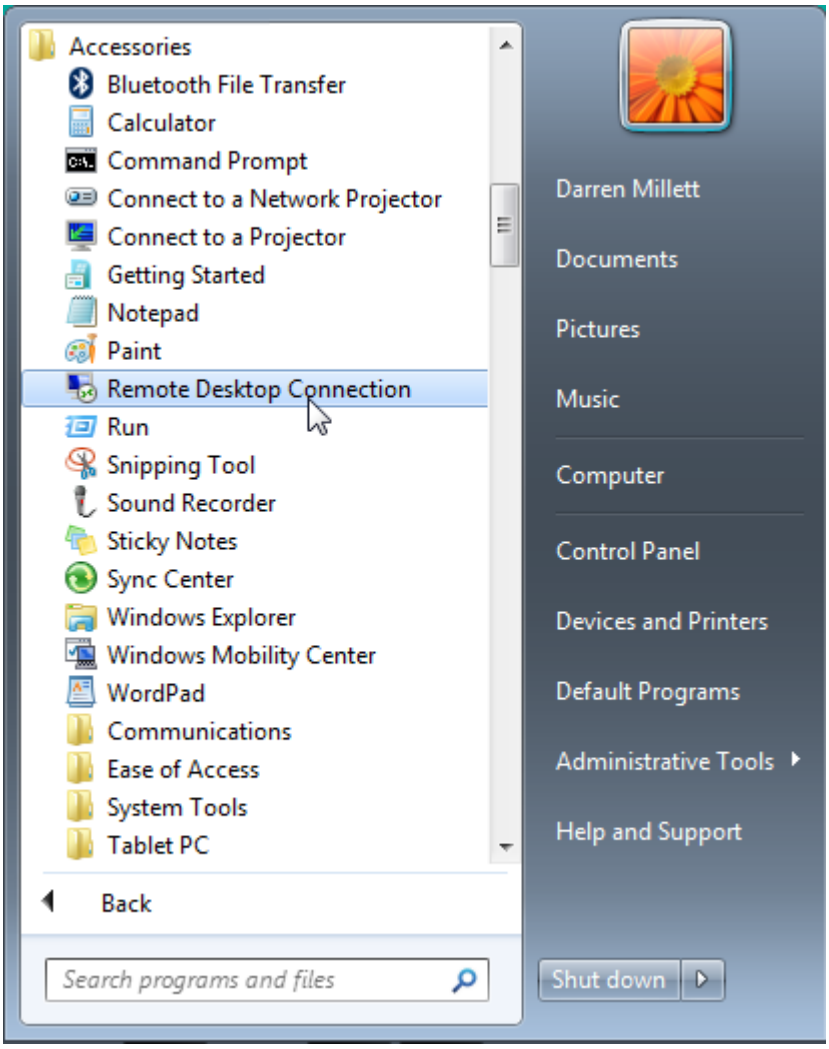


10. Note the current settings for each Profile. By default, if Remote Desktop Services are enabled, the Domain and Private profiles will be enabled, but Public profile will be disabled. Remember that the Edge server is not a Domain Member server. Its internal network connection will likely be a public profile.
11. Select the Rules you wish to change. (You can select multiple rules.)
12. Click **Enable Rule** or **Disable Rule** in the right hand panel, as required.
13. Close all windows.

23 Starting RDC

You can start RDC from the Start button. On Windows 7, it is located in **Start** > **Programs** > **Accessories** > **Remote Desktop Connection**. On other Windows versions in may be located in slightly different locations. You can also Search for and Run **mstsc.exe**.

Figure 23-1: Starting RDC

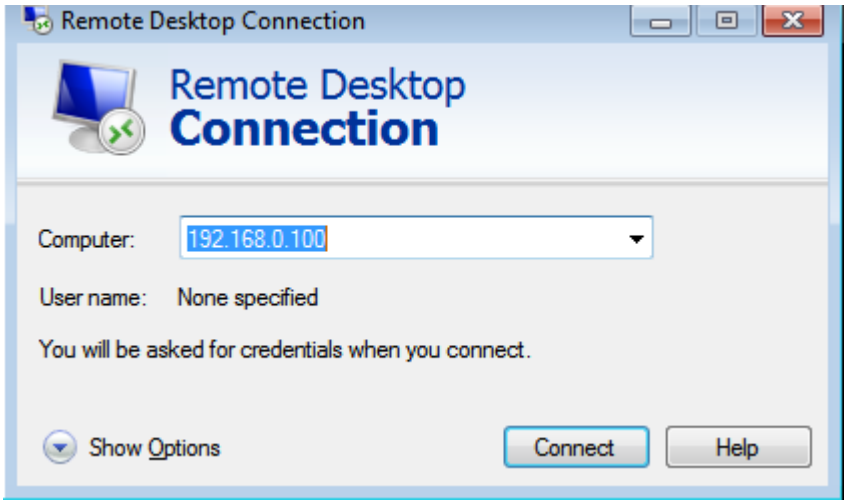


When RDC starts, you will be prompted to enter the destination computer. You can enter either an IP address, or computer DNS name. You can also select form a saved list of computers you have previously connected to.

Enter the IP Address of your UC-DC server. For a default installation, this is 192.168.0.100, if you have changed this or specified a different address during the CloudBond 365 build.

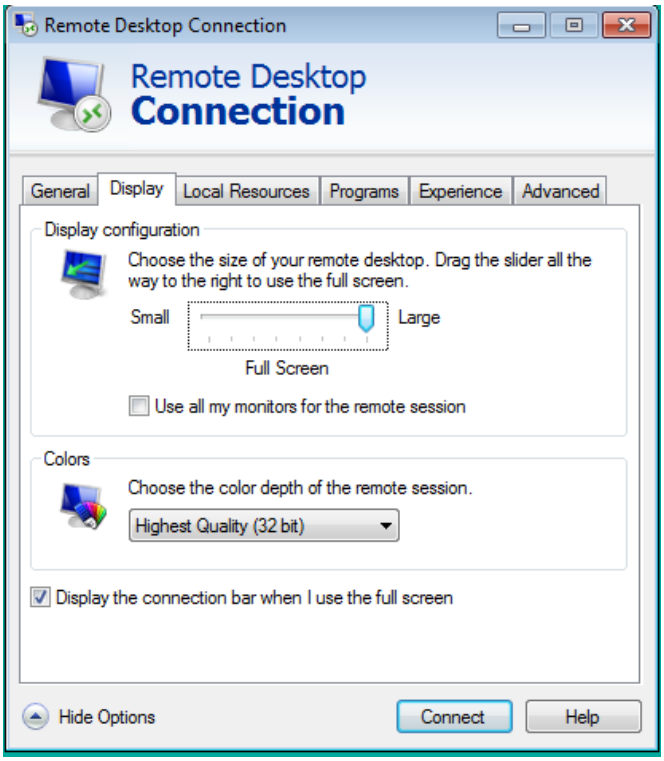
If you have not used RDP to connect to the UC-DC before, take time to set the RDC Options before pressing **Connect**.

Figure 23-2: RDC Connection Prompt



23.1 Setting RDC Options

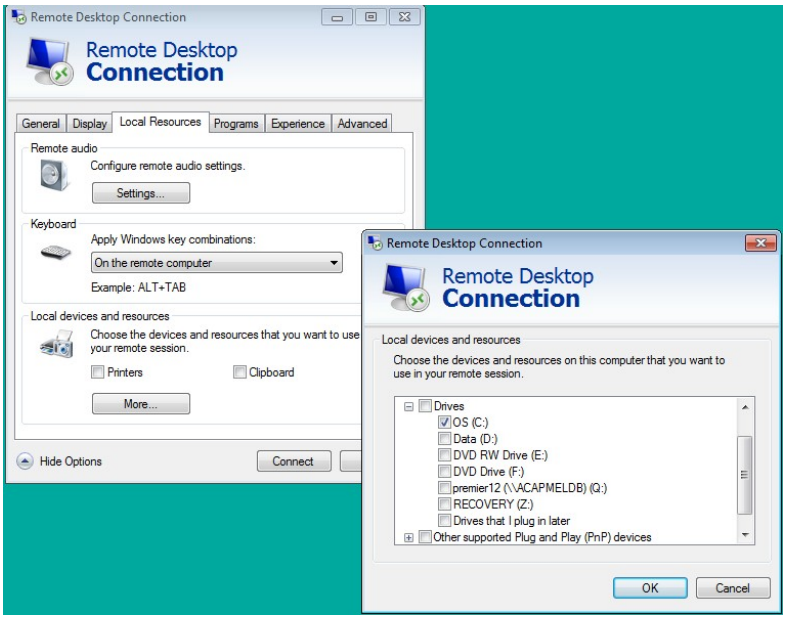
Figure 23-3: Setting RDC Options



If you click **Show Options** you will see various settings you can change to control your connection settings with the remote computer.

We recommend you set your Display Configuration to Full Screen and share your C:\ drive and clipboard as a local resource, for the best experience.

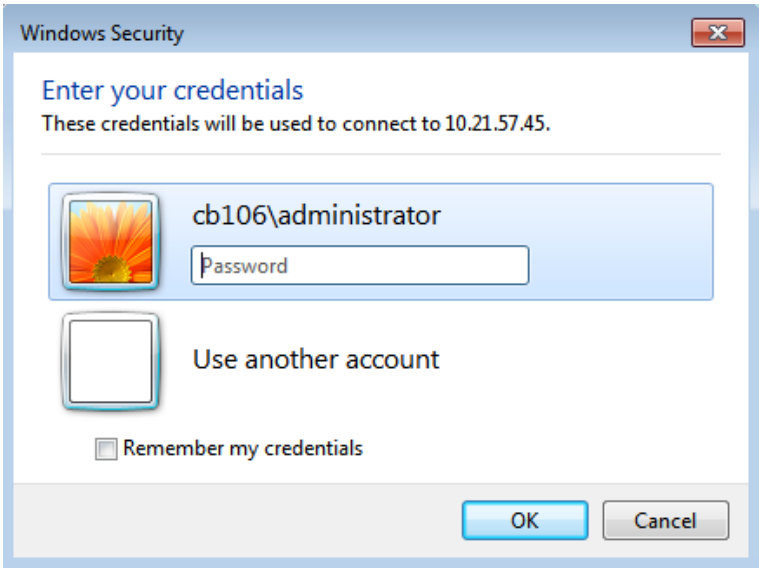
Figure 23-4: Sharing Local C drive



23.2 Connecting

After clicking the **Connect** button, you will be presented with an Authentication screen. For the CloudBond 365 Controller (UC-DC), it is simplest to log in as the CloudBond 365 Administrator. The default account is shown below.

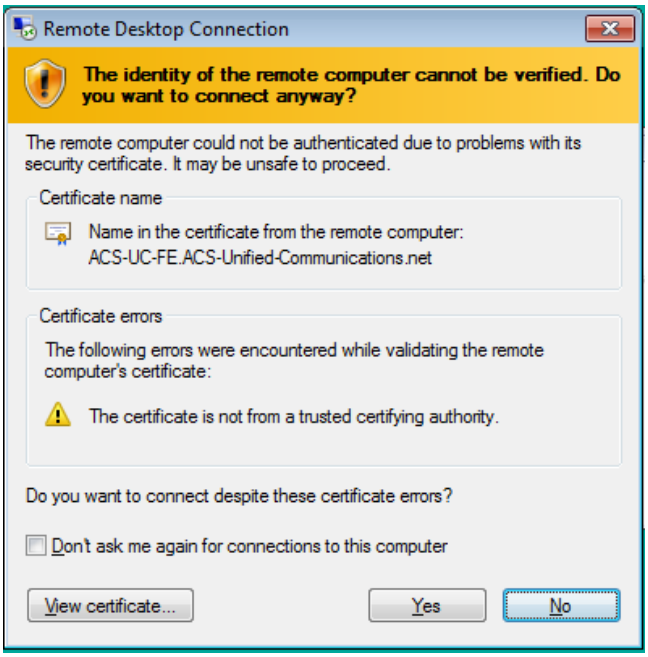
Figure 23-5: RDC Authentication



After entering you credentials successfully, you may see the following warning. It is normal for the CloudBond 365 domain CA certificate not to be installed on end user workstations. You can optionally check the box “Don’t ask me again..” to avoid displaying this warning in future.

Click **Yes** to proceed.

Figure 23-6: CloudBond 365 Certificate



You will next be presented with the desktop of the selected server. From here, you can carry out most tasks as if you were physically present in front of the server, including mouse control and keyboard input.

Figure 23-7: RDP Session Established

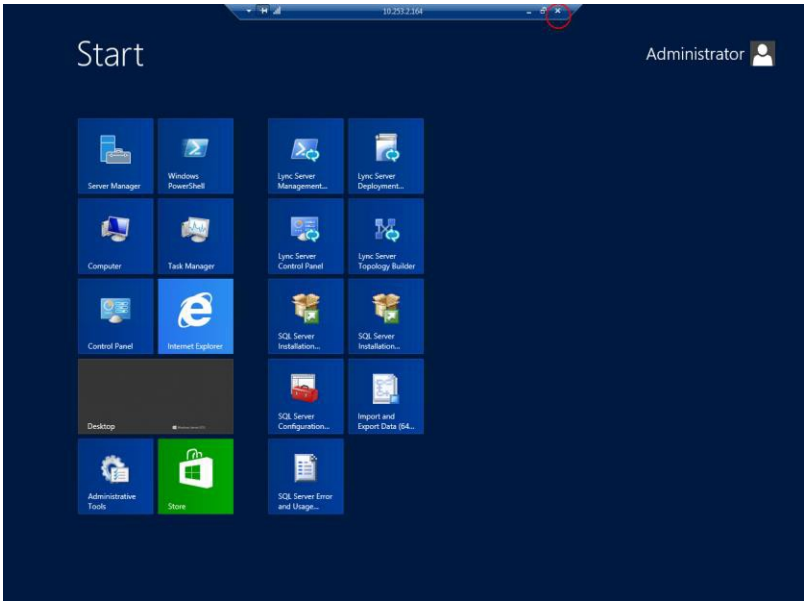
24 Ending an RDC Session

There are two ways to end an RDC session with a remote computer.

Performing a Windows Logout (not a Shutdown) is the preferred way. This ends your login session, and leaves the remote server at its login screen, ensuring any users must re-enter their credentials to login to the server.

Alternatively, you may need to leave your current login session running for a long running task etc. You can simply end the RDC session by pressing the X on the connection bar. This will leave your login session running, but lock the remote computer. Your login session can be re-established by reconnecting using RDC.

Figure 24-1: Ending RDC Session



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Part IV

IP Phone Management Administrator's Tool

25 Introduction to the IP Phone Manager Admin

AudioCodes CloudBond 365 can manage AudioCodes IP Phones that are deployed in the same Microsoft Skype for Business environment, using the CloudBond 365 management suite. For managing the IP Phones, the CloudBond 365 management suite includes the IP Phones management module.

The main screen of the IP Phones management module provides basic IP Phone management and monitoring capabilities. For advanced configuration, such as loading configuration files and firmware files to multiple IP Phones, a link to the IP Phone management suite client is provided from the CloudBond 365 management interface.

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26 Deploying the IP Phones

This section shows how to deploy AudioCodes IP phones in the enterprise.

26.1 Planning the Deployment

Before deploying the phones:

1. List the configurations specific to your phone network, e.g., language per region, speed dials, etc.
2. List the phone features and parameter configurations you want in each region.
3. Log in to the IP Phone Management Server (see Section 26.3).
4. Configure a 'system user' whose username is **system** and whose password is **system** (see Section 26.4).
5. Before plugging phones into the network, define parameter placeholders values for criteria such as region and phone model, to maintain an automatic provisioning scheme (see Section 29.2.80).

26.2 Preparing the Enterprise Network

This section shows how to prepare the enterprise network for IP phones.

➢ **To prepare the enterprise network:**

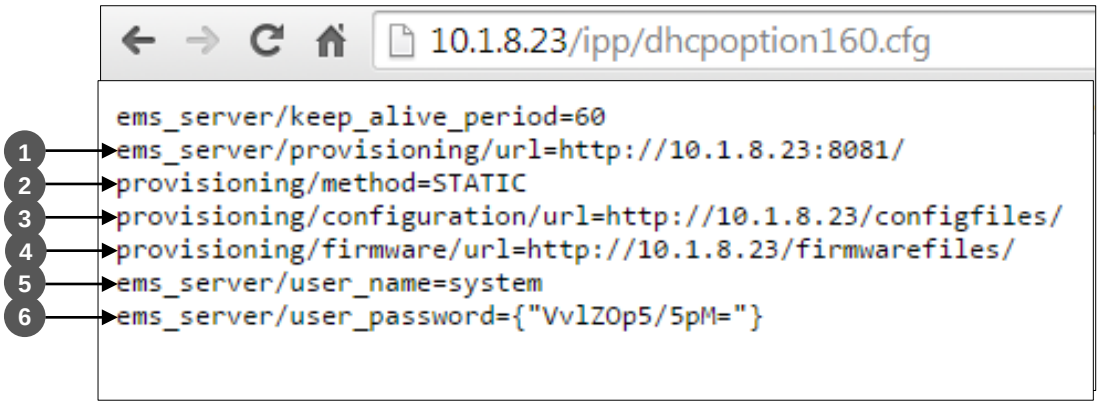
- Obtain the phones' latest firmware files from AudioCodes and upload them to the IP Phone Management Server - see under Section 29.4 for detailed information:
  - In the Phone Firmware Files screen, click the **Upload firmware** button.
  - Navigate to the img file and upload to the IP Phone Management Server.
- Configure your enterprise's DHCP server with DHCP Option 160 to point to the CloudBond Provisioning server's URL - if your phones are not behind a NAT.
  In addition to DHCP Option 160, DHCP Option 66/67 can also be used.

  If your phones reside behind a NAT and an HTTP proxy is available, configure your enterprise's DHCP Server with DHCP Option 160 to point to the HTTP proxy. Phone-IP Phone Management Server communications will then be performed via the HTTP proxy rather than directly.

  As DHCP clients, AudioCodes IP phones will then automatically be provisioned with the cfg and img files located on the IP Phone Provisioning server.

The figure below shows the default **dhcpoption160.cfg** file.

Figure 26-1: Default cfg File Located on the IP Phone Management Server



Legend	Description
1	Pointing to the URL of the IP Phone Management Server.
2	STATIC provisioning method, so the cfg and img files are automatically retrieved from the IP Phone Management Server rather than from the DHCP server.
3	Location of the cfg file, pulled by the phones when they're plugged into the network, on the IP Phone Management Server.
4	Location of the img file, retrieved by the phones when they're plugged into the network, on the IP Phone Management Server.
5	Name of the 'system user', necessary for basic REST API authentication when the phones are plugged in to the network for the first time.
6	(Encrypted) Password of the 'system user', necessary for basic REST API authentication when the phones are plugged in to the network for the first time.

Note:

- The **dhcpoption160.cfg** file is created when logging in for the first time to the IP Phone Management Server.
- After installation, the first, second and third lines in the file are automatically updated.

26.2.1 Deployment

This section describes how to deploy IP phones in a Skype for Business environment.

Note:

- If your phones communicates directly with the CloudBond server, make sure you defined **http://<** Server **IP address>/firmwarefiles;ipp/dhcpoption160.cfg** for DHCP Option 160 in the enterprise's DHCP server. See the previous section for details.
- If your phones will communicate with an HTTP proxy rather than directly with the IP Phone Management Server, make sure you have defined **http://<Proxy SBC IP address><Proxy SBC Port>/firmwarefiles;ipp/httpproxy** for DHCP Option 160 in the enterprise's DHCP server. See the previous section for details.

➢ **To deploy IP phones:**

■ Plug in the phone (see Section 26.5).

The cfg file includes default values and overwritten values according to configured placeholders. If no placeholder was configured, the cfg file will include only default values. See Section 29.2.8 for details on how to configure parameters placeholders.

26.3 Logging in to the Management Server

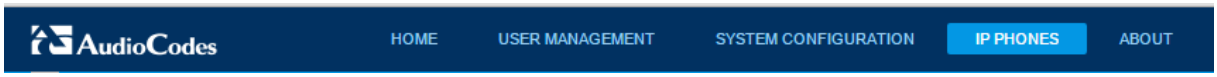
This section shows how to log in to the IP Phone Management Server UI. The UI is a secured web client that runs on any standard web browser supporting HTML5: Internet Explorer version 11 and later, Chrome or Firefox. Before logging in, you need to run the CloudBond Management Server.

Note: To access the IP Phone Management Server UI without running the CloudBond Management Server, point your web browser to **https://<CloudBond_IP_Address>/ipp** and then in the login screen that opens, log in.

➢ **To log in to the IP Phone Management Server via the CloudBond Management Server:**

1. Open the CloudBond Management server and click **IP Phones** in the main screen toolbar.

Figure 26-2: CloudBond Management Server - IP Phone Management Server button



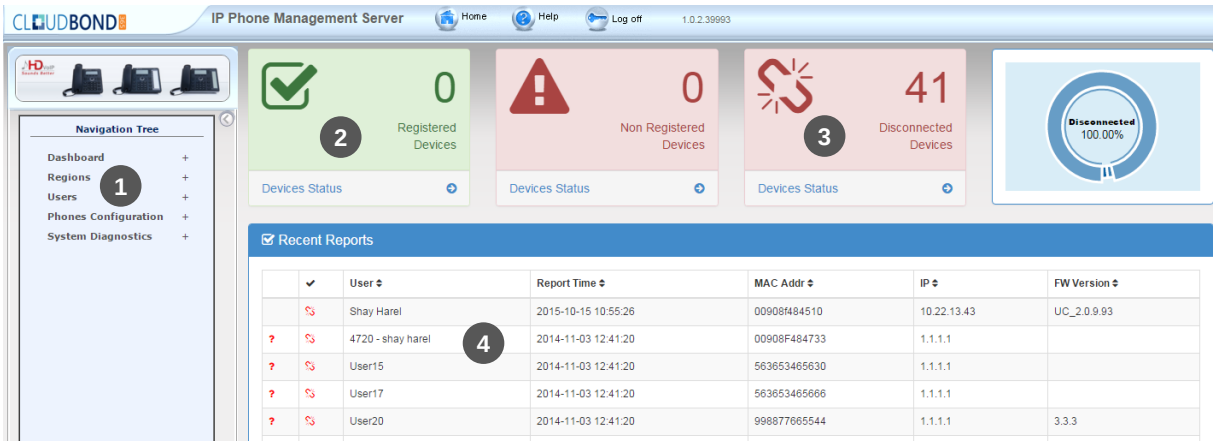
The Welcome to the IP Phone Management Server screen opens:

Figure 26-3: Welcome to the IP Phone Management Server

Note: The 'Username' and 'Password' used to log in to the IP Phone Management Server are the same as the windows OS.

2. Enter your Username and Password and click **Login**; the application is launched and the homepage displayed.

Figure 26-4: IP Phone Management Server User Interface - Homepage



1 = Navigation pane

2 = Network registration status

3 = Network health status

4 = List of users and their current status

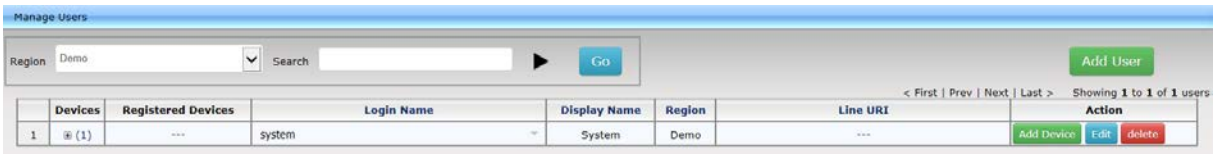
Note: After first-time login, no users and devices are displayed in the Home page.

26.4 The 'System User'

During the installation the system creates a 'system user' whose user name is **system** and whose password is **system**. This is necessary for *basic REST API authentication*, after the phones are plugged in to the network for the first time.

- Make sure in the Manage Users screen that the System user has been added.

Figure 26-5: Manage Users Screen Displaying Added User



Note: The system is now ready for monitoring and managing phones.
All you need to do is to plug in the phones.

26.5 Plugging Phones into the Network

Once you have configured the 'system user', you can plug the phones into the network.

The following describes possible user action scenarios that occur when the IP Phones are connected to CloudBond (these scenarios usually occur in the order described below):

- **Scenario 1:** Initial IP Phone connection to the CloudBond:

  The phone is reported as offline and is displayed in the dashboard as follows:

?				00908f484688	10.38.2.8	UC_2.0.9.93

- **Scenario 2:** Phone sign-in:

  The phone is reported as registered/unregistered and is displayed in the dashboard as follows:

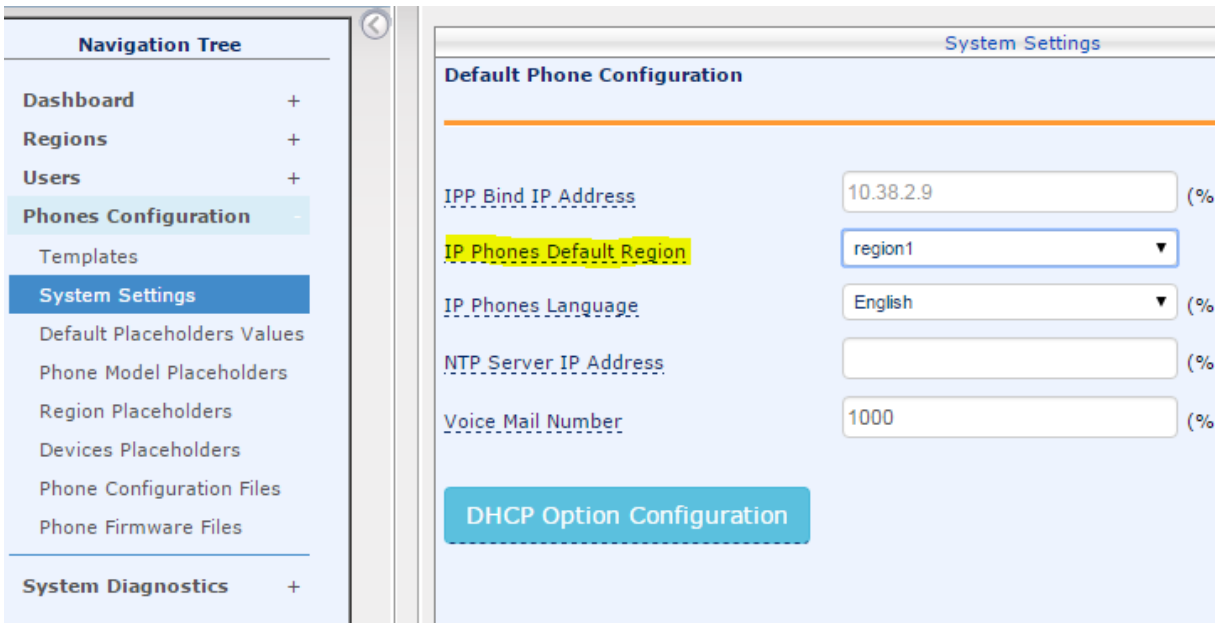
	☑	Alex Agranov	16.11.2015 15:15:53	00908f48464d	10.22.11.6	UC_2.0.11.194.10.2

  If the sign-in was successful, a user and device are automatically created and a new <MAC>.cfg file is generated for this phone.

  The user is created in the default region.

  You can configure the default region in the System settings:

Figure 26-6: System Settings



- **Scenario 3:** Phone sign-out and sign-in with a different user:

  If the user signs-out and signs-in with a different user, the endpoint along with the old <MAC>.cfg are deleted and a new endpoint with a new <MAC>.cfg are created for the sign-in user.

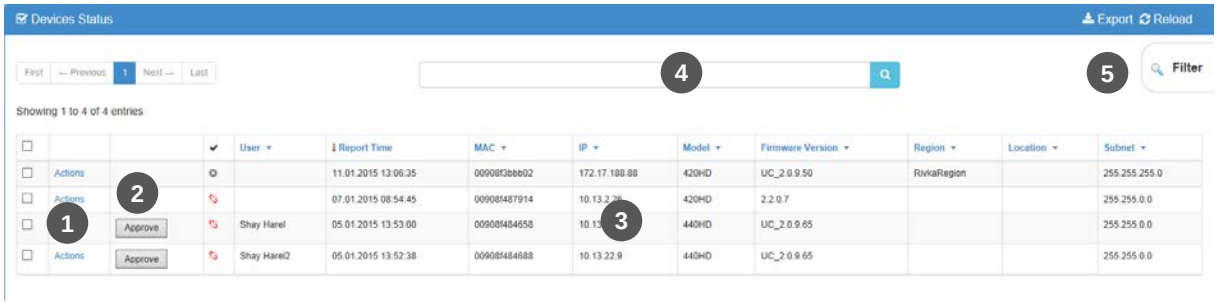
  You can view this information in real time on the Homepage or in the Device status page.

26.5.1 Devices Status

After the phones are plugged in, they send updates to the IP Phone Management Server; however, the user names are not displayed in the interface until either sign-in is performed on the phone or until users are approved in the interface (if the user signs-in on the phone, then its automatically approved in the interface).

- In the IP Phone Management Server, open the Devices Status page (**Dashboard** > **Devices Status**).

Figure 26-7: Devices Status



1 = Device actions: refresh, reset, download files, open web page, delete, send text message to the phone

2 = Device approval

3 = Device status: User, MAC, IP Address, SIP URI, and Location

4 = Search option

5 = Smart filters

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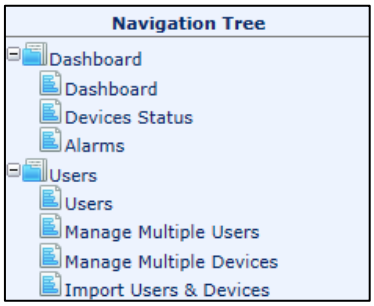
27 Monitoring and Maintaining the Phone Network

This section shows how to monitor and maintain the phone network in the enterprise.

The following Dashboard and Users pages let you monitor and maintain the phone network:

Figure 27-1: Dashboard and Users



The sections below shows the functionality of each page.

27.1 Monitoring the Network from the Dashboard

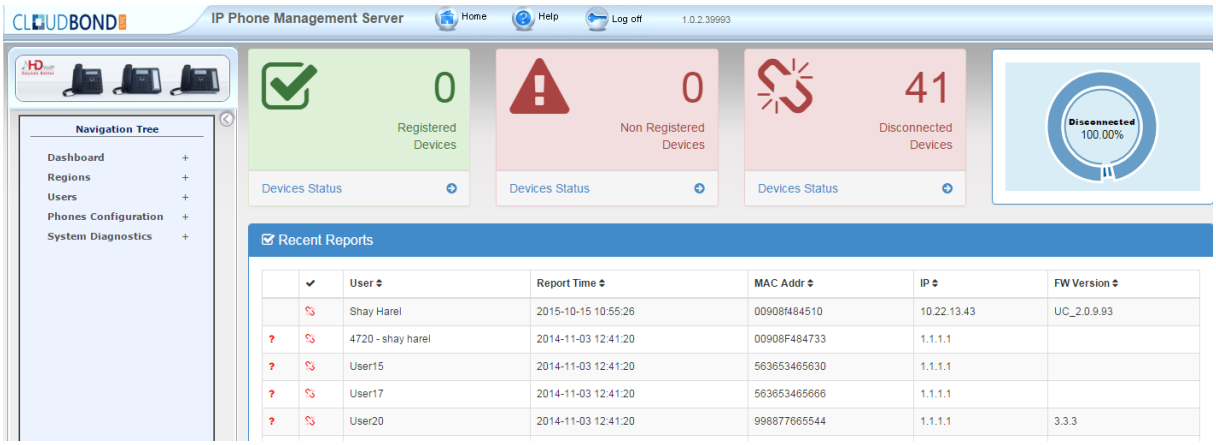
The Dashboard page lets you quickly identify the following:

- Which phones in the network are registered
- Which phones in the network are non-registered
- # of registered and non-registered phones (in terms of SIP registration)
- % of registered phones
- The MAC and IP address of each phone
- The time the information was reported
- The firmware version

➢ **To open the Dashboard page:**

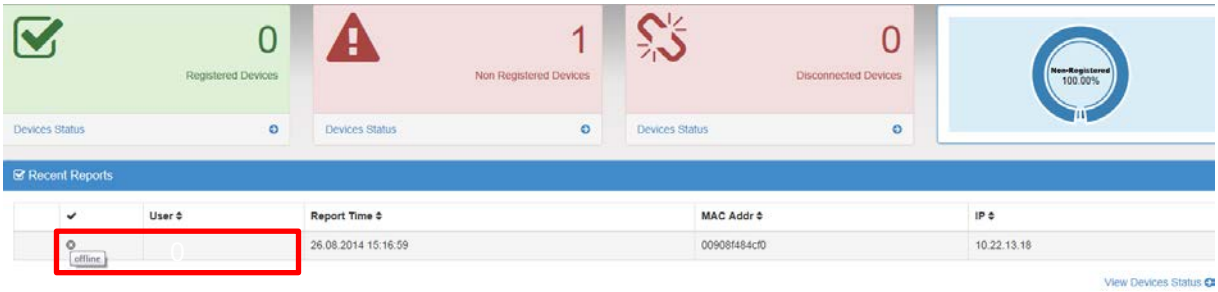
- In the navigation tree, click **Dashboard** > **Dashboard**.

Figure 27-2: Dashboard



If a Skype for Business Desktop phone is signed out (offline, or not registered), you'll see a grey circle icon with an x inside, and the 'User' column will be blank, as shown in the figure below.
It will be counted as a Non-Registered Device.

Figure 27-3: Dashboard - Not Registered

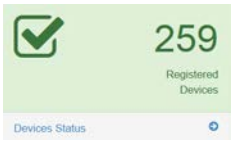


Point your mouse over the icon to view the 'offline' indication (see the figure above).

If the phone is a generic model, a red triangle enclosing an exclamation mark will be displayed, as shown in the figure above.

View the following status thumbnails on the Dashboard:

Table 27-1: Dashboard – Status Thumbnails

Status Thumbnail	Description
	The number of registered devices. Click the **Devices Status** link to quickly access the Devices Status page.
	The number of non-registered devices. Click the **Devices Status** link to quickly access the Devices Status page.
	The number of disconnected devices. Click the **Devices Status** link to quickly access the Devices Status page.
	The percentage of registered devices.

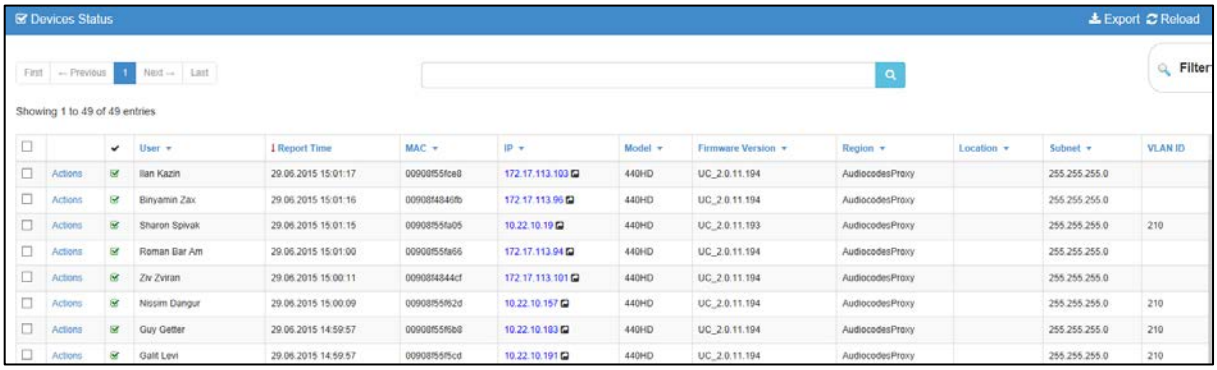
27.2 Checking Devices Status

The Devices Status page lets you check a phone's status

➢ **To check a phone's status:**

1. Open the Devices Status page (**Dashboard** > **Devices Statuses**).

Figure 27-4: Devices Status



2. Click the **Filter**; the filter lets you quickly access specific information in the page.

Figure 27-5: Devices Status Filter

3. You can filter per user, MAC, IP address, model, and version, status (offline, registered, disconnected, approved or pending approval, or users with multiple devices.
4. The format of 'User Agent' for Skype for Business Desktop phones is **AUDC-IPPhone-430HD_UC_2.0.7.70/1.0.0000.0.**
   The 'Location' is displayed if was configure correctly in the Skype for Business server.

5. You can click an individual user's **Actions** link; the following menu is displayed:

Figure 27-6: Actions Menu - Single User

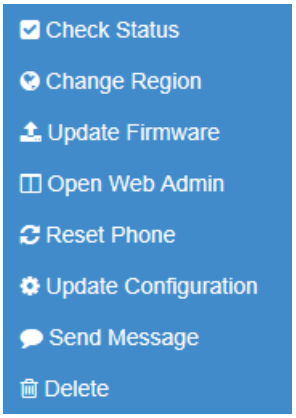
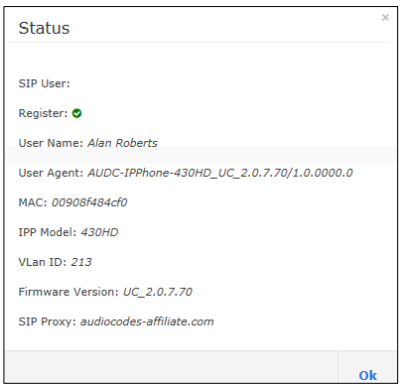
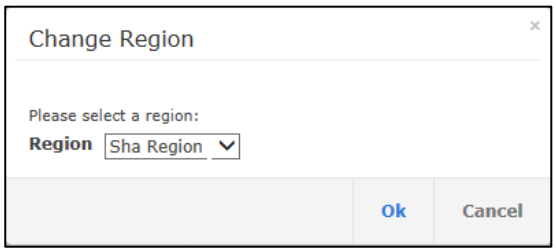
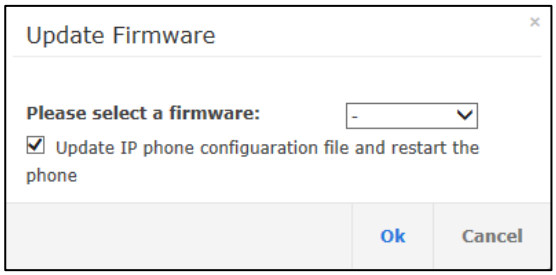


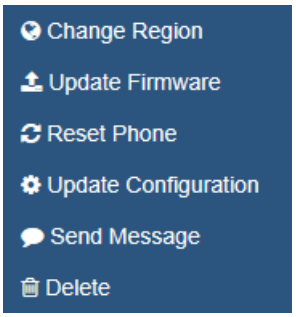
Table 27-2: Actions Menu

Action	Description
Check Status	Select the 'Check Status' option; the status is displayed: 
Change Region	Select the 'Change Region' option:  From the dropdown, select the region, and then click **Ok**.
Update Firmware	You can update firmware per device, or for multiple selected devices (see step 6 below). Select the 'Update Firmware' menu option:  From the dropdown, select the firmware file, and then click **Ok**.; the firmware file is updated.

Action	Description
Open Web Admin	Opens the Web interface (see the *Administrator's Manual*).
Reset Phone	Sends a reset command to the selected device/s. Note that some phone models wait for the user to finish an active call, while others may perform an immediate restart.
Update configuration	Sends a command to the phone to check whether there is a new configuration file to upload and updates the phone after a configurable 'Delay Time' (Default = 2 seconds).
Send Message	Let's you send a message to the LCD/s of the selected device/s. Enter the message in the 'Text' field. You can configure for how long the message will be displayed in the LCD/s.
Delete	Deletes the devices from the Status table.

6. You can select multiple users and then click the **Selected Rows Actions** link; the following menu is displayed:

Figure 27-7: Actions Menu - Selected Rows



See the table above for descriptions. Any action you choose will apply to all selected rows. For example, select rows, click the **Selected Rows Actions** link, and then select the **Update Firmware** option; all selected devices will be updated with the firmware file that you select.

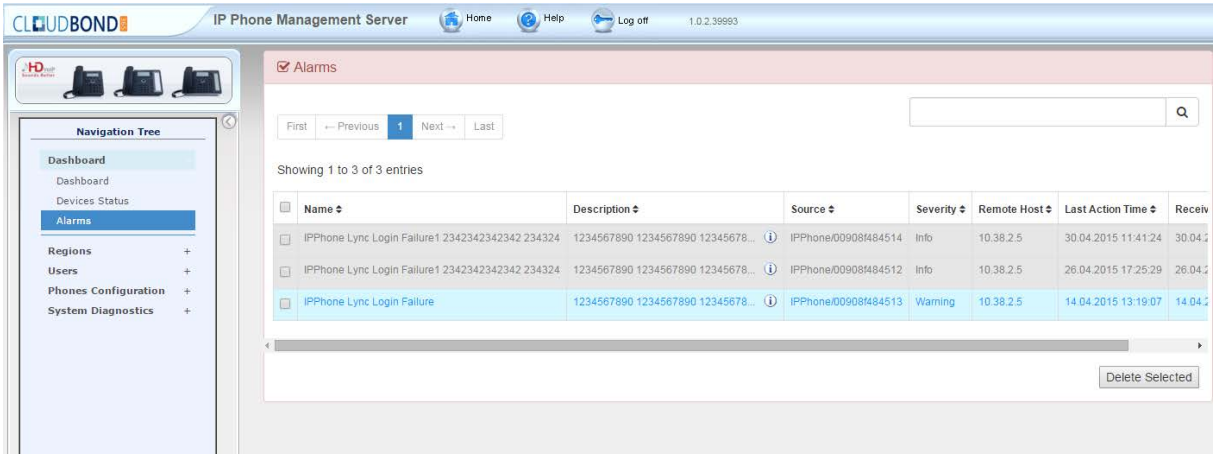
27.3 Monitoring Alarms

AudioCodes IP phones send alarms via the REST protocol.

The Alarms page (**Dashboard** > **Alarms**) displays the following information:

- Each phone alarm in the network
- A description of each alarm
- The MAC address of the phone (source)
- The alarm severity
- The IP address of the phone
- The last action time
- The date and time of receipt of the alarm

Figure 27-8: Alarms



The management server displays *active* alarms, not historical alarms.

Red indicates a severity level of "Critical"

Orange indicates a severity level of "Major"

After an alarm is cleared, it disappears from the Alarms screen.

The table below shows the alarms that users can receive.

Table 27-3: Alarms

Alarm Name	IP Phone Type	Severity
Login Failure	Skype for Business	Critical
Survivable Mode Start	Skype for Business	Major

27.3.1 Registration Failure Alarm

The table below describes the Registration Failure alarm. The alarm is issued if SIP registration, with the PBX, fails.

Table 27-4: IP Phone Registration Failure Alarm

Alarm	IPPhoneRegisterFailure
OID	1.3.6.1.4.1.5003.9.20.3.2.0.39 is the OID used in the IPP Manager to forward the IPPhoneRegisterFailure alarm.
Description	This alarm is activated when a registration failure occurs
Alarm Title	Registration Failure
Alarm Type	communicationsAlarm(1)
Probable Cause	communicationsProtocolError(5)
Severity	Critical
Corrective Action	The problem is typically not related to the phone; however, to the server. The user/phone may not be defined, or may be incorrectly defined, or may previously have been defined but the username (for example) may have been changed, causing the registration to fail. Make sure the username and password credentials are the same in both the server and phone, and weren't changed; server-phone credentials must be synchronized. Make sure the server is responsive.

27.3.2 Survivable Mode Start Alarm

The table below describes the Survivable Mode Start alarm.

Table 27-5: IP Phone Survivable Mode Start Alarm

Alarm	IPPhoneSurvivableModeStart
OID	1.3.6.1.4.1.5003.9.20.3.2.0.40 is the OID used in the IPP Manager to forward the IPPhoneSurvivableModeStart alarm
Description	This alarm is activated when entering survivable mode state with limited services
Alarm Title	Survivable Mode Start
Alarm Type	Other(0)
Probable Cause	other (0)
Severity	Major
Additional Info	
Corrective Action	The problem is typically not related to the phone; however, to the server or network. Make sure all servers in the enterprise network are up. If one is down, limited service will result.

27.3.3 Lync Login Failure Alarm

The table below describes the Lync Login Failure alarm.

Table 27-6: IP Phone Lync Login Failure Alarm

Alarm	IPPhoneLyncLoginFailure
OID	1.3.6.1.4.1.5003.9.20.3.2.0.41 is the OID used in the IPP Manager to forward the IPPhoneLyncLoginFailure alarm
Description	This alarm is activated when failing to connect to the Skype for Business server during sign in
Alarm Title	Lync Login Failure
Alarm Type	communicationsAlarm(1)
Probable Cause	communicationsProtocolError(5)
Severity	Critical
Additional Info	TlsConnectionFailure NtpServerError
Corrective Action	This alarm may typically occur if the user is not registered - or is registered incorrectly - in the Skype for Business server. Make sure in the server that the username, password and PIN code are correctly configured and valid. Try resetting them. Try redefine the user.

27.3.3.1 Searching for Alarms

You can search for alarms in the Alarms page. The 'Search' field enables the functionality. You can search by the following parameters:

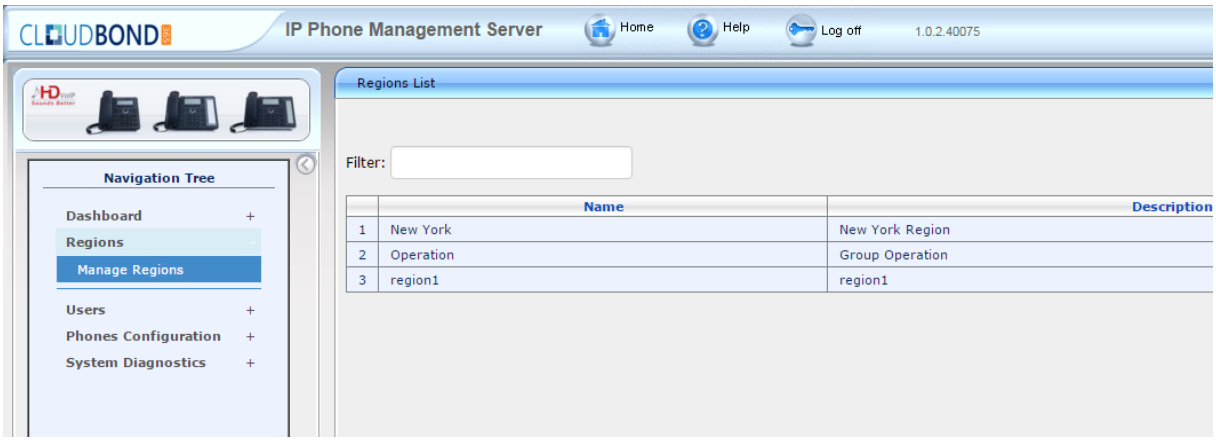
- alarm name
- a phone's MAC address
- a phone's IP address

27.4 Maintaining Regions

The Manage Regions page lets you maintain regions. You can perform the following actions:

- add a region
- edit region
- delete a region

Figure 27-9: Maintain Regions



Note: The main purpose of the Region/s is to group users in order to control the IP Phones.

27.5 Maintaining Users

The Manage Users page lets you maintain users. You can perform the following actions:

- Add a user
- Add a device to a user
- Edit user/device
- Delete a user/device
- Search for a device by region
- Search for a device by name

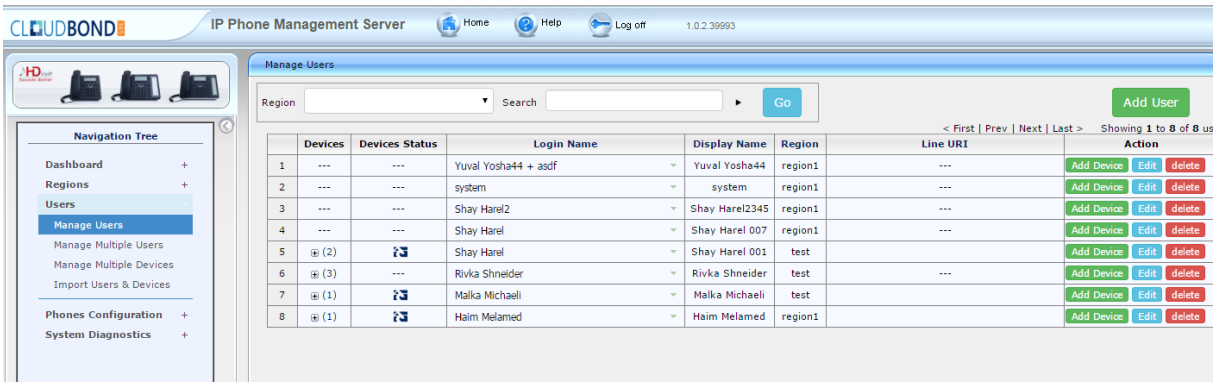
Note: In most cases adding users and devices is done automatically by the system, therefore you should not add a user or device on a regular basis

27.5.1 Adding a User

➢ **To add a user to the Management Server:**

1. Access the 'Manage Users' page (**Management** > **Users** > **Users**):

Figure 27-10: Manage Users

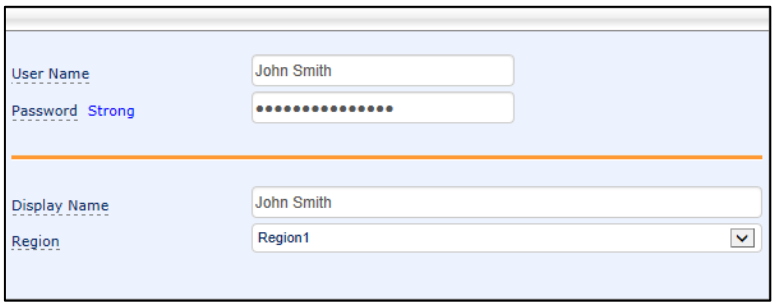


2. Click the **Add User** button (before adding phones to the IP phone management server you must add users); the following screen is displayed:

Figure 27-11: Add User

3. Define a name and password for the user.
4. Define the 'Display Name' and select a region from the 'Region' dropdown.

Figure 27-12: Add User Definitions



5. Click the **Submit** button; you're returned to the Manage Users page; locate the listed added user.

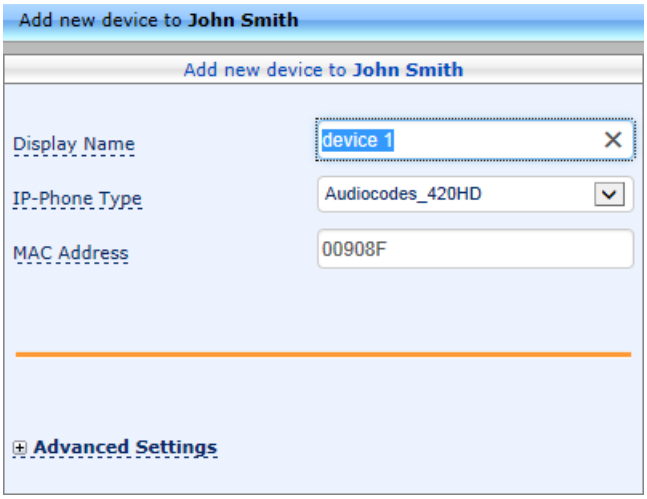
27.5.2 Adding a Phone

You can manually add a single phone to the server.

➢ **To add a phone:**

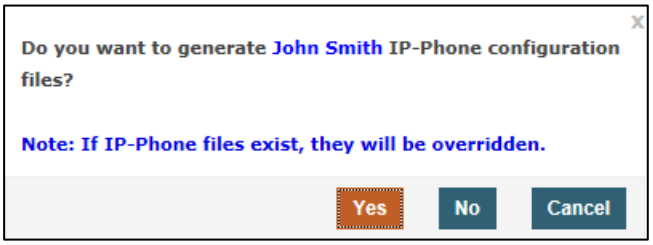
1. In the Manage Users page, click the **Add Device** button in the row of the listed added user; the following screen opens:

Figure 27-13: Add New Device to User



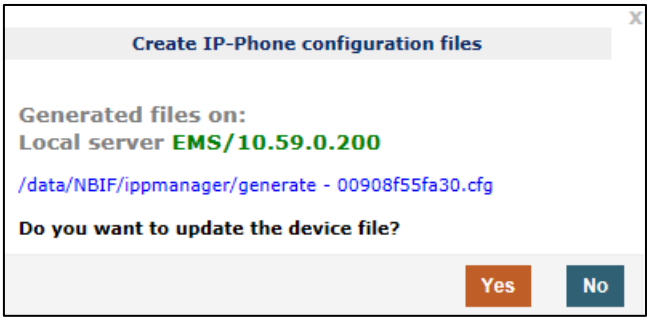
2. Enter the 'Display Name'. This is the name that will be displayed in the management server interface.
3. Click the **Submit** button.
4. Click **Add Device** (to associate the employee's name/line with the IP phone).
5. Enter the remaining characters of the 'MAC Address'. The prefix characters are displayed by default.
6. Click the **Submit** button; the following screen is displayed:

Figure 27-14: Prompt: Do you want to generate configuration files?



7. Click **Yes**.

Figure 27-15: Prompt: Do you want to update the device file?



8. Click **Yes**.

27.5.3 Editing a User

You can edit a user.

➢ **To edit a user:**

1. Click the **Edit** button in the row adjacent to the user; the Edit User screen opens, identical to that shown in Figure 27-11.
2. Edit the same fields as when adding the device (see Section 27.5.2).

27.5.4 Deleting a User

You can delete a user.

➢ **To delete a user:**

- Click the **Delete** button in the row adjacent to the user; the user and device are removed.

27.6 Managing Multiple Users

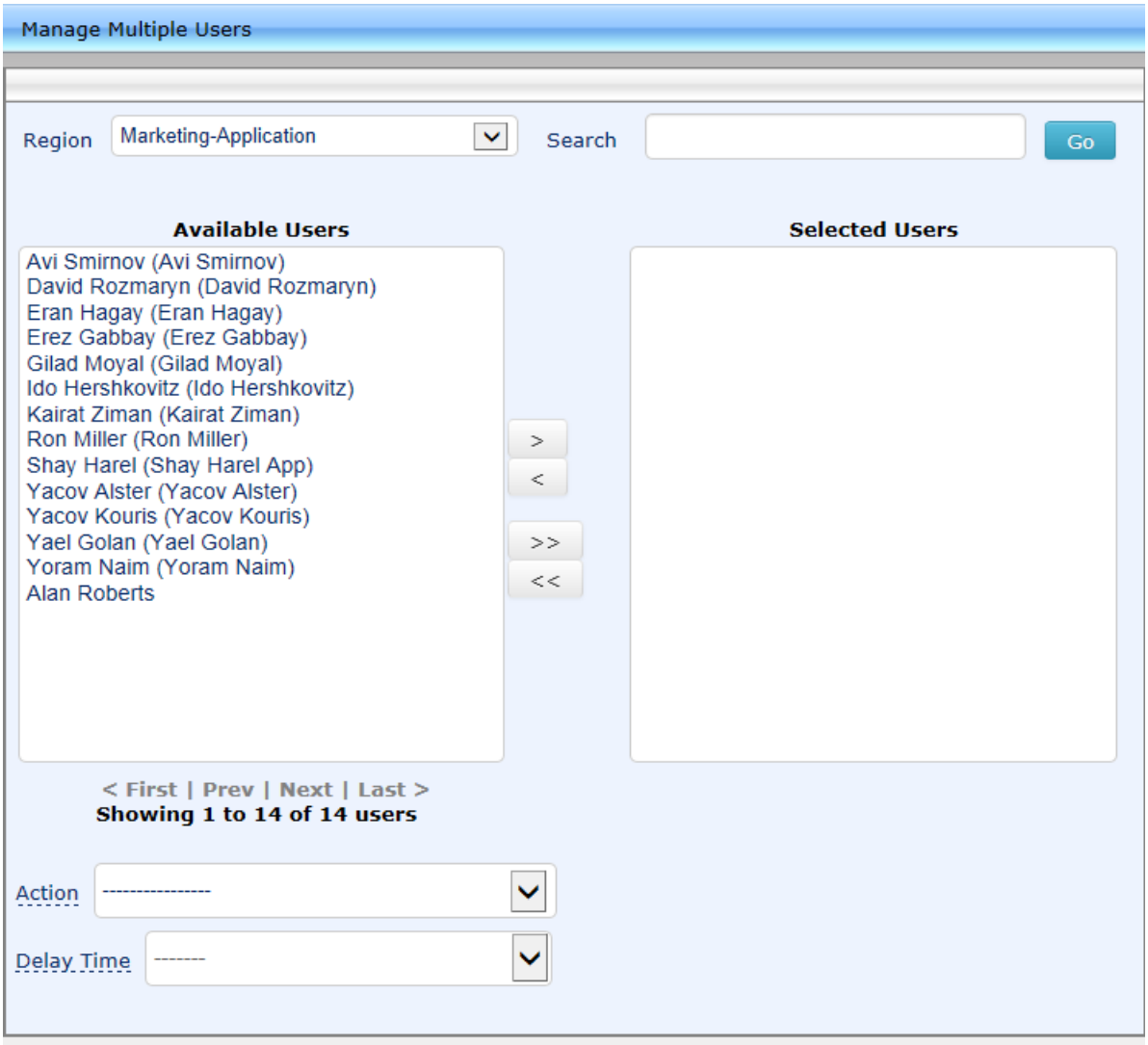
The Manage Multiple Users page lets you easily perform a single operation on all or on many users simultaneously:

- Reset passwords
- Delete users
- Restart devices
- Generate IP phones configuration files
- Update configuration files
- Send a message to multiple phones

➢ **To manage multiple users:**

1. Access the 'Manage Multiple Users' page (**Management** > **Users** > **Manage Multiple Users**):

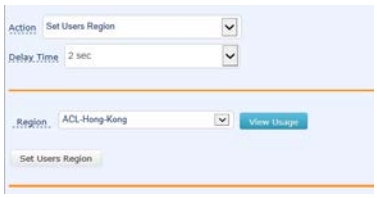
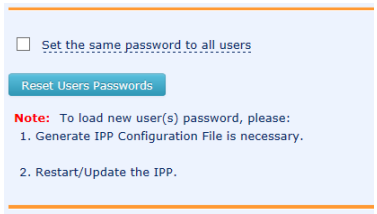
Figure 27-16: Manage Multiple Users



2. In the **Available Users** pane, select the users on which to perform the operation.
3. Click the right arrow (**>**) to add new users to the Selected Users pane. Click the left arrow (**<**) to remove selected users.
4. From the **Action** dropdown, select the required action.

Use the table below as reference.

Table 27-7: Managing Multiple Users - Actions

Action	Description
Set Users Region	 Sets the region for users selected.
Reset Users Passwords	 Resets user's passwords. A random password is generated for each user. To generate a single password for all users selected, select the **Set the same password to all users** option. To load the new user passwords: ▪ Generate the phone's configuration file ▪ Restart/Update the phone
Delete Users	Deletes users and applies a configurable 'Delay Time' (Default = 2 seconds) after each delete is performed.
Restart Devices	Restarts devices. A reset command is sent to all selected devices. The commands are sent in batches; where each batch contains five devices with a delay of two minutes between each batch. From the dropdown, choose the type of restart: ▪ Graceful (default) ▪ Force ▪ Scheduled Before restarting, some models wait for the user to finish an active call while others may perform an immediate restart.
Generate IP Phones Configuration Files	Generates new configuration files. Updates each phone with the newly generated configuration files after a configurable 'Delay Time' (default = 2 seconds) - if you select the **Updating IP Phones after generating files** option. You can generate a private configuration file per user group, device group, or specific regions.
Update Configuration Files	Updates each phone after a configurable 'Delay Time' (default = 2 seconds).

Action	Description
Send Message	Let's you send a message to the LCDs of all user phones selected. Enter the message in the 'Text' field. You can configure the length of time the message will be displayed in the LCD. Phones beep to alert users whenever there is an incoming message.

The page also lets you do the following:

- filter per region, before selecting the users on which to perform an action.

27.7 Maintaining Multiple Devices

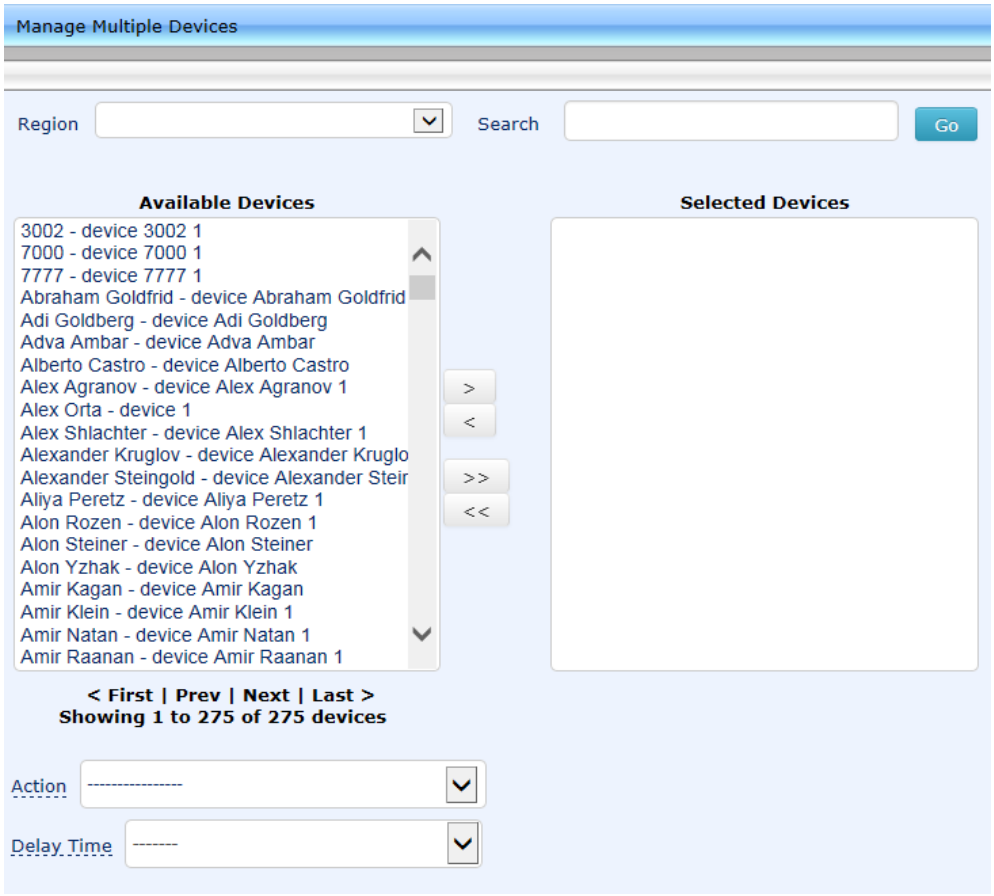
The Manage Multiple Devices page lets you perform a single operation on all or on many user devices. The page lets you do the following:

- Delete multiple devices
- Change IP phone type
- Change language
- Restart multiple devices
- Generate IP phones configuration files
- Update configuration files
- Send a message to multiple phones

➢ **To manage multiple devices:**

1. Access the 'Manage Multiple Users' page (**Management** > **Users** > **Manage Multiple Devices**):

Figure 27-17: Manage Multiple Devices

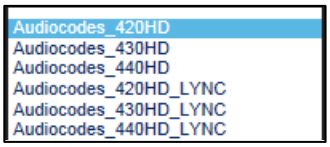


The devices are displayed in the following format:

1. You can search for devices by entering a string in the 'Search' field and then clicking **Go**.
2. You can filter the devices per region, before selecting those on which to perform an action.
3. In the Available Devices pane, select the devices on which to perform the action.
4. Click the right arrow → to add new devices to the Selected Devices pane, or use the left arrow ← to remove selected devices.

5. From the **Action** dropdown, select an action. Use the table below as reference.

Table 27-8: Managing Multiple Devices - Actions

Action	Description
Delete Devices	Deletes selected devices from the server applying a configurable 'Delay Time' (default = 2 seconds) in the process.
Change IP Phone Type	You can change the phone model:  To view the usage of a model, click **View Usage**. To load a new phone model: 1 Generate the phone's configuration file. 2 Restart/update the phone.
Change Language	Changes the phone language. Select the language from the **Language** dropdown and click **Change**. To view the usage of a language, click **View Usage**. To load a new language: 1 Generate the phone's configuration file. 2 Restart/update the phone.
Restart Devices	Restarts online devices. Before restarting, some models wait for the user to finish an active call while others may perform an immediate restart. From the dropdown, choose the type of restart: ▪ Graceful (default) ▪ Force ▪ Scheduled
Generate IP Phone Configuration files	Generates new configuration files. Updates each phone with the newly generated configuration files after a configurable 'Delay Time' (default = 2 seconds) - if you selected the **Updating IP Phones after generating files** option.
Update Configuration Files	Updates each phone after a configurable 'Delay Time' (default = 2 seconds).
Send Message	Let's you send a message to the LCDs of all user phones selected. Enter the message in the 'Text' field. You can configure the length of time the message will be displayed in the LCD. Phones beep to alert users whenever there is an incoming message.

➢ **To update all existing configuration files according to the new template:**

- Use the **Generate IP Phones Configuration Files** option in the Manage Multiple Devices page.

This page is intentionally left blank.

28 Troubleshooting

You can display log files to help troubleshoot problems and determine the cause of the problem.

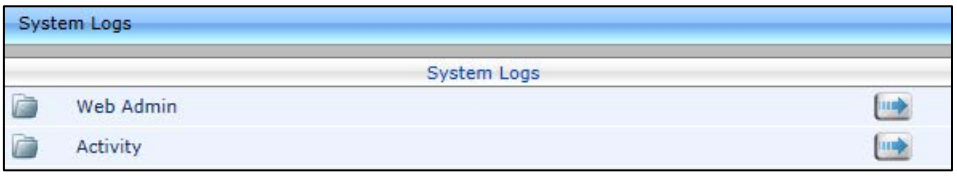
28.1 Displaying Log Files

This section describes how to display log files.

➢ **To display log files:**

1. Access the System Logs page (**System Diagnostics** > **System Logs**):

Figure 28-1: System Logs



2. Click the **Web Admin** arrow or the **Activity** arrow link.

Note:

- The Web Admin log displays recent actions performed in the user interface.
- The Activity log displays recent activities performed with the IPPhone Management server.

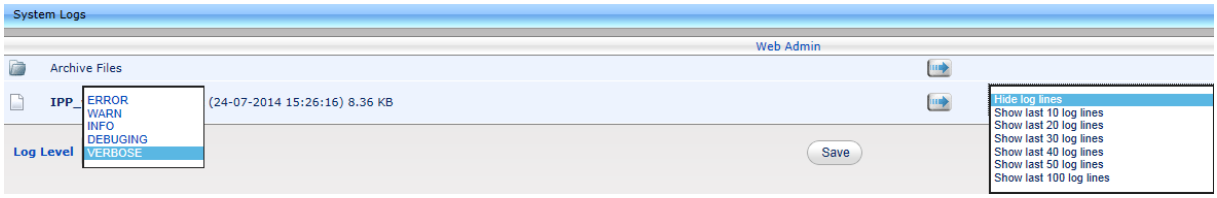
28.2 Displaying Web Admin Log Files

This section describes how to display Web Admin log files.

➢ **To display Web Admin log files:**

1. Click the **Web Admin** arrow link; the System Logs – Web Admin page opens:

Figure 28-2: System Logs – Web Admin Level Log

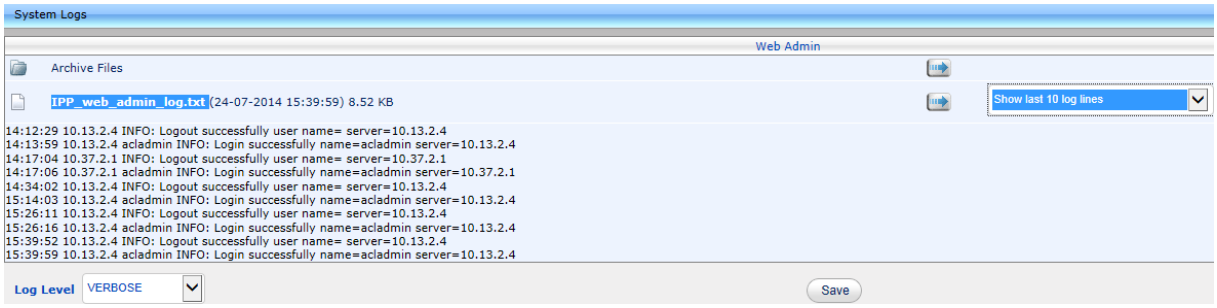


2. From the 'Log Level' dropdown list, select one of the following:
   - ERROR
   - WARN
   - INFO
   - DEBUGGING
   - VERBOSE (default) – All Levels (Detailed)
3. From the 'Hide log lines' dropdown list, select one of the following:
   - Hide log lines
   - Show last 10 log lines
   - Show last 20 log lines

- Show last 30 log lines
- Show last 40 log lines
- Show last 50 log lines
- Show last 100 log lines

4. View the generated IPP_web_admin_log.txt file.

Figure 28-3: System Logs – Web Admin Level txt Log File Displayed



5. Click **Save** to save the file and share it with others.

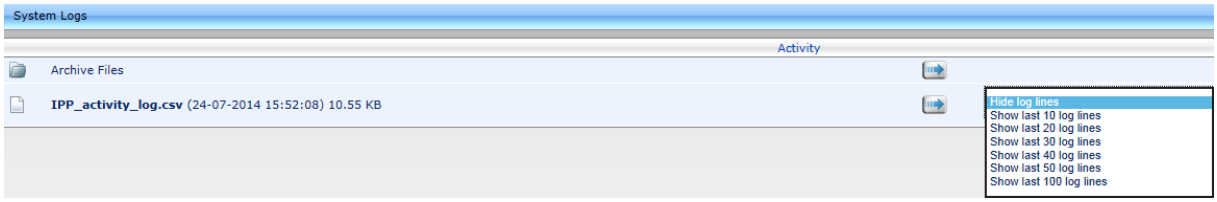
28.3 Displaying Activity Log Files

This section describes how to display activity log files.

➢ **To display Activity log files:**

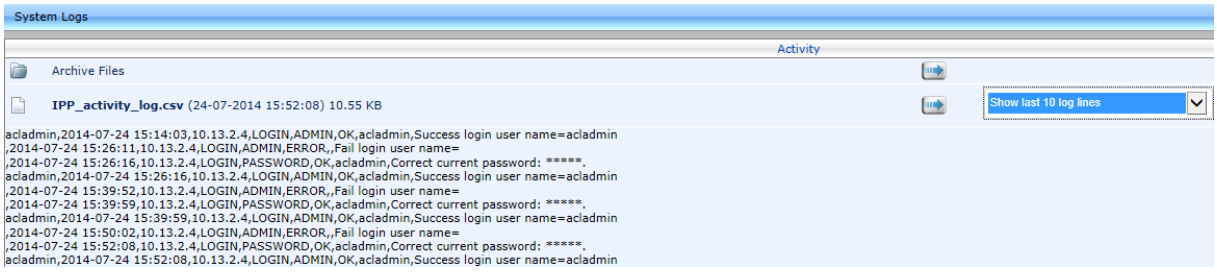
1. Click the **Activity** arrow; the System Logs – Activity page opens:

Figure 28-4: System Logs – Activity Log



2. From the 'Hide log lines' dropdown list, select one of the following:
   - Hide log lines
   - Show last 10 log lines
   - Show last 20 log lines
   - Show last 30 log lines
   - Show last 40 log lines
   - Show last 50 log lines
   - Show last 100 log lines

Figure 28-5: System Logs – Activity Level txt Log File Displayed



29 Preparing a Configuration File

You can prepare a configuration file from a template in the IP Phone Management Server UI. The template defines how a phone's configuration file is generated. The phones retrieve the cfg file from the Provisioning server.

Note: Before plugging phones into the network, define parameter placeholder's values for criteria such as region and phone model, to maintain an automatic provisioning scheme.

29.1 Selecting a Configuration Template

Configuration templates are available as follows:

- Per phone model
- Per model for Microsoft ® Skype for Business Desktop phones

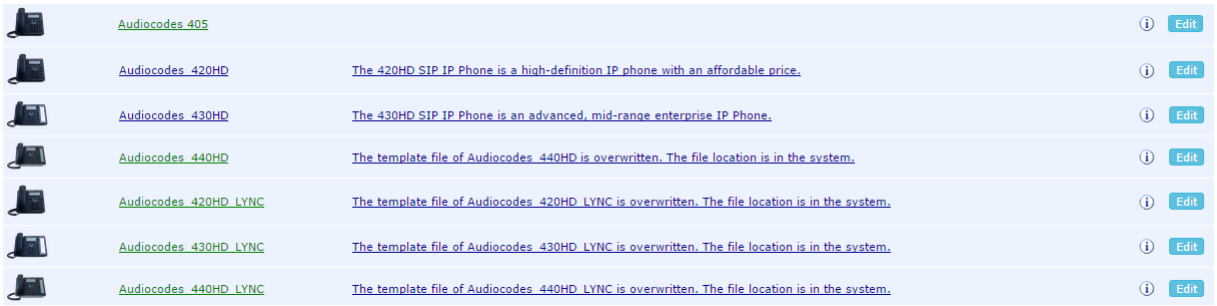
Depending on the models and the server in the enterprise, select a template for the following phone models:

- AudioCodes 420HD Skype for Business Desktop phone
- AudioCodes 430HD Skype for Business Desktop phone
- AudioCodes 440HD Skype for Business Desktop phone

➢ **To select a configuration template:**

- In the navigation tree, access the IP Phones Configuration Templates page (**Phones Configuration** > **Templates**):

Figure 29-1: IP Phone Models Configuration Templates



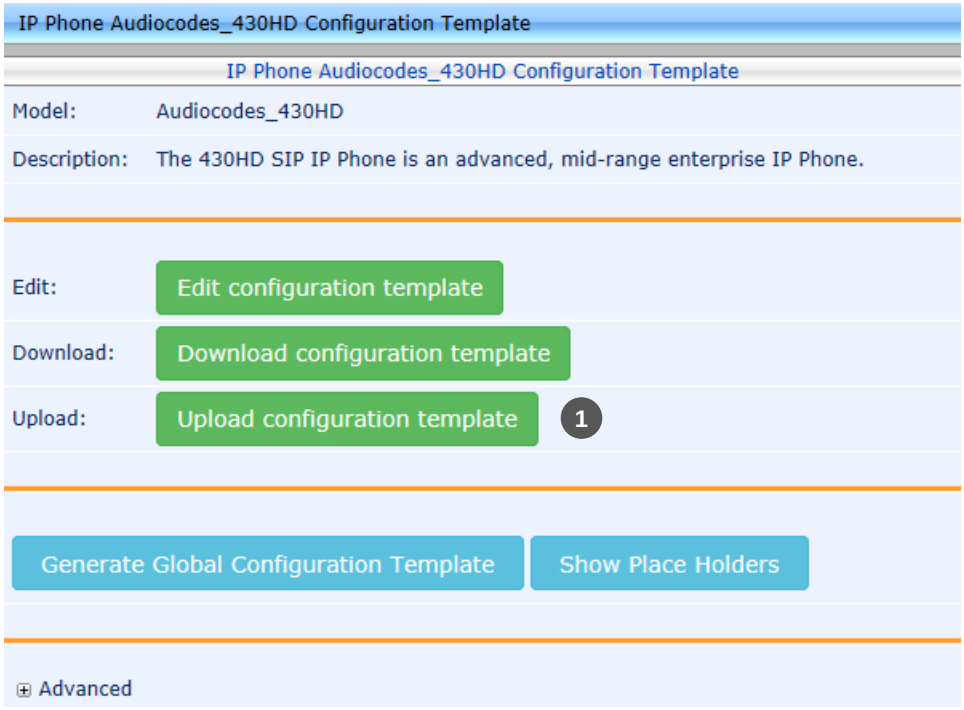
29.2 Editing a Configuration Template

You can edit a phone model's template, however typically it's unnecessary to change it.

➢ **To edit a template:**

1. In the IP Phones Configuration Templates page, click the link of the IP phone model, or its **Edit** icon; this dialog is displayed:

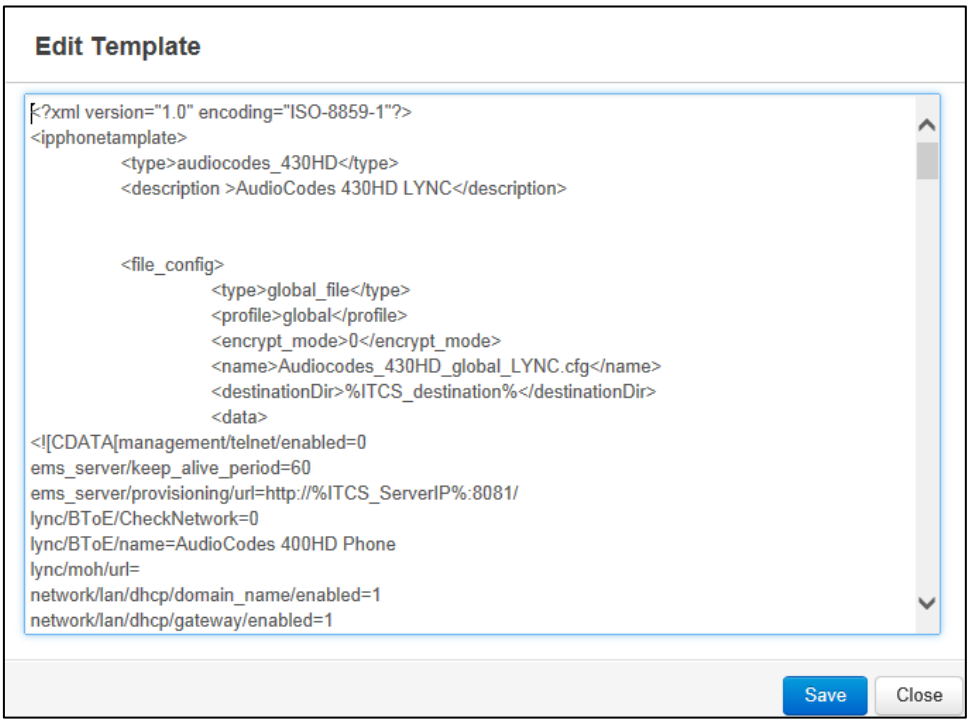
Figure 29-2: IP Phone Configuration Template



1 = generic templates can be modified and generated per phone model

2. Click the **Edit configuration template** button; the template opens in an integral editor:

Figure 29-3: Edit Template



3. Edit the template and then click **Save**; the modified template is saved in its URL location on the server, for example, **http://10.59.0.200/ipp/admin/AudioCodes.php**

   See the phone's *Administrator's Manual* for parameter descriptions.

   See also Section 29.2.8.

29.2.1 About the Template File

The template is an xml file. It defines how a phone's configuration file will be generated. The template shows the following sections:

- The upper section defines the *global* parameters that will be in the *global* configuration file.
- The lower section defines the *private user* parameters that will be in the *device* configuration file.

29.2.2 Global Parameters

Global parameters apply to *all* phones in the enterprise network. The **ems_server/provisioning/url** parameter, for example, is a global parameter because all phones in the enterprise network point to the same Provisioning server.

Only one file is generated for each template, so every change in the global file will automatically impact all the phones from this template.

29.2.3 User-Specific Parameters

Private user parameters apply to specific phones. They can pull global parameters using the template's 'include' function. The **network/lan/vlan/mode=%ITCS_VLANMode%** parameter, for example, is a user parameter because each user in an enterprise is defined in a user-specific VLAN.

These parameters will be stored in the MAC.cfg file for each device.

29.2.4 Restoring a Template to the Default

You can restore a template to the factory default at any time.

➢ **To restore a template to the default:**

- Click the **Restore to default** button (displayed only if a change was made); the phone model and its description are displayed.

29.2.5 Downloading a Template

You can download a template, for example, in order to edit it in a PC-based editor.

➢ **To download a template:**

- Click the **Download configuration template** button and save the *xml* file in a folder on your PC.

29.2.6 Uploading an Edited Template

You can upload a template, for example, after editing it in a PC-based editor.

➢ **To upload an edited template:**

- Click the **Upload configuration template** button and browse to the *xml* template file on your PC. The file will be the new template for the phone model.

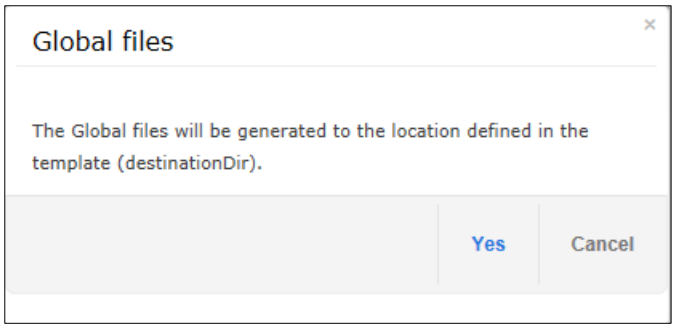
29.2.7 Generating an Edited Template

After editing a template if necessary, you must generate the edited template.

➢ **To generate an edited template:**

1. In the IP Phone Configuration Template page, click the **Generate Configuration Template** button; this prompt is displayed:

Figure 29-4: Generate Configuration Template – 'Global files' Prompt



2. Click **Yes**; the generated template reflecting the edit/s is available in the IP Phone Models Configuration Templates page.

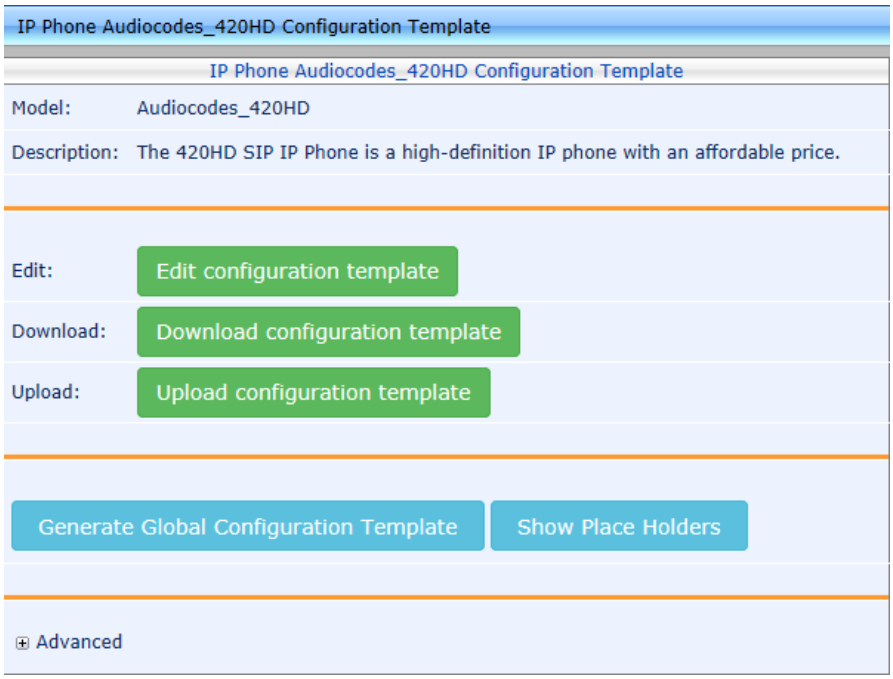
29.2.8 Defining Template Placeholders

Templates include *placeholders* whose values you can define. After defining values, the placeholders are automatically resolved when you generate the template, for example, the placeholder **%ITCS_TimeZoneLocation%** is replaced with the local time zone in a globally distributed enterprise's phones. Placeholders can be defined per system, region, IP phone model, and devices.

➢ **To show placeholders:**

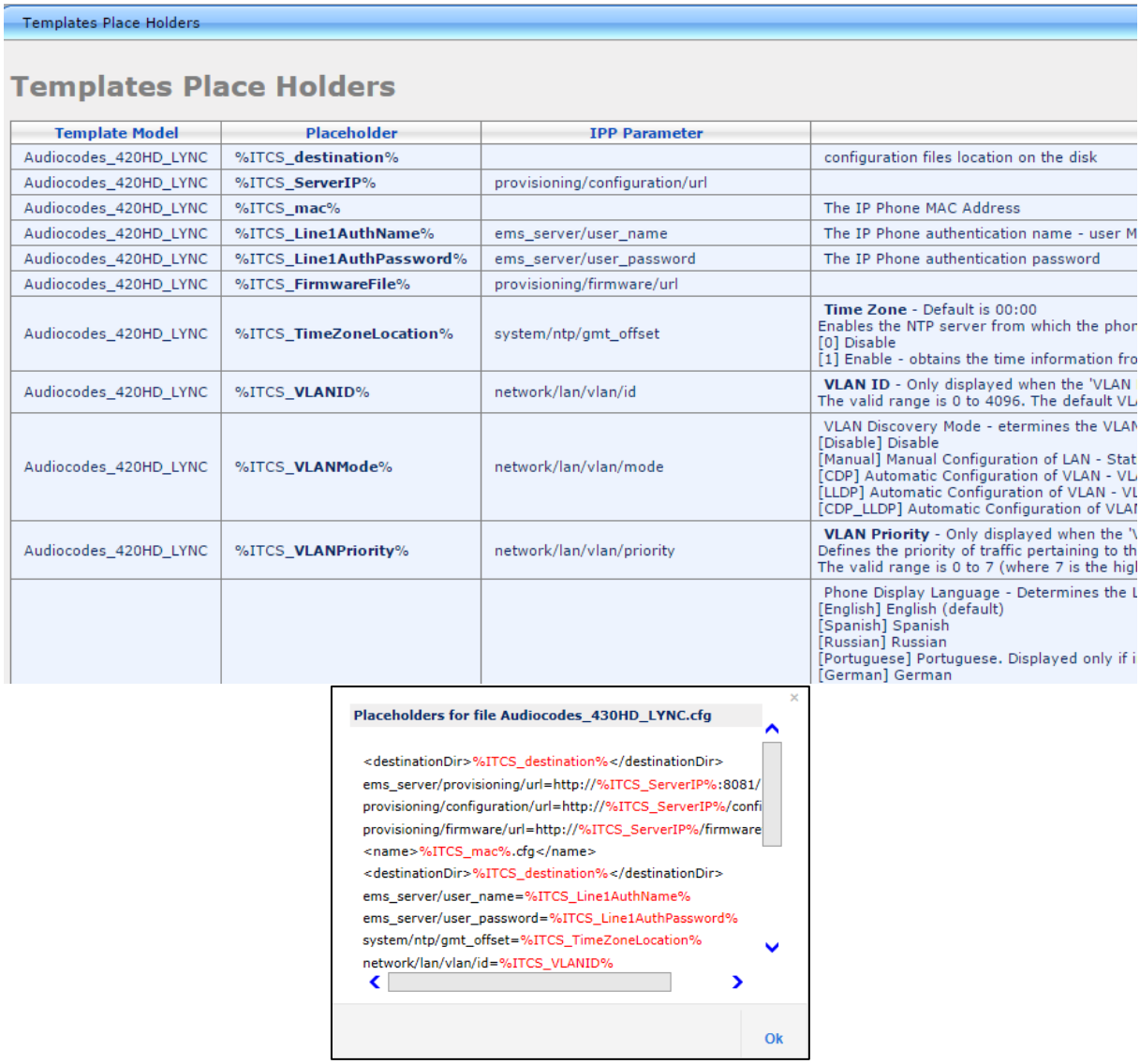
1. In the IP Phones Configuration Templates page (**Phones Configuration** > **Templates**), click the **Edit** button adjacent to the phone model; this screen opens:

Figure 29-5: Configuration Template



2. Click **Show Placeholders** button.

Figure 29-6: Show Placeholders



The figure above shows placeholders that are currently defined in the xml Configuration Template file for the 430HD Skype for Business Desktop phone phone model.

There are four kinds of placeholders: (1) System (2) Phone Model (3) Region (4) Devices.

- To manage an available placeholder, see Section 29.2.8.1
- To add/edit/delete a phone model placeholder, see Section 29.2.8.1.3
- To add/edit/delete a region placeholder, see Section 29.2.8.2
- To add/edit/delete a device placeholder, see Section 29.2.8.3

29.2.8.1 Default Placeholders Values

You can define placeholders. Before defining values for placeholders, you can view the default placeholders values defined.

➢ **To view default placeholders values defined:**

- Access the Default Placeholders Values page (**Phones Configuration** > **Default Placeholders Values**):

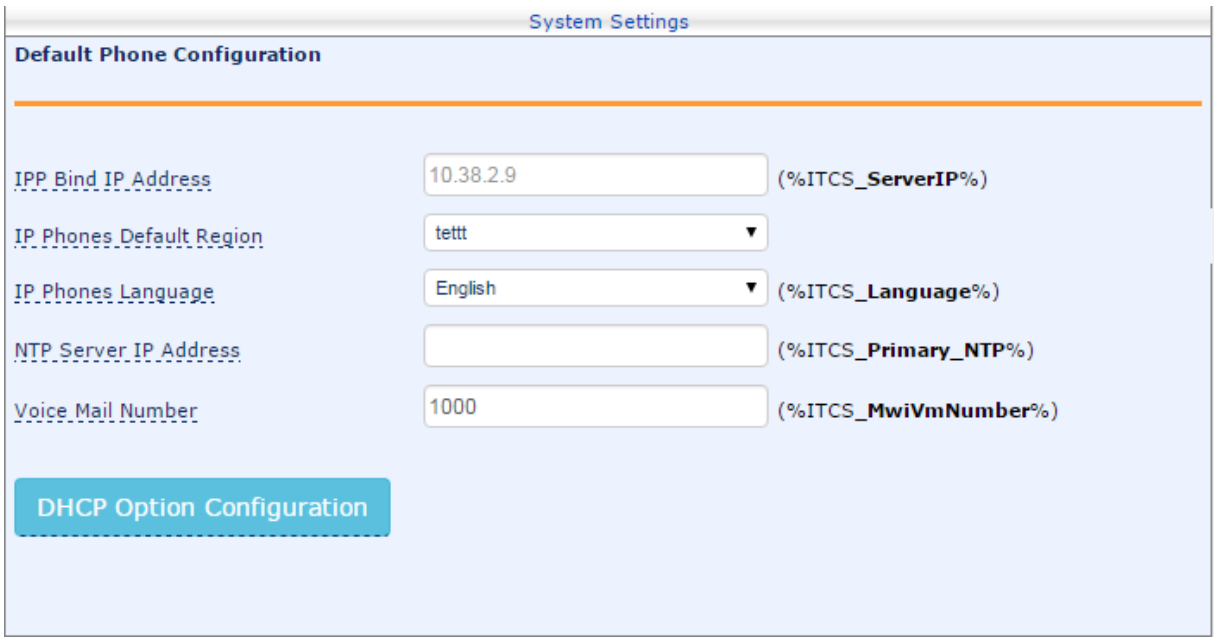
Figure 29-7: Default Placeholders Values

Placeholder	Value	Description
%ITCS_ServerIP%	10.38.2.9	
%ITCS_TimeZoneName%	FET	The IP CloudBond 365 TimeZone/Country name
%ITCS_TimeZoneLocation%	+03:00	The IP CloudBond 365 TimeZone offset format is +/-xx:xx
%ITCS_DayLightSwitch%	0	
%ITCS_MwiVmNumber%	1000	The Voice Mail number
%ITCS_Version%	1447689670	
%ITCS_Language%	English	Determines IPP display user interface language: English, Spanish
%ITCS_SRTP%	0	
%ITCS_IPPhoneUsername%	admin	The IPPhone administration user name
%ITCS_IPPhonePassword%	1234	The IPPhone administration password
%ITCS_destination%	C:/audiocodes/Onebox4IPP/ipp_files/generate/	configuration files location on the disk

➢ **To define a placeholder value:**

1. Access the System Settings page (**Phones Configuration** > **System Settings**).

Figure 29-8: System Settings



2. Define values for available placeholders according to your enterprise IP phone configuration requirements, and then click the **Submit** button. Use the table below as reference. Except for the 'IP Phones Language' parameter.

Table 29-1: System Settings

Parameter	Description
Server FQDN	[Recommended] Point phones to the CloudBond server using the server's name instead of its IP address. If phones are pointed to the CloudBond server's IP address, then if the server is moved due to organizational changes within the enterprise, all phones are disconnected from it. Pointing using the server's name prevents this from occurring.
Default Region	The system uses this region when creating a user after the phone sign-in and the user does not exist.
IP Phones Language	From the dropdown select the language you want displayed in the phones' LCD screens: **English** (default), **French**, **German**, **Hebrew**, **Italian**, **Polish**, **Portuguese**, **Russian**, **Spanish** or **Ukraine**.
NTP Server IP Address	Enter the IP address of the Network Time Protocol (NTP) server from which the phones can retrieve the time.
Voice Mail Number	Enter the number of the enterprise's exchange. Configuration depends on the enterprise environment, specifically, on which exchange the enterprise has setup. If the enterprise has a Skype for Business environment, ignore this parameter. Default=1000.
DHCP Option Configuration	Click this button if your phones are operating directly with a DHCP server without the mediation of an HTTP proxy which is required when the phones are behind a NAT. See Section 29.2.8.1.1.

3. View newly defined placeholder values in the IP Phone Placeholders page (**Phones Configuration** > **System Placeholders**).

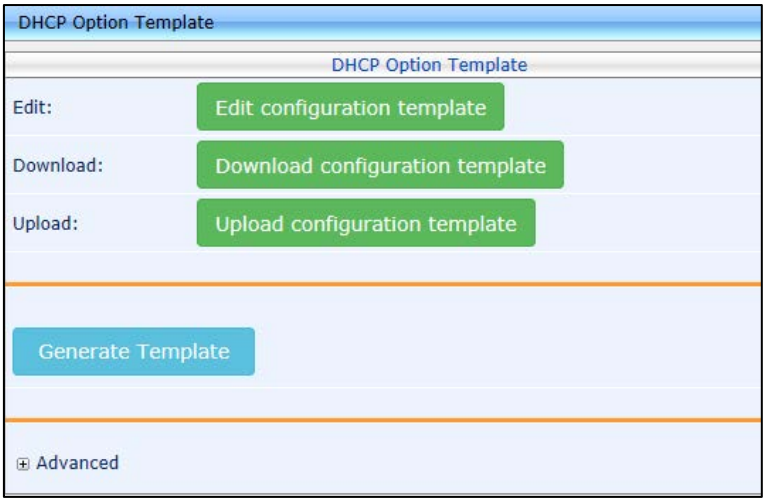
29.2.8.1.1 Configuring DHCP Option

Users can opt to edit the initial DHCP Options 160 cfg file. Choose the **DHCP Option Configuration** button if your phones are communicating directly with a DHCP server without the mediation of an HTTP proxy, which is required when the phones are located behind a NAT.

➢ **To configure DHCP Option:**

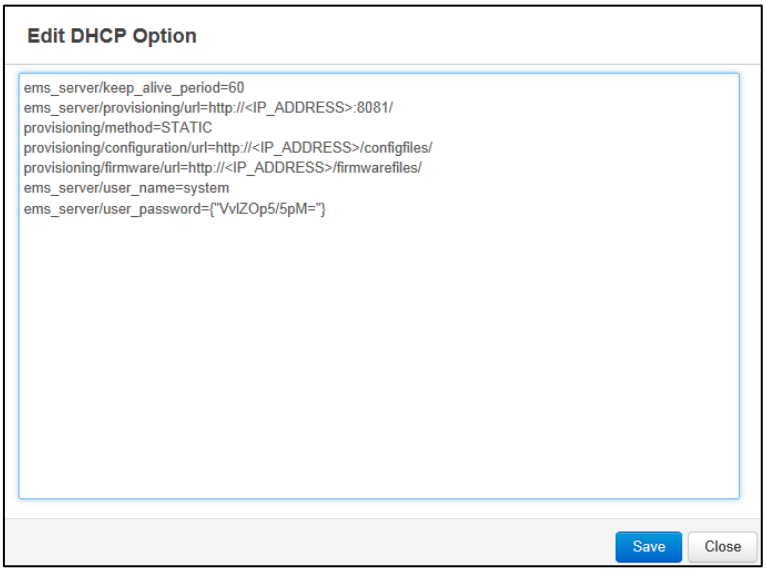
1. Access the System Settings page (**Phones Configuration** > **System Settings**).
2. Click the **DHCP Option Configuration** button; the DHCP Option Template dialog opens.

Figure 29-9: DHCP Option Template



3. Click the **Edit configuration template** button.

Figure 29-10: Edit DHCP Option



4. Configure the DHCP option using the table below as reference.

Table 29-2: DHCP Option

Parameter	Description
Keep alive period	You can configure how often the phones generate a Keep-alive trap towards the IP Phone Management Server. Default: Every 60 minutes. It's advisable to configure a period that does not exceed an hour. The management system may incorrectly determine that the phone is disconnected if a period of more than an hour is configured.
Provisioning URL	Defines the URL (including IP address and port) of the Provisioning server.
Provisioning Method	Defines the provisioning method, i.e., STATIC or Dynamic (DHCP). Do not change this setting. The setting must remain STATIC. If not, the phone will continuously perform restarts.
Provisioning Configuration URL	Defines the URL of the location of the configuration files (including IP address and port) in the Provisioning server.
Provisioning Firmware URL	Defines the URL of the location of the firmware files (including IP address and port) in the Provisioning server.
User Name	Defines the user name for the REST API. Default: **System**. Later, each phone receives its own unique user name. See Section 26.4.
User Password	Encrypted. Defines the user password for the REST API. Default: **System**. Later, each phone receives its own unique user password.

Note: You can always restore these settings to their defaults if necessary, however it's advisable to leave these settings unchanged.

5. Click **Save**.

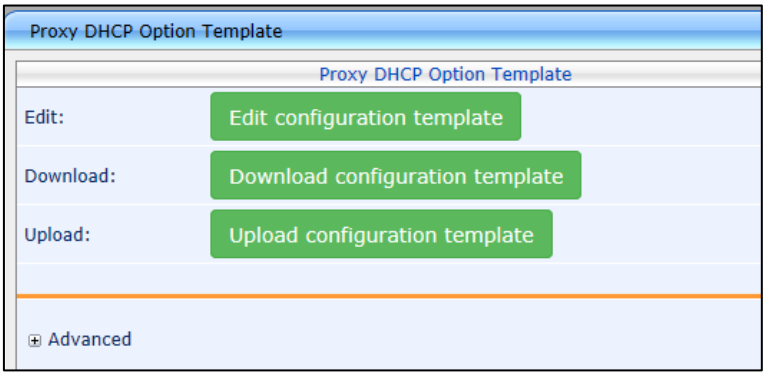
29.2.8.1.2 Configuring the HTTP Proxy

Users can opt to edit the initial DHCP Options 160 cfg file. Choose the **HTTP Proxy Configuration** button if your phones are communicating with an HTTP proxy, which is required when the phones are located behind a NAT.

➢ **To configure the HTTP proxy:**

1. Access the System Settings page (**Phones Configuration** > **System Settings**).
2. Click the **HTTP Proxy Configuration** button; the Proxy DHCP Option Template screen opens.

Figure 29-11: Proxy DHCP Option Template



3. Click the **Edit configuration template** button; the same Edit DHCP Option screen shown in the previous section opens. Edit as described in the previous section.
4. Click **Save**.

29.2.8.1.3 Phone Model Placeholders

You can edit the values defined for an existing phone model placeholder and/or you can add a new model placeholder.

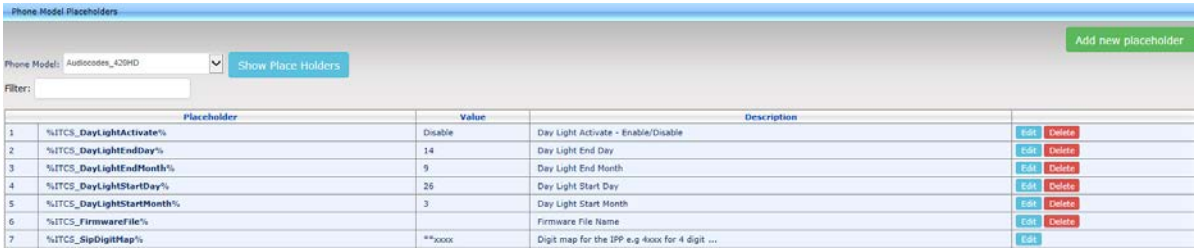
29.2.8.1.4 Editing Phone Model Placeholders

You can edit the values for existing phone model placeholders.

➢ **To edit values for existing phone model placeholders:**

- Open the Phone Model Placeholders page (Phones Configuration>Phone Model Placeholders):

Figure 29-12: Phone Model Placeholders

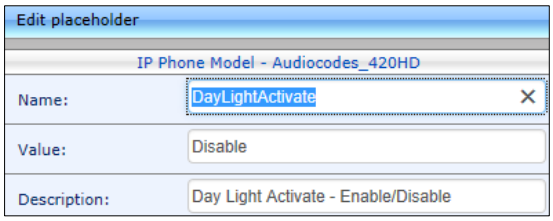


The page shows the placeholders and their values defined for a phone model.

➢ **To edit a value of an existing phone model placeholder:**

1. Click the **Edit** button; the 'Edit placeholder' screen is displayed:

Figure 29-13: Edit Phone Model Placeholder



2. In the 'Name' field, you can edit the name of the placeholder.
3. In the 'Value' field, you can edit the value of the placeholder.
4. In the 'Description' field, you can edit the placeholder description.
5. Click **Submit**; the edited placeholder is added to the table.

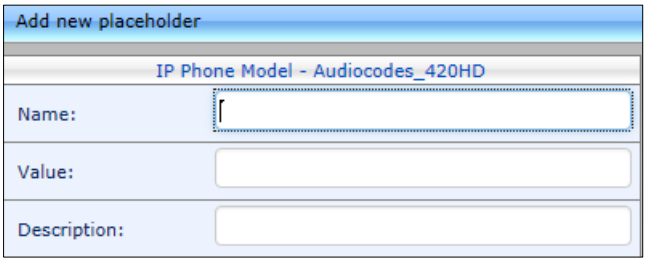
29.2.8.1.5 Adding a New Phone Model Placeholder

You can add a new phone model placeholder. A new placeholder can be added and assigned with a new value.

➢ **To add a new phone model placeholder:**

1. Open the Phone Model Placeholders page (**Phones Configuration** > **Phone Model Placeholders**):
2. From the **IP Phone Model** dropdown in the Phone Model Placeholders page, select the model, e.g., IP Phone Model – Audiocodes_420HD.
3. Click the **Add new placeholder** button.

Figure 29-14: Add New Phone Model Placeholder



4. In the 'Name' field, enter the name of the new placeholder.
5. In the 'Value' field, enter the value of the new placeholder.
6. In the 'Description' field, enter a short description for the new placeholder.
7. Click **Submit**; the new placeholder is added to the table.

29.2.8.2 Region Placeholders

You can edit values for existing region placeholders and/or you can add new region placeholders.

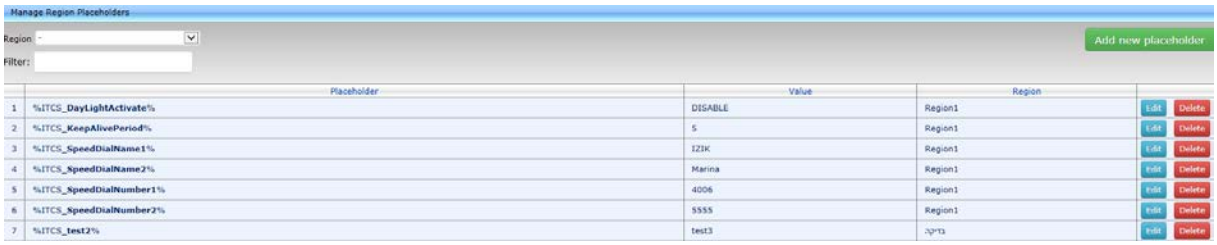
29.2.8.2.1 Editing Region Placeholders

You can edit the values for existing region placeholders.

➢ **To edit values for existing region placeholders:**

- Access the Manage Region Placeholders page (**Phones Configuration** > **Region Placeholders**):

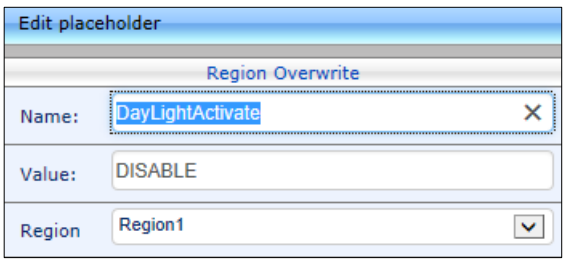
Figure 29-15: Manage Region Placeholders



➢ **To edit a value of an existing region placeholder:**

1. Click the **Edit** button; the 'Edit placeholder' screen is displayed:

Figure 29-16: Edit Region Placeholder



2. In the 'Name' field, you can edit the name of the placeholder.
3. In the 'Value' field, you can edit the value of the placeholder.
4. From the 'Region' dropdown, you can select another region.
5. Click **Submit**; the edited placeholder is added to the table.

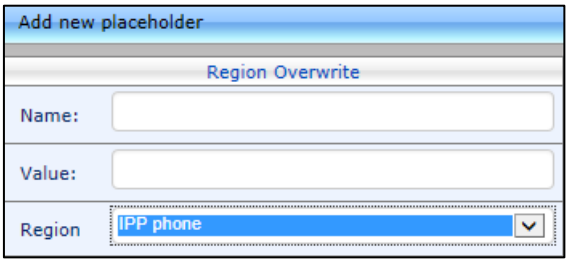
29.2.8.2.2 Adding a New Region Placeholder

You can add a new region placeholder.

➢ **To add a new region placeholder:**

1. Access the Manage Region Placeholders page (**Phones Configuration** > **Region Placeholders**):
2. From the **Region** dropdown, select a region, and then click the **Add new placeholder** button.

Figure 29-17: Add New Region Placeholder



3. In the 'Name' field, enter the name of the new placeholder.
4. In the 'Value' field, enter the value of the new placeholder.
5. From the 'Region' dropdown, select a new region.
6. Click **Submit**; the new placeholder is added to the table.

29.2.8.3 Devices Placeholders

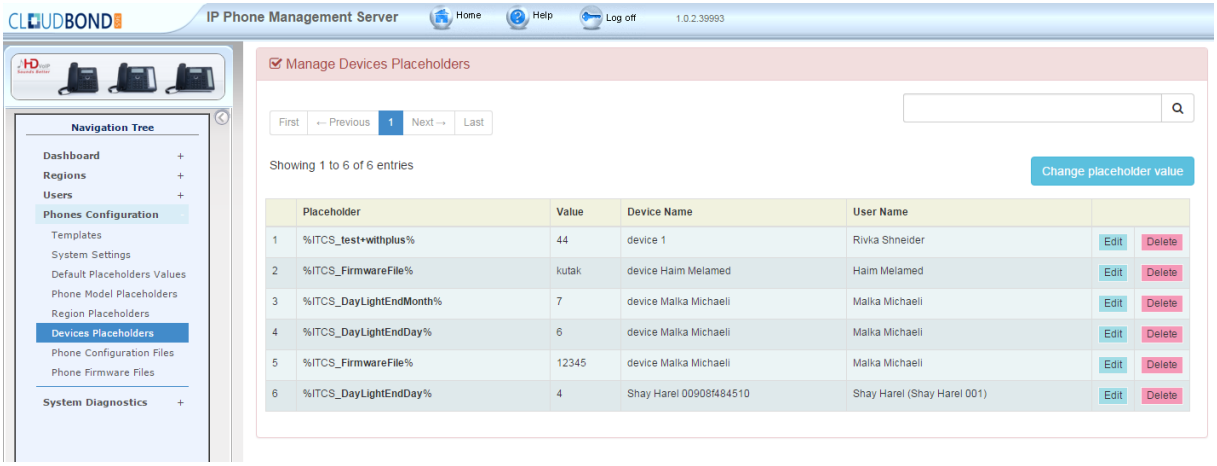
You can change placeholder's values for specific phones, for example, you can change placeholder's values for the CEO's phone. You can also edit a phone's placeholder's values.

29.2.8.3.1 Changing a Device Placeholder Value

➢ **To change a device placeholder value:**

1. Access the Manage Devices Placeholders page (**Phones Configuration** > **Devices Placeholders**):

Figure 29-18: Manage Devices Placeholders



Tip: Use the 'Filter' field to quickly find a specific device if there are many devices listed. You can search for a device by its name or by its extension.

2. Click the **Change placeholder value** button; the Change IP Phone Device Placeholder screen opens.

Figure 29-19: Change IP Phone Device Placeholder

3. From the **Device** dropdown, select the device.

Figure 29-20: Change IP Phone Device Placeholder – Selecting the Device

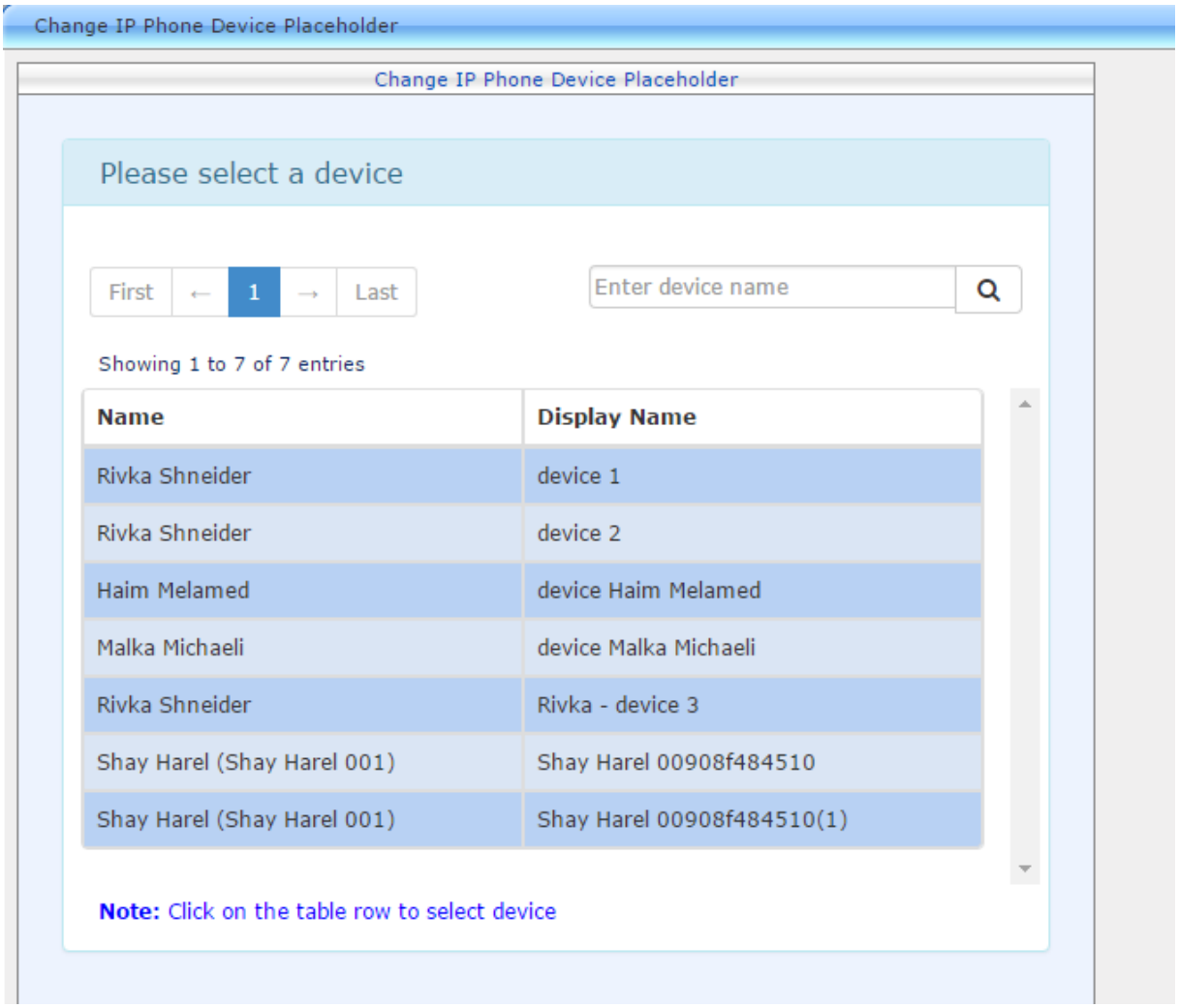
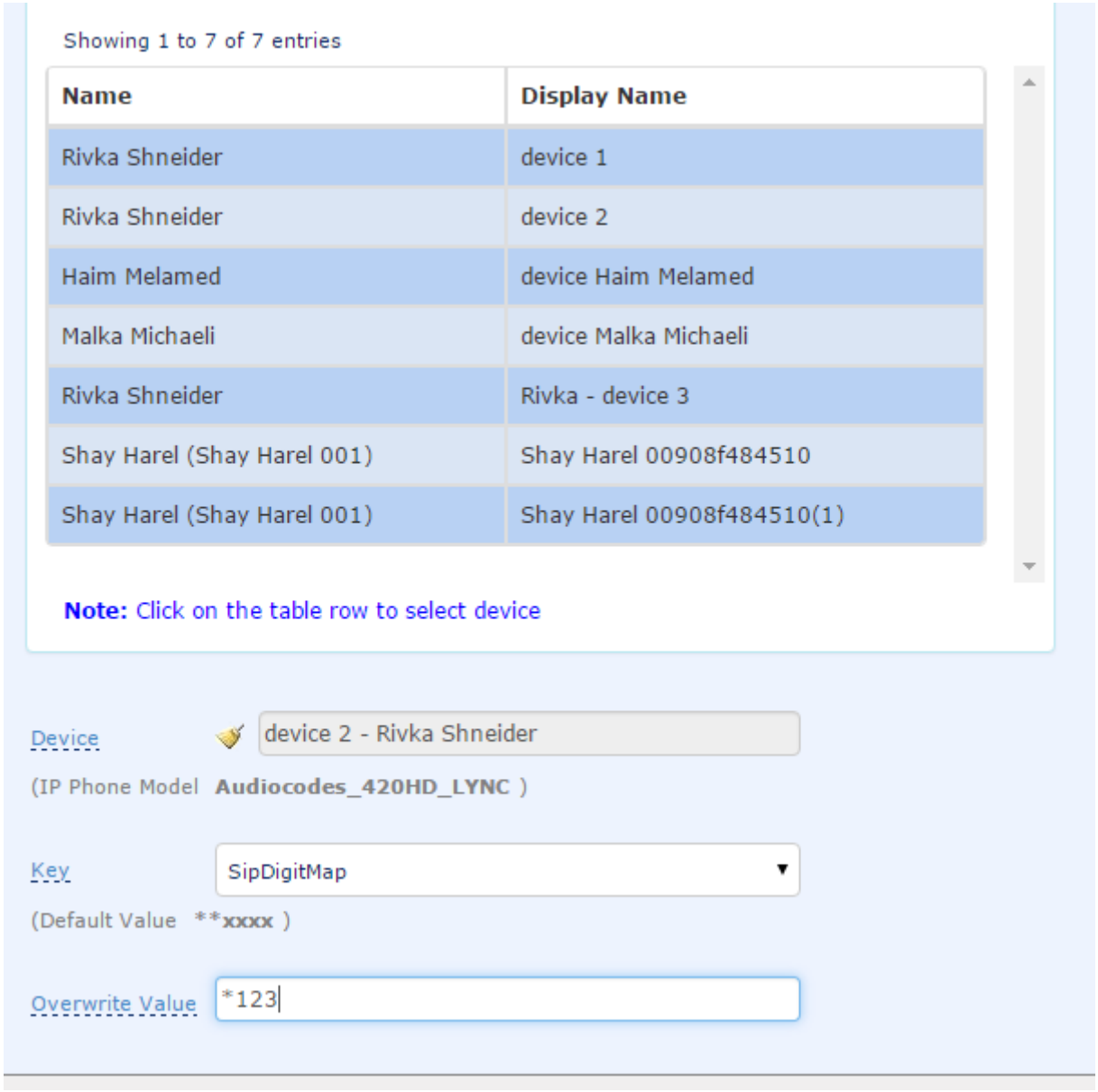


Figure 29-21: Edit IP Phone Device Placeholder



4. From the **Key** dropdown, choose the phone configuration key.
5. Enter the device's overwrite value in the 'Overwrite Value' field, and then click the **Submit** button.

29.2.8.3.2 Editing a Device Placeholder Value

You can edit a device placeholder value.

➢ **To edit a device placeholder value:**

1. Access the Manage Devices Placeholders page (**Phones Configuration** > **Devices Placeholders**).
2. Click the **Edit** button; the 'Edit placeholder' screen is displayed, as shown above.
3. In the 'Overwrite Value' field, you enter a new value.
4. Click **Submit**; the edited device placeholder is added to the table.

Note: The new overwrite value is not automatically generated in the device IP phone configuration file. To generate the new device in the IP phone configuration template file, click the **Generate Configuration Template** button in the Templates page (**Phones Configuration** > **Templates**).

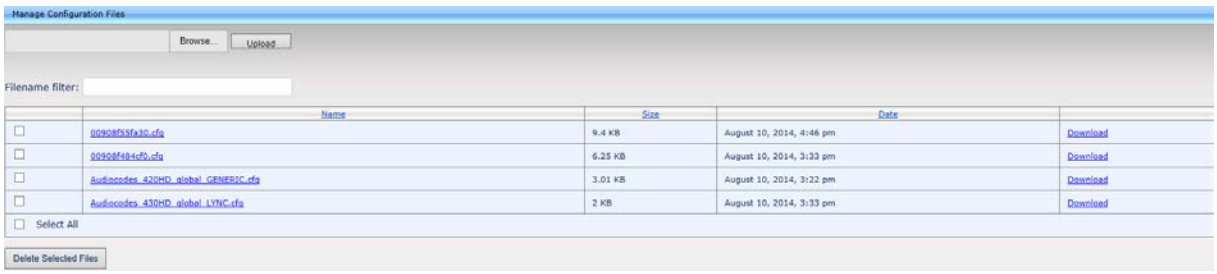
29.3 Managing Configuration Files

You can manage IP phones configuration files. All cfg files are created and located on the CloudBond server. You can view and manage storage and upload and delete files from storage. To avoid network congestion, a delay feature enables an interval between each installation.

➢ **To manage IP phone configuration files:**

- Access the Manage Configuration Files page (**Phones Configuration** > **Phone Configuration Files**).

Figure 29-22: Manage Configuration Files



In this page you can do the following:

- Filter by filename the cfg configuration files listed.
- Browse to a location on your PC and upload a cfg configuration file.
- Select and delete any or all of the cfg configuration files listed.
- Open any of the cfg configuration files listed in an editor.
- Save any of the cfg configuration files listed.
- Download any of the cfg configuration files listed.
- View all configuration files currently located on the server (global configuration files, company directory configuration files, and IP phone configuration files).

29.4 Managing Phone Firmware Files

You can manage the phones' img firmware files.

➢ **To manage the img firmware files:**

- Access the Phone Firmware Files page (**Phones Configuration** > **Phone Firmware Files**).

Figure 29-23: Phone Firmware Files

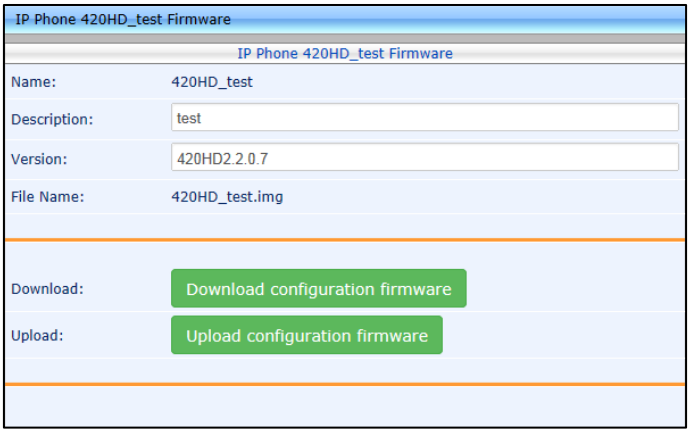
In this page you can do the following:

- View all img firmware files currently located on the server
- Add a new IP phone firmware file. Note that if default names are used (e.g., 420HDimg), all devices of this type will automatically use it.
- Filter the img firmware files listed by filename. img .

- Determine from the phone's name if it does not have firmware loaded – it will be **red**-coded. If so, you must upload the phone's img firmware file that you obtained from AudioCodes, to the CloudBond Provisioning server:

  a. Click the name of the phone; this screen opens:

Figure 29-24: img Firmware File Download/Upload



  b. Click the **Upload firmware** button, and then navigate to the img file you received from AudioCodes and save it on the CloudBond Provisioning server. You can perform this part of the installation procedure before or after configuring your enterprise's DHCP server with DHCP Option 160 (see also Section 26.2).

- Download a phone's img firmware file to the PC. Click the phone's Name; the screen shown in Figure 29-23 opens. Click the **Download firmware** button.
- Edit a phone's img firmware file. Click the name or click the **Edit** button in the row.
- Delete any img firmware file listed. Click the **Delete** button in the row.

- Manage img firmware files by grouping them.
  - **a.** Click the **Add new IP Phone firmware** button.

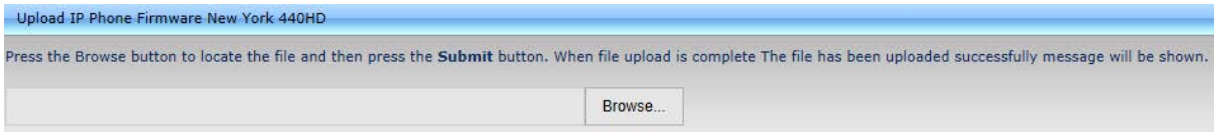
Figure 29-25: Add IP Phone Firmware

  - **b.** Define an intuitive 'Name' and 'Description' to facilitate easy identification. You can leave the 'Version' field empty, and then click the **Submit** button; this screen is displayed:

Figure 29-26: Upload Configuration Firmware

  - **c.** Click **Upload firmware**; this screen is displayed:

Figure 29-27: Browse to Firmware



  - **d.** Click **Browse**, navigate to the img file, and then click the **Submit** button; the 'Version' field is populated and the img file is uploaded to the phone.

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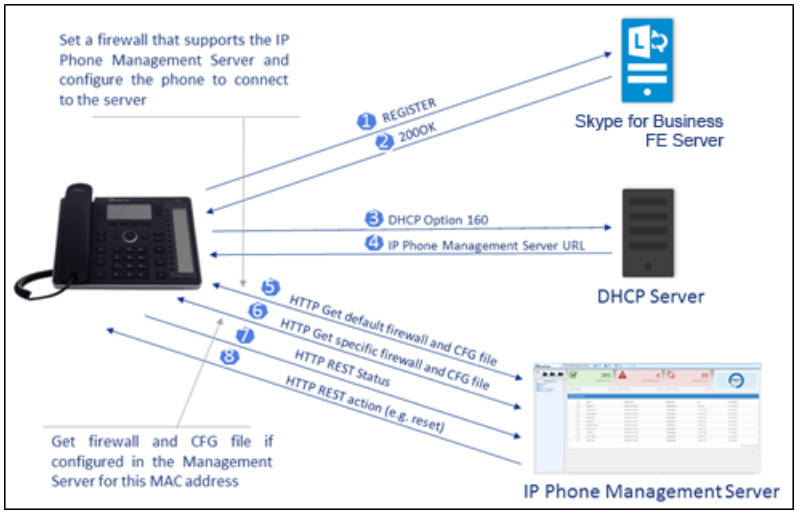
30 Provisioning Flows

This chapter illustrates the provisioning flows between phones and IP Phone Management server.

30.1 Skype for Business Desktop Phones

The figure below shows the provisioning flow between the Skype for Business Desktop phone and the IP Phone Management server.

Figure 30-1: Skype for Business Desktop Phone



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31 Ports Required for IP Phone Management

The table below shows the firewall ports configuration required for IP phone management to set up, configure, and maintain AudioCodes IP phones in an enterprise network, from a single centralized point.

Table 31-1: Ports Required for IP Phone Management

Connection	Port Type	Port Number	Purpose	Port Side / Flow Direction
CloudBond ↔ IP Phone Management Server	TCP (HTTP)	80	HTTP connection between the CloudBond server and the IP Phone Manager Web browser that is used for Web management, for downloading firmware and for REST requests sent from the IP Phone Manager to the phones.	CloudBond 365 server side / Bi-Directional
	TCP (HTTPS)	443	HTTPS connection between the CloudBond 365 server and the IP Phone Manager Web browser that is used for Web management and for downloading firmware.	CloudBond 365 server side / Bi-Directional

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Part V

EMS Management

32 Introduction

The CloudBond 365 product series can be managed remotely using AudioCodes Element Management System (EMS). The EMS supports the management of the following product configurations:

- CloudBond 365 Standard Edition (Mediant 800B platform)
- CloudBond 365 Standard Plus Edition (Mediant 800B platform)
- CloudBond 365 Pro Edition (Mediant Server platform)
- CloudBond 365 Enterprise Edition (Mediant Server platform)
- CloudBond 365 Virtualized Edition

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33 Status Monitoring and Navigation

The EMS Status pane shows the CloudBond 365 devices front panel with the regular redundant alarm status color coding. The following actions can be performed on the device: Switchover; Reset whole chassis or Reset Redundant chassis (executable actions are not supported for this product series).

The figures below display the CloudBond 365 Status panes.

Figure 13-1: CloudBond 365 Pro Edition

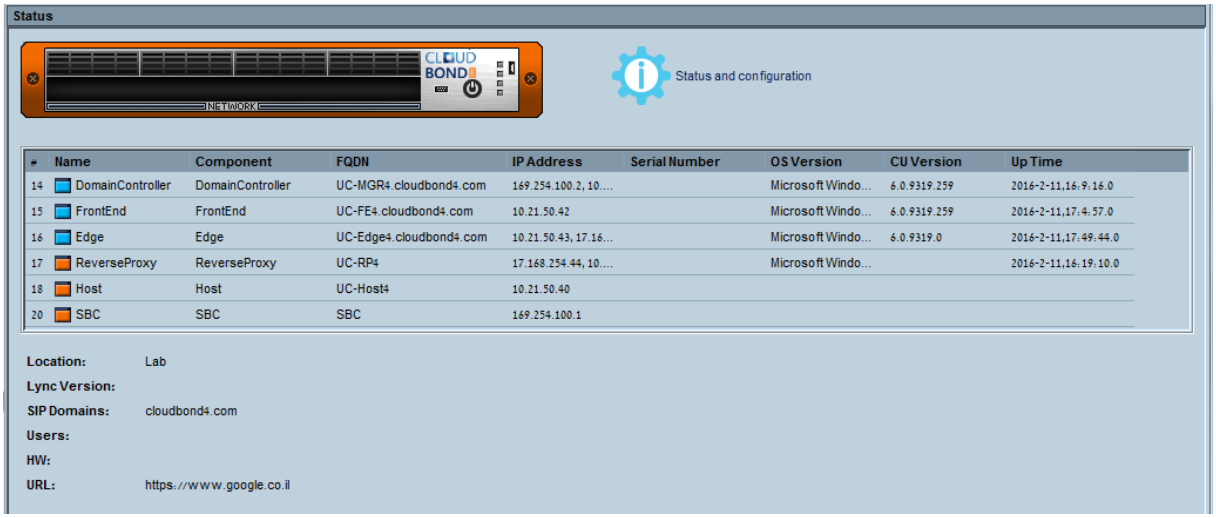


Figure 13-2: CloudBond 365 Standard Edition

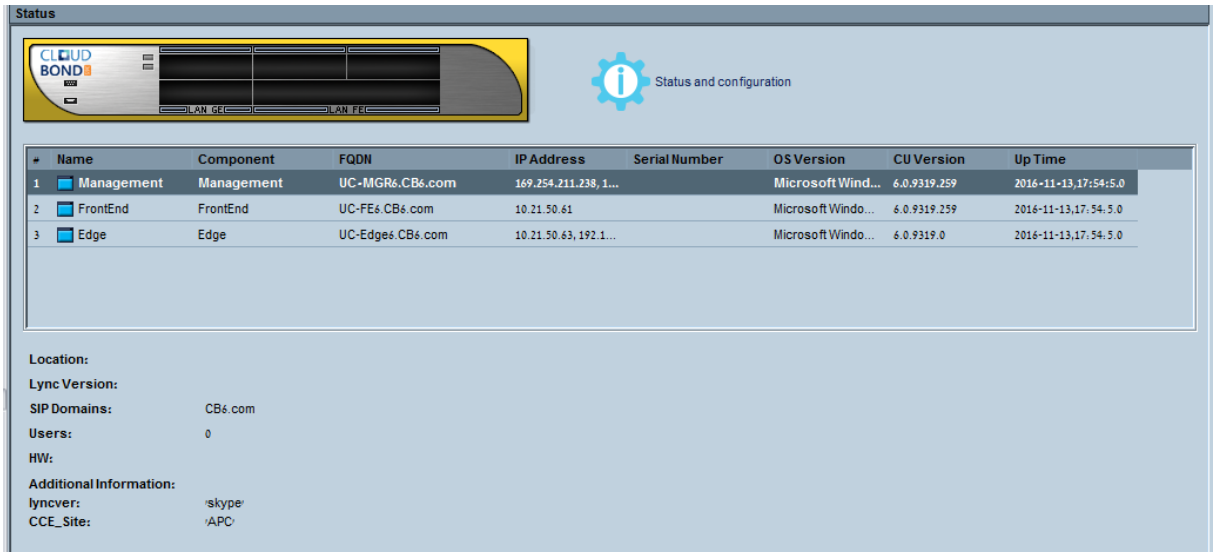
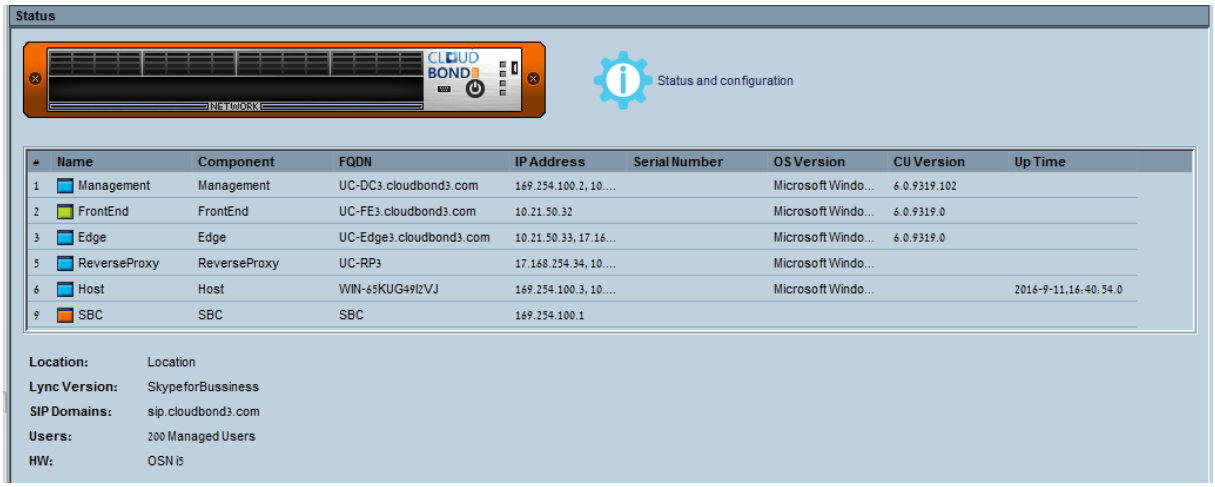


Figure 13-3: CloudBond 365 Enterprise Edition



For more information, refer to the *EMS User's Manual*.

The following table describes the components that are displayed:

Table 33-1: CloudBond 365 Component Statuses

Detail	Description
Name	The name of the Microsoft Windows (Skype for Business Server) component.
Component	The type of the Microsoft Windows (Skype for Business Server) component.
FQDN	The components FQDN in the Enterprise's network.
IP Address	The IP address of the component.
Serial Number	The serial number of the component.
OS Version	The Microsoft Windows Operating system of the component.
CU Version	The Microsoft Windows Cumulative Update version.
Up Time	The time that the component is active.

For accessing the CloudBond 365 Web interface, click the

link in the status screen.

Note: Single Sign-on is not supported for the CloudBond 365 product. Consequently when you click the above link, the CloudBond 365 Login screen is displayed and you must then enter your login credentials.

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34 CloudBond 365 Alarms

This chapter describes the CloudBond 365 alarms that are raised on the CloudBond 365 platform and sent to the EMS server. These alarms are displayed in the Alarm Browser pane in the Status screen (see Chapter 33). Double-click the alarm whose details you wish to display.

34.1 Commit License Failed

Table 34-1: Commit License Failed

Description	This alarm is raised when the EMS Main Agent is unable to store the license in the Active Directory.		
SNMP Alarm	acCbManLicenseCommitAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.1		
Alarm Source			
Alarm Title	Commit License Failed		
Alarm Type	Other		
Probable Cause	Other		
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Major	Unable to store the license in the Active Directory	Unable to commit the license in Active Directory.	
Cleared	The license has been successfully stored in the Active Directory.		

34.2 Component Unreachable

Table 34-2: Component Unreachable

Description	This alarm is raised when the EMS Main Agent is unable to connect to one of the client agents in the CloudBond environment.		
SNMP Alarm	acCbManEnvUnreachableAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.2		
Alarm Source	<n> (where n is the component name)		
Alarm Title	Component Unreachable		
Alarm Type	Other		
Probable Cause	Other		
Alarm Severity		<text>	**Corrective Action**
Major	Client agent is unavailable	Unable to connect to the client agent on <CloudBond component name>.	
Cleared	Client agent is available again.		

34.3 Component Restart

Table 34-3: Component Restart

Description	This alarm is raised when a CloudBond component has restarted.		
SNMP Alarm	acCbManEnvRestartEvent		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.3		
Alarm Source	<n> (where n is the component name)		
Alarm Title			
Alarm Type	Other		
Probable Cause	Other		
Additional Info	The restart reason		
Alarm Severity		**<text>**	**Corrective Action**
Major	Indeterminate	CloudBond component <component name> restarted	
Cleared			

34.4 Component Performance Counter General

Table 34-4: Component Performance Counter General

Description	This alarm is raised when the generic performance counter has reached a pre-defined threshold for memory/CPU/disk.		
SNMP Alarm	acCbCompPcGenAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.11		
Alarm Source	<n>\<g>\<p> (where n is the component name, g is the performance group and p is performance counter name)		
Alarm Title	Component Performance Counter General		
Alarm Type	QualityOfServiceAlarm		
Probable Cause	Other		
Additional Info			
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Critical	Pre-defined severity per counter type.	<Performance counter> high level <x>.	
Major	Pre-defined severity per counter type.	<Performance counter> high level <x>.	
Warning	Pre-defined severity per counter type.	<Performance counter> high level <x>.	
Cleared	When counter returns below the threshold level.		

34.5 Component Performance Counter Service

Table 34-5: Component Performance Counter Service

Description	This alarm is raised when the service-related performance counter has reached a pre-defined threshold. Related to activity of SfB/Lync services.		
SNMP Alarm	**acCbCompPcServAlarm**		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.12		
Alarm Source	<n>\<g>\<p> (where n is the component name, g is the performance group and p is performance counter name)		
Alarm Title	Component Performance Counter Service		
Alarm Type	QualityOfServiceAlarm		
Probable Cause			
Additional Info			
Alarm Severity	**Condition**	**<text>**	**Corrective Action**

Critical	Pre-defined severity per each counter type	<Performance counter> high level <x>	
Major	Pre-defined severity per each counter type	<Performance counter> high level <x>	
Warning	Pre-defined severity per each counter type	<Performance counter> high level <x>	
Cleared	When counter returns below the threshold level.		

34.6 Component Service Status

Table 34-6: Component Service Status

Description	This alarm is raised when a component service is down.		
SNMP Alarm	acCbCompSrvAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.13		
Alarm Source	<n>\<sn> (where n is the component name and sn is the service name)		
Alarm Title	Component Service Status		
Alarm Type	Other		
Probable Cause	Other		
Additional Info			
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Critical	Service is down	SERVICE_STOPPED (indicates which service is down)	
Major	Service is down	SERVICE_STOPPED (indicates which service is down)	
Warning	Service is down	SERVICE_STOPPED. (indicates which service is down)	
Cleared	Service is running		
Note: the severity is determined according to the service's importance to system functionality.			

34.7 Component Event Viewer

Table 34-7: Component Event Viewer

Description	This alarm is raised when report is generated in the Event Viewer for a component error.		
SNMP Alarm	acCbCompEventViewer		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.14		
Alarm Source	<n>\<e> (where n is the component name and e is Type of event (System/Security..))		
Alarm Title	Component Event Viewer		
Alarm Type	Other		
Probable Cause	Other		
Additional Info	Contains the original severity of the event. This event is displayed in the EMS as type “Info”.		
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Indeterminate		The text of the event	

34.8 Component Event Viewer Past Hours

Table 34-8: Component Event Viewer Past Hours

Description	This alarm is raised when an error is generated in the Event Viewer in the past 24 hours.		
SNMP Alarm	acCbCompEventLogAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.15		
Alarm Source	<n> (where n is the component name)		
Alarm Title	Component Event Viewer Past Hours		
Alarm Type	Other		
Probable Cause	Other		
Additional Info			
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Critical	Event Log has a Critical alarm.	The event log has errors	
Major	Event Log has a Major alarm.	The event log has errors	
Warning	Event Log has a Warning alarm.	The event log has errors	
Cleared	No errors have occurred in the past hours.		

34.9 Component Event Viewer Dropped

Table 34-9: Component Event Viewer Dropped

Description	This alarm is raised when events from the Event Viewer are dropped and not sent to the EMS after the sending rate threshold has been exceeded.
SNMP Alarm	acCbCompEventViewerDropped
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.16
Alarm Source	
Alarm Title	
Alarm Type	Other
Probable Cause	Other
Additional Info	
Alarm Severity	Indeterminate

34.10 Admin License Expired

Table 34-10: Admin License Expired

Description	This alarm is raised by the CloudBond administrator when the CloudBond user license is invalid.		
SNMP Alarm	acCbAdminLicInvalidAlarm		
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.21		
Alarm Source			
Alarm Title			
Alarm Type	Other		
Probable Cause	Other		
Additional Info			
Alarm Severity	**Condition**	**<text>**	**Corrective Action**
Major	License is invalid/expired	▪ License expired on <Data of the license> ▪ Invalid license or missing license in Active Directory	
Cleared	License is valid		

34.11 Admin License Violation

Table 34-11: Admin License Violation

Description	This alarm is raised when the CloudBond administrator attempts to define users exceeding the maximum capacity set by license.
SNMP Alarm	acCbAdminLicViolationEvent
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.22
Alarm Source	
Alarm Title	
Alarm Type	Other
Probable Cause	Other
Additional Info	
Alarm Severity	Indeterminate

34.12 Admin Create User Failed

Table 34-12: Admin Create User Failed

Description	This alarm is raised when the CloudBond administrator fails to create a user in Skype for Business.
SNMP Alarm	acCbAdminOpsUsrFailedEvent
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.23
Alarm Source	
Alarm Title	Other
Alarm Type	Other
Probable Cause	
Alarm Text	Failed to create user in the SfB environment
Additional Info	
Alarm Severity	Indeterminate

34.13 Admin Backup Failed

Table 34-13: Admin Backup Failed

Description	This alarm is raised when the system backup fails.
SNMP Alarm	acCbAdminOpsBackupEvent
SNMP OID	1.3.6.1.4.1.5003.9.80.3.2.0.24
Alarm Source	
Alarm Title	
Alarm Type	Other
Probable Cause	Other
Alarm Text	System backup failed
Additional Info	
Alarm Severity	Indeterminate

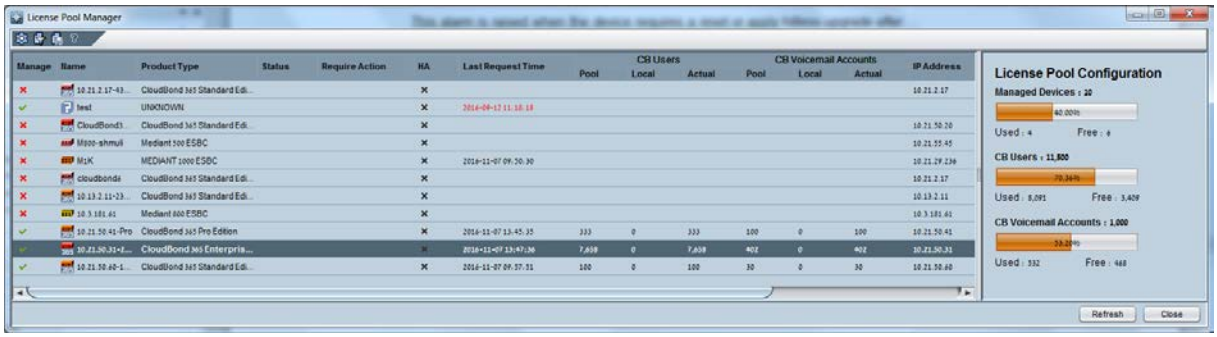
35 License Management

The "License Pool Manager" enables operators to centrally manage and distribute session licenses for multiple CloudBond 365 devices using a flexible license pool. The operator can allocate and de-allocate the licenses for the devices in the pool according to their capacity requirements.

➢ **To access the License Pool Manager:**

- In the EMS Main Menu, select **Tools** > **License Pool Manager**. The License Pool Manager screen is displayed:

Figure 22-1: License Pool Manager - CloudBond Devices



The following license parameters can be managed for CloudBond 365 devices:

- The number of CB user sessions
- The number of CB PBX users (for future use)
- The number of CB analog devices (for future use)
- The number of CB voicemail accounts (for future use)

For more information, refer to the *EMS User's Manual*.

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Part VI

Backup and Restore

36 Introduction

This part describes how to configure and use the CloudBond backup and restore functionality.

The functionality uses two third-party components:

- **Veeam Endpoint Backup (VEB):** A designated tool installed on the host server to back up the host itself, without its virtual machines (i.e., Front End and Edge servers).
- **Veeam Backup and Replication (VBR):** A designated tool installed on the CloudBond host server or on an external server, to back up the CloudBond virtual machines (VM) only.

CloudBond products are divided to two main topologies, and two different hardware types:

- Main Topologies:
  - Standalone configuration
  - Pool-paired branch - Branch Pool Appliance (BPA)
- Hardware:
  - Mediant 800
  - HP Server (host)

Some procedures require a different setup, depending on hardware and topology. If a different setup is required, the correct hardware and topology is noted.

Note: Backup and restore are critical functions. It is important to follow all steps described in the procedures in this document. Do not skip any steps when performing Backup or Restore.

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37 Backup Architecture

This section describes the different backup architecture options and components which are used for CloudBond 365. Veeam components consist of the following:

- VEB
- VBR Manager
- Backup Repository

One of the important issues regarding backup and restore procedures is the location of CloudBond 365 – whether it is at the Service Provider or at the customer premises. The backup and restore infrastructure must be on the same local network as the CloudBond 365.

This document does not distinguish between the different locations of the CloudBond 365. The setup is similar for both locations You must design your architecture with the limitation that the backup and restore infrastricture must be on the same LAN as the CloudBond 365 (except for the cloud repository that is always on the cloud).

Figure 37-1: Backup Architecture on Premises

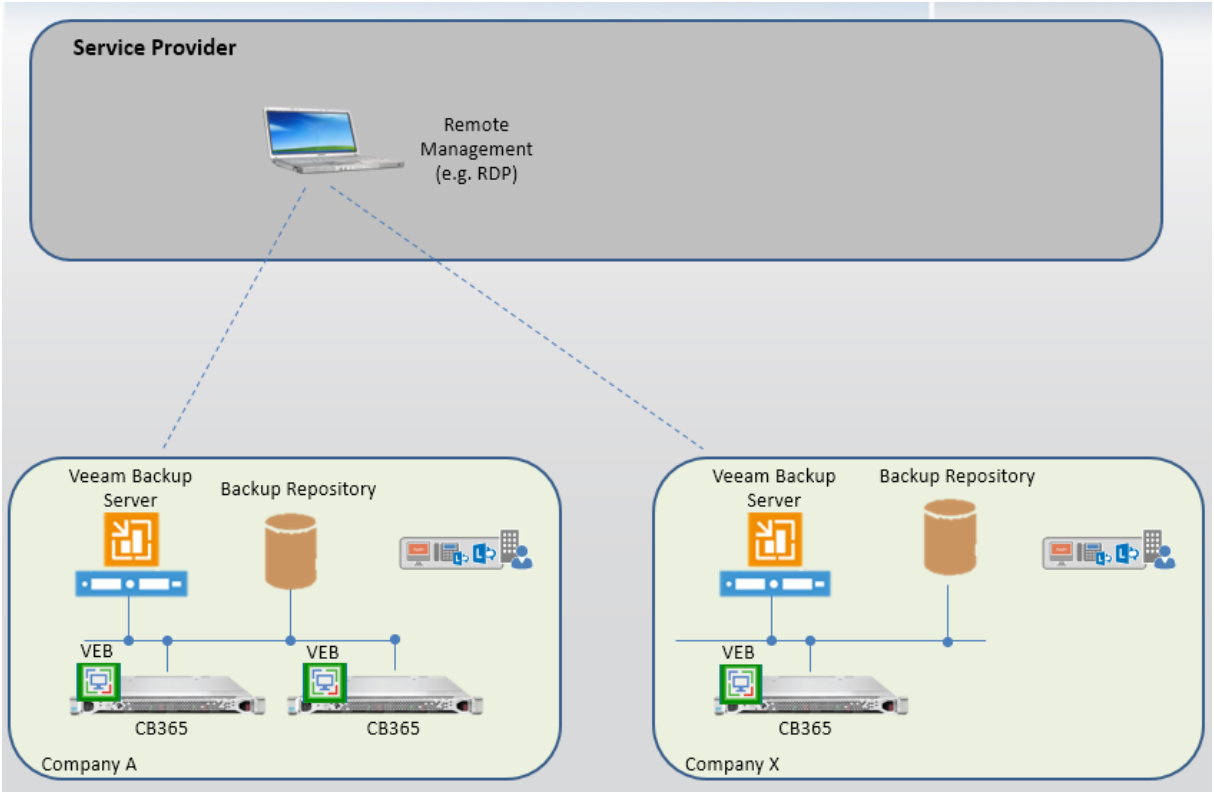
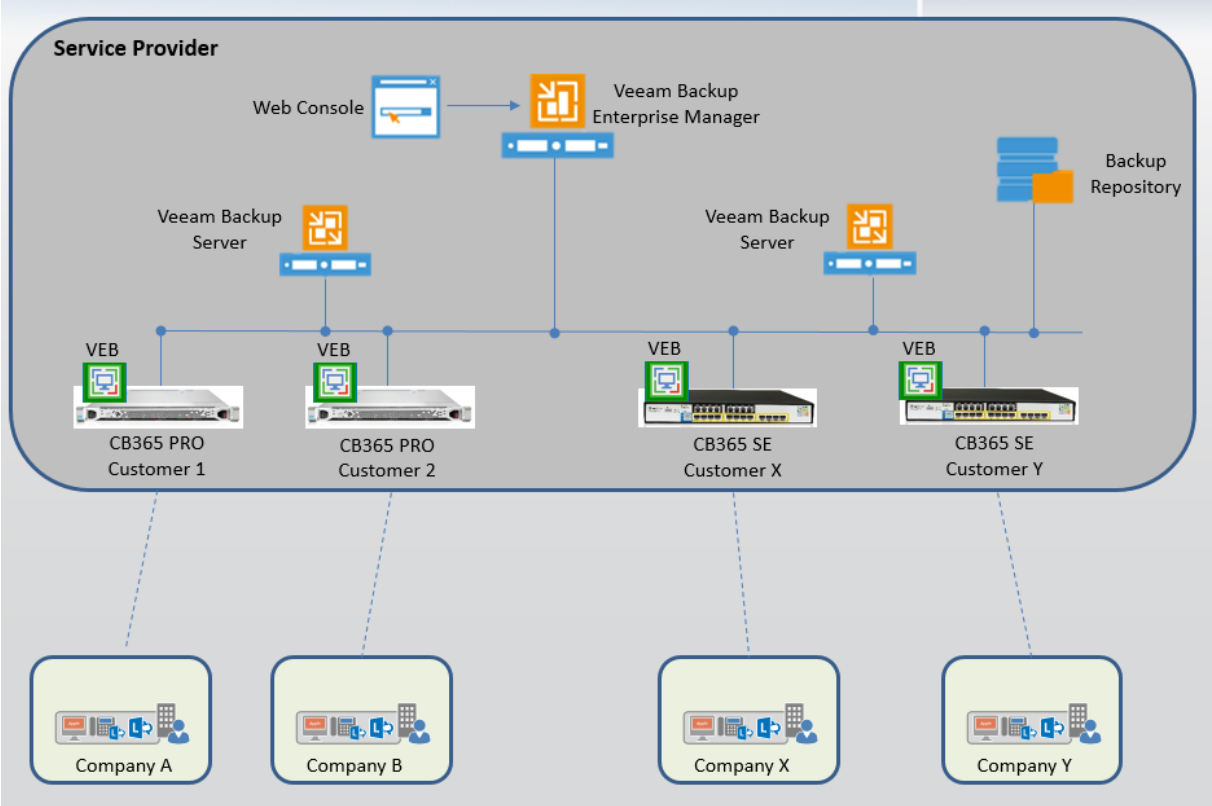


Figure 37-2: Backup Architecture on Service Provider



37.1 Using Veeam Products

37.1.1 VEB

VEB software is installed on every CloudBond 365. This software only backs up the Host server. For standalone configurations, the system volume and extra volume/files are also backed up. For BPA topology, there is usually no database for the paired CloudBond 365 server and therefore the system volume and extra volume/files are not backed up.

37.1.2 VBR

VBR is a distributed system. CloudBond uses only part of the available components. The Veeam Backup Server is the VBR management component and can be run on the CloudBond Host or it can be run on external server. If the Backup Repository is external and it is a Windows server, it is recommended to run the VBR Manager so that it can backup several CloudBond systems on the same branch.

37.2 Using VBR Components

37.2.1 VBR Manager

The VBR manager can be run on the CloudBond 365 host or on an external server. The external server can run the backup repository and the VBR Manager. To run the VBR Manager on an external server, refer to the server requirements in the *Veeam Backup & Replication User Guide* under **Planning and Preparation** > **Requirements** > **System Requirements** > **Veeam Backup Server**.

37.2.2 Backup Repository

The Backup Repository can be external. There are several types of Backup Repositories which are supported and can be used:

- Microsoft Windows server with local or directly attached storage
- Linux server with local, directly attached storage or mounted NFS
- Common Internet File System (CIFS)

For more information, refer to the *Veeam Backup & Replication User Guide* under **Overview** > **Solution Architecture** > **Components** > **Backup Repository**.

Note: The repository can be a local disk connected to CloudBond 365. However, this document does not describe this topology in details.

37.2.2.1 Backup Repository Size

The following lists backup repository size requirements per CloudBond 365 type:

- **Standard Box Edition:** 150 GB
- **Standard Plus Box Edition:** 200 GB
- **Pro Box Edition:** 300 GB
- **Enterprise Box Edition:** 300 GB

Note: It is not intended for the Backup tool to back up the CloudBond 365 SBC. To back up the CloudBond 365 SBC, it is recommended to manually backup the SBC Settings INI files and VM. The VM can also be found on the CloudBond 365 USB. For more information, refer to the Saving Configuration sub-section of the *AudioCodes SBC User's Manual*.

37.3 Firewall

There are several ports used between the CloudBond 365 server and the Veeam components that must be open if the Firewall is used on the network. Refer to the list of ports requirements in the *Veeam Endpoint Backup User Guide* under **System Requirements** > **Used Ports**.

38 Installing VEB and VBR

This section describes how to install and configure VEB and VBR. Version 7.0 backup setup files can be downloaded from: https://s3.eu-central-1.amazonaws.com/downloads-audiocodes/CB365Backup/CB365_Backup_7.0.0.zip

When selecting this hyperlink, the following files appear in the WinZip window:

- Endpoint Backup 1.1.2.119.zip
- Backup & Replication 8.0.0.817.iso
- Veeam Backup & Replication_8.0.0.2084_Update3.zip (patch file)

38.1 Installing VEB on the Host Server

Note: This document is applicable to VEB version **1.1.2.119**.

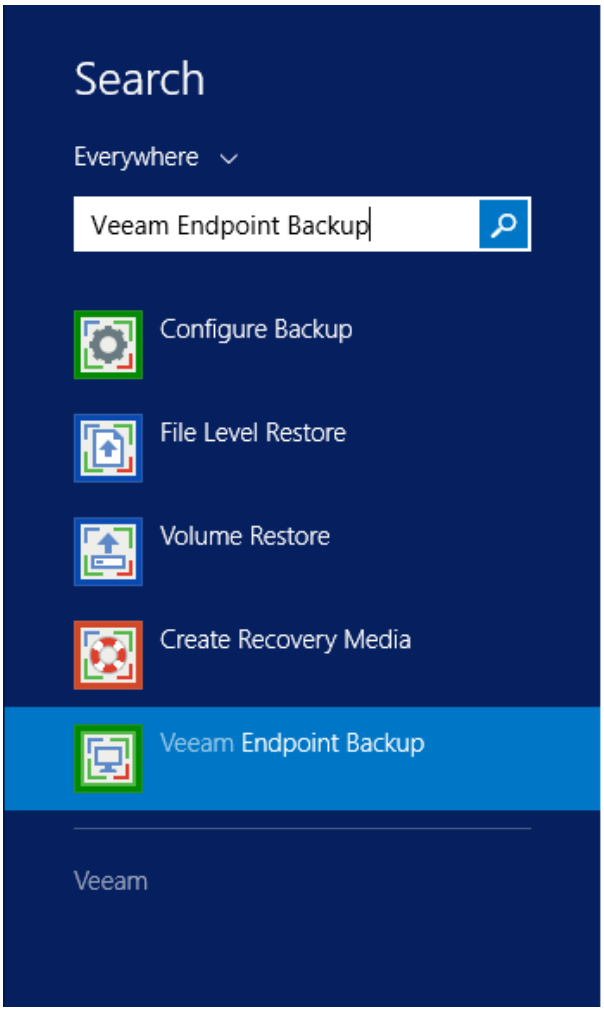
The VEB should be installed on the host server. If you already have the current version 1.1.2.119 installed, skip this procedure.

If you have an older version, install the new one and follow the upgrade instructions. This requires two re-boots.

To confirm that VEB has been installed, search for Veeam Endpoint backup on the **Start** window.

To confirm which version is installed on your system, open **Veeam Endpoint Backup** and navigate to the **Update** menu.

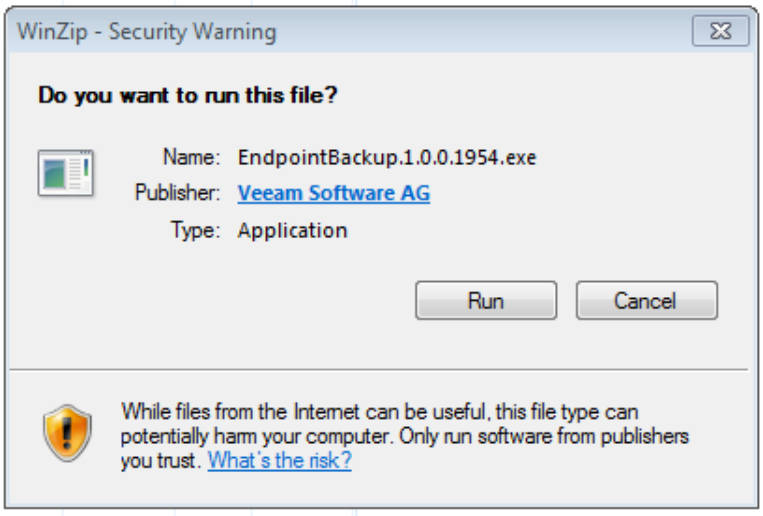
Figure 38-1: Search Menu



➢ **To install VEB on the host server:**

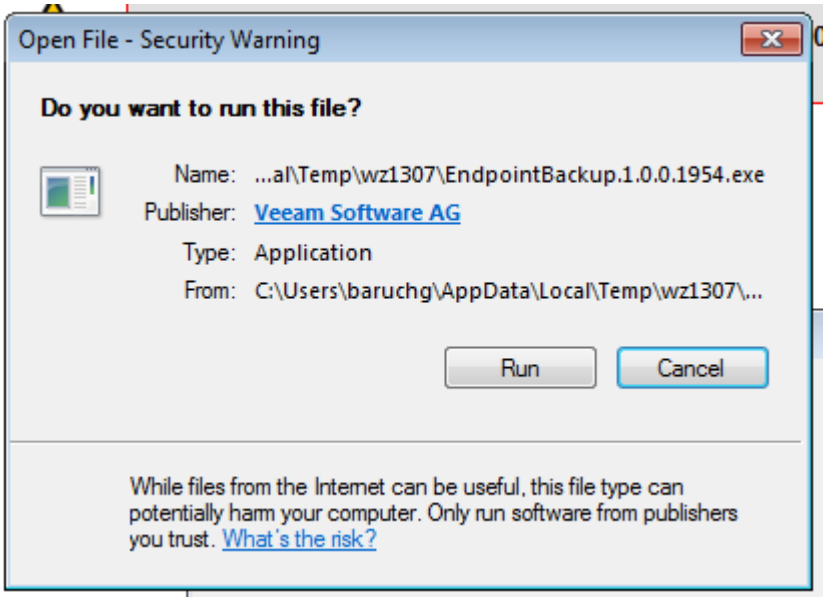
1. Unzip *EndpointBackup.1.1.2.119.zip* file
2. Run the *EndpointBackup.1.1.2.119.exe* file.

Figure 38-2: WinZip Security Warning



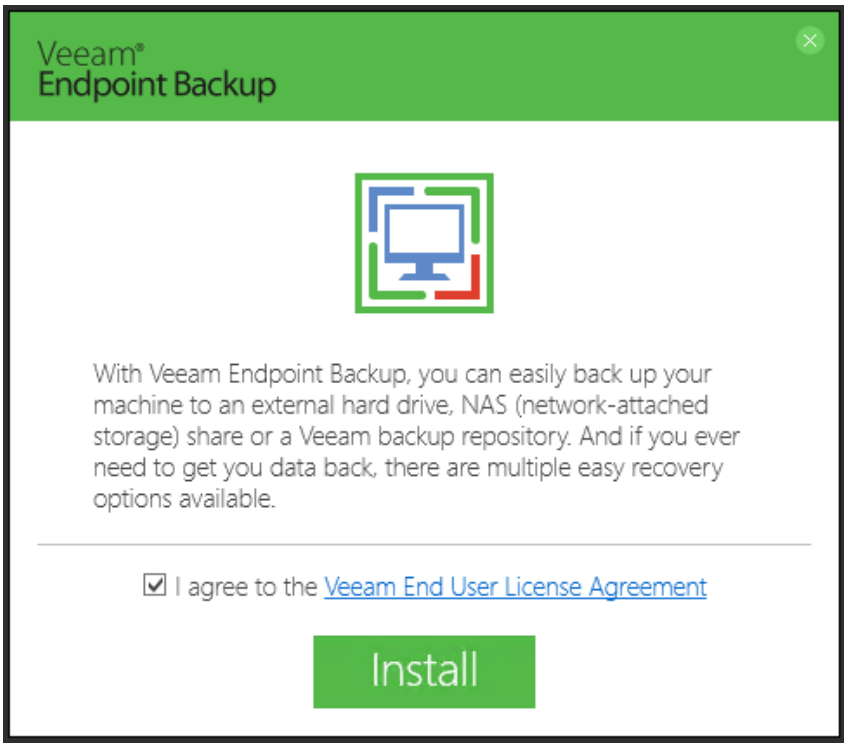
3. Click **Run**.

Figure 38-3: Do you want to run this file?



4. When the following screen appears, select the 'I agree…' checkbox.

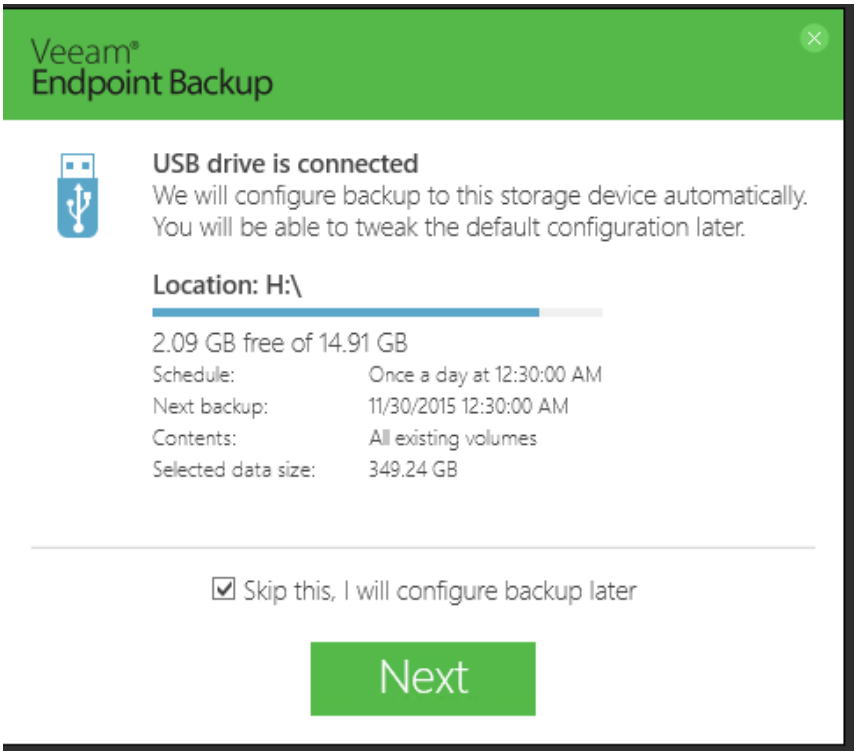
Figure 38-4: Veeam Endpoint Backup



5. Click **Install**.
6. Select the 'Skip this, I will…' checkbox.

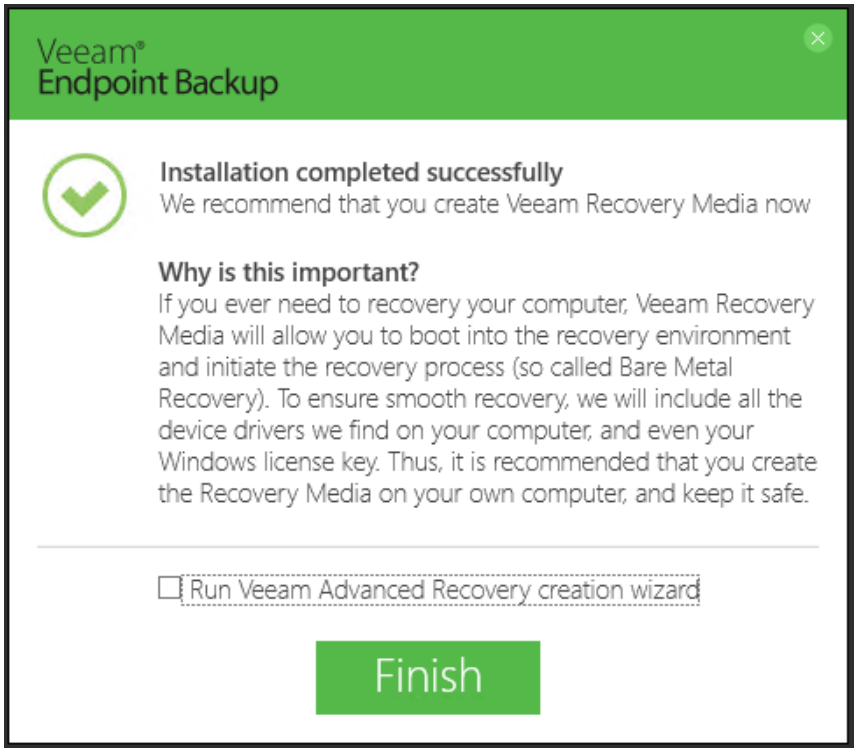
7. Click **Next**.

Figure 38-5: Veeam Endpoint Backup - Next



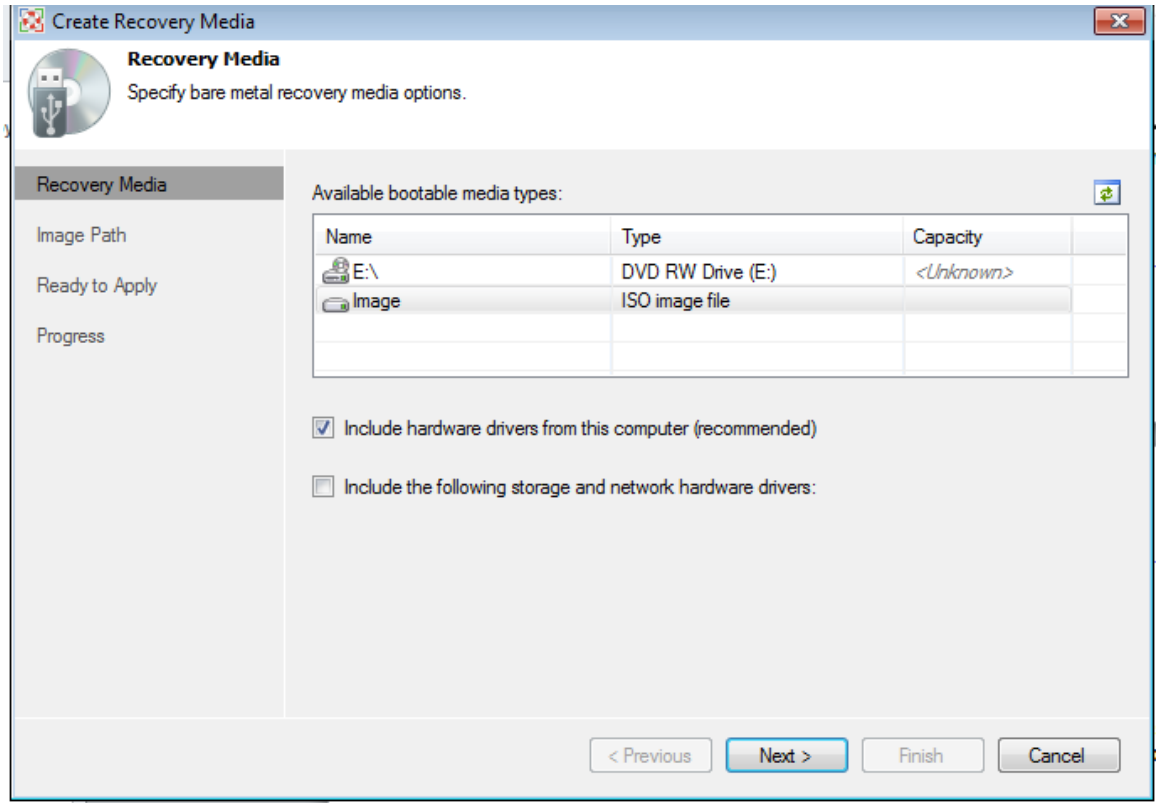
8. Clear the 'Run Veeam Advanced Recovery creation wizard' check box.
9. Click **Finish**.

Figure 38-6: Veeam Endpoint Backup - Finish



10. Click **Cancel**.

Figure 38-7: Create Recovery Media



38.2 Installing VBR

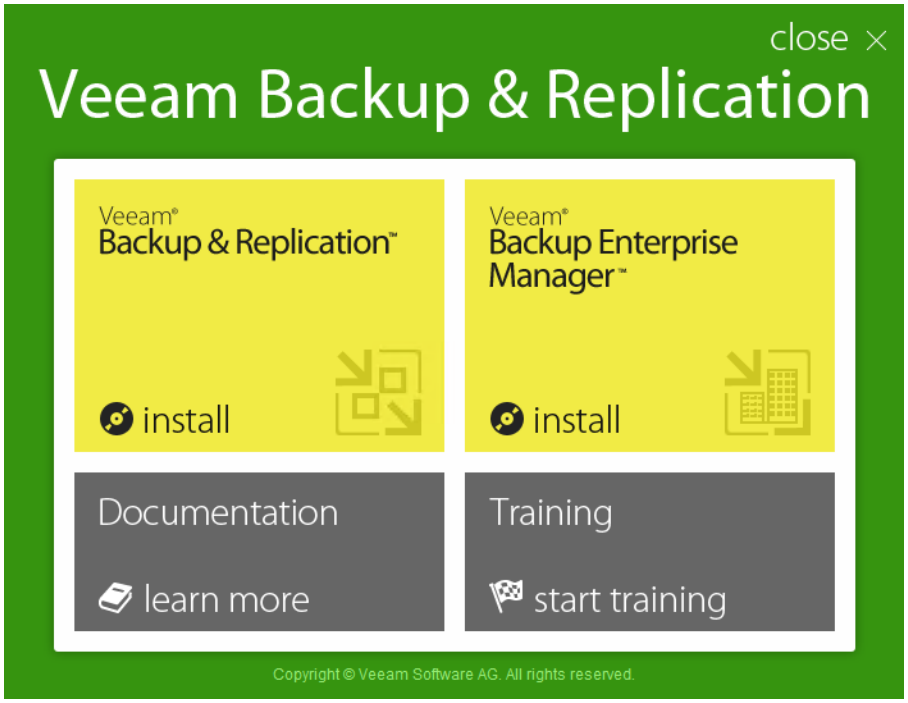
The VBR can be installed on every CloudBond 365 Host or on the recommended external server (the same server that can be used as the backup repository).

Before you begin the installation process, check the following prerequisites:

- The computer on which you plan to install Veeam Backup & Replication must meet the system requirements. Refer to the server requirements in the *Veeam Backup & Replication User Guide* under **Planning and Preparation** > **Requirements** > **System Requirements** > **Veeam Backup Server**.
- Communication between components requires a number of ports to be open. Refer to the **Requirements** > **Used Ports** section in the *Veeam Endpoint Backup User Guide*.

Note: The VBR installation requires a server restart.

Figure 38-8: Veeam Endpoint Backup - Finish

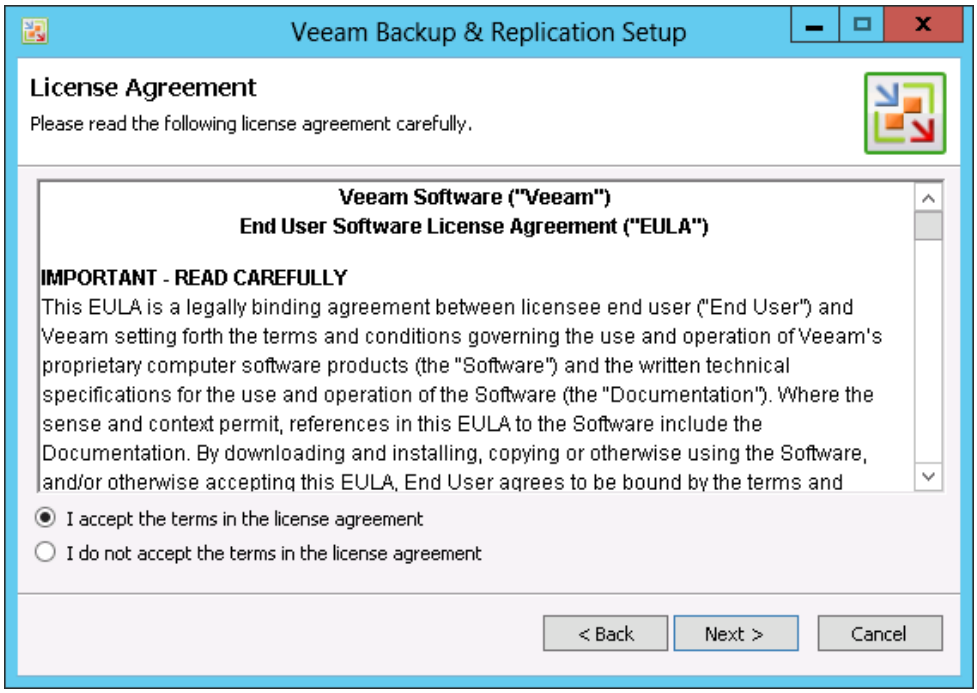


➢ **To install the VBR:**

1. Select **Install** in the 'Veeam Backup & Replication' window.
2. On the **Welcome** step of the wizard, click **Next** to start the installation.

3. Read the license agreement and then accept it, by clicking the **I accept the terms in the license agreement** option, and then click **Next**.

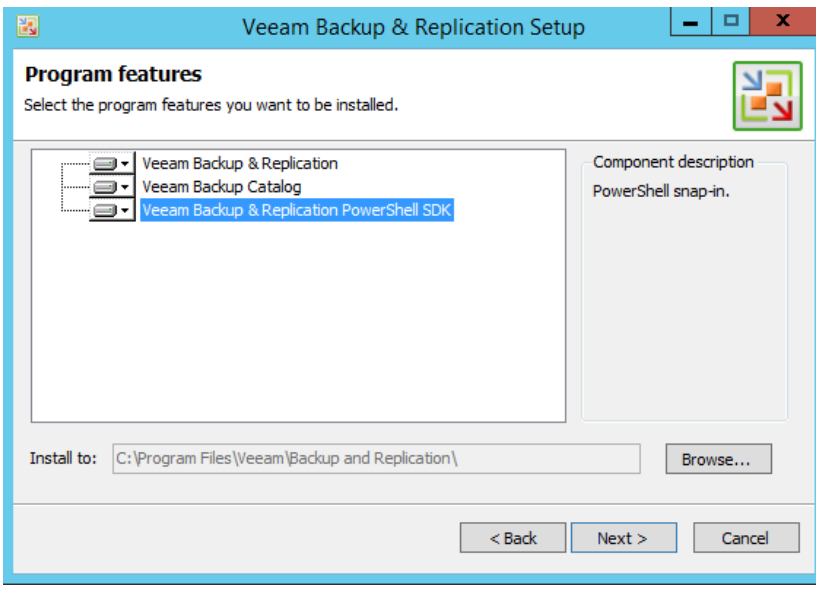
Figure 38-9: Veeam Backup and Replication Setup



Note: You must have a valid trial license or full paid license for Veeam Backup & Replication.

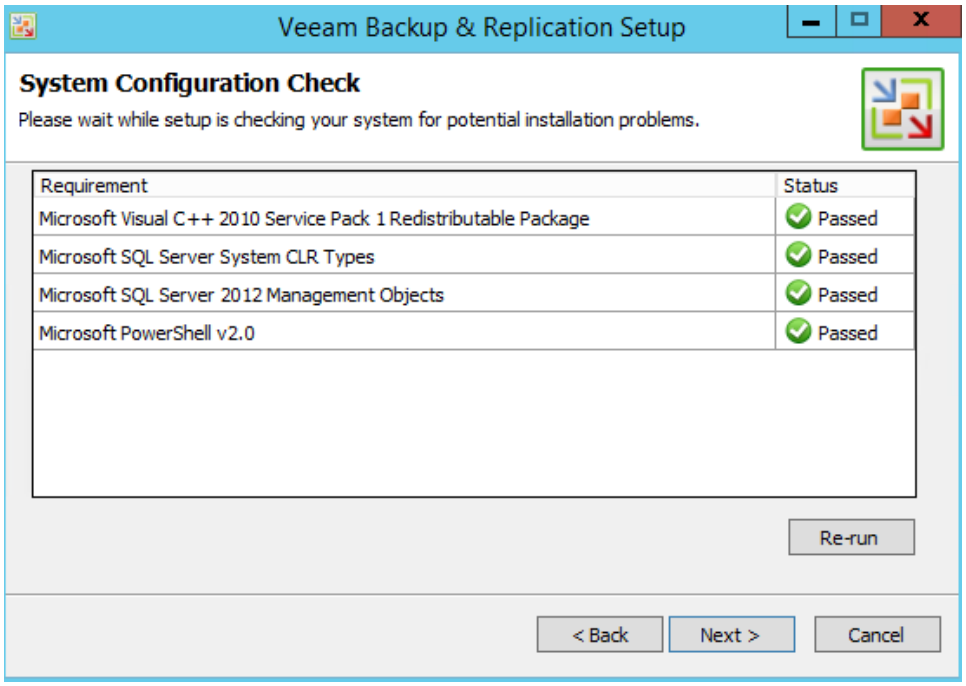
4. Select the three features to be installed and then click **Next**.

Figure 38-10: Program Features



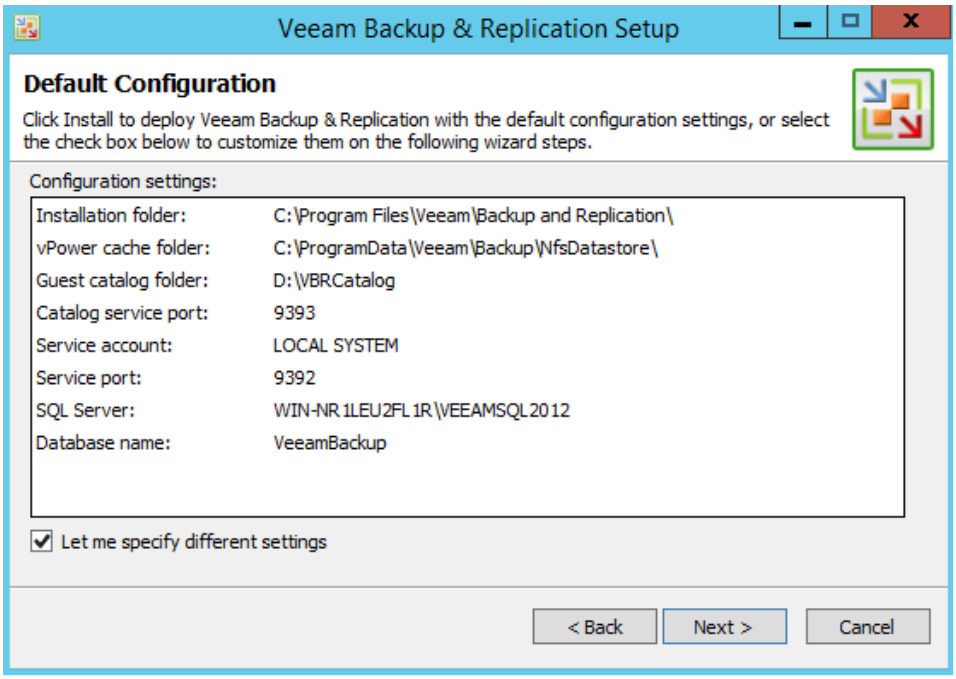
5. The setup checks your system for potential installation problems. Click **Next**; the missing components are installed.

Figure 38-11: System Configuration Check



6. Select the 'Let me specify different settings' checkbox, and then click **Next**.

Figure 38-12: Default Configuration

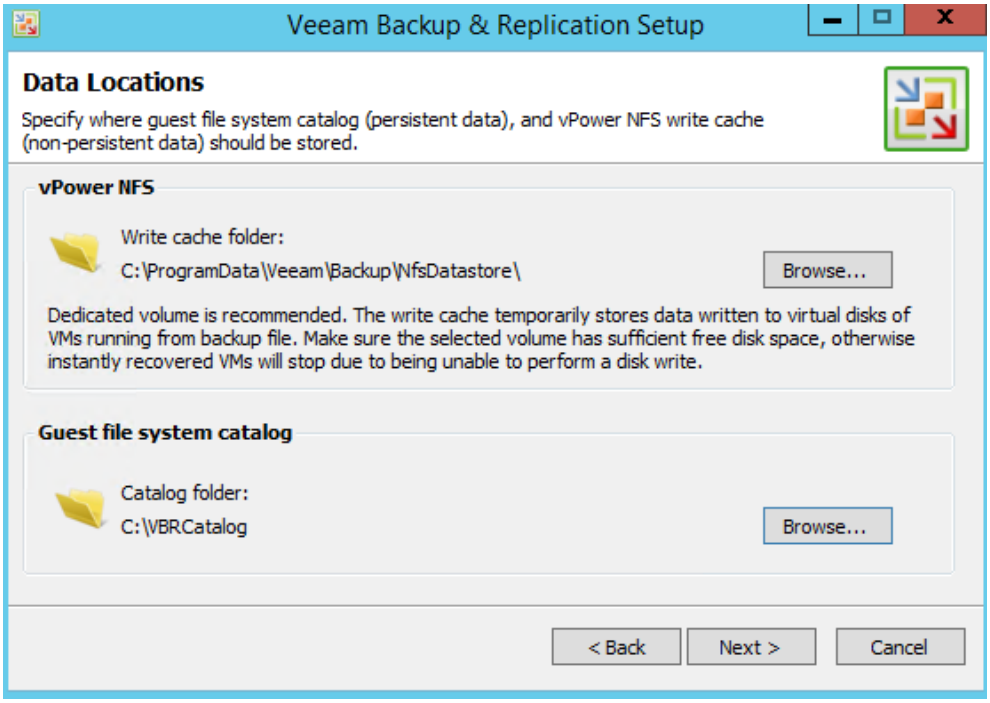


7. For the 'Catalog folder', click **Browse** to select "C:\VBRCatalog".

Note: You first need to create this folder.

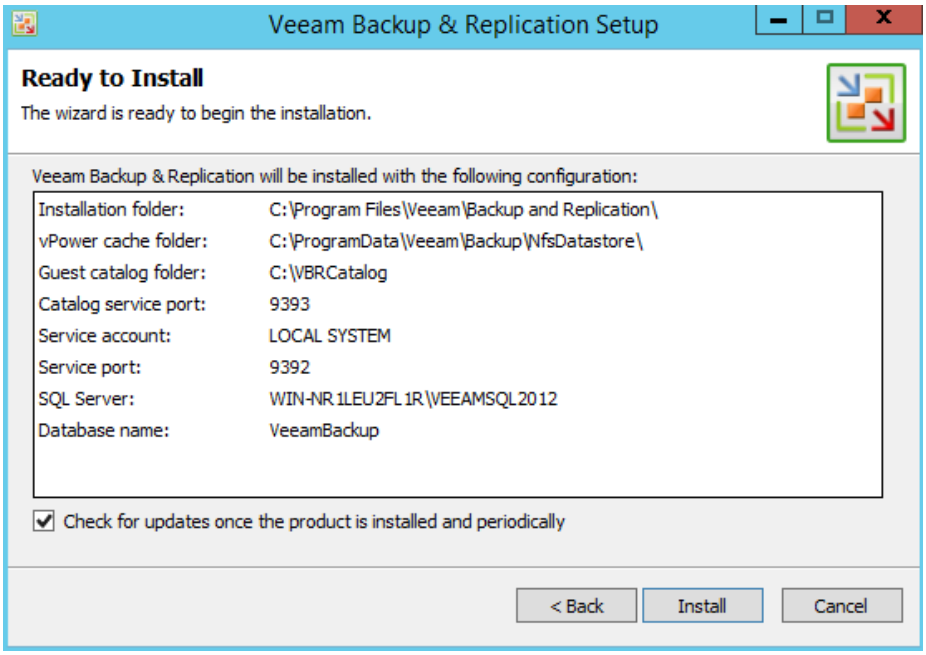
8. Click **Next**.

Figure 38-13: Data Locations



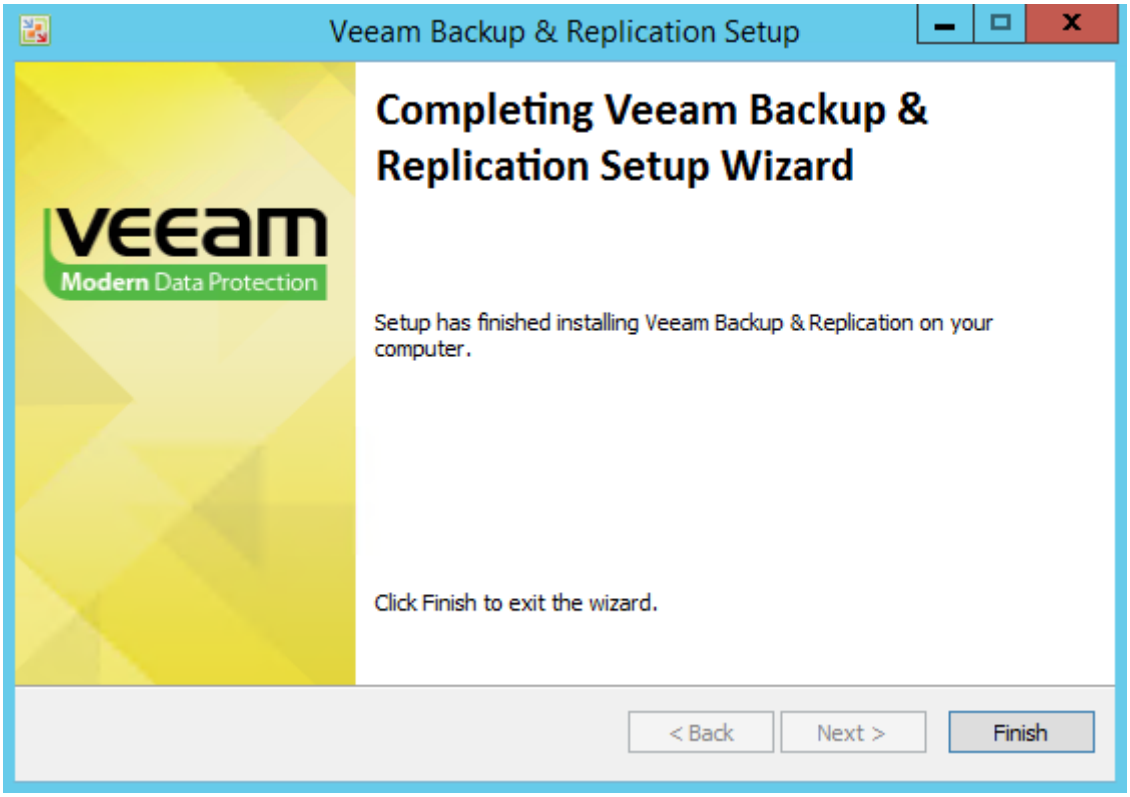
9. Click **Install**.

Figure 38-14: Ready to Install



10. Click **Finish**, and then close the above screen.

Figure 38-15: Completing Veeam Backup and Replication Wizard



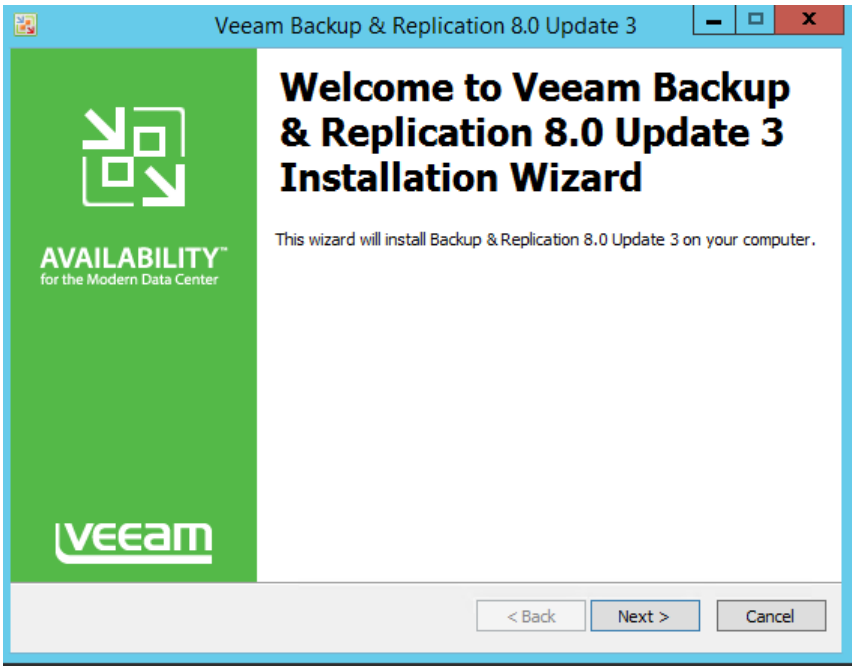
38.2.1 Installing Patch File

The following procedure describes how to install the patch file update *VBR Update3: VeeamBackup&Replication_8.0.0._Update3.*

➢ **To install the patch file:**

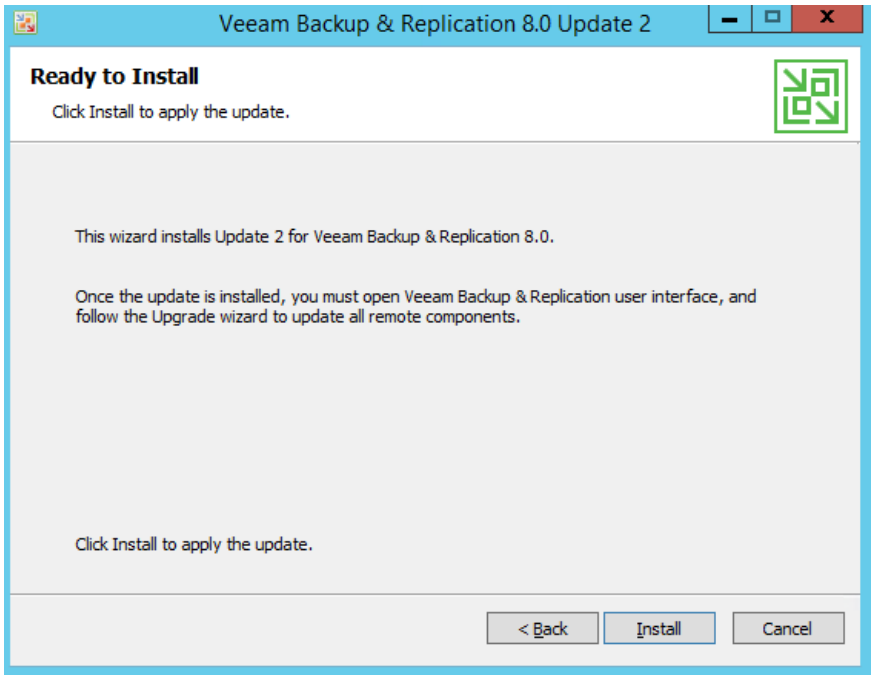
1. Run the patch file with an Administrator login.
2. Click **Next**.

Figure 38-16: Welcome Update Installation Wizard



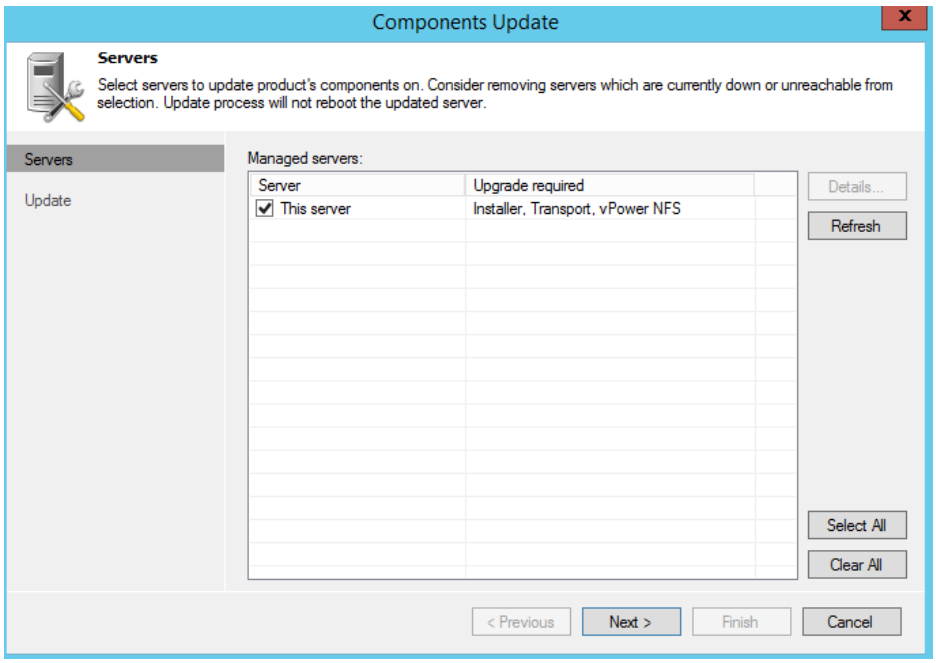
3. Click **Install**; the following screen appears.

Figure 38-17: Ready to Install



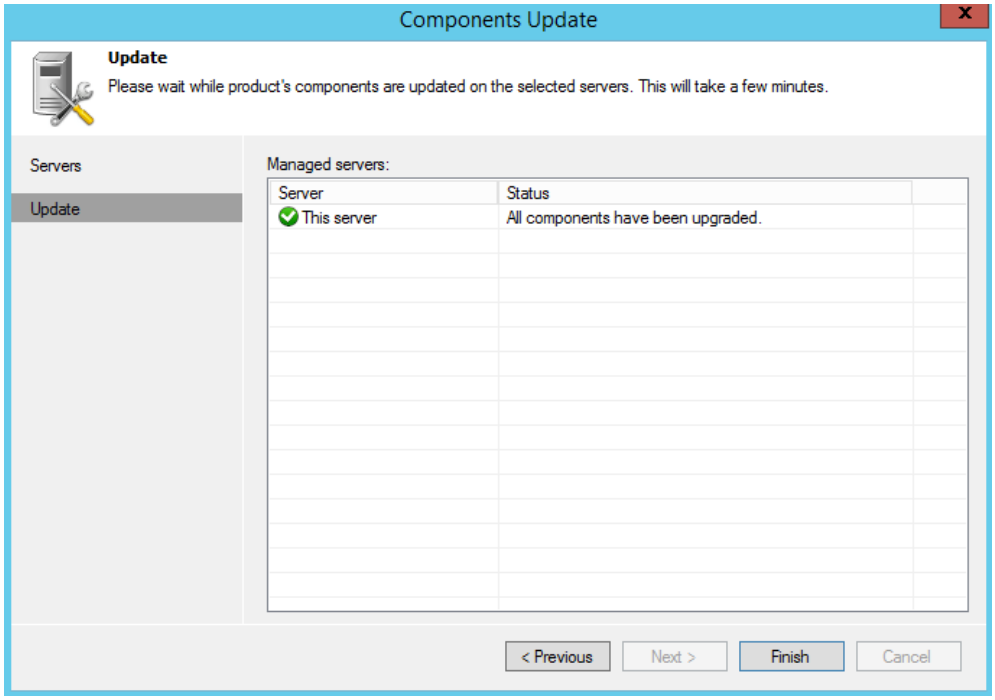
4. Click **Finish** when the installation has finished.
5. Open the VBR Console from the desktop by double-clicking the Veeam Backup icon.
6. Click **Next**.

Figure 38-18: Components Update



7. When the components have been updated, click **Finish**.

Figure 38-19: Components Update - Finish



39 Configuring License and Credentials

The following procedure describes how to configure the license and credentials.

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40 Backing up the Repository

The following procedures describe how to setup the backup repository.

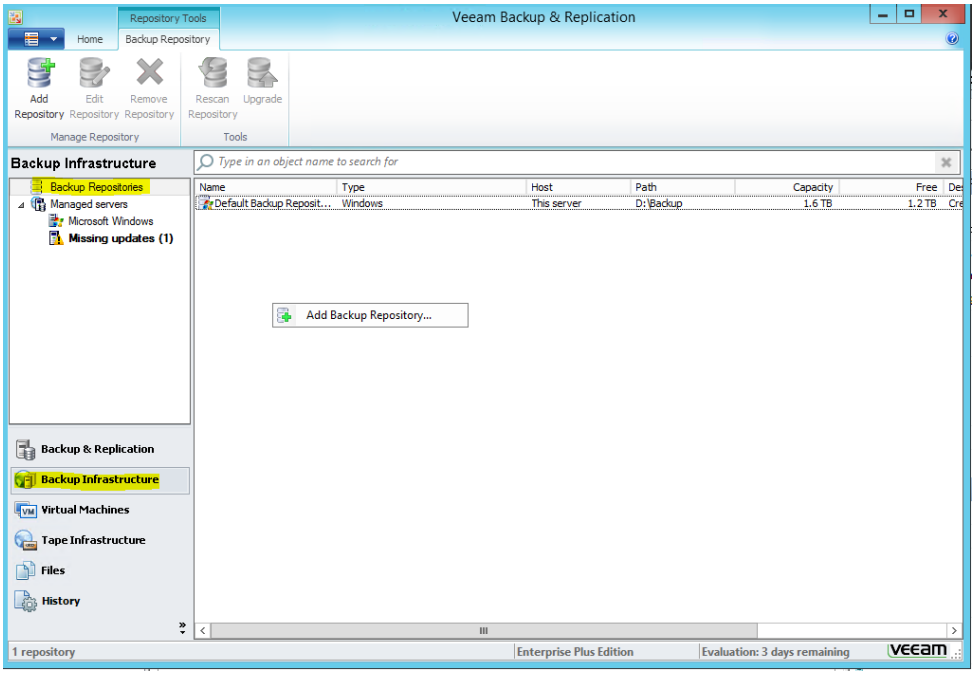
40.1 Adding Backup Repository

The following procedure describes how to add a backup repository in VBR.

➢ **To add a backup repository:**

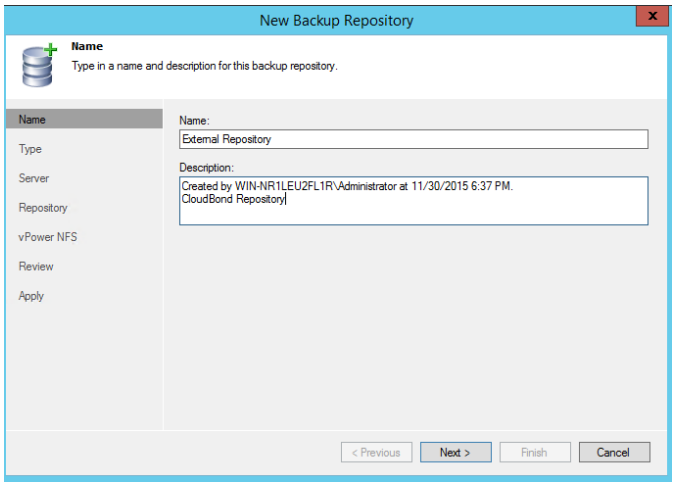
1. Open the VBR main console screen.
2. From the menu options on the left-side of the screen, select **Backup Infrastructure** and navigate to **Repository Tools** > **Backup Repository**.
3. Right-click on the repository and then, select **Add Backup Repository**.

Figure 40-1: VBR Backup Repository



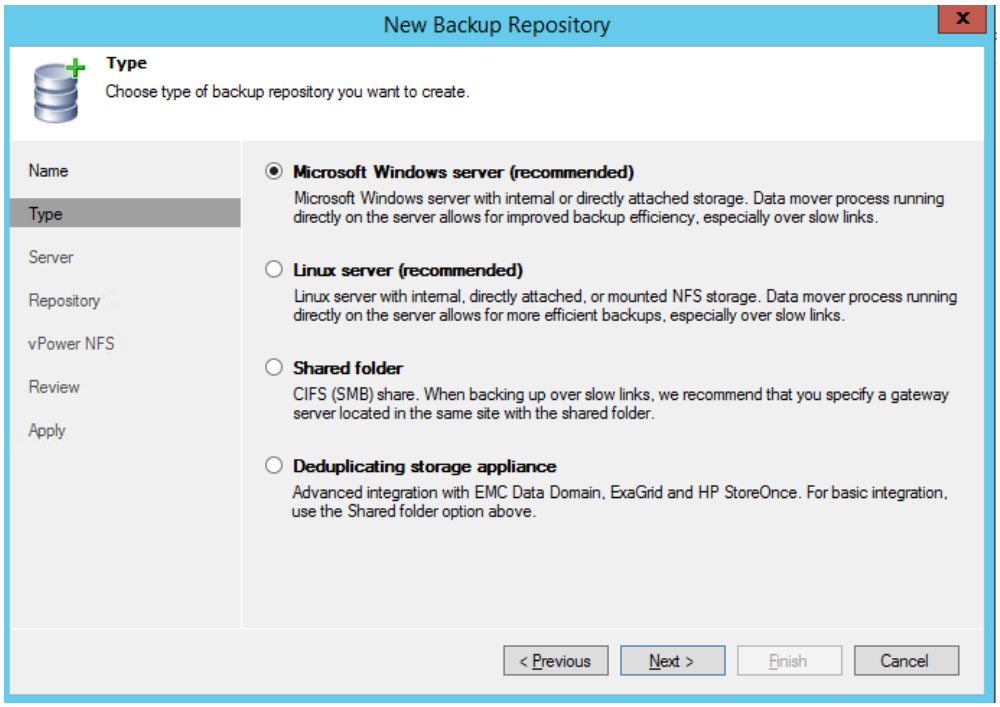
4. On the New Backup Repository screen, enter the **Name** and **Description** of the repository, and then click **Next**.

Figure 40-2: New Backup Repository - Name



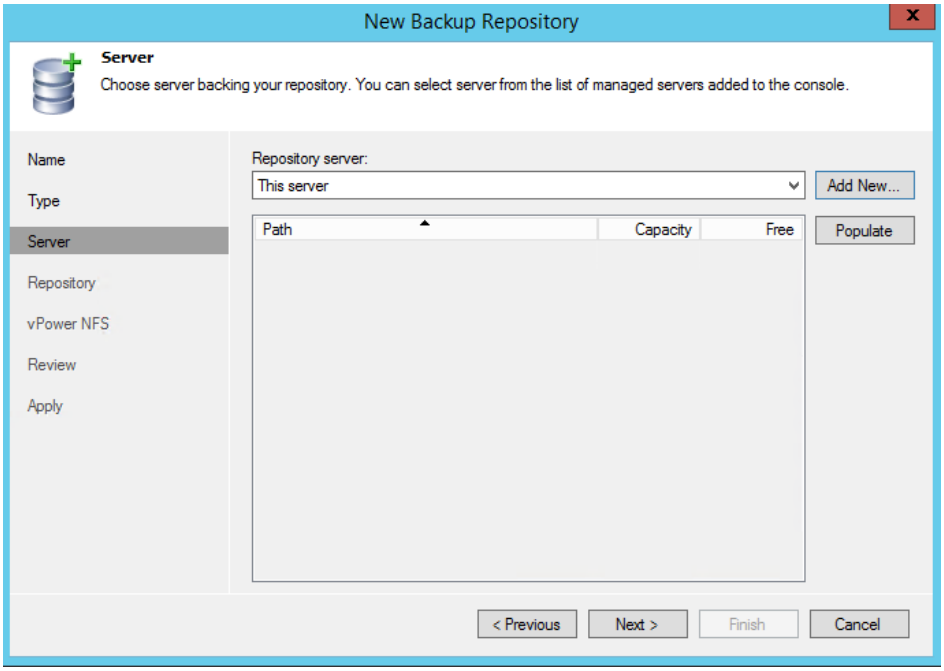
5. Select the backup repository type that you want to create, and then click **Next**.

Figure 40-3: New Backup Repository - Type



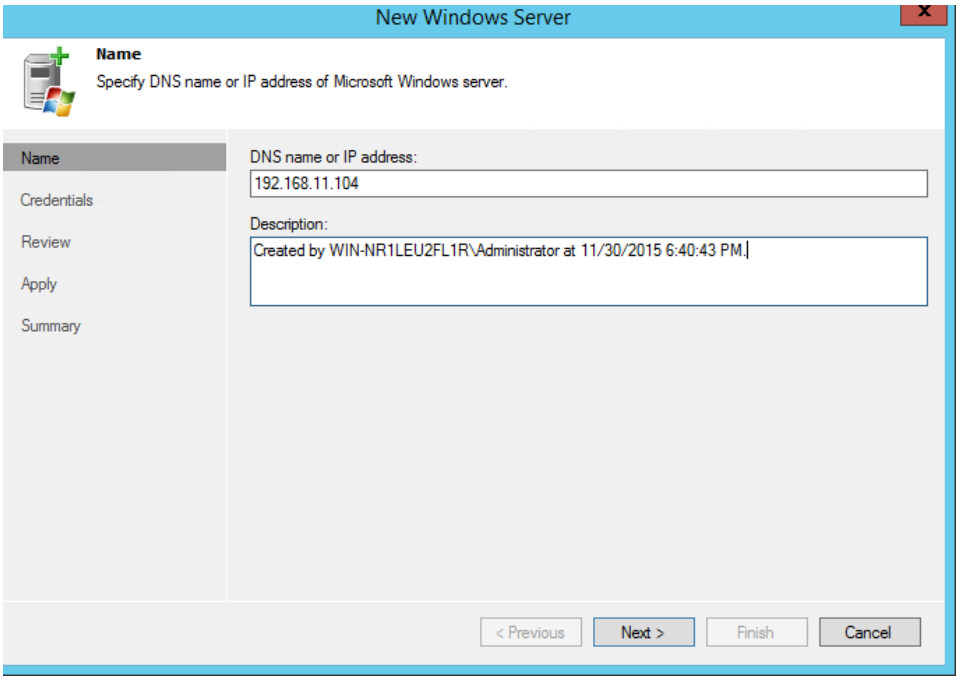
6. On the New Backup Repository - Server screen, click **Add New**.

Figure 40-4: New Backup Repository - Server



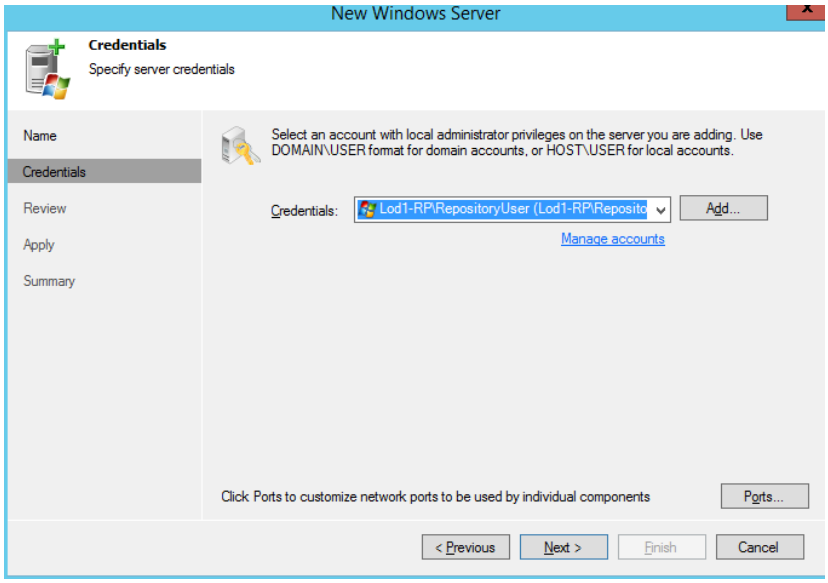
7. In the 'DNS name or IP address' field, enter the IP address/DNS Name, and then click **Next**.

Figure 40-5: New Windows Server



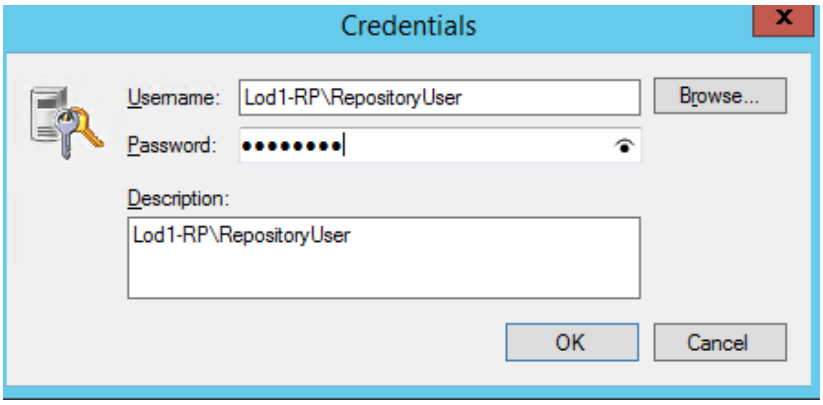
8. Select the Repository Credentials (which must be a local Administrator on the Repository) and then click **Next**.
9. If you do not have the credentials and you wish to add the credentials, click **Add**.

Figure 40-6: New Windows Server - Credentials



10. Enter the **Username** and **Password**, and then click **OK**.

Figure 40-7: Credentials

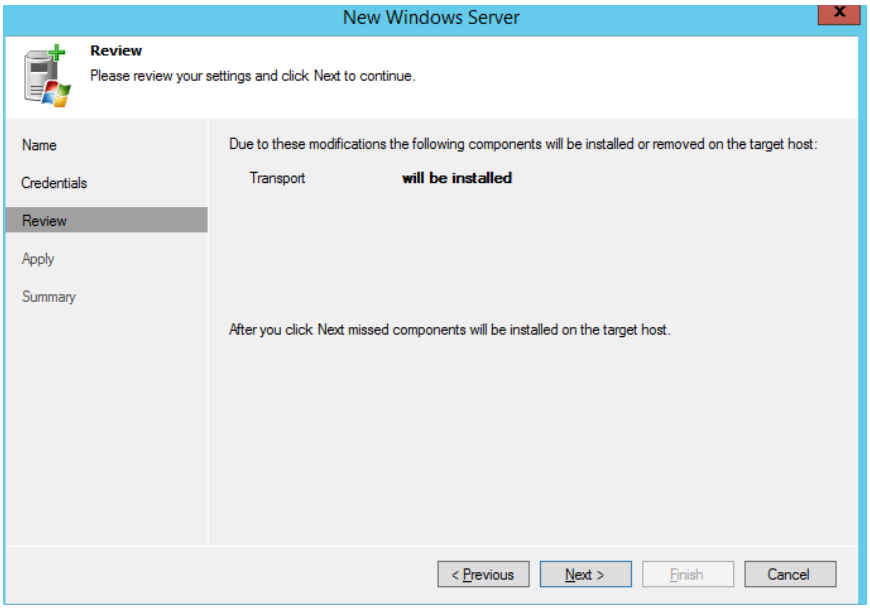


11. The Repository server is analyzed to see if you need to install the agent. You are informed which agents are going to be installed on the Repository.

Note: The required ports must be open between the VBR server and the Repository server.

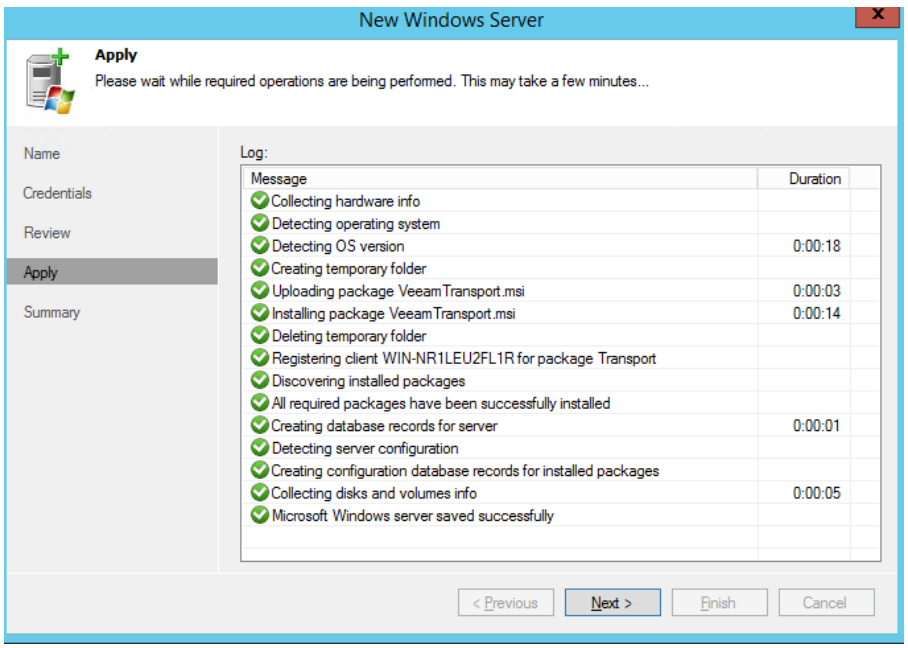
12. Click **Next**.

Figure 40-8: New Windows Server - Review



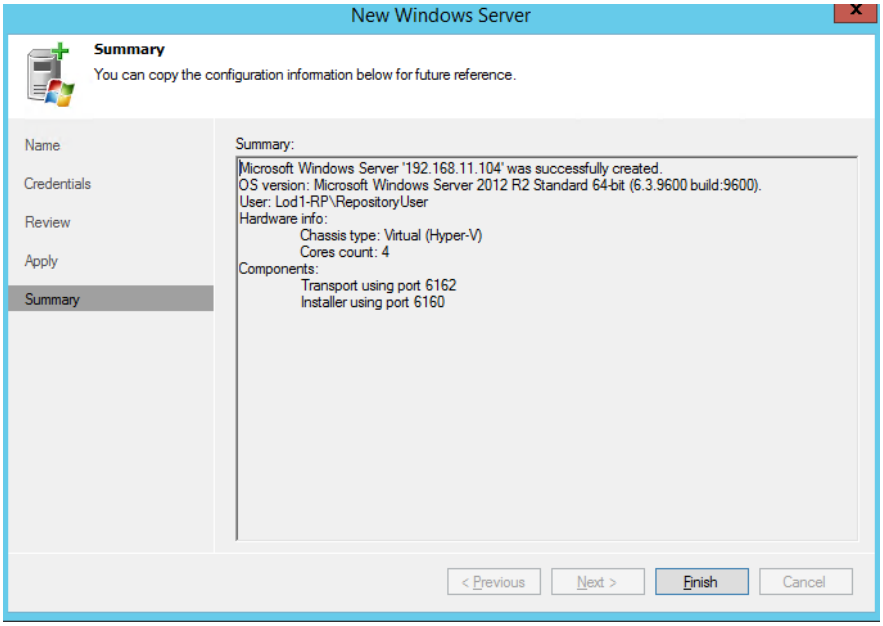
13. Please wait while the required operations are being performed. When the installation has completed, click **Next**

Figure 40-9: New Windows Server - Apply



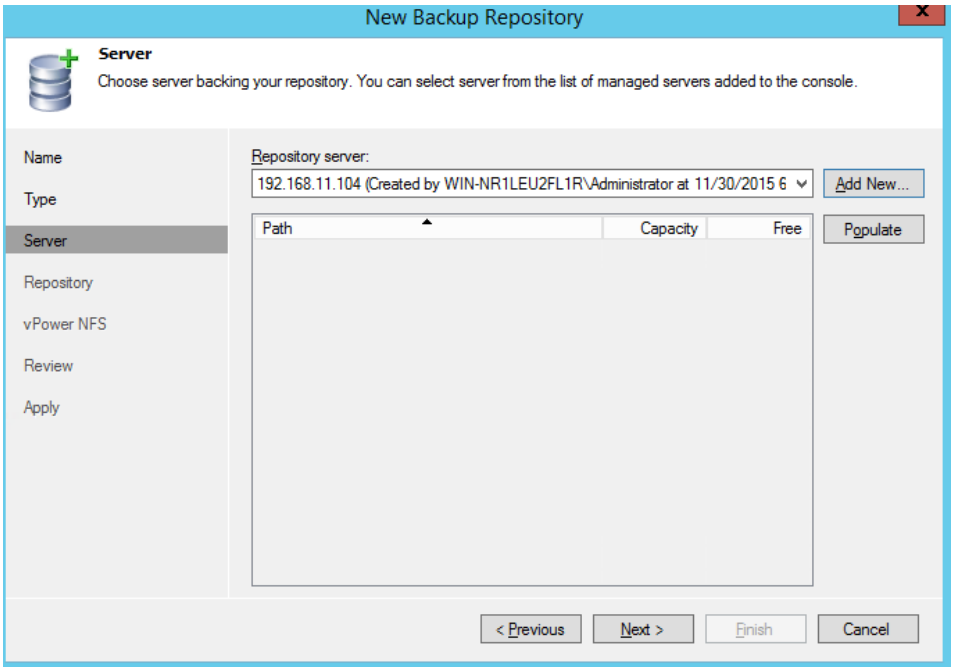
14. Click **Finish**.

Figure 40-10: New Windows Server - Summary



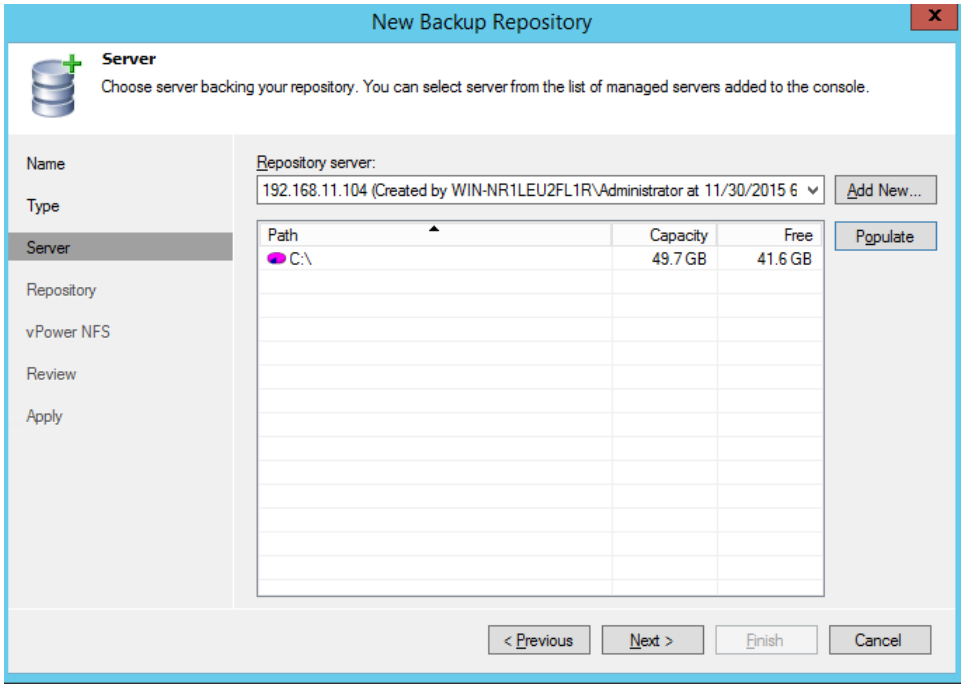
15. Click **Populate** to select the volume for the repository, and then click **Next**.

Figure 40-11: New Backup Repository - Server



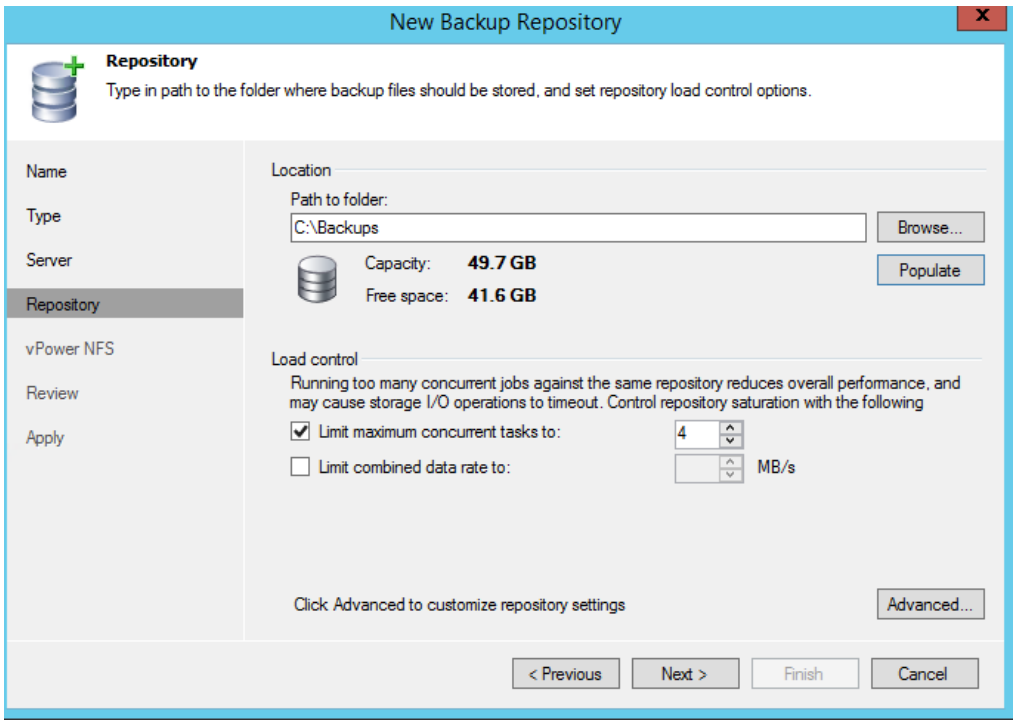
16. In the 'Path to folder' field, select the path to be used as the root for the repository.

Figure 40-12: New Backup Repository – Server C:\ Path



17. Click **Populate** to see available free space.
18. You can limit the number of concurrent tasks to the Repository, depending on the hardware resources, or limit the data rate, if needed. If you are running the repository on the CloudBond 365, you need to limit concurrent tasks to 1.
19. Click **Next**.

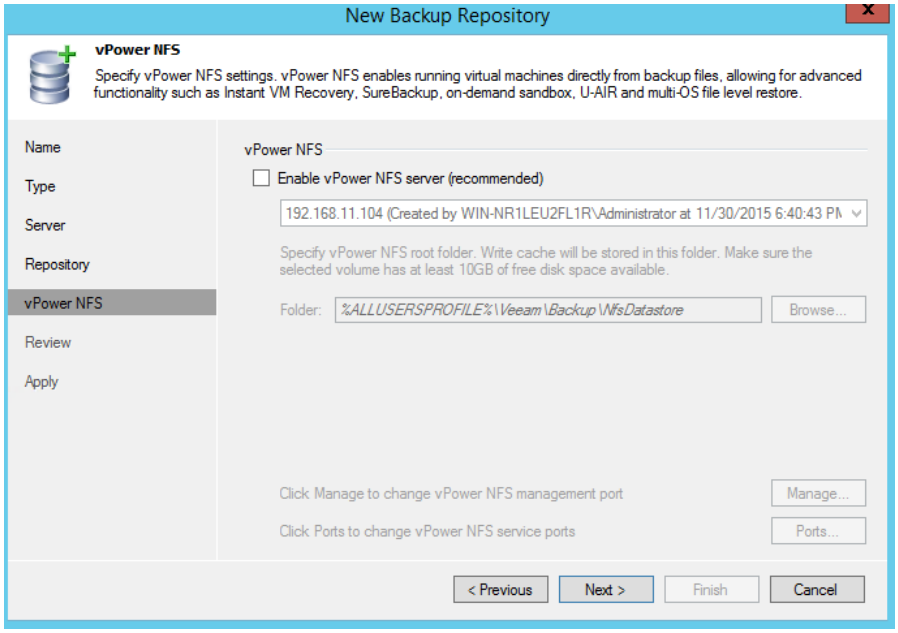
Figure 40-13: New Backup Repository - Repository



20. Clear the 'Enable vPower NFS server' check box to disable vPower NFS.

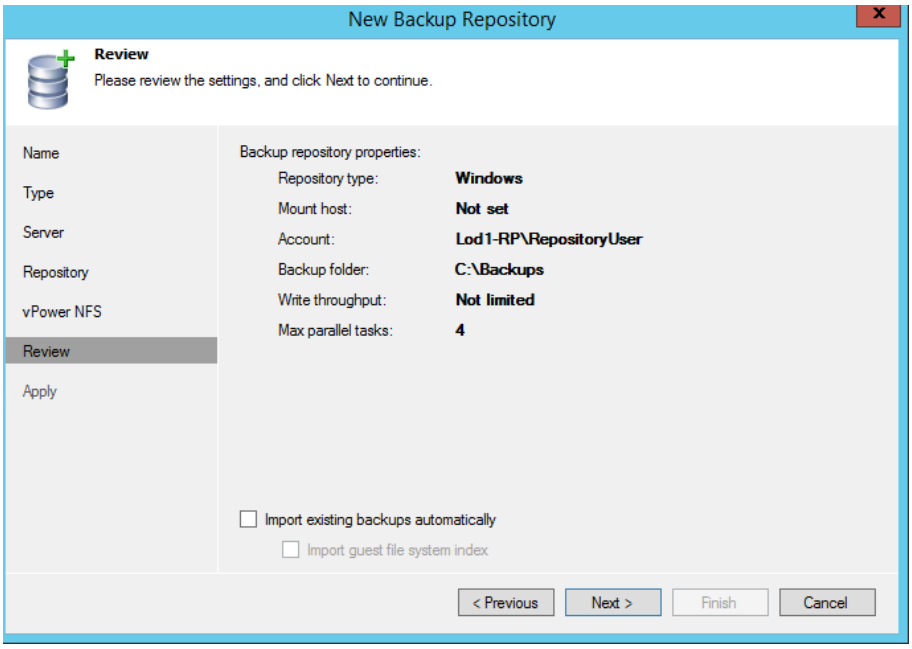
21. Click **Next**.

Figure 40-14: New Backup Repository - vPowerNFS



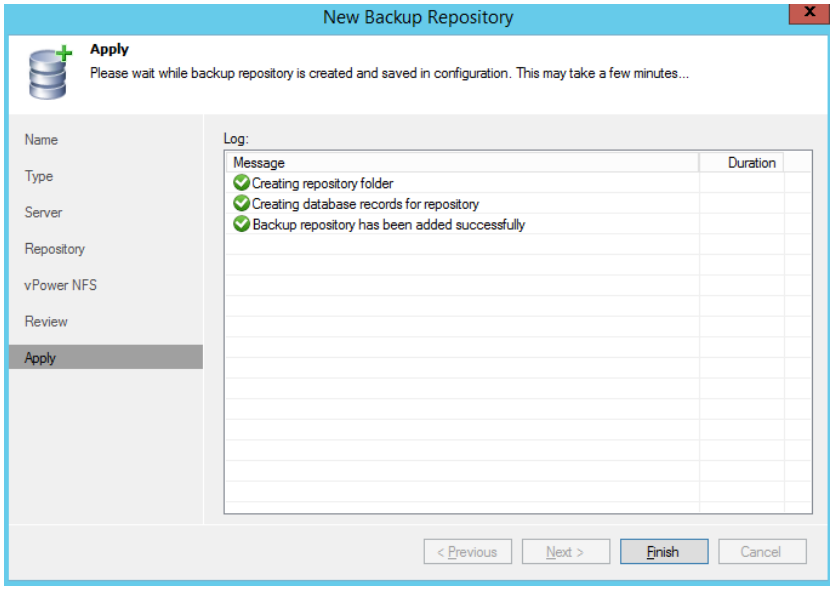
22. Click **Next**.

Figure 40-15: New Backup Repository - Review



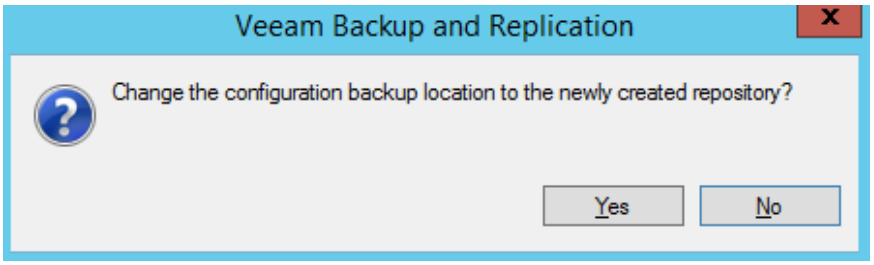
23. Click **Finish**.

Figure 40-16: New Backup Repository - Apply



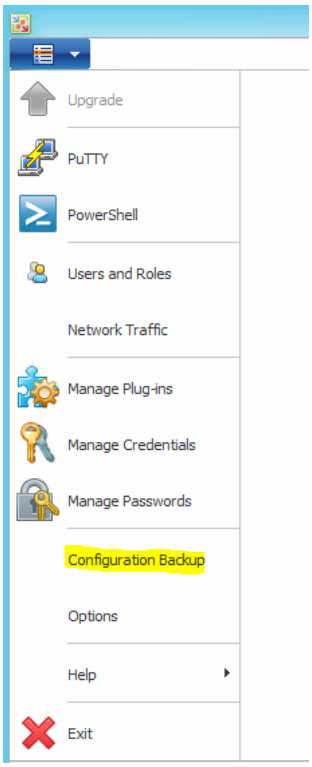
24. Set the new Repository as the default for configuration backup, and then click **Yes**.

Figure 40-17: VBR – Change Backup Location



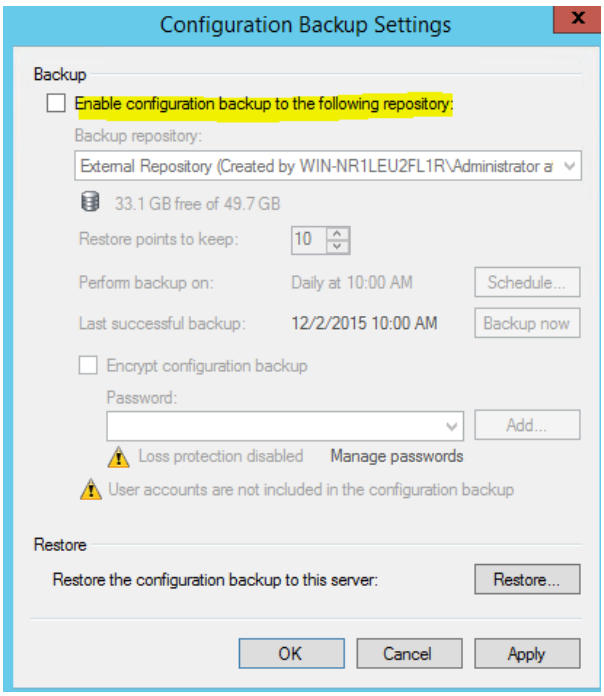
25. If the VBR is installed on the CloudBond 365, disable the configuration backup by doing the following:
    a. From the VBR main console screen, click the Menu icon (in the top-left corner of the screen).
    b. Select the **Configuration Backup** menu.

Figure 40-18: Configuration Backup



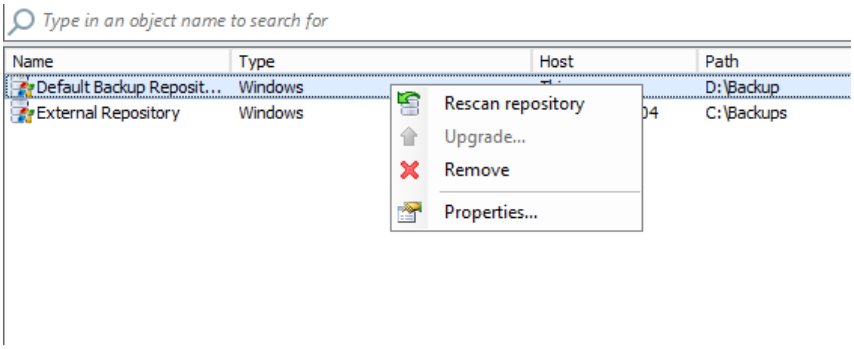
    c. Clear the 'Enable configuration backup to the following repository' check-box.

Figure 40-19: Configuration Backup Settings



26. Delete the old local repository by right-clicking it as shown in the screen below.
27. Select **Remove**.

Figure 40-20: Removing Old Repository



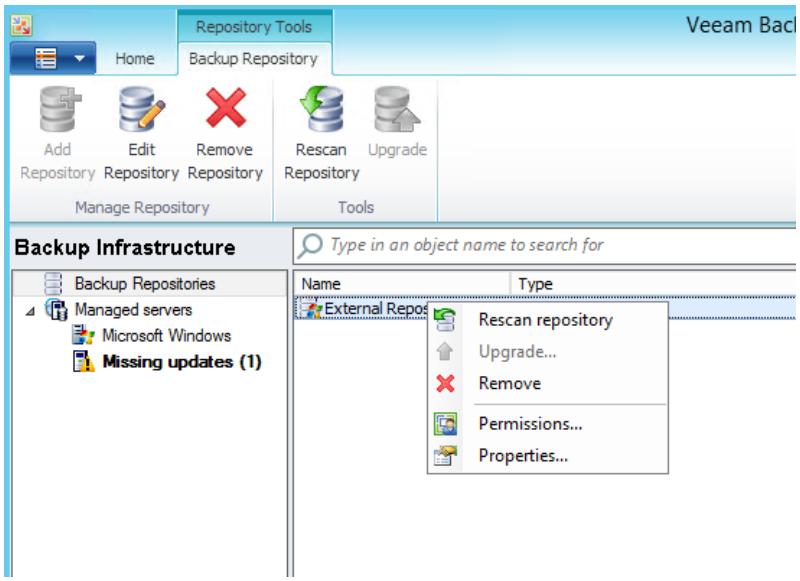
40.2 Configure Backup Repository Permissions

The following procedure describes how to configure Backup Repository permissions.

➢ **To configure Backup Repository permissions.**

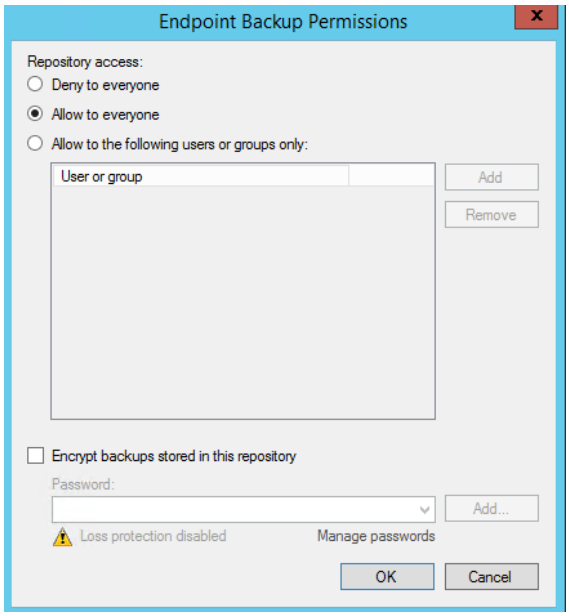
1. Open the VBR main console screen.
2. Press **Ctrl** and right-click on the External Repository that was previously added.
3. Select **Permissions**.

Figure 40-21: Backup Infrastructure



4. By default, the Repository is blocked for everyone. However, you can change the permissions to allow access to everyone as shown in the example below. Alternatively, you can define which users or groups can have access. For more information, refer to the *Veeam Endpoint Backup User Guide*.

Figure 40-22: Endpoint Backup Permissions



5. Select the 'Encrypt backup stored in this repository' check-box to define that all the data on the repository should be encrypted. If you want to do this, you need to define a password for the encryption. For more information, refer to the *Veeam Endpoint Backup User Guide Version*.
6. Click **OK**.

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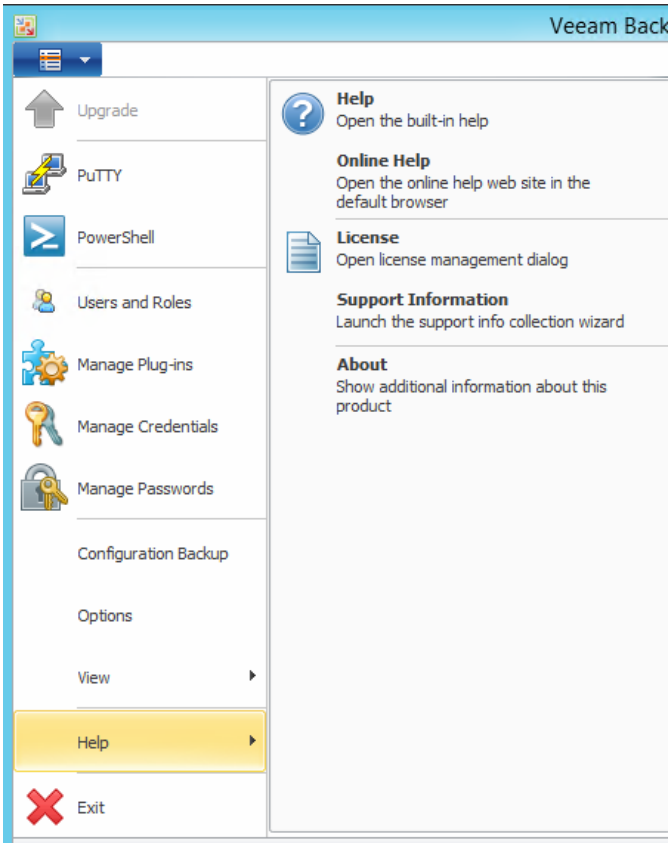
40.3 Installing the License

If the license was not supplied during the Installation step, you must install a license.

➢ **To install the license:**

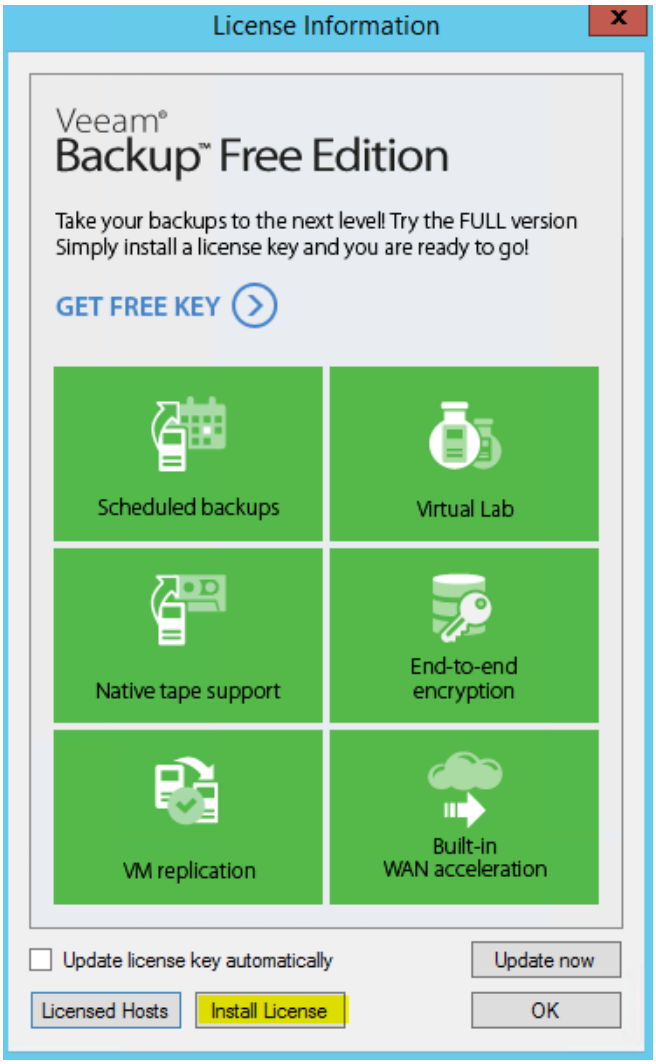
1. Open the VBR Console from the desktop by double-clicking the Veeam Backup menu icon.
2. Open the **Help** menu and navigate to the **License** sub-menu.

Figure 40-23: Help – License Menu



3. From the **License** sub-menu, click **License**.
4. Click **Install License** and select the license file.

Figure 40-24: License Information



40.4 Assigning VBR Console Credentials and VBR Roles

The account used to start the VBR console must have the Local Administrator permissions on the Veeam backup server.

You can assign one of the following roles to users or groups of users:

- Veeam Backup & Replication
- Veeam Restore Operator
- Veeam Backup Viewer
- Veeam Backup Operator
- Veeam Backup Administrator

A role assigned to the user defines the user activity scope and what operations in Veeam Backup & Replication the user can perform. Role security settings affect the following operations:

- Starting and stopping jobs
- Performing restore operations

By default, during installation the Veeam Backup Administrator role is assigned to users in the Local Administrators group. If you change the default settings, make sure that you assign the Veeam Backup Administrator role to the necessary user account. Changing the role is done through the Users and Roles menu option accessible from the main menu.

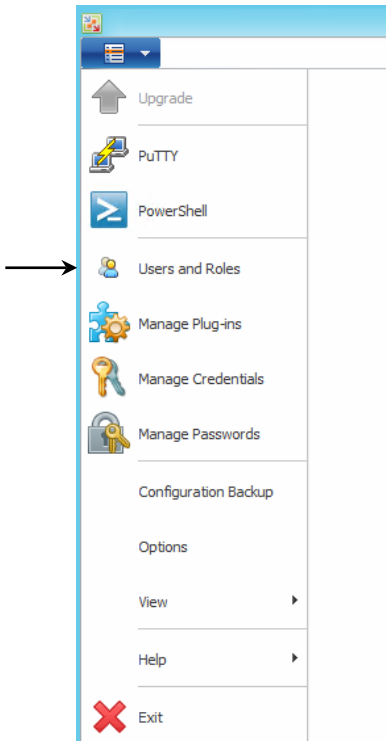
By default, the Local Administrators group is defined as the Veeam Backup Administrator.

You can confirm this by following this procedure.

➢ **To confirm the Veeam Backup Administrator:**

1. From the VBR main console screen, click the **Menu** icon (in the top-left corner of the screen); the following menu options appear:

Figure 40-25: Users and Roles

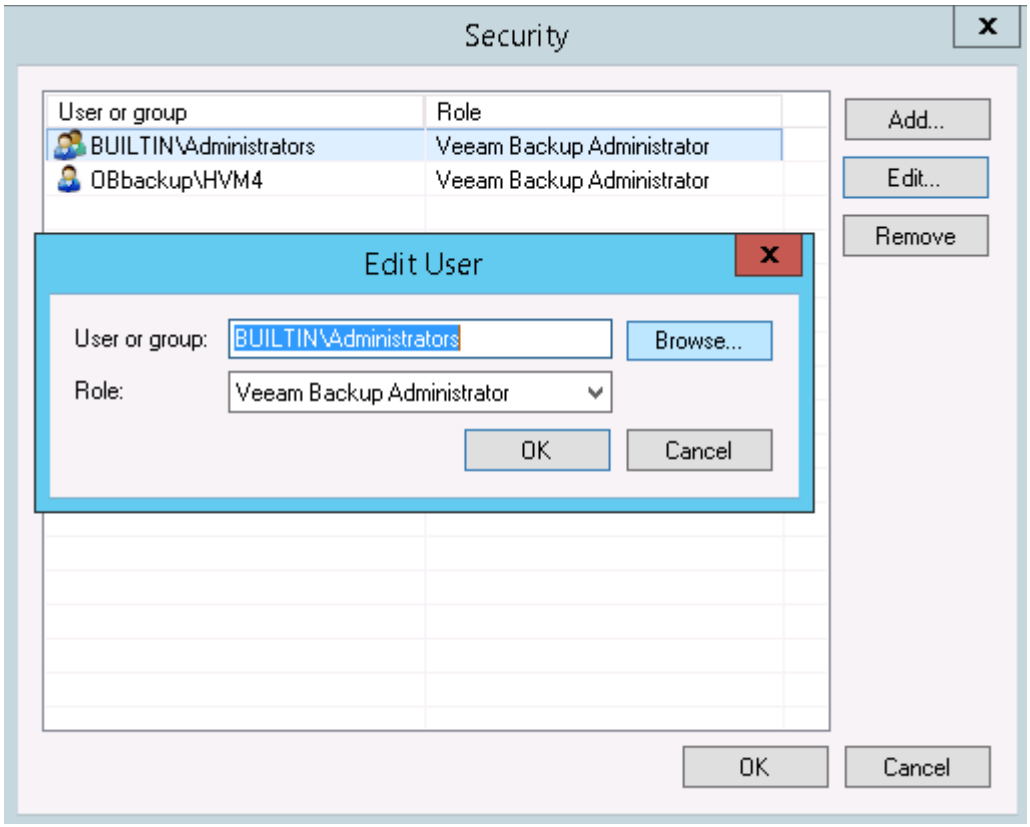


2. Select **Users and Roles**; the following screen appears.

Note: On the Mediant 800, where the host is the Domain Controller (DC), this is the CloudBond 365 domain Administrator group and not the local server Administrator group.

3. Select the User or Group, and then click **Edit**.
4. Confirm that the role is correct.

Figure 40-26: Security



40.4.1 Adding a User and Role for VEB

You need to add a user for the VEB and assign a role to it.

Notes:

- Every CloudBond 365 must have a different user (with a different user name) for the VEB because the name of the user is part of the directory path on the backup file system. Add a user that has local Administrator credentials e.g., CloudBondVEB1.
- If you have several CloudBond 365 devices that use the same backup repository, even if they are standalone, you must allocate different user names for the VEB.

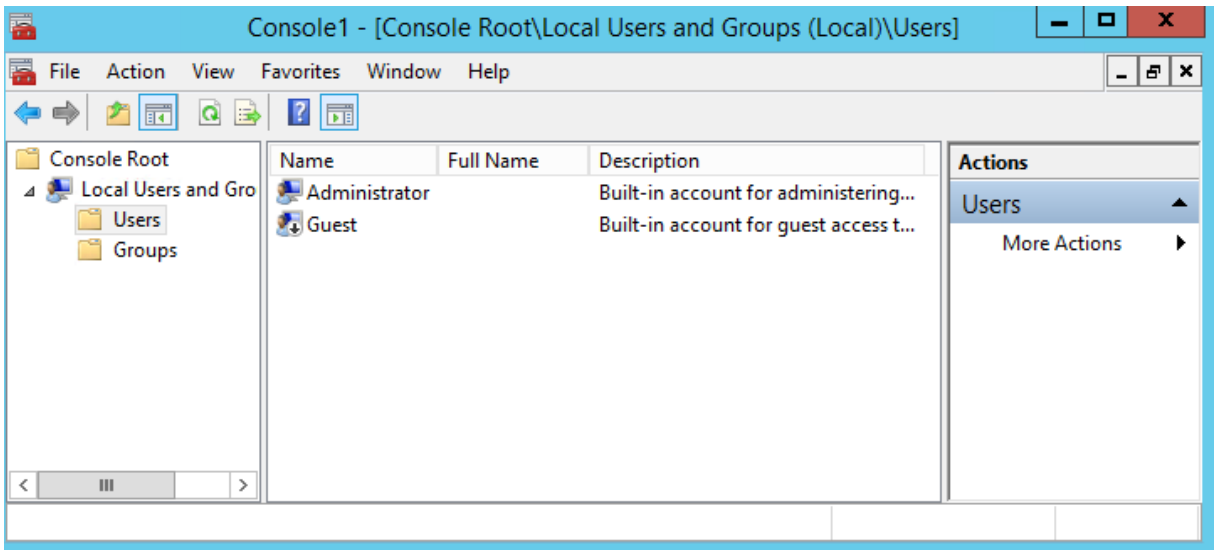
40.4.1.1 For CloudBond 365 Pro Box / Enterprise Box Editions (or VBR on External Server)

The following procedure describes how to add a new user for CloudBond 365 Pro Box / Enterprise Box Editions.

➢ **To add a new user for CloudBond 365 Pro Box / Enterprise Box Editions:**

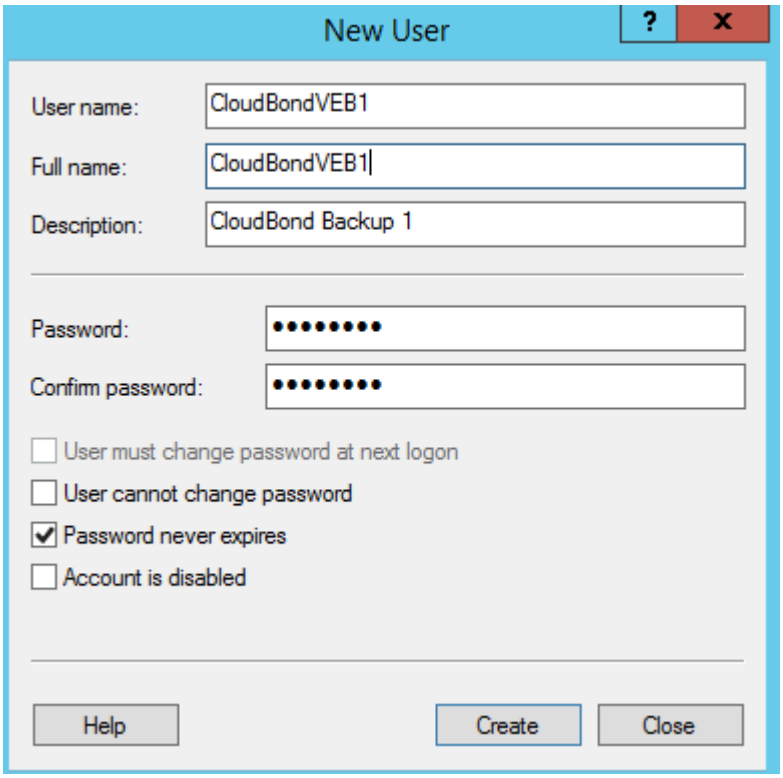
1. Create the user as a local Administrator that belongs to the Local Server Administrators group.
2. Open the Local User and Groups using Microsoft Management Console (MMC).

Figure 40-27: Local User and Groups



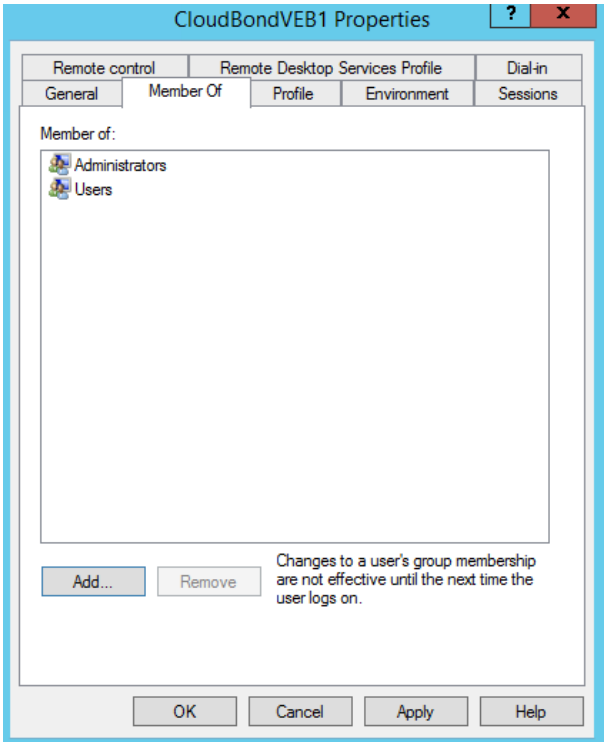
3. Enter the new user details on the New User screen.
4. Click **Create**.

Figure 40-28: Creating a New User



5. On the CloudBondVEB1 Properties screen, click the **Member of** tab.
6. Add the new user to the Local Administrators Group, and then click **Add**.
7. Click **OK**.

Figure 40-29: Adding to Administrators



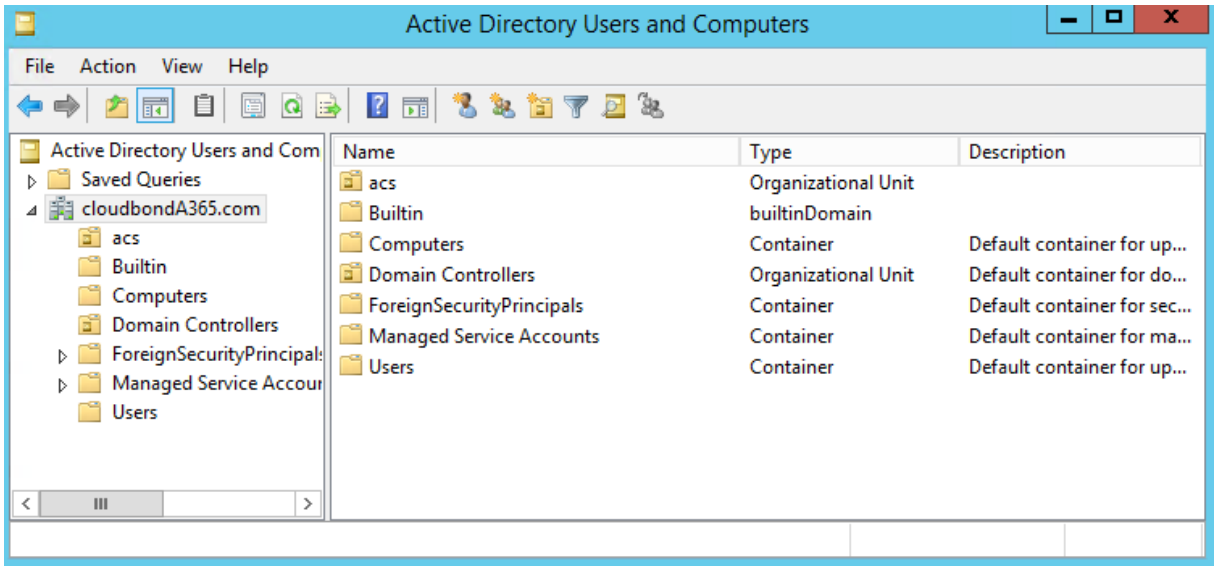
40.4.1.2 For CloudBond 365 Standard Box Edition

The following procedure describes how to add a new user for CloudBond 365 Standard Box Edition.

➢ **To add a new user for CloudBond 365 Standard Box Edition:**

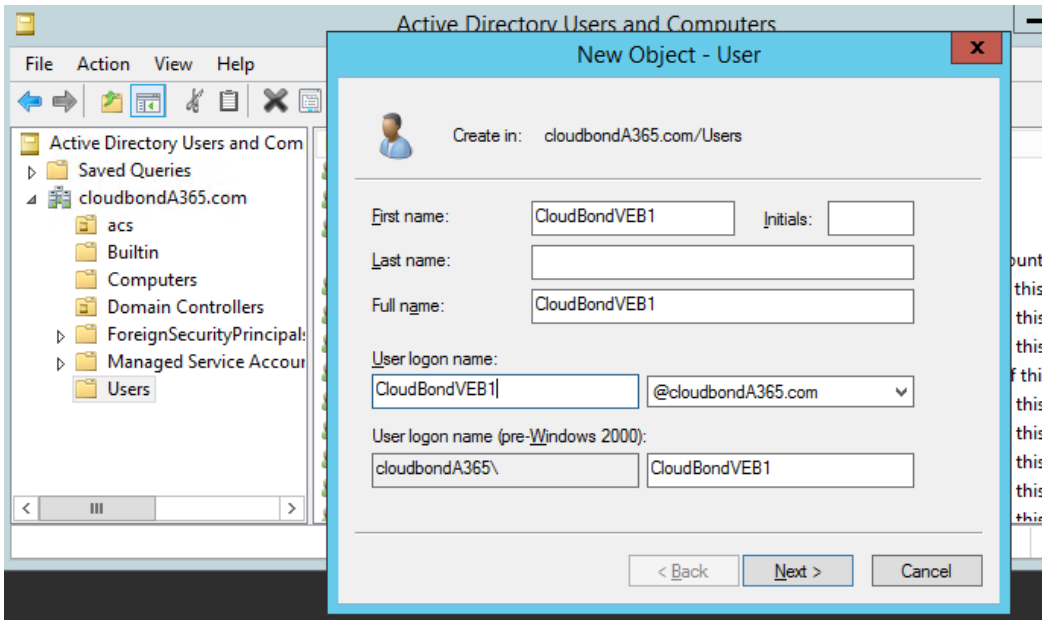
1. Create the new user on the CloudBond 365 domain which belongs to the CloudBond 365 domain Administrators group.
2. Open the **Active Directory User and Computers** tool.

Figure 40-30: Active Directory Users and Computers



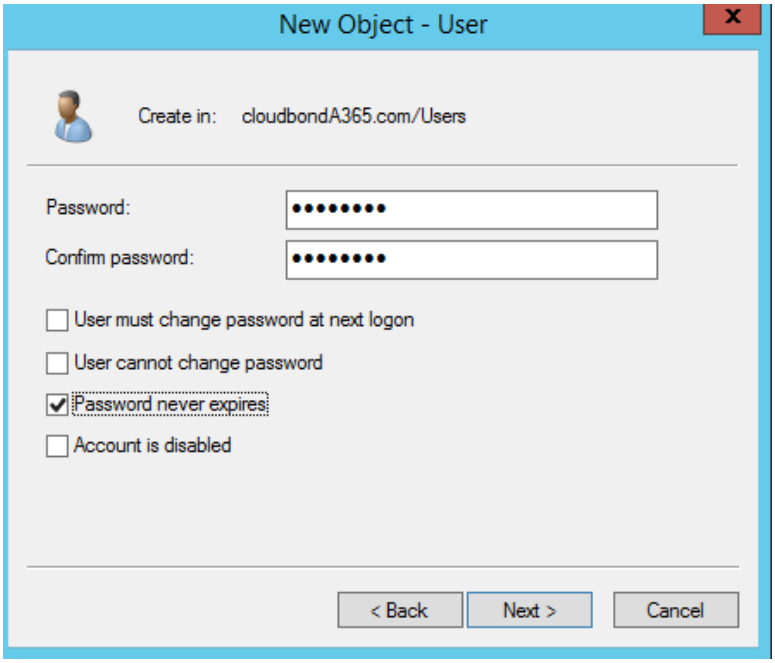
3. Select the **Users** folder and create a new user.
4. On the New Object – User screen, enter the name details, and then click **Next**.

Figure 40-31: New Object – Name Details



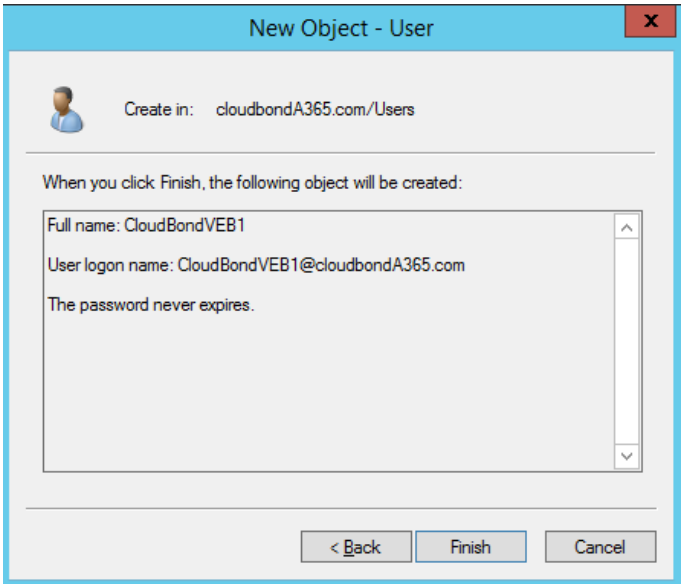
5. Enter the password credentials, and then click **Next**.

Figure 40-32: New Object – Password Details



6. Click **Next**.

Figure 40-33: New Object – Finish



7. Click **Finish**.

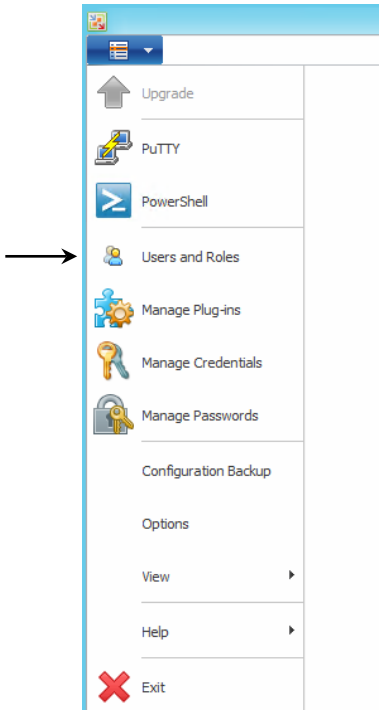
40.4.2 Assigning a Role for the VEB User

The following procedure below describes how to assign a role for the VEB user.

➢ **To assign a role for the VEB user:**

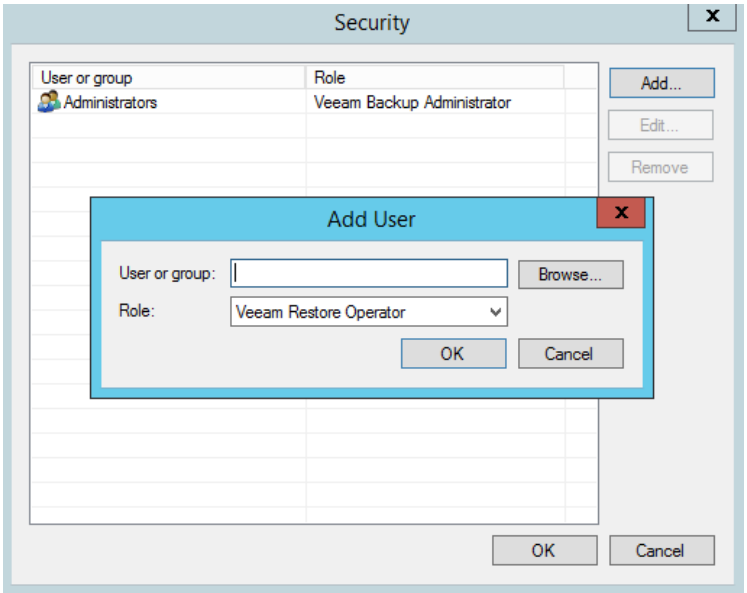
1. From the VBR main console screen, click the **Menu** icon (in the top-left corner of the screen); the following menu options appear:

Figure 40-34: Users and Roles



2. Select **Users and Roles**; the following screen appears.

Figure 40-35: Security

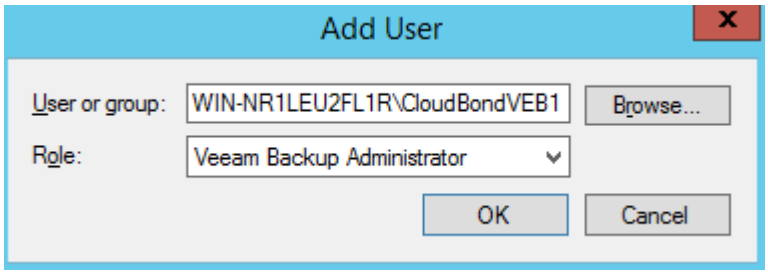


3. Click **Add**.
4. In the 'user or group' field, enter the user that was created before for the VEB or use

Browse to select it.

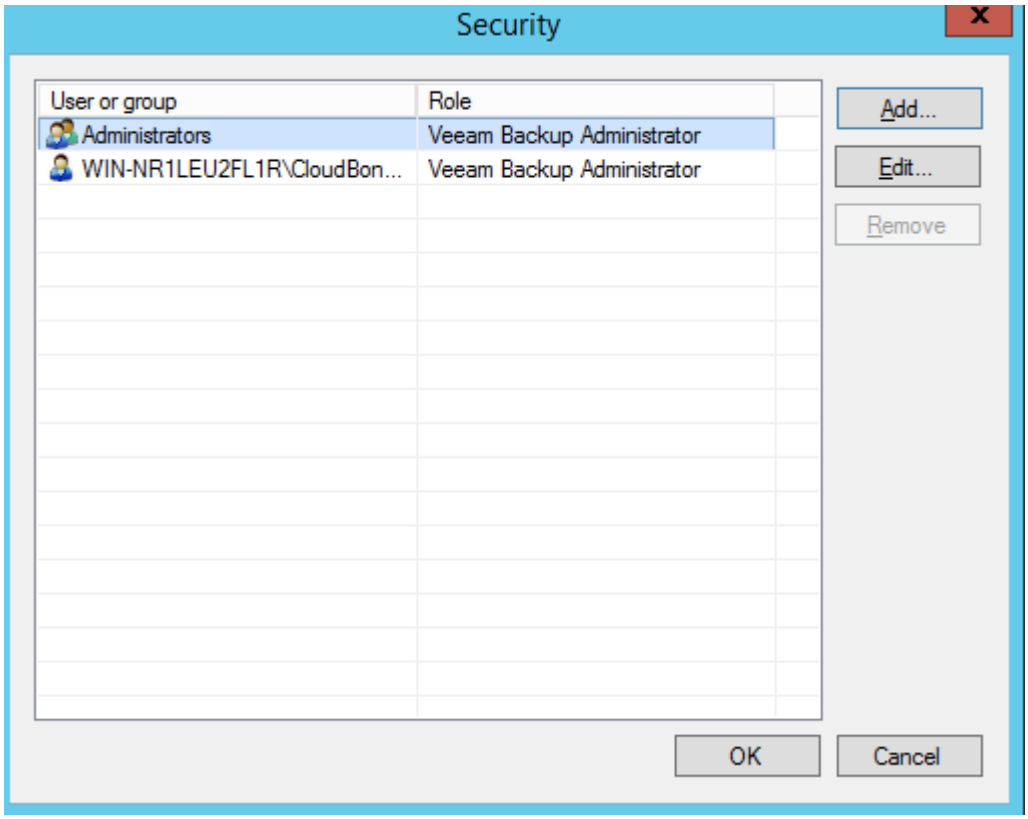
5. From the 'Role' drop-down list, select **Veeam Backup Administrator**.

Figure 40-36: Add User



6. Click **OK**; the new role has been added.

Figure 40-37: Security – with Added Role



7. Click **OK**.

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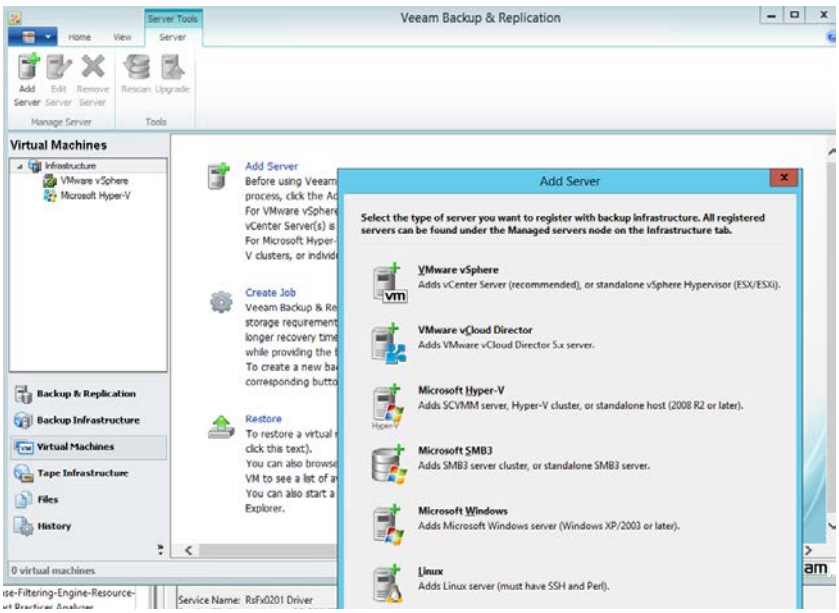
41 Adding CloudBond 365 Hyper-V to VBR

The following procedure describes how to add CloudBond 365 Hyper-V to VBR.

➢ **To add CloudBond 365 Hyper-V to VBR:**

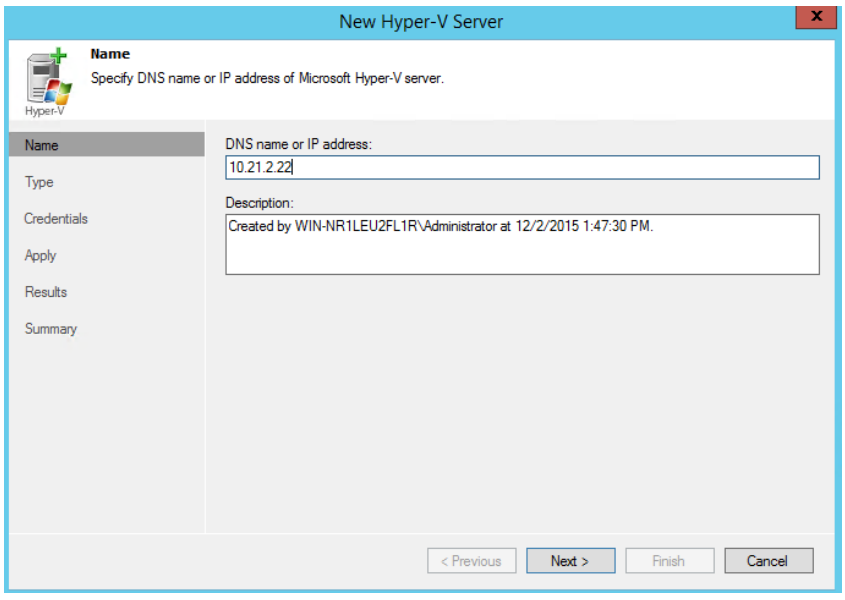
1. From the VBR main console screen, select **Virtual Machines**.
2. Select **Add Server**.
3. Select **Microsoft Hyper-V**.

Figure 41-1: Add Server



4. In the 'DNS name or IP address' field, enter the CloudBond 365 Host IP address.
5. In the 'Description' field add a description of the new Hyper-V server.

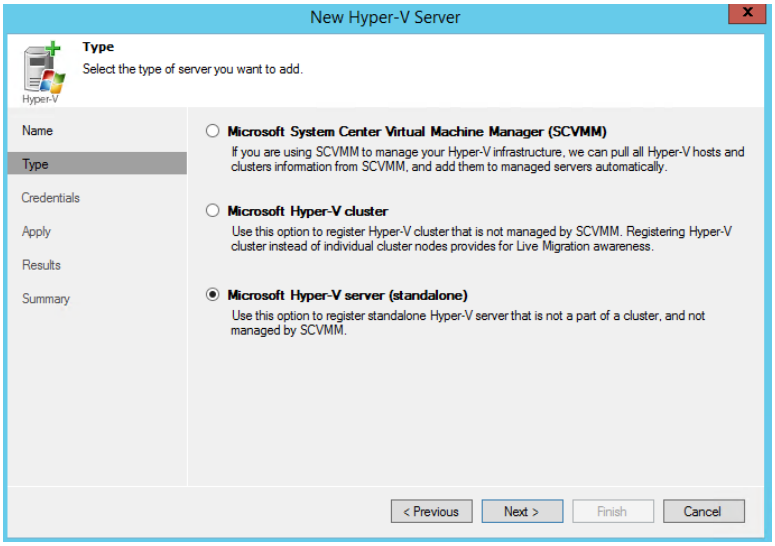
Figure 41-2: New Hyper-V Server



6. Click **Next**.

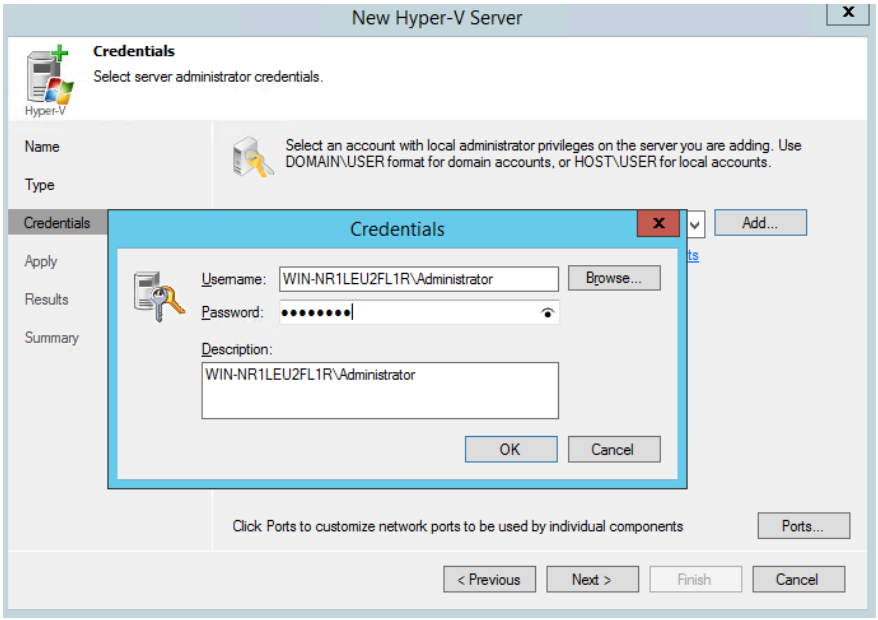
7. Click the **Microsoft Hyper-V Server (standalone)** option, and then click **Next**.

Figure 41-3: New Hyper-V Server - Type



8. You must have local Administrator credentials on the server.
9. From the 'Credentials' drop-down list, select an existing or add credentials to access the Hyper-V host.

Figure 41-4: New Hyper-V Server - Credentials



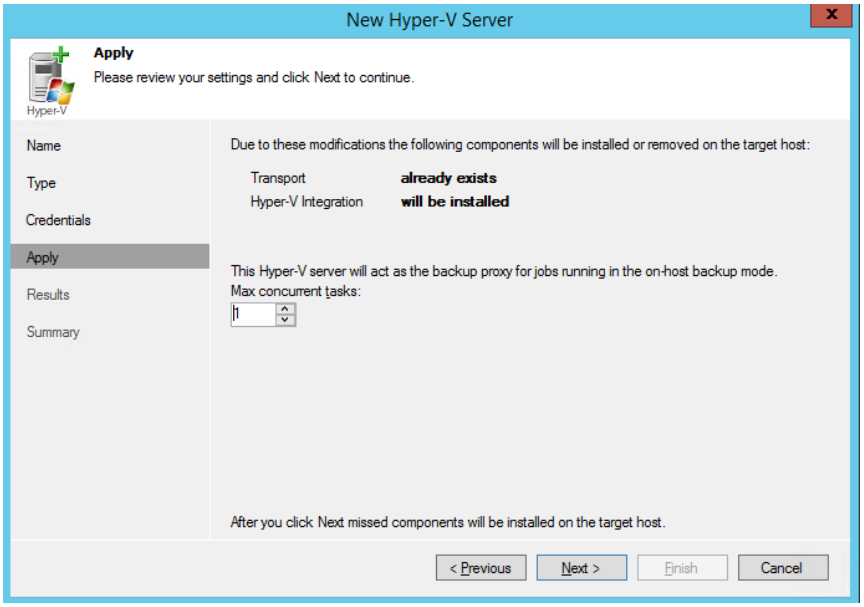
Notes:

- If CloudBond 365 is backed up, the host can be a Domain Controller. If so, use a User which belongs to the Domain Administrators (e.g., CloudBond 365/Administrator).
- If the HyperV host is not a Domain Controller, use the following format for the user name: <computer Name>\<user>

10. On the Credentials screen, click **OK,** and then click **Next**. The VBR examines the Target server, which can take several minutes.

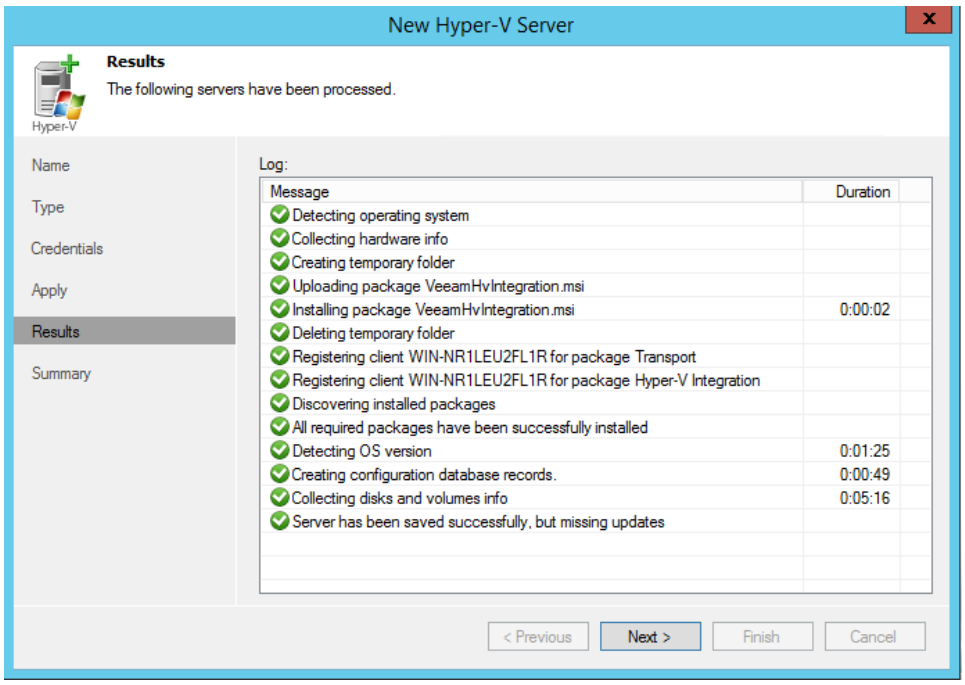
11. In the 'Max concurrent tasks' field, select **1,** and then click **Next**.

Figure 41-5: New Hyper-V Server - Apply



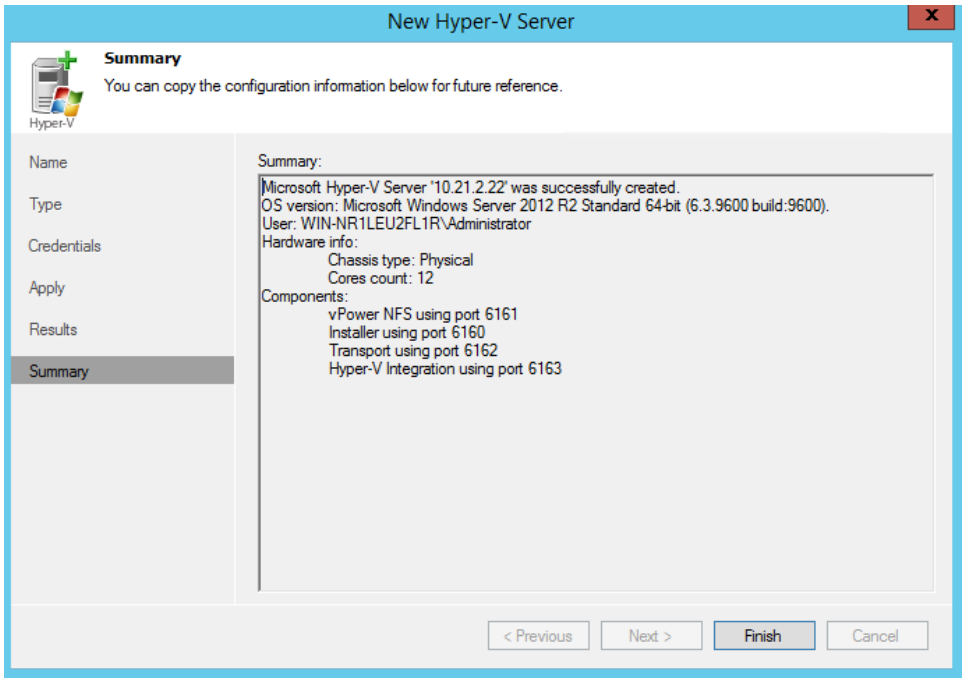
12. The missing components are installed on the CloudBond 365. This takes several minutes.
13. On the Results screen, click **Next**.

Figure 41-6: New Hyper-V Server - Results



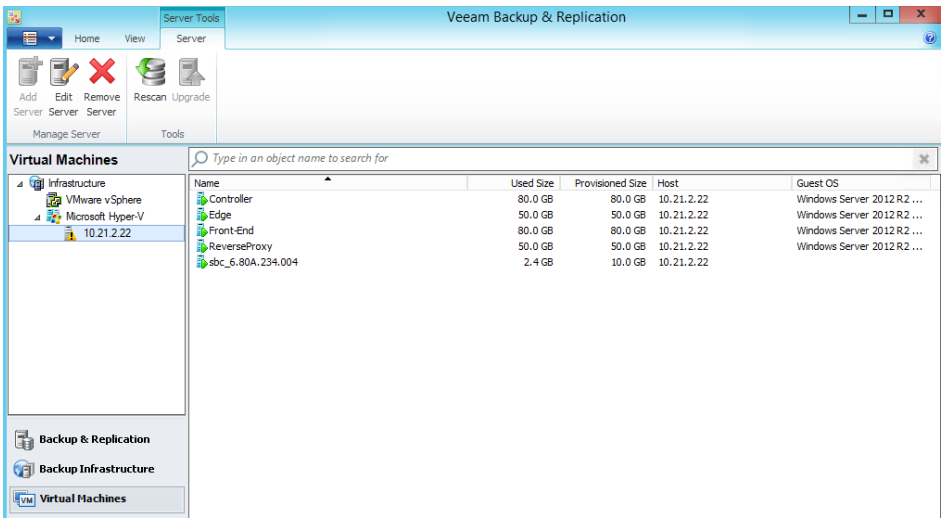
14. On the Summary screen, click **Finish**.

Figure 41-7: New Hyper-V Server - Summary



15. The VBR informs you which Windows updates are missing and need to be installed.
16. The Microsoft Hyper-V server with its Virtual Machines appears on the screen.

Figure 41-8: Microsoft Hyper-V Server



42 Configuring Backup Jobs

The following procedures describe how to configure backup jobs.

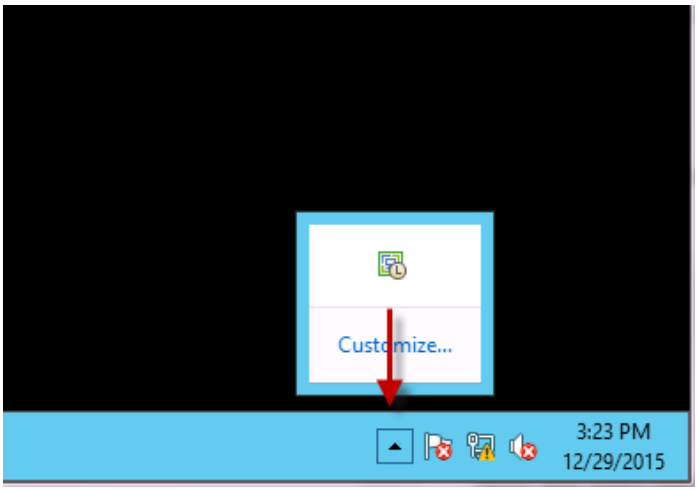
42.1 Configuring VEB Host Backup

The following procedure describes how to configure the backup for the host server.

➢ **To configure the backup for the host server:**

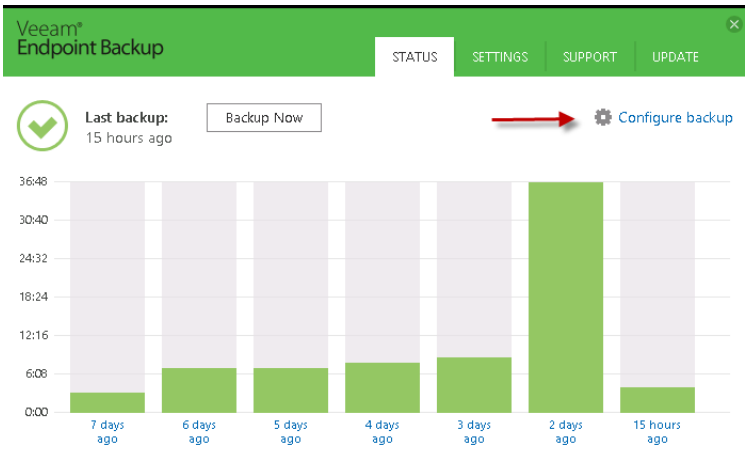
1. From the Notifications Area icons, double-click on VEB.

Figure 42-1: Notifications Area Icons



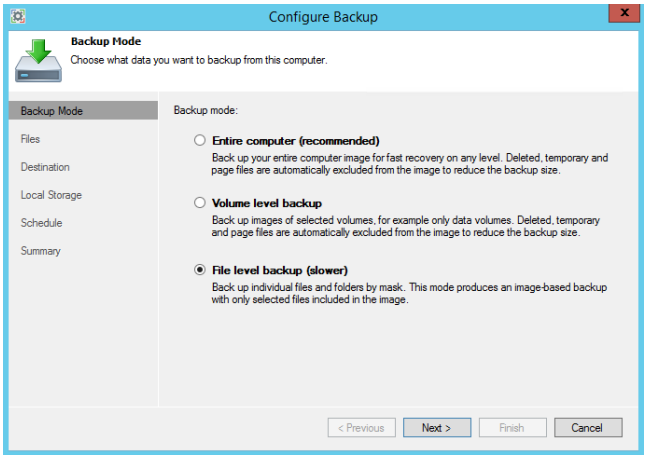
2. Run **Configure Backup**.

Figure 42-2: Configure Backup



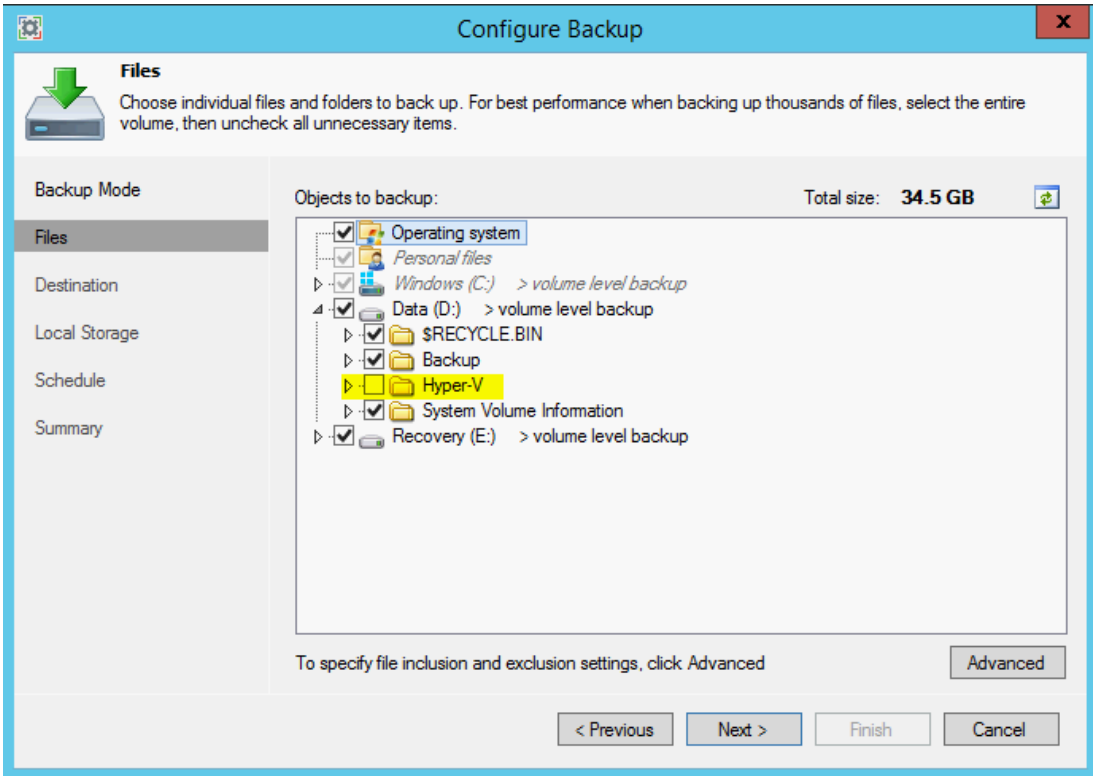
3. Click the **File level backup (slower) mode** option, and then click **Next**.

Figure 42-3: Configure Backup



4. Select the 'Operating system' check box (automatically checks Volume C and personal files),
5. Select 'Volume D'.
6. Clear the Hyper-V folder check box under Volume D.
7. Click **Next**.

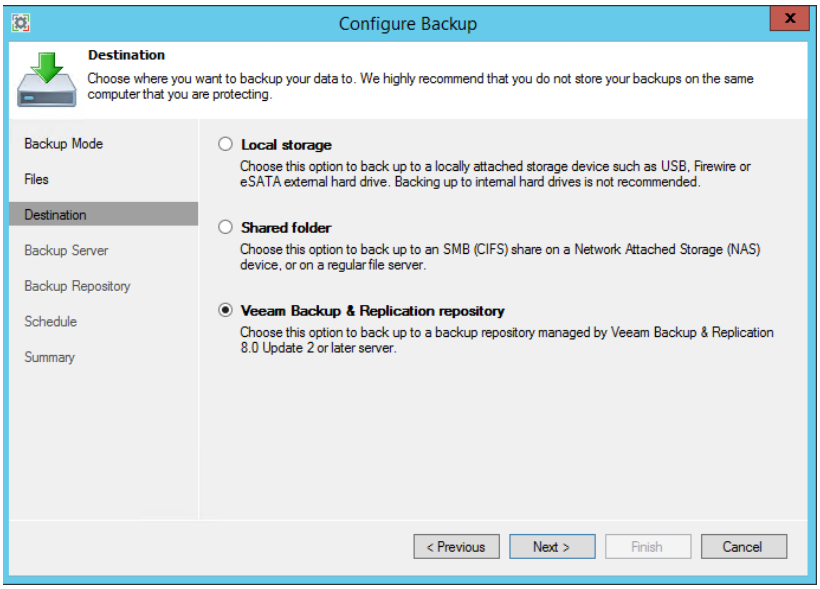
Figure 42-4: Configure Backup - Files



Note: Volume E: is used only when installing the CloudBond 365. All its information exists on the CloudBond 365 USB. If you want to back it up, select the Volume E check box as well.

8. Select the **Veeam Backup & Replication repository** option as the Destination, and then click **Next**.

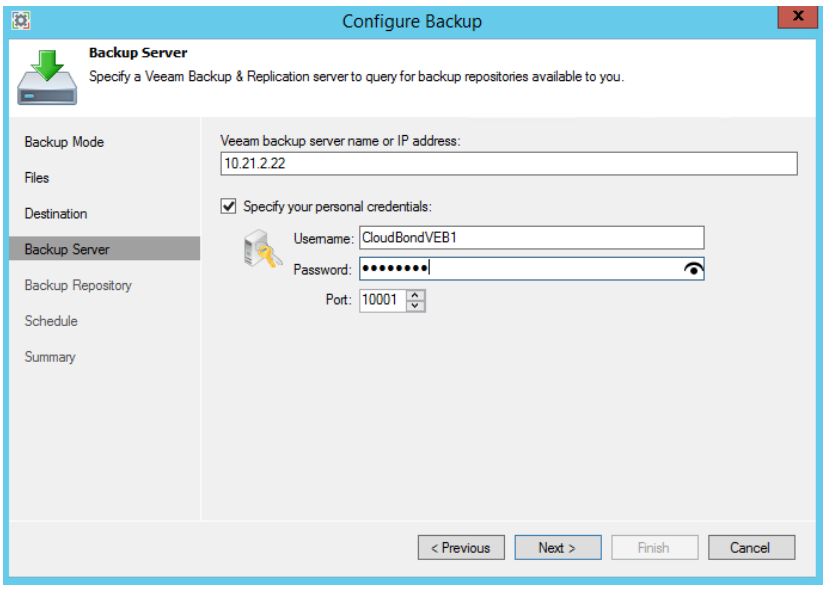
Figure 42-5: Configure Backup - Destination



9. On the Backup Server screen, enter the VBR IP address that runs on the CloudBond 365 host or on the external one (if you selected to run it on an external server).

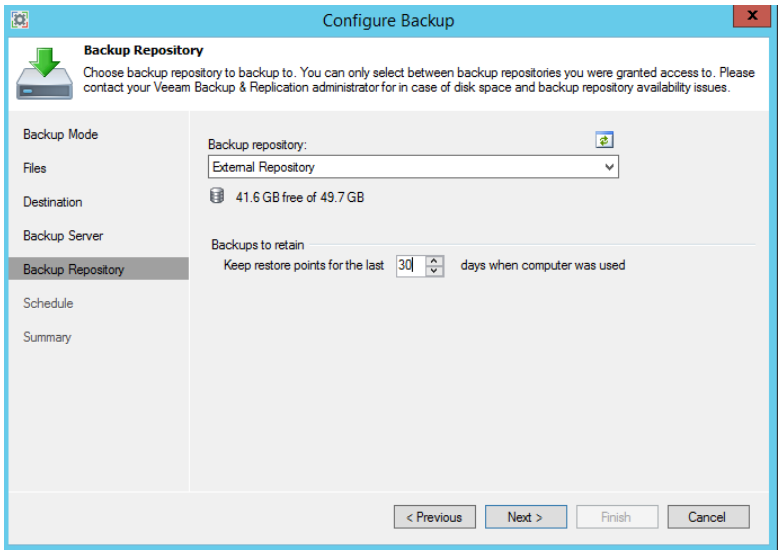
10. Enter the VEB credentials that you defined in Section 40.4.1, and then click **Next**.

Figure 42-6: Configure Backup – Backup Server



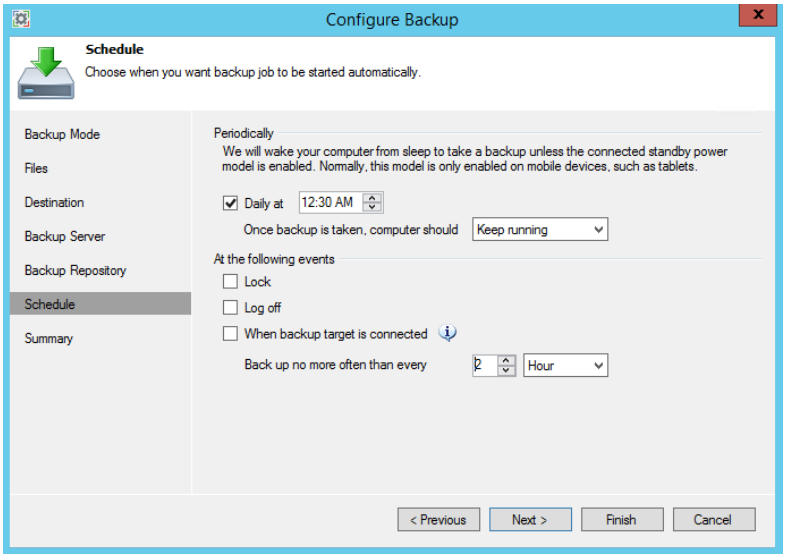
11. Select the Backup Repository from the drop-down list.
12. In the 'backups to retain' field, select how many backups should be retained, and then click **Next**

Figure 42-7: Configure Backup – Backup Repository



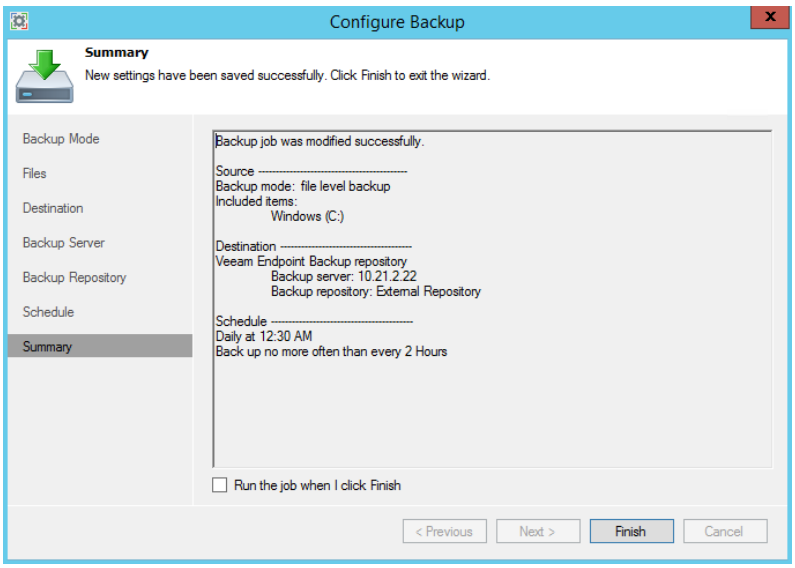
13. Set the time to perform the backup. (The preferred time is at night when the system is less loaded.)
14. Click **Next**.

Figure 42-8: Configure Backup – Schedule



15. You can check the 'Run the job when I click Finish' check box, to perform a full backup now. This is recommended so you can check that the backup is correctly set.
16. Click **Finish**.

Figure 42-9: Configure Backup – Summary



17. If you selected to perform a backup now, you can monitor the backup from:
    - **VEB Control Panel:** Navigate to **Start** > **Control Panel**.

Figure 42-10: Monitoring Backup with VEB Control Panel

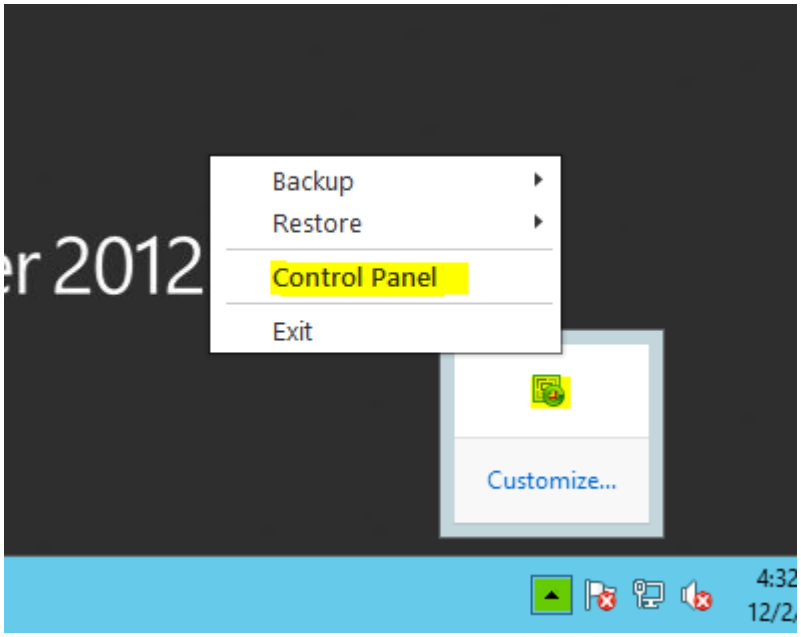
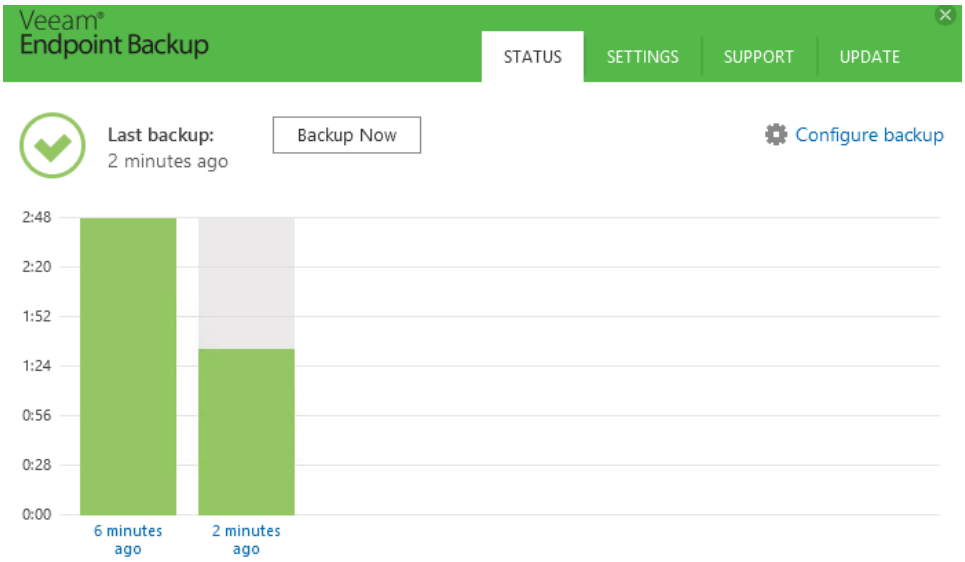
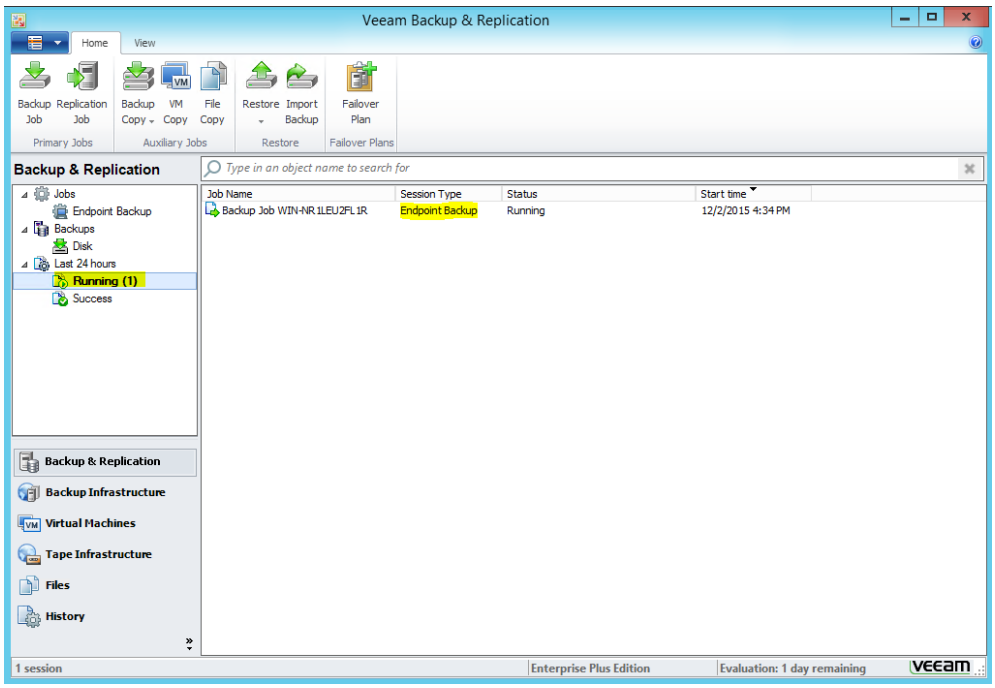


Figure 42-11: Monitoring Backup with VEB Control Panel - Status



- **VBR Jobs:** Click **Running** to view display.

Figure 42-12: Monitoring Backup with VBR Jobs



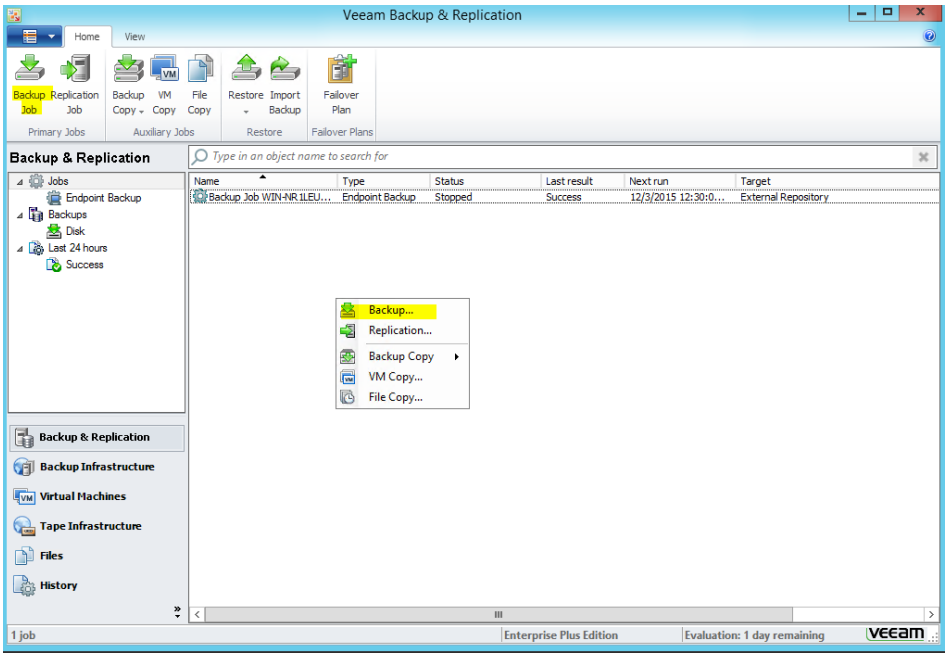
42.2 Configuring VBR VMs Backup

The following procedure describes how to configure the VBR backup for the VMs.

➢ **To set the backup for the Virtual Machines on the CloudBond 365 server:**

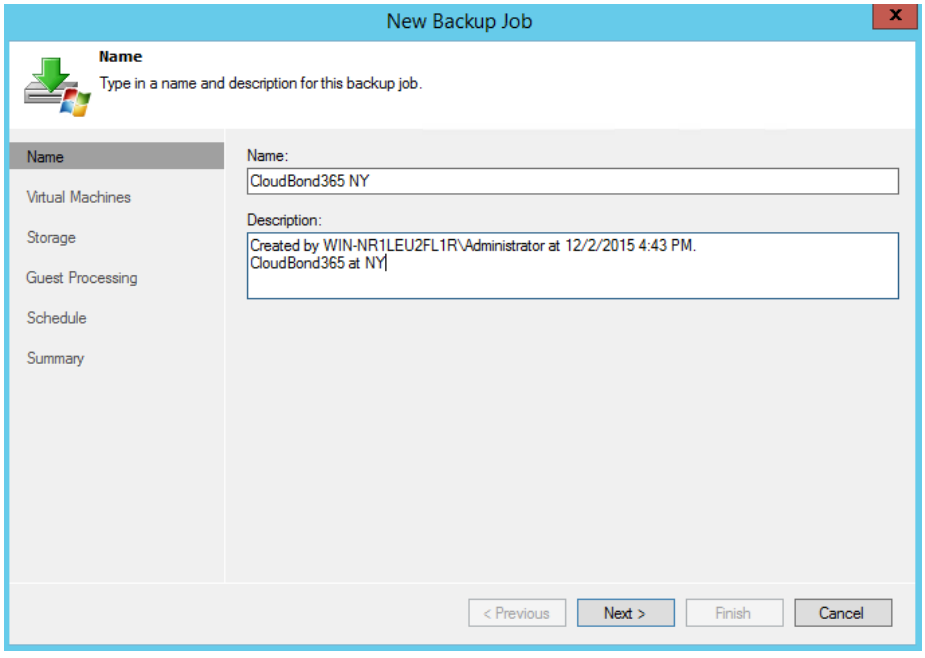
1. Run Veeam Backup and Replication (VBR).
2. Create a backup job from the **Home** menu or by right-clicking the **Jobs** window.

Figure 42-13: VBR Jobs - Backup



3. Enter the name and description and then click **Next**.

Figure 42-14: New Backup Job



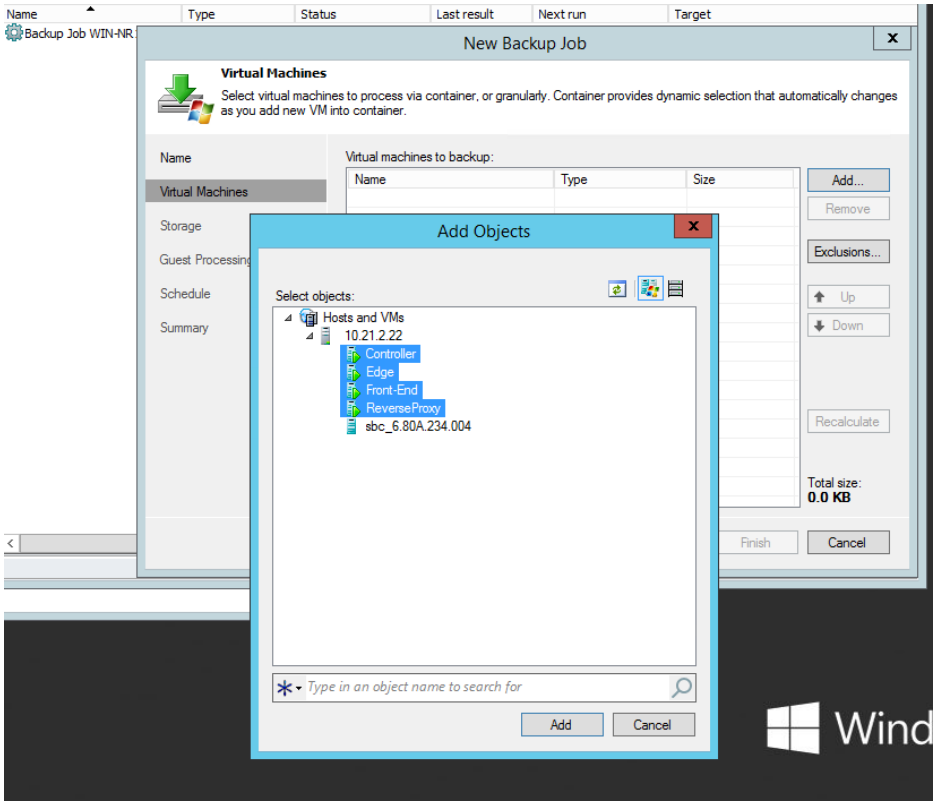
4. Select **Add** to add VMs to the job.

5. Select all the VMs **except the SBC**. The VMs list is according to the CloudBond 365 model and setup that was selected. The number of VMs that are allowed to be backed up is calculated according to your license.

Note: To back up the SBC, it is recommended to manually back up the SBC Settings INI file. For more information, refer to the Saving Configuration sub-section of the *AudioCodes SBC User's Manual*.

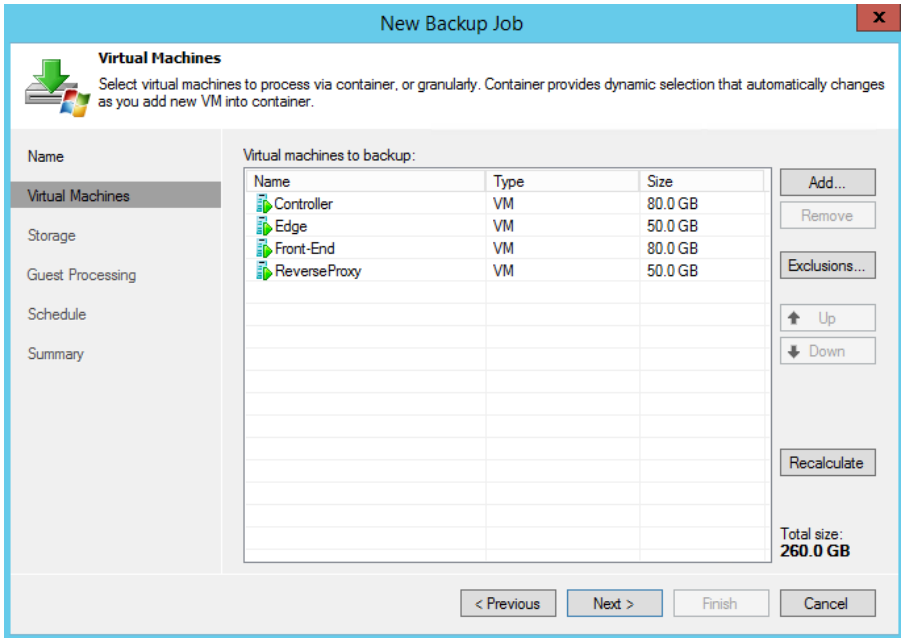
6. Click **Add**.

Figure 42-15: Add Objects



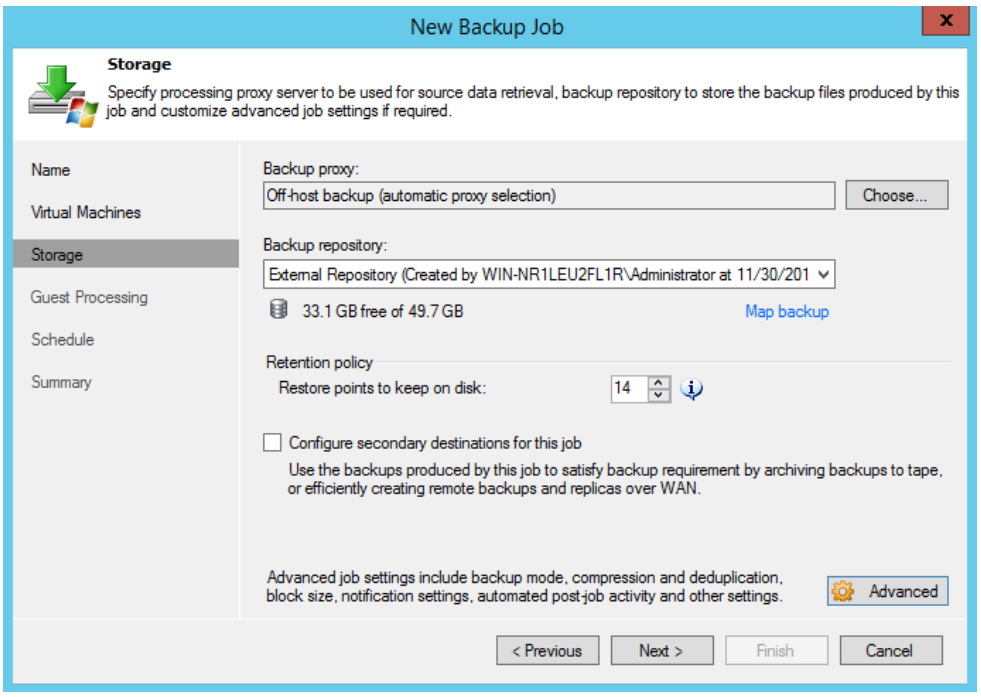
7. Click **Next**.

Figure 42-16: New Backup Job – Virtual Machines



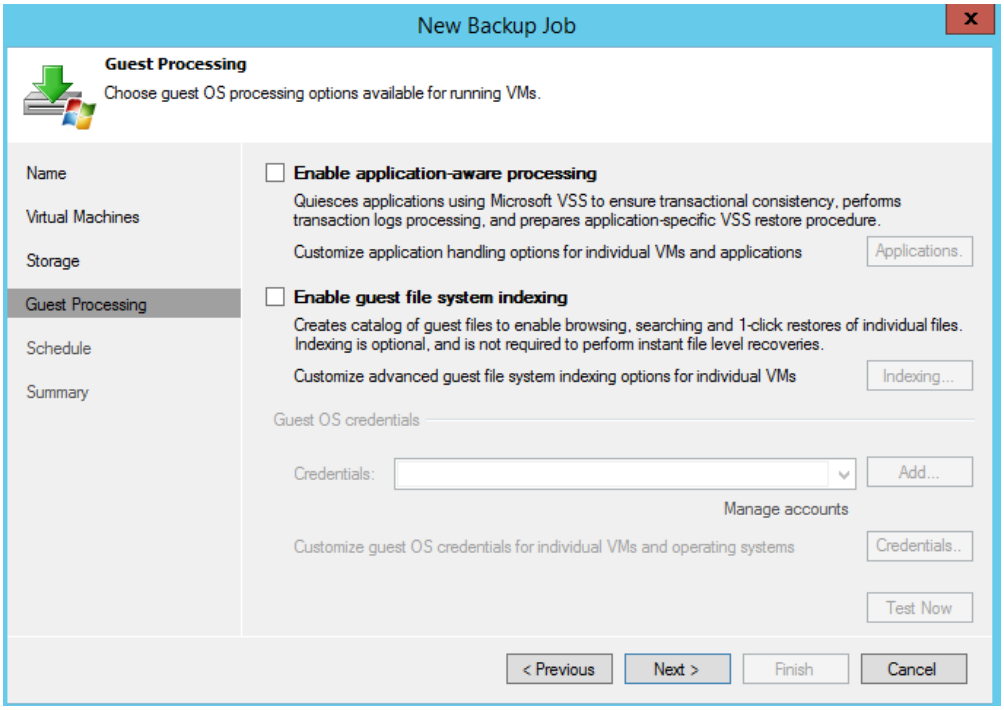
8. Confirm that the correct repository has been selected and that the number of restore points to keep is correct.
9. Click **Next**.

Figure 42-17: New Backup Job – Storage



10. Click **Next**.

Figure 42-18: New Backup Job – Guest Processing



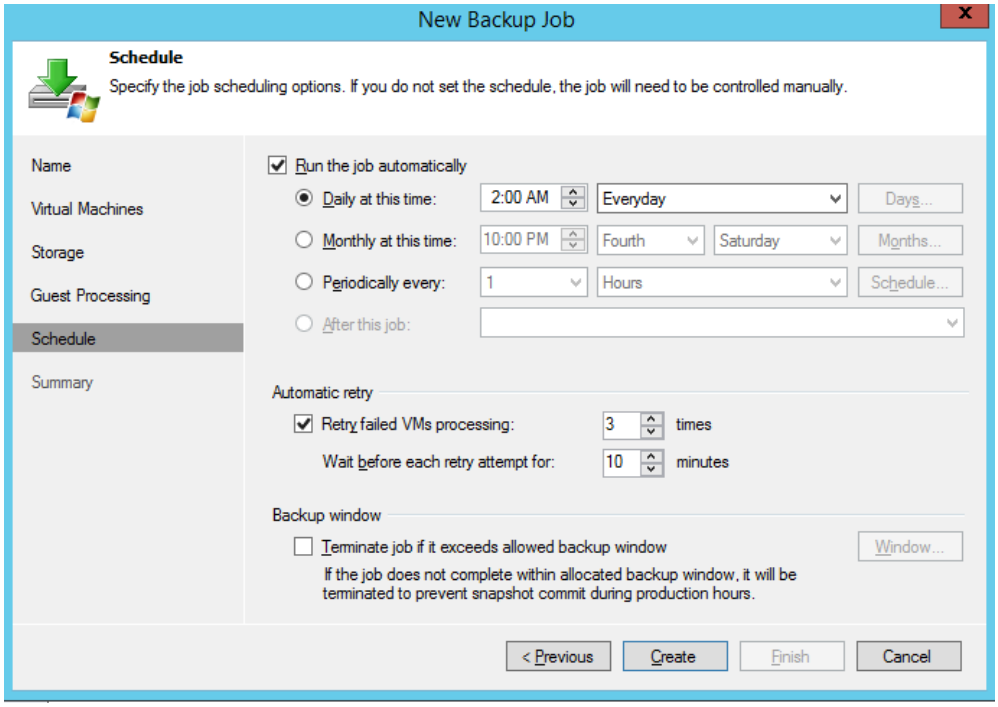
11. Select the 'Backup window' check box to terminate the job if it exceeds the allowed backup window.

Note: If the job does not complete within the allocated backup window, it is terminated to prevent a snapshot commit during production hours.

12. Define the schedule for the job and click **Create**.

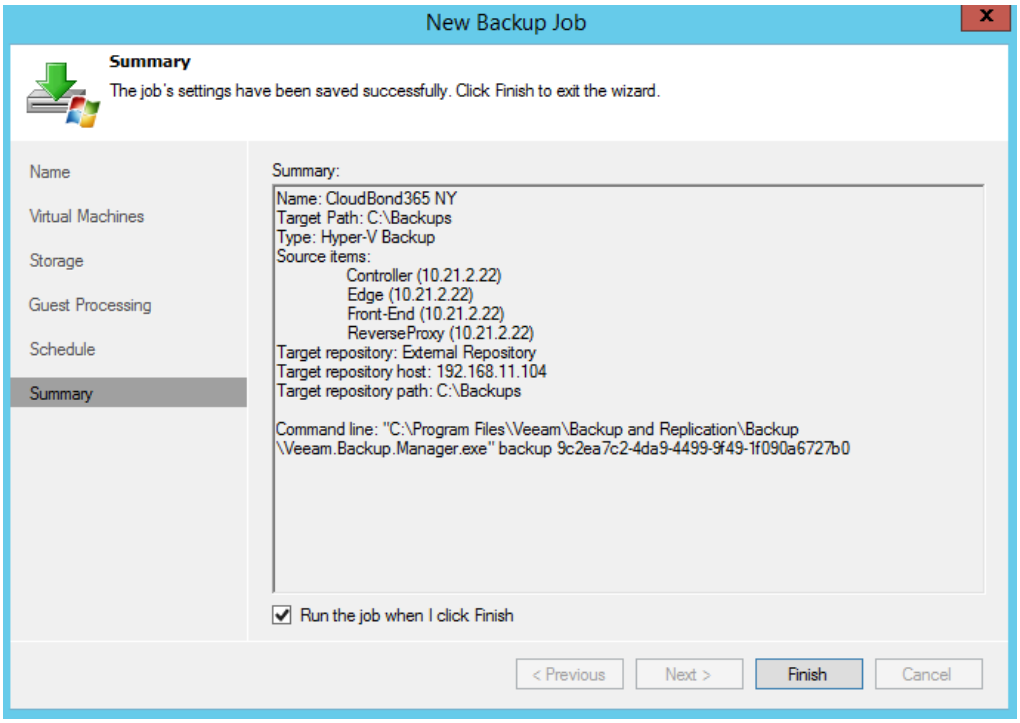
Note: It is recommended to schedule this backup job at least 60 minutes later than the VEB backup scheduled time.

Figure 42-19: New Backup Job – Schedule



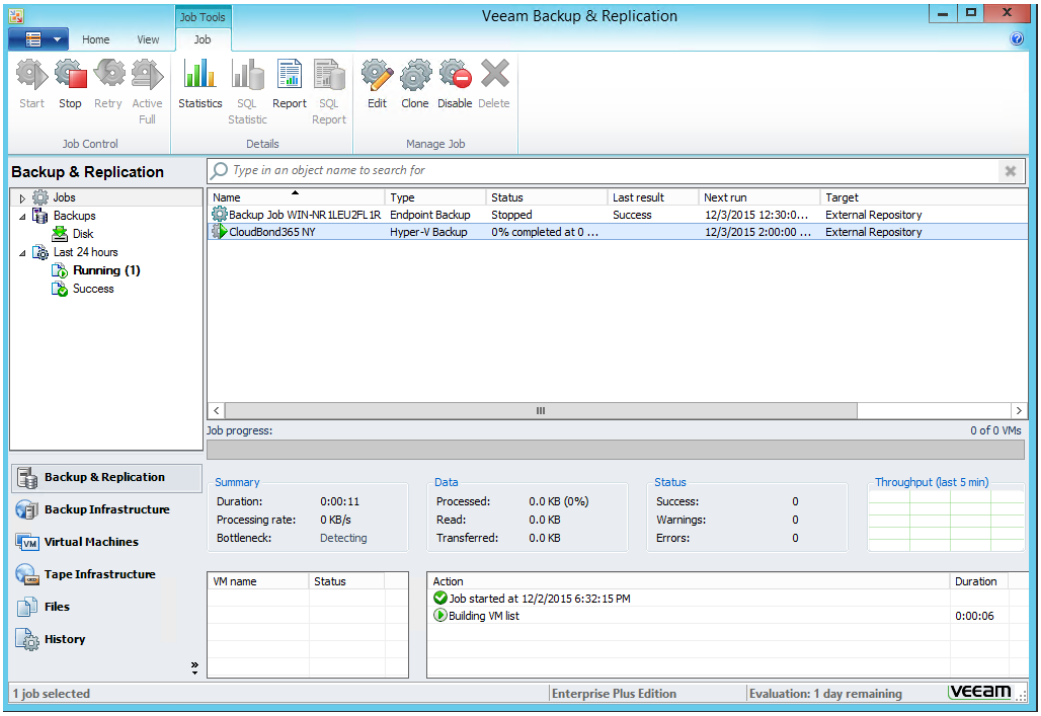
13. Click **Finish**.
14. It is recommended to select the 'Run the job when I click Finish' check box, so that you can run the job immediately to test the backup.

Figure 42-20: New Backup Job – Summary



15. You can monitor the job using the VBR.

Figure 42-21: VBR - Monitoring



42.3 Monitoring Backup

You can monitor the backup process using either:

- Email
- SNMP

The setup is done using the VBR: Refer to *Veeam Backup & Replication User Guide.* You can receive notification on the status of backup jobs and on system parameters.

42.4 Using the 3-2-1 Backup Rule

In making back up files, use the 3-2-1 rule:

- Have at least **three copies of your data**.
- Store the copies on **two different media**.
- Keep **one backup copy offsite**.

The above procedure provides the ability to create one local backup. Creating another two copies and one offsite is not described in this document. The VBR tool can be used for creating extra jobs to copy the backup to another place and to store the backup offsite using the Veeam cloud. For more information, contact AudioCodes.

42.5 Backing up the SBC

The SBC (software and hardware SBC) can be backed up by saving its *ini* files. For more information on how to save the *ini* files, refer to the *SBC User Manual*.

For Pro Box and Enterprise Box editions, where software SBC is used, you must restore the SBC VM first and then configure it with the *ini* files. We recommend you export the SBC VM after setting it to the C: drive, so that the VEB will back it up.

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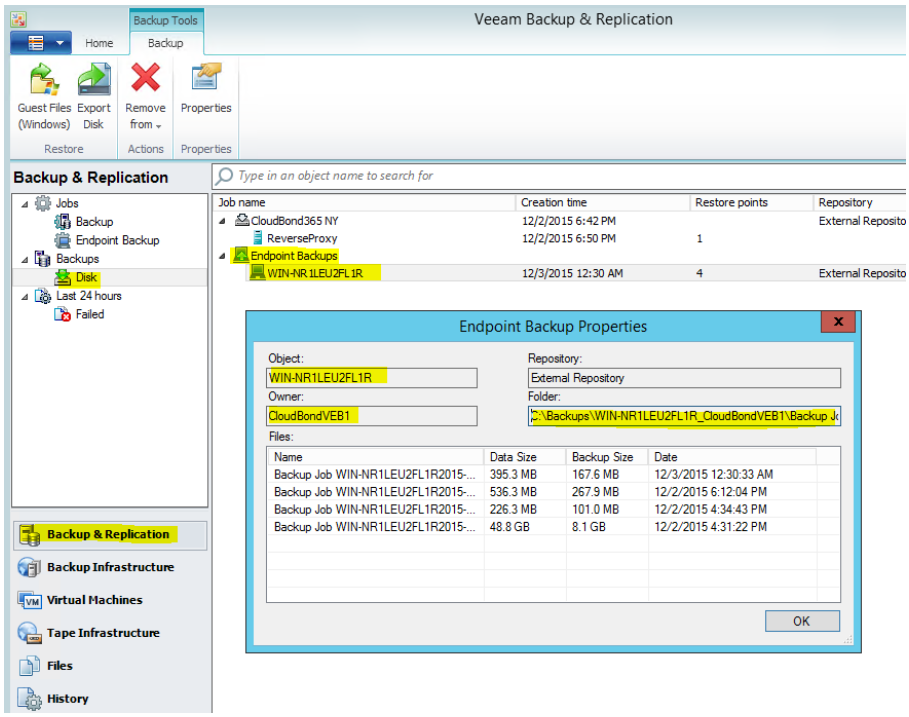
43 Keeping Information after Defining the Backup

A restore can be done years after you defined the backup. It is recommended to enter the following information per CloudBond 365, so it will be available if needed for recovery.

- **Location of the recovered USB:** It is recommended to update the USB using your server as explained in Chapter 45 to keep your system drivers.
- **Architecture used:** Note what architecture is used for VBR on the CloudBond 365 or on an external server. Either the repository is external or on the CloudBond (attached USB Disk)
- **Password used:** Note the password used if you encrypt the backup.
- **CloudBond 365 topology:** (with Domain Controller or without).
- **D: and E: drive/files:** If you backed up D: and E: drives, you will need to restore them.
- **IP address:** Note the IP address of the Repository server.
- **Network Settings:** Note the network settings, IP address and which virtual network is associated with a physical network card.
- **Username and Password of the Repository server:**
- **Username and Password of the VEB:** (for every CloudBond 365 it is a different user)
- **The full network path of the VEB backup**: This can be seen after you perform one backup from the VBR console. The full local path is displayed in the 'Folder' field.

Figure 43-1: Backup and Replication



- Network setup for all Network interfaces – Host and VM
- Hyper-V Virtual Network switch configuration.

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44 Restoring a CloudBond 365 Backup

The Restore procedure is for a full system restore and not one for a virtual machine, even though that the Backup system supports it. When restoring to different hardware, a new license is required. The basic system functionality works without the new license. If you change your hardware, you need a new license for CloudBond 365 SysAdmin, because the license is based on the device's hardware IDs.

Note: Please contact AudioCodes to obtain this license.

Before you begin the restore process, check that the date and time on the CloudBond 365 server BIOS are correct.

Note: The Restore procedure is divided into several Restore tasks. It is recommended that when restoring, the same Restore date for all tasks is used.

44.1 Booting the CloudBond 365

The following procedures describe two different ways of how to boot the CloudBond 365:

- From Veeam Recovery Media USB
- Remotely from .iso using HP iLO

44.1.1 Booting CloudBond 365 from Veeam Recovery Media USB

The following procedure below describes how to boot the CloudBond 365 from a Veeam Recovery Media USB.

➢ **To boot the CloudBond 365 from a Veeam Recovery Media USB:**

1. Plug the Veeam Recovery Media USB into the CloudBond 365.

Notes:

- The Veeam Recovery Media USB comes with the CloudBond 365. If you don't have the Veeam Recovery Media USB, see Chapter 45 for instructions on how to create it.
- If the Veeam software was updated on your server, it is recommended to update the USB. See Chapter 45 for more information.
- The Veeam Recovery Media USB is a different USB than the CloudBond 365 Recovery USB. The CloudBond Recovery USB is used for a clean system re-install using the CloudBond 365 Installation wizard.

2. Start the server and boot from the USB:
   - **On CloudBond Standard and Standard+ Editions:** From the BIOS, select **Save and Exit Menu** and select to boot from USB.
   - **On CloudBond 365 Pro Box and Enterprise Box Editions:** While booting, click F11. Select Option 3 to boot once from the USB

44.1.2 Booting CloudBond 365 Remotely from *.iso* using HP iLO

The recovery can be performed remotely using HP Integrity Integrated Lights-Out (iLO) management for CloudBond 365 Pro Ent (HP server). You need to boot the CloudBond 365 from an *iso* file, instead of a USB.

The *.iso* file can be downloaded from https://s3.eu-central-1.amazonaws.com/downloads-audiocodes/CB365Backup/VeeamRecoveryMedia.iso.

Another option is to put the USB with the *.iso* file and set the iLO to boot from the *.iso* on the USB. This *.iso* file can be prepared the same way as preparing the USB in Chapter 45, but you need to select *.iso* boot type.

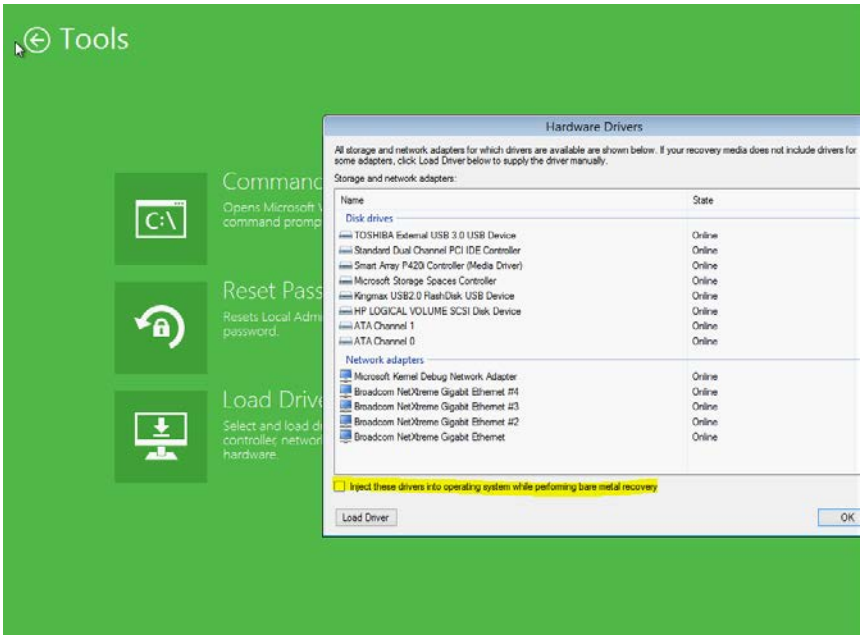
44.2 Restoring Volume C: Using VEB

The procedure below describes how to restore Volume C using the VEB.

➢ **To restore Volume C: using VEB:**

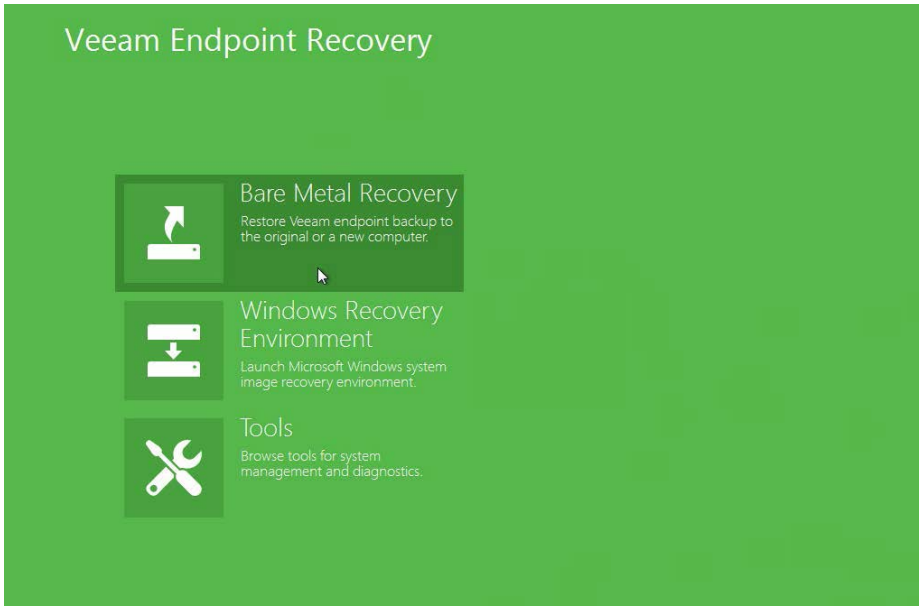
1. Boot the system using either a USB or *.iso* file.
2. From the main menu, select **Tools,** and then select the **Load Driver** menu option.

Figure 44-1: Hardware Drivers



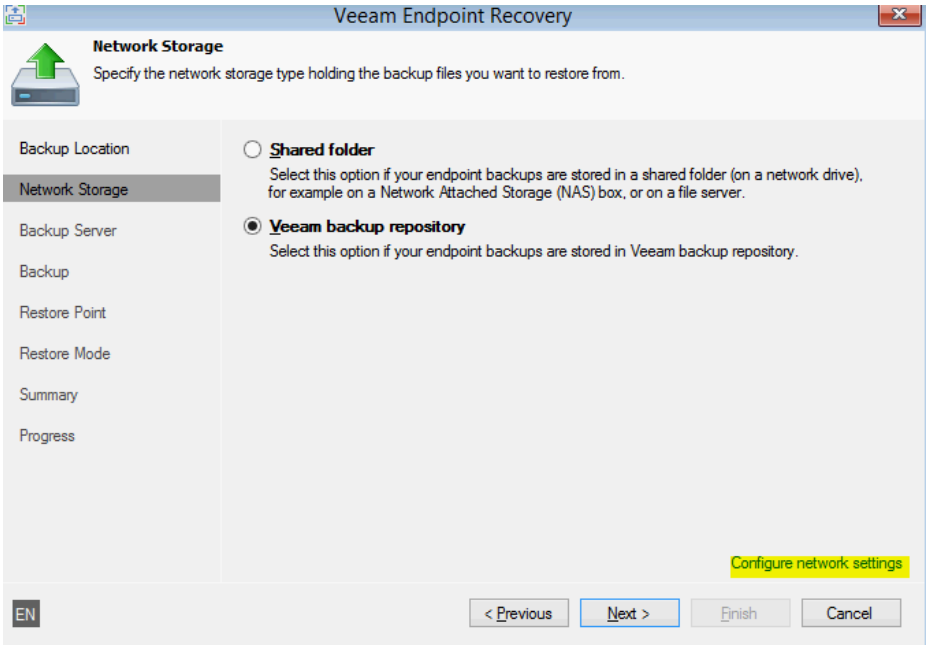
3. Clear the 'Inject these drivers…' check box, and click **OK**.
4. Return to the main screen
5. On the Veeam Endpoint Recovery screen, select the **Bare Metal Recovery** option.

Figure 44-2: Veeam Endpoint Recovery – Bare Metal Option



6. Click the **Network storage** option.

Figure 44-3: Veeam Endpoint Recovery – Backup Location

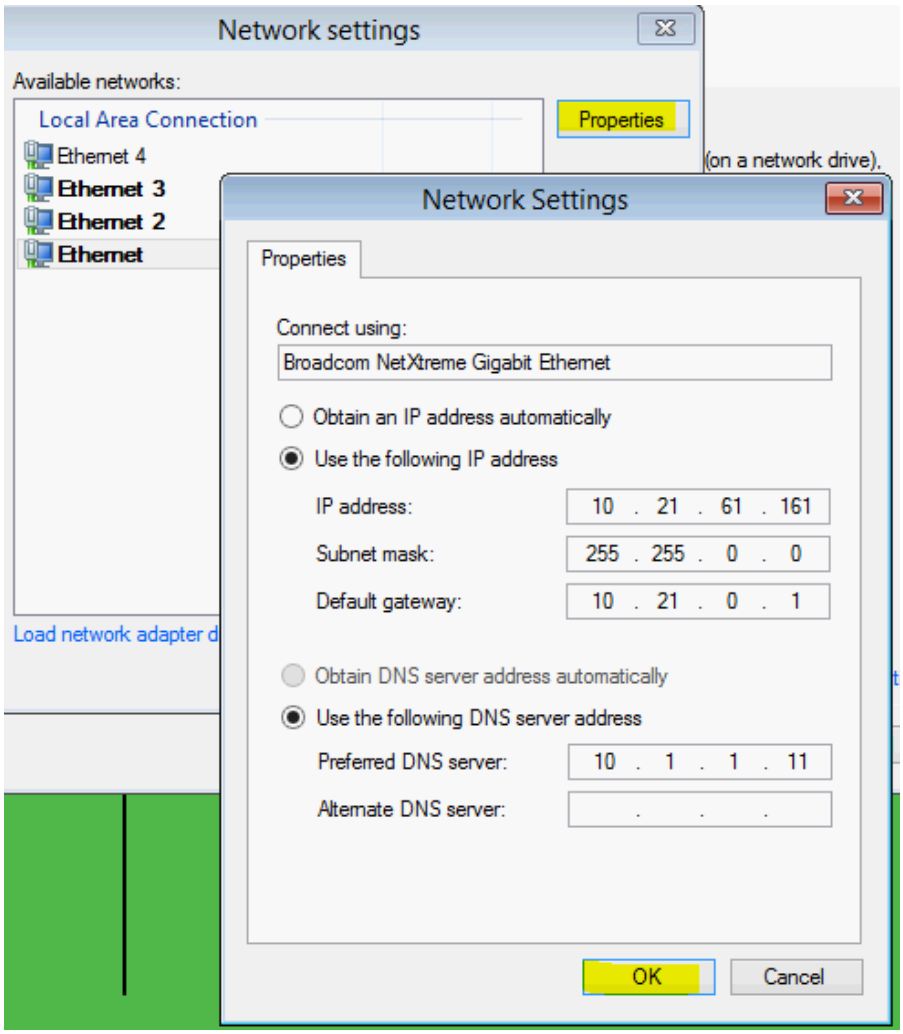


Notes:

- It is possible to perform a restore by using the **Local Storage** (USB Disk) option. To do so, copy the appropriate directory from the backup repository to the USB Disk. Connect it to the CloudBond 365, and then select **Local Storage** on the Backup Location screen.
- If the backup topology is connecting the local USB disk to the CloudBond 365, select the Local storage option (Shared folder option) and browse to the relevant directory to select the *vbm* file. In this case, the steps below are not relevant.

7. Set the IP address for the recovery session by selecting **Configure Network Settings**.

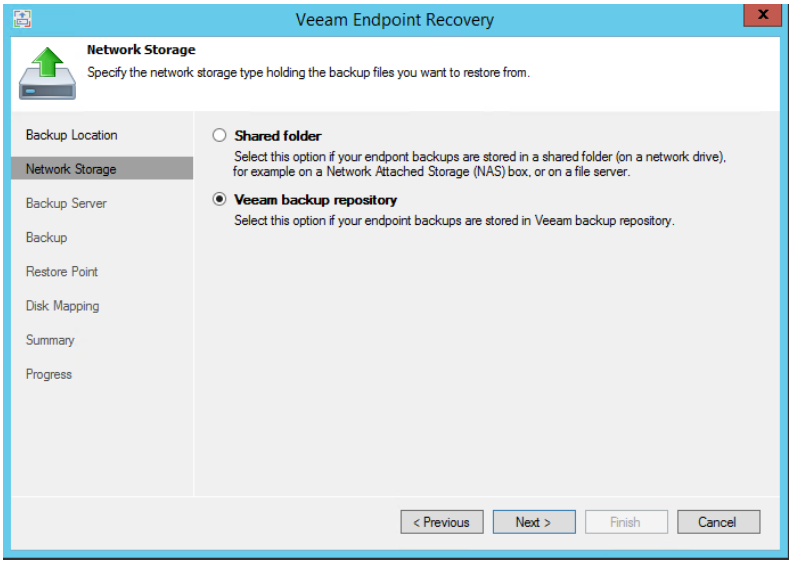
Figure 44-4: Network Settings



8. Select the correct network adapter with the valid IP address, and then click **OK**.
9. Click **Next**.
10. On the Network Storage screen:
    - If the VBR is running on a CloudBond 365 host, click the **Shared folder** because the VBR cannot be accessed.
    - If the VBR is running on an external server, click the **Veeam backup repository** option.
11. Click **Next**.

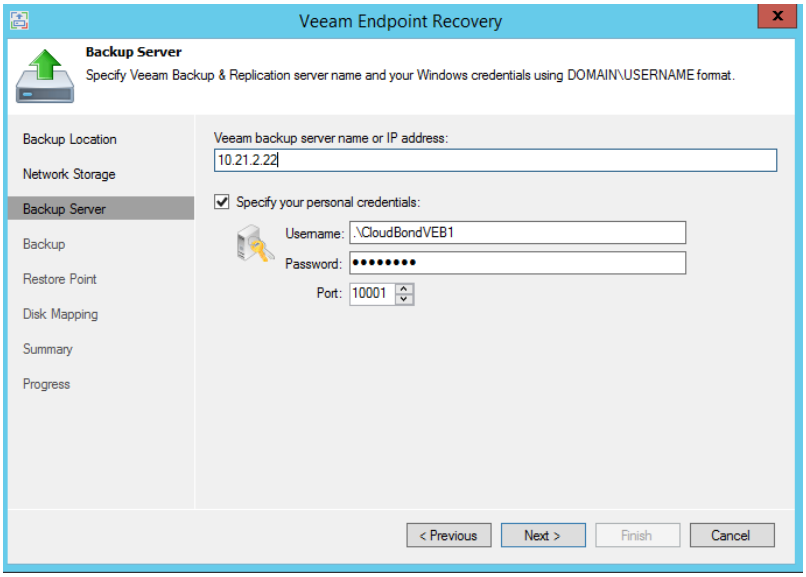
12. The **Veeam backup repository** option is selected.

Figure 44-5: Veeam Endpoint Recovery – Network Storage



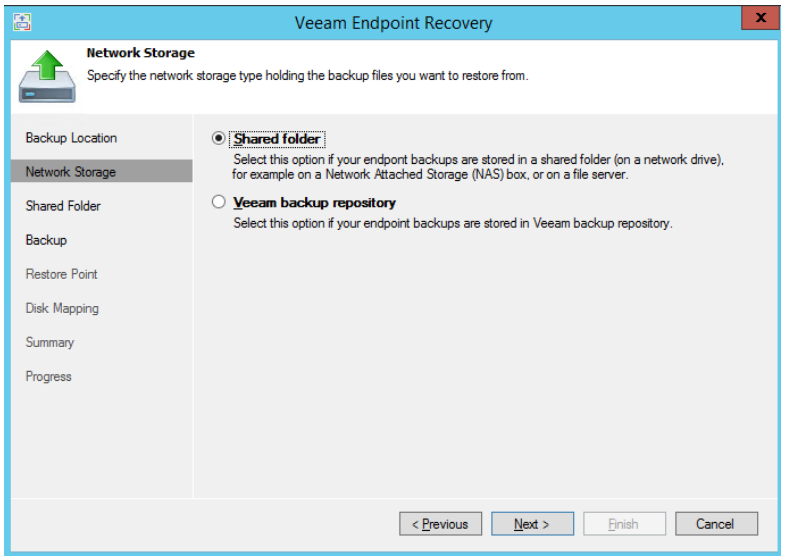
13. Provide the VEB credentials that you defined when you configured the backup, and then click **Next**.

Figure 44-6: Veeam Endpoint Recovery – Backup Server



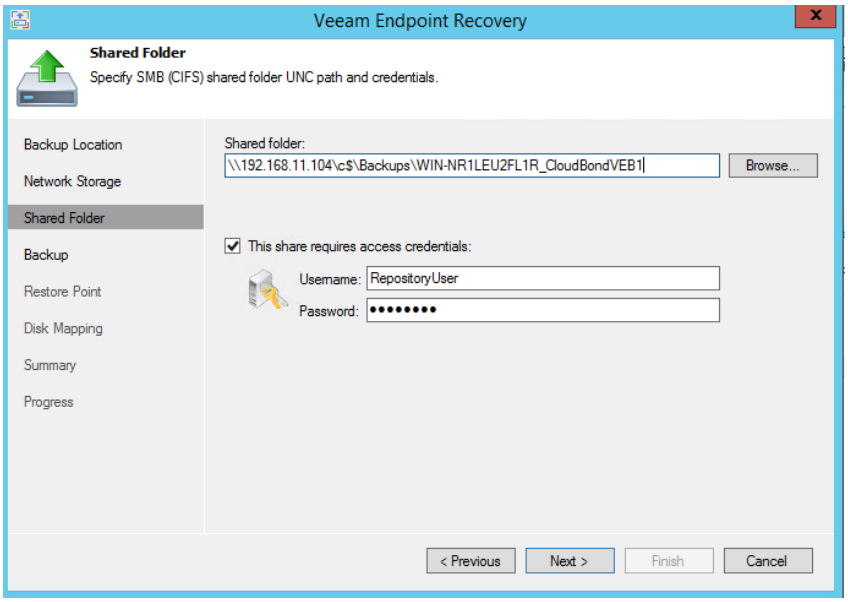
14. The **Shared Folder** option is selected; click **Next**.

Figure 44-7: Veeam Endpoint Recovery – Network Storage



15. You need to provide the full shared folder path to the VEB backup that is on the repository server. The name of the directory of the VEB backup is a combination of the *server name* and the *VEB user name*. Browse to the backup repository using another server to see what the full path name is.
16. Enter the credentials of the backup repository, and then click **Next**.

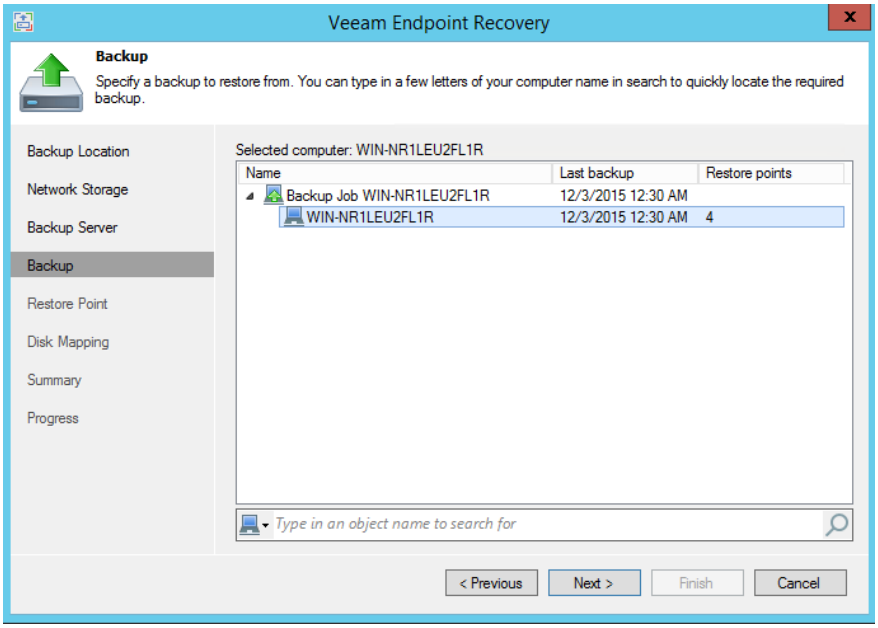
Figure 44-8: Veeam Endpoint Recovery – Shared Folder



17. You should only see one computer name because only the VEB backup is done through the specific VEB user. One VEB user is defined per CloudBond 365 for the VEB backup.

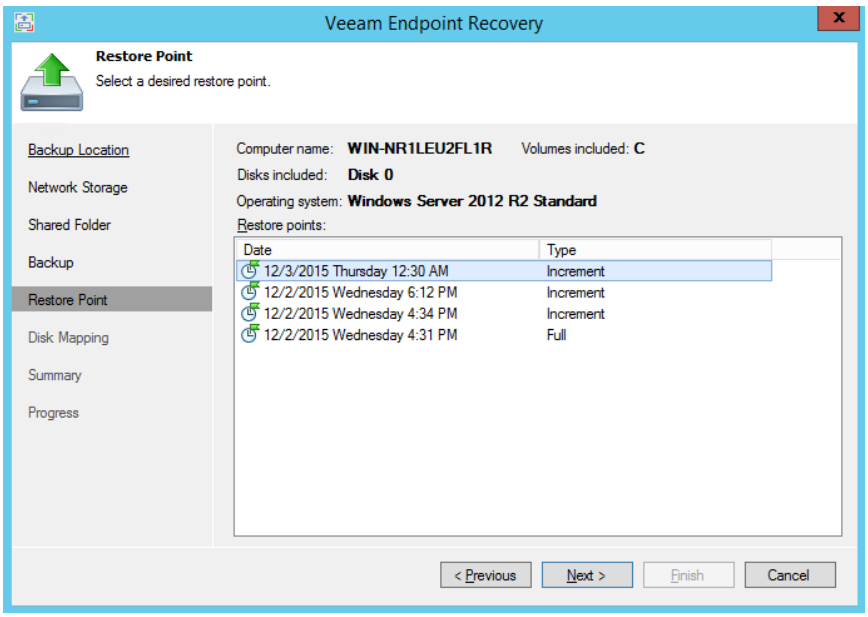
18. Select the computer to recover from, and then click **Next**.

Figure 44-9: Veeam Endpoint Recovery – Backup



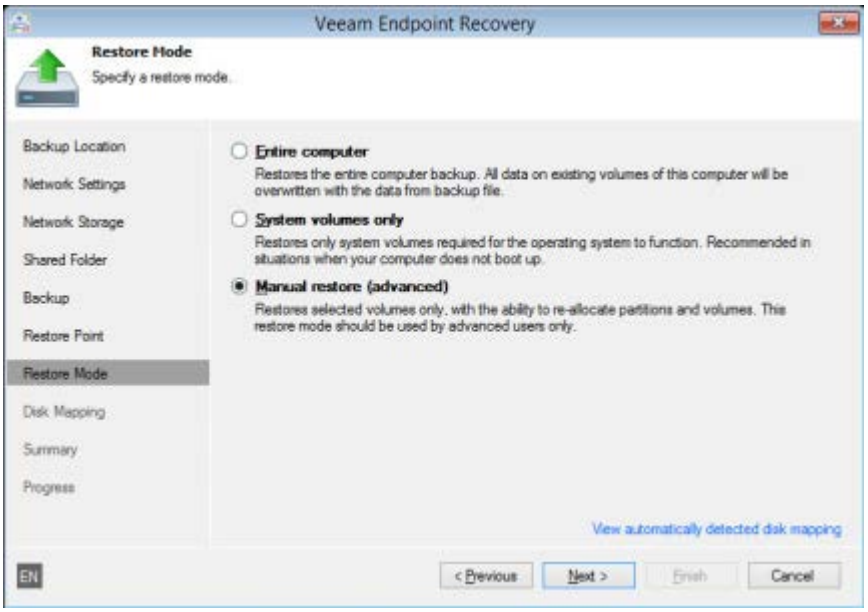
19. From the Restore Point screen, select the appropriate restore point, and then click **Next**.

Figure 44-10: Veeam Endpoint Recovery – Restore Point



20. Select the **Manual restore (advanced)** option, to choose what computer volumes you want to restore and manually allocate disk space on the restored volumes, and then click **Next**. (To view the current disk allocations settings on your computer, click **View automatically detected disk mapping** on the bottom of the screen. Delete unwanted volumes on that screen.)

Figure 44-11: Veeam Endpoint Recovery – Restore Mode



21. can map volumes that you want to restore from the backup to disks on the target computer. To map volumes:

    a. Select the check box of the volume that you want to restore from the backup.

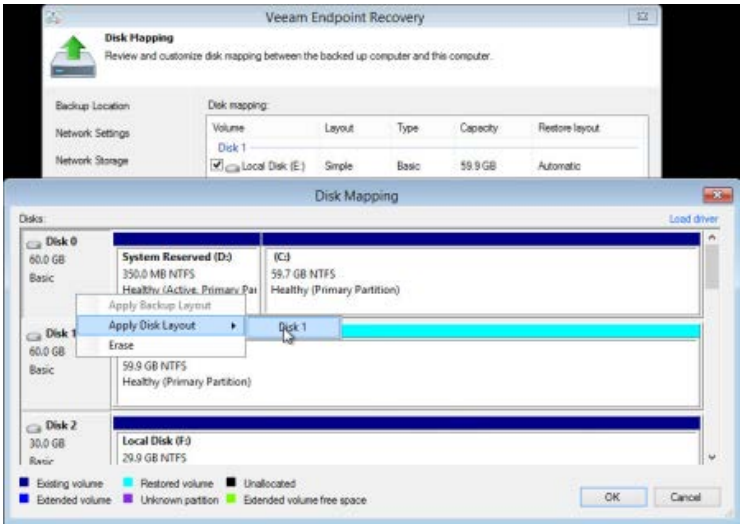
    b. By default, VEB restores all volumes to their initial location. To map the restored volume to another computer disk, at the bottom of the wizard click **Customize disk mapping**. In the **Disk Mapping** window, specify which volumes must be restored:

    c. Right-click the target disk on the left side of the screen and select the necessary disk layout.

    - **Apply Backup Layout:** Select this option if you want to apply to the disk, the settings that were used on your computer when you performed the backup.
    - **Apply Disk Layout:** Select this option if you want to apply to the current disk settings of another disk.
    - **Erase -** Select this option if you want to discard the current disk settings.

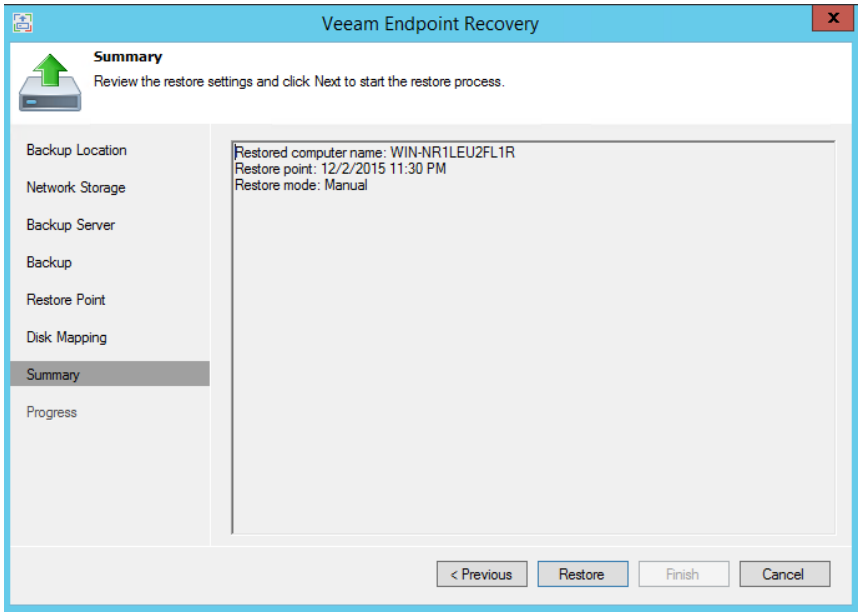
22. Click **OK**, and then **Next**.

Figure 44-12: Veeam Endpoint Recovery – Disk Mapping



23. Click **Restore** to start the recovery.
24. When the Restore process ends, restart the server.

Figure 44-13: Veeam Endpoint Recovery – Summary



44.3 Performing Post-Restore – Exiting Domain Controller Safe Mode

If the host is a Domain Controller, log in with Safe boot mode. If the host is not a Domain Controller, skip this procedure.

After performing a full Virtual Machine restore, the Domain Controller computer boots up in what appears to be Safe mode. When the Domain Controller boots for the first time, it is actually in Active Directory Services Restore mode as you are booting from a backup file. However it should automatically re-boot.

➢ **To exit the Domain Controller in Safe mode:**

1. Log in with the Directory Services Restore mode account (typically.*administrator*).
2. Open a command prompt and run the following:

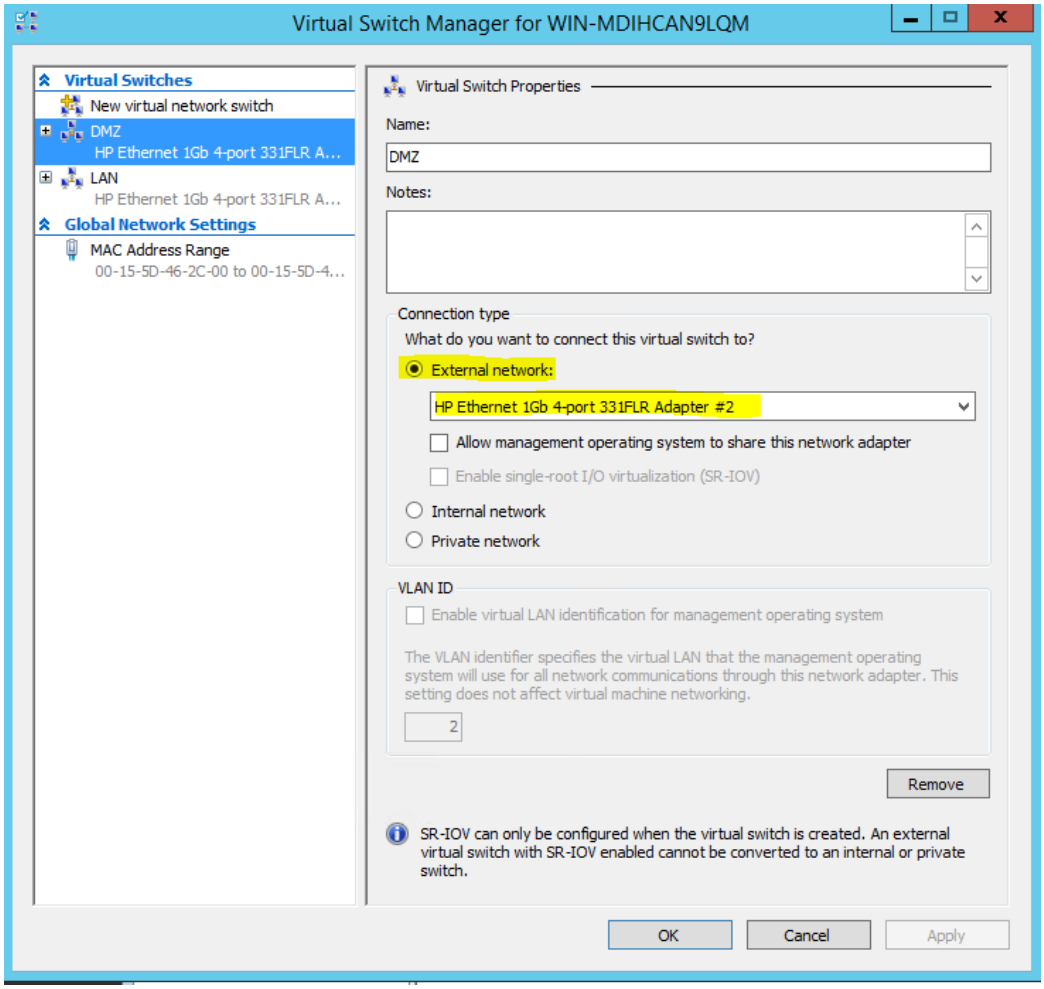
```
bcdedit /set safeboot dsrepair
bcdedit /deletevalue safeboot
shutdown -t 01 -r
```

3. CloudBond 365 should then re-boot in Normal mode.
4. Log in to the Domain Controller as the Domain Administrator
5. For more information, refer to the Microsoft Knowledge Base article in http://technet.microsoft.com/en-us/library/cc816897(WS.10).aspx.

44.4 Validating Network Settings

You need to confirm that **all** network cards are valid and have the correct IP addresses. (You can only check the host network and not the VM in this step). Compare it to the information you saved when you defined the backup (See Chapter 43 on page 267).

Validate that the Hyper-V virtual network switch is set correctly. Every virtual network is connected to a real physical card. Compare it to the information you saved when you defined the backup.



1. If the Network cards are not functioning correctly, refer to the Troubleshooting (Chapter 47).

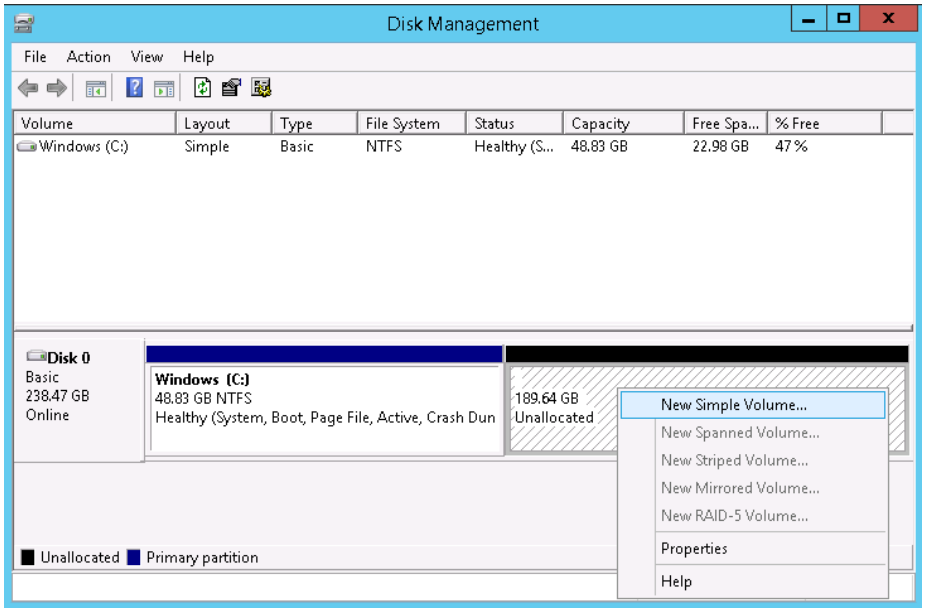
44.5 Preparing Volume D: for Restoring VMs from the VBR

The following procedure describes how to prepare Volume D: for restoring the VMs from the VBR, as described in Section 44.8 on page 287.

➢ **To prepare Volume D: for restoring the VMs from the VBR:**

1. Login to the host in Normal mode.
2. Open the Disk Management screen and create Volume D:, if it does not exist. Volume D: should use all the free disk size. and it depends on the CloudBond 365 type.

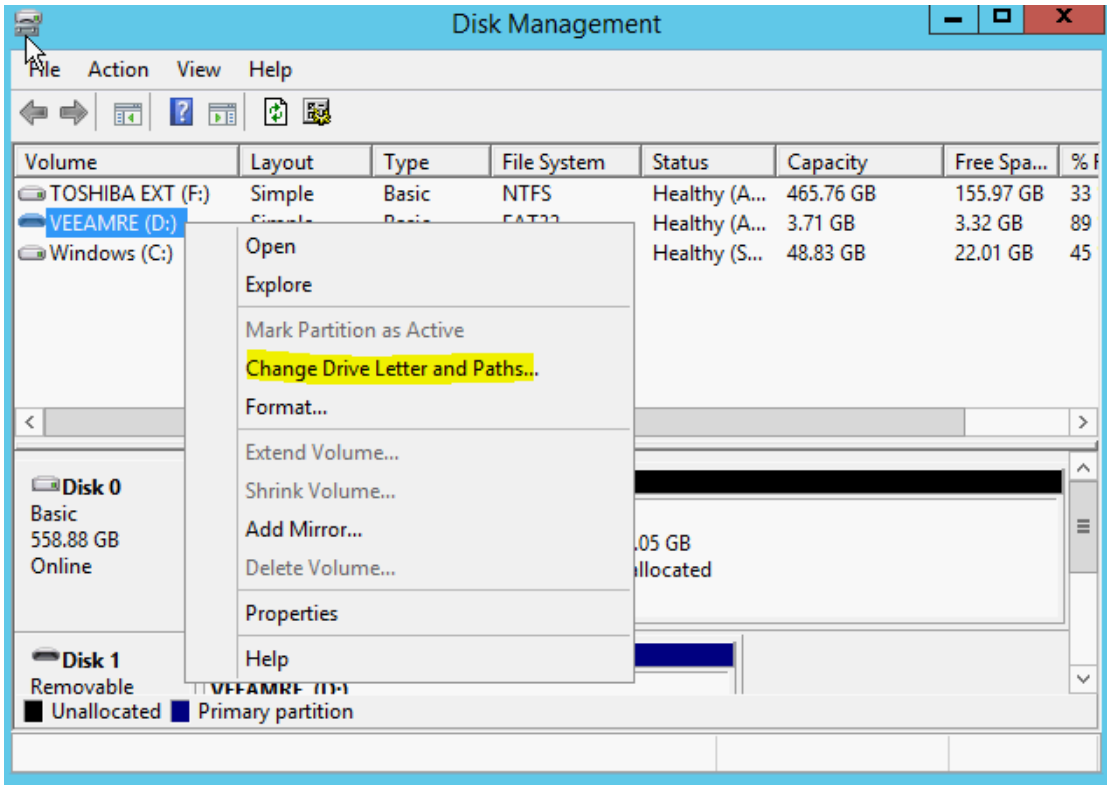
Figure 44-14: Disk Management



Notes:

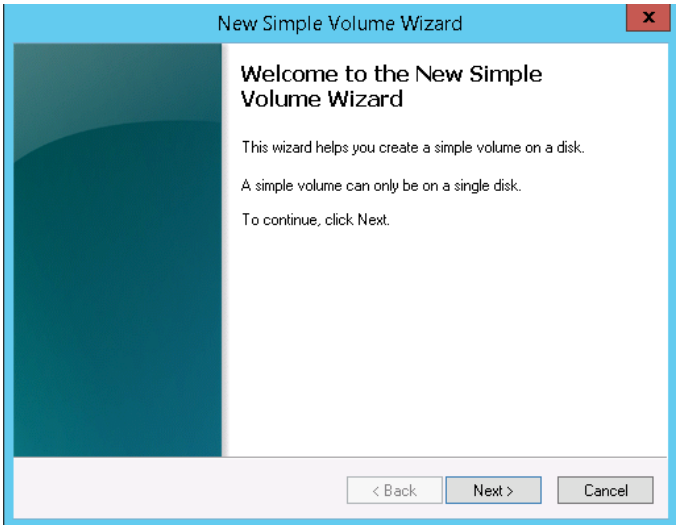
- If the D: drive is already assigned to USB storage, change the drive letter to something else before you continue.
- If you wish to also restore Volume E:, make sure you have 32 GB of available disk space.

Figure 44-15: Disk Management – Change Drive Letter and Paths



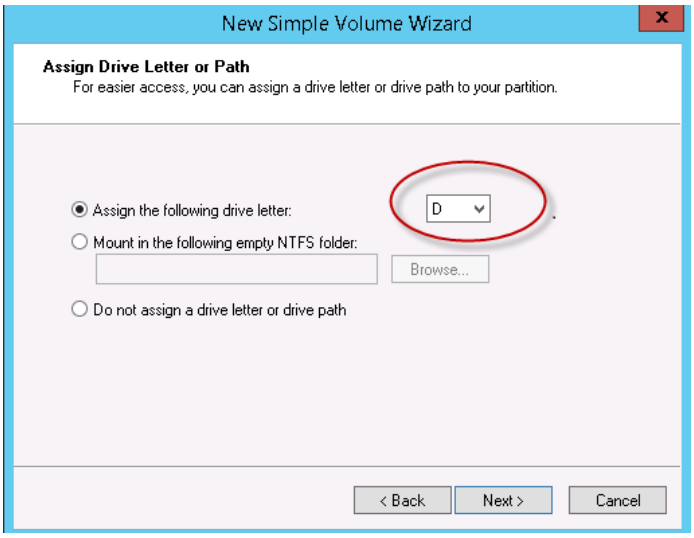
3. Right-click on the disk.
4. Select **New Simple Volume**; the Welcome New Simple Volume Wizard .
5. Click **Next**.

Figure 44-16: New Simple Volume Wizard - Welcome



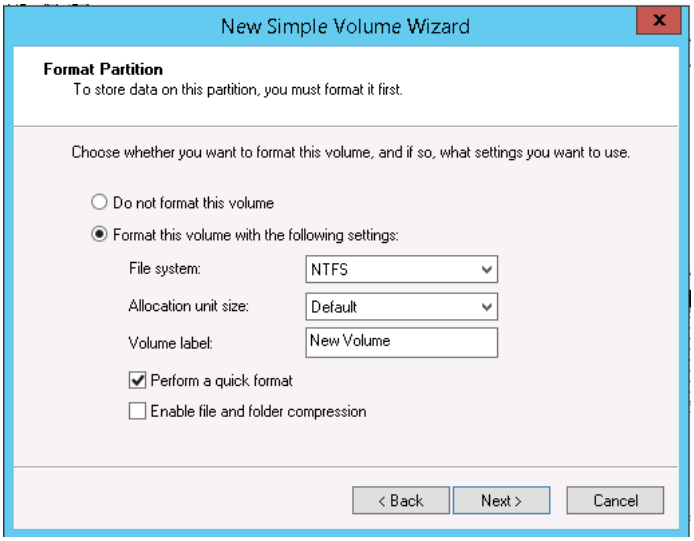
6. Click the **Assign the following drive letter** option.
7. From the drop-down list, select the drive letter, and then click **Next**.

Figure 44-17: New Simple Volume Wizard – Assign Drive Letter or Path



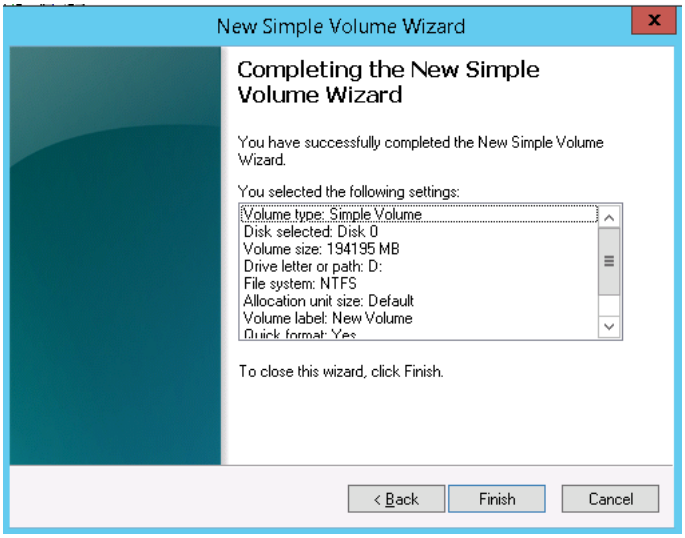
8. Click the **Format this volume with the following settings** option.
9. Enter the appropriate values as shown in the screen below, and then click **Next**.

Figure 44-18: New Simple Volume Wizard – Format Partition



10. Click **Finish**.

Figure 44-19: New Simple Volume Wizard – Finish



44.6 Updating Host Virtual NIC MAC Address After Restore

When CloudBond 365 is working correctly, its vEthernet (VLAN) NIC interface receives one of the physical MAC addresses of the server and uses it. After a Restore, the vEthernet NIC interface receives a unique MAC address, which needs to be updated. After a Restore, the MAC addresses appear as follows:

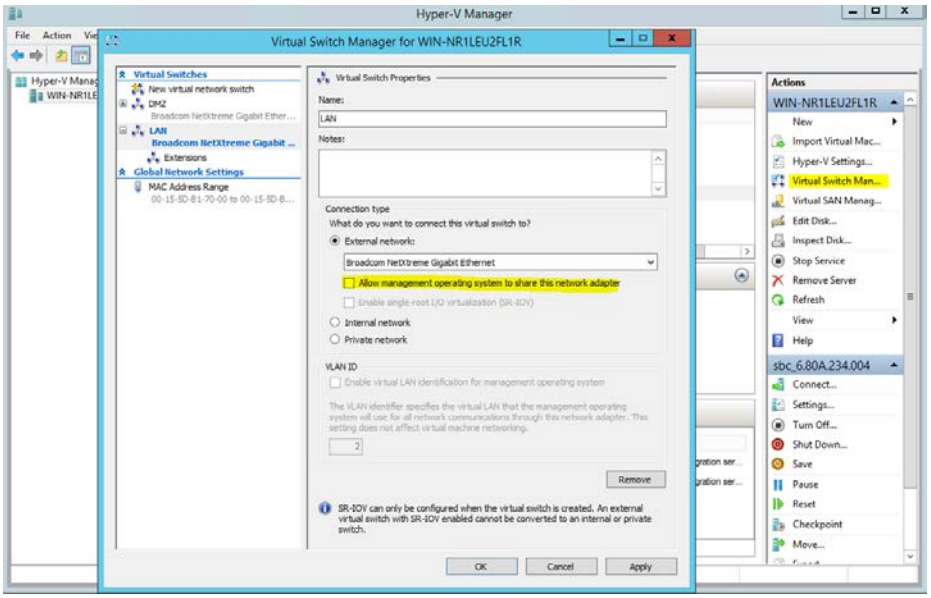
Figure 44-20: MAC Addresses After Restore

```
Name                    InterfaceDescription                ifIndex Status       MacAddress             LinkSpeed
----                    --------------------                ------- ------       ----------             ---------
vEthernet (LAN)         Hyper-V Virtual Ethernet Adapter #2      19 Up           00-90-FB-50-9B-D9        10 Gbps
Ethernet 3              Intel(R) 82574L Gigabit Network Co...#2  14 Disconnected 00-90-8F-5F-03-C2         0 bps
Ethernet 2              Intel(R) 82579LM Gigabit Network Con...  13 Up           00-90-FB-4F-AA-2B       100 Mbps
Ethernet                Intel(R) 82574L Gigabit Network Conn...  12 Disconnected 00-90-8F-5F-03-C3         0 bps
```

➢ To update the Host Virtual NIC MAC Address After Restore

1. Open the **Hyper-V Manager**.
2. Navigate to the **Virtual Switch Manager**.
3. Under **Connection type**, clear the 'Allow management operating system to share this network adapter' check box, and then click **Apply**.

Figure 44-21: Hyper-V Manager



4. Click **OK.**
5. After the update, the MAC address should look like **00-90-FB-50-9B-D9**.

Figure 44-22: MAC Addresses After Update

```
PS C:\Users\Administrator> Get-NetAdapter

Name                    InterfaceDescription                ifIndex Status       MacAddress             LinkSpeed
----                    --------------------                ------- ------       ----------             ---------
vEthernet (LAN)         Hyper-V Virtual Ethernet Adapter #2      22 Up           00-90-FB-50-9B-D9        10 Gbps
Ethernet 3              Intel(R) 82574L Gigabit Network Co...#2  14 Disconnected 00-90-8F-5F-03-B4         0 bps
Ethernet                Intel(R) 82579LM Gigabit Network Con...  12 Up           00-90-FB-50-9B-D9       100 Mbps
Ethernet 2              Intel(R) 82574L Gigabit Network Conn...  13 Disconnected 00-90-8F-5F-03-B5         0 bps
```

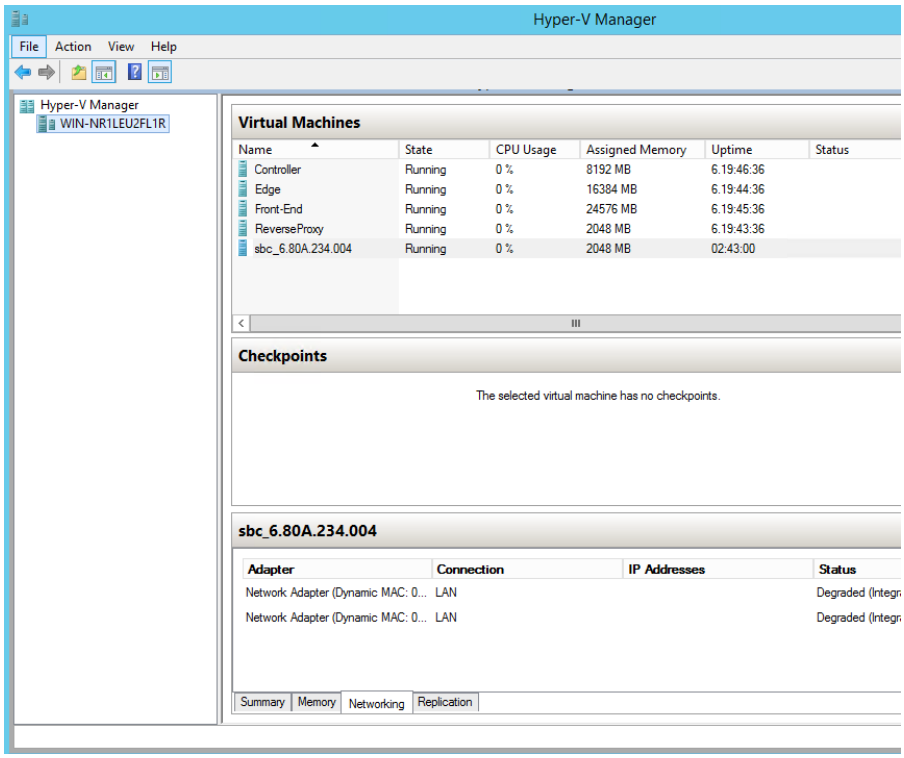
44.7 Clearing Old Virtual Machine Data

The procedure below describes how to clear old Virtual Machine (VM) data.

➢ **To clear old Virtual Machine data:**

1. Open the Hyper-V Manager.
2. From the Hyper-V main page, delete all the VMs including checkpoints.

Figure 44-23: Hyper-V Manager – Virtual Machines



3. You need a clean Hyper-V Manager without any VMs before restoring the VMs.

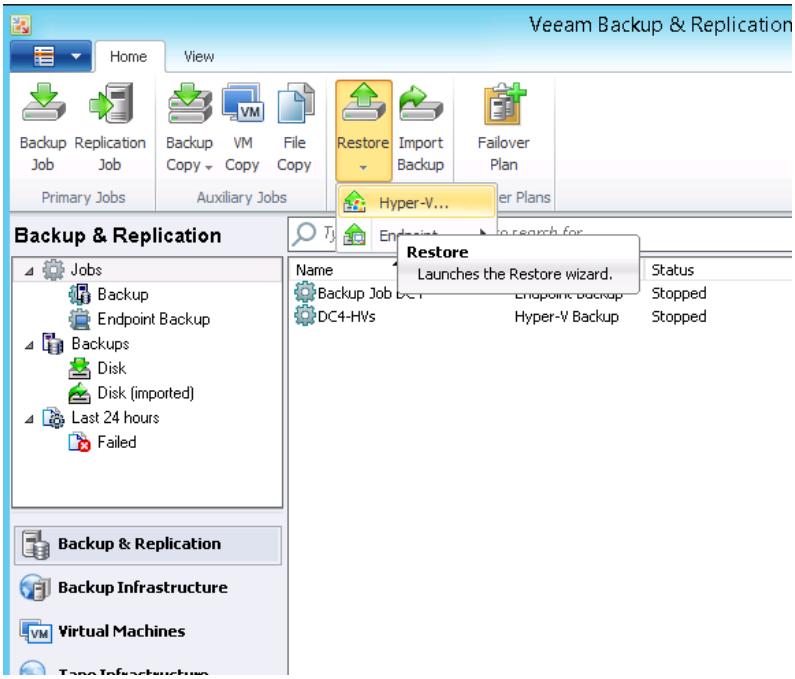
44.8 Restoring all VMs from the VBR

The procedure below describes how to restore all VMs from the VBR.

➢ **To restore all VMs from the VBR:**

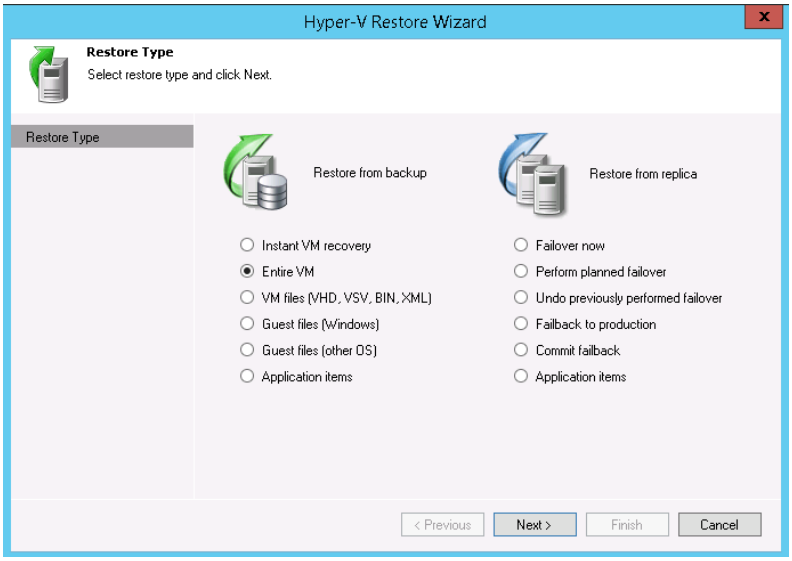
1. Open the VBR console.
2. Launch the Restore wizard (**Home** tab > **Restore** menu > **Hyper-V - Restore**).

Figure 44-24: VBR – Hyper-V



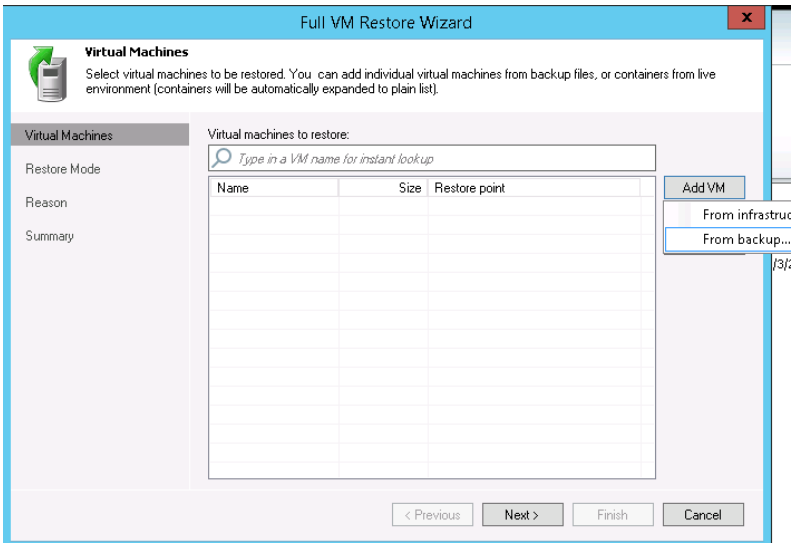
3. Select **Restore from backup** and then click the **Entire VM** option.
4. Click **Next**.

Figure 44-25: Hyper-V – Restore Type



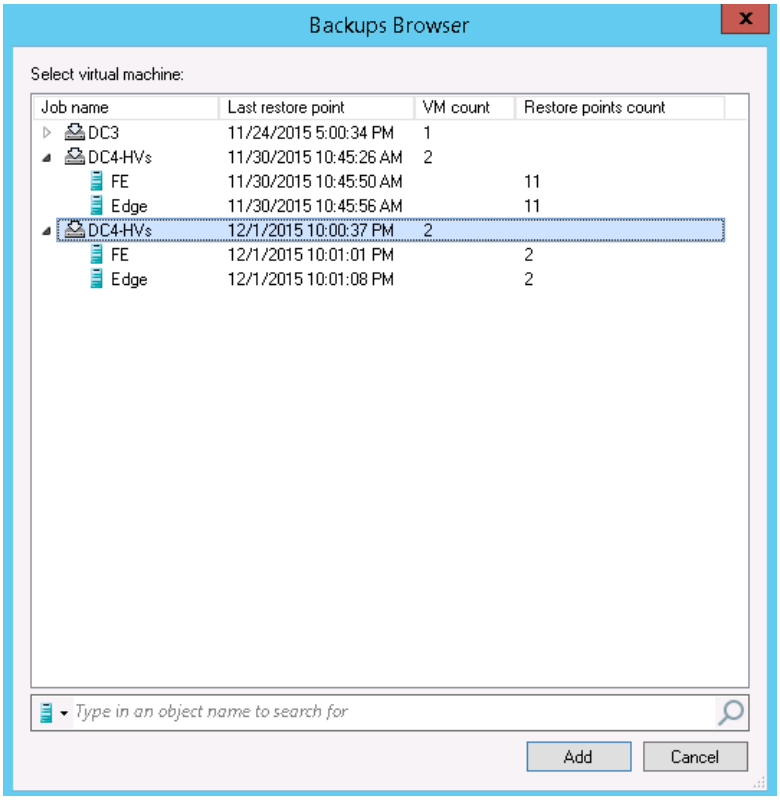
5. Click **Add VM**, and then select the **From backup** option.
6. Click **Next**.

Figure 44-26: Full VM Restore Wizard – Virtual Machines



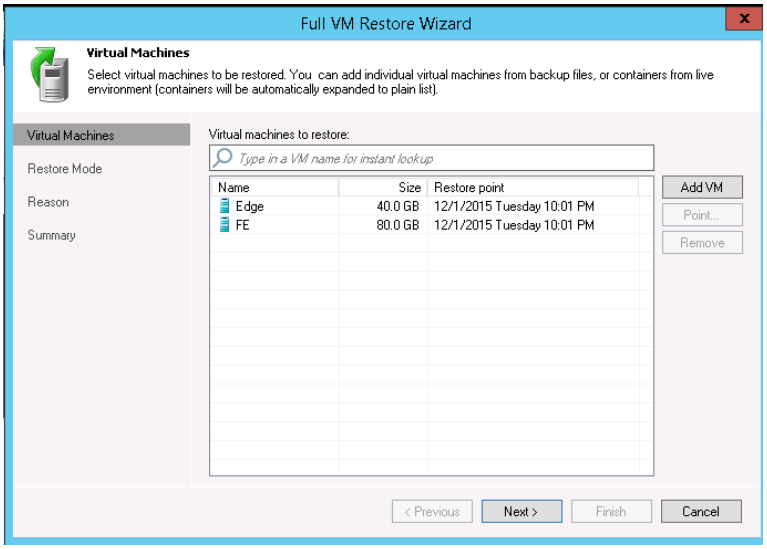
7. Select the server you wish to restore (e.g., DC4-HVs), and then click **Add**.

Figure 44-27: Backup Browser



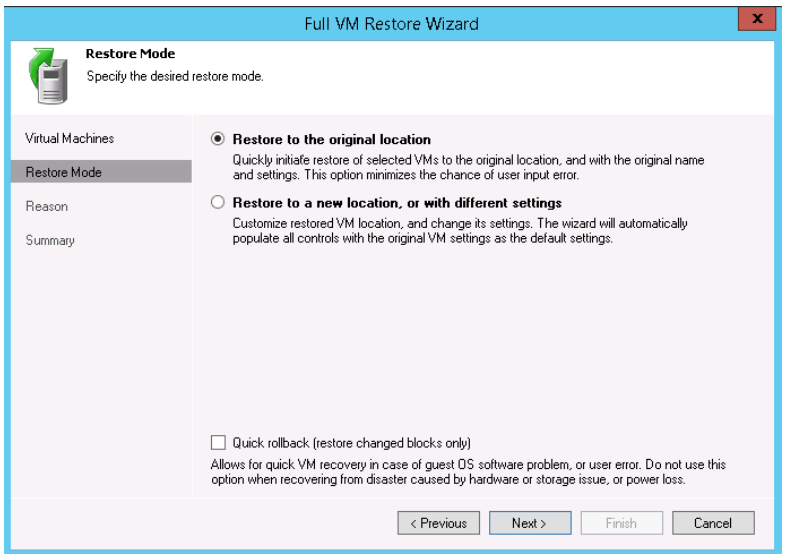
8. Click **Next**.

Figure 44-28: Full VM Restore Wizard – Virtual Machines



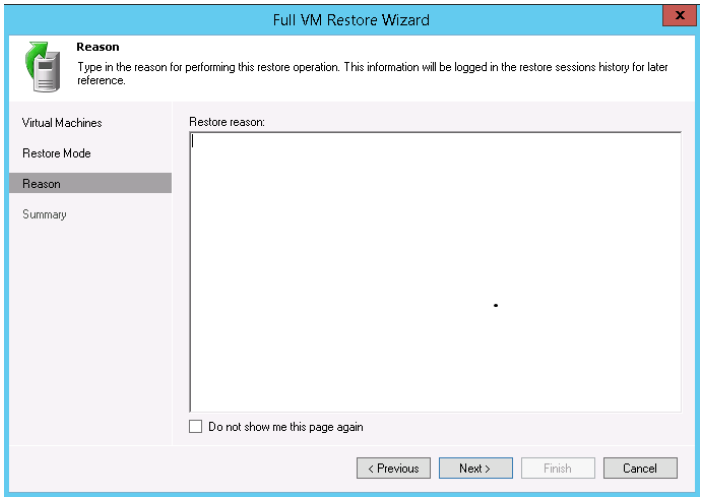
9. Click the **Restore to the original location** option, and then click **Next**.

Figure 44-29: Full VM Restore Wizard – Restore Mode



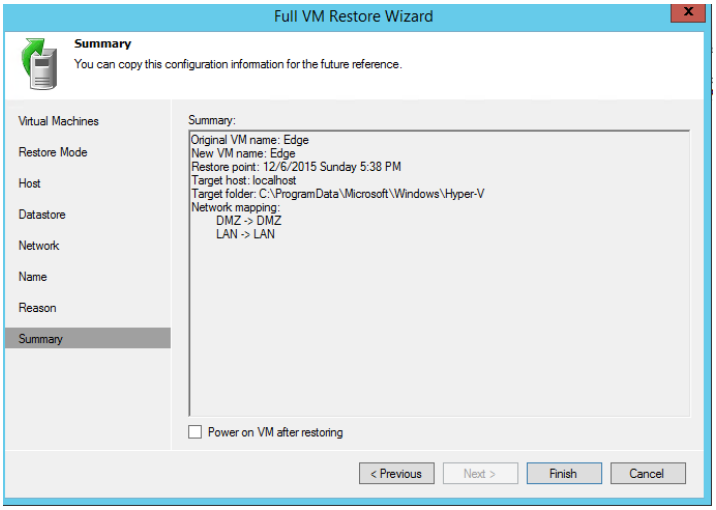
10. Add the **Restore reason**, and then click **Next**.

Figure 44-30: Full VM Restore Wizard – Reason



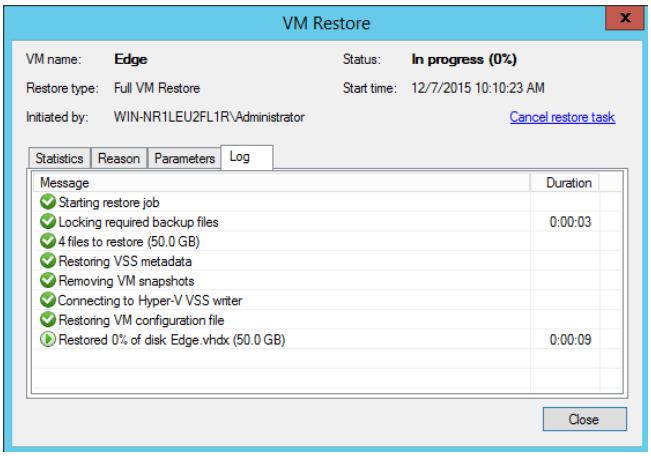
11. Make sure the 'Power on VM after restoring' check box is cleared.
12. Click **Finish**, and then wait for the Restore process to end.

Figure 44-31: Full VM Restore Wizard – Summary



13. Click **Close**.

Figure 44-32: VM Restore



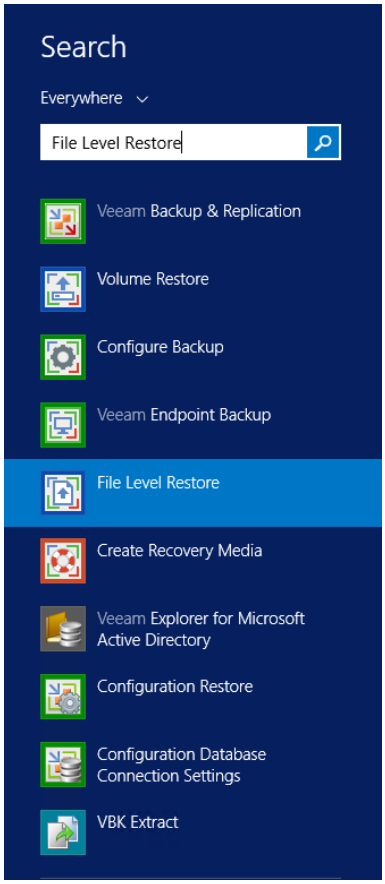
44.9 Restoring D: and E: Drives and Files

If the D: and E: drives were backed up, you need to restore them.

➢ **To restore D: and E: Drives and files:**

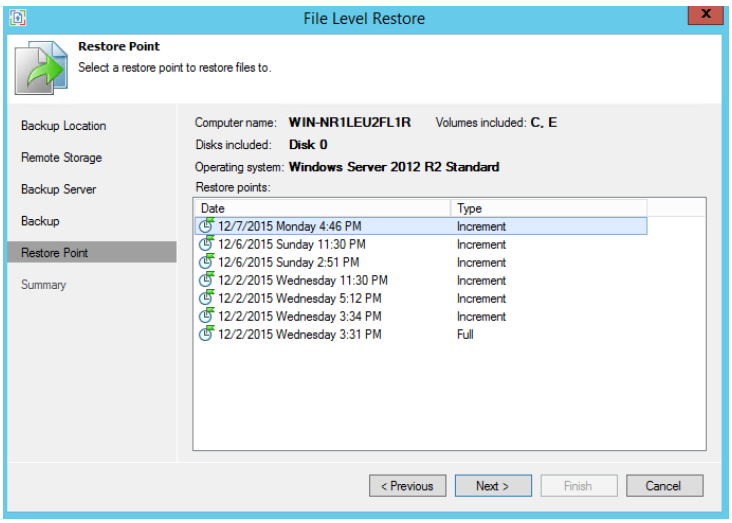
1. From the Veeam main screen, run the **File Level Restore** menu option.

Figure 44-33: File Level Restore



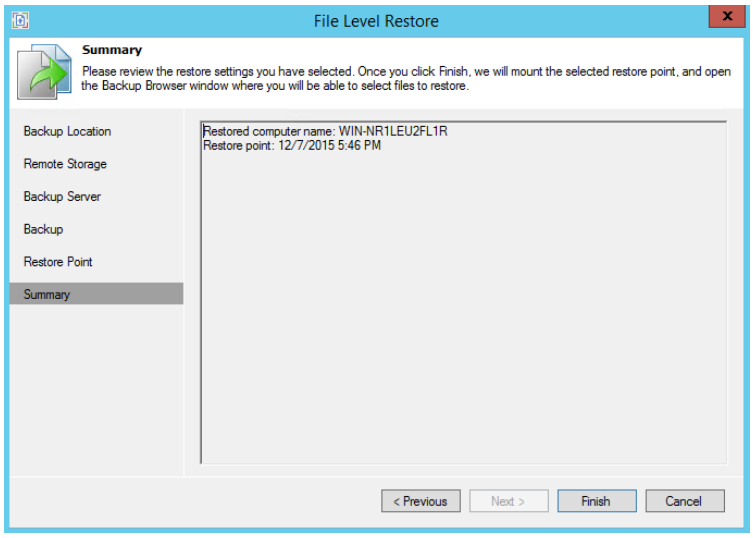
2. Select the restore point, and then click **Next**.

Figure 44-34: File Level Restore – Restore Point



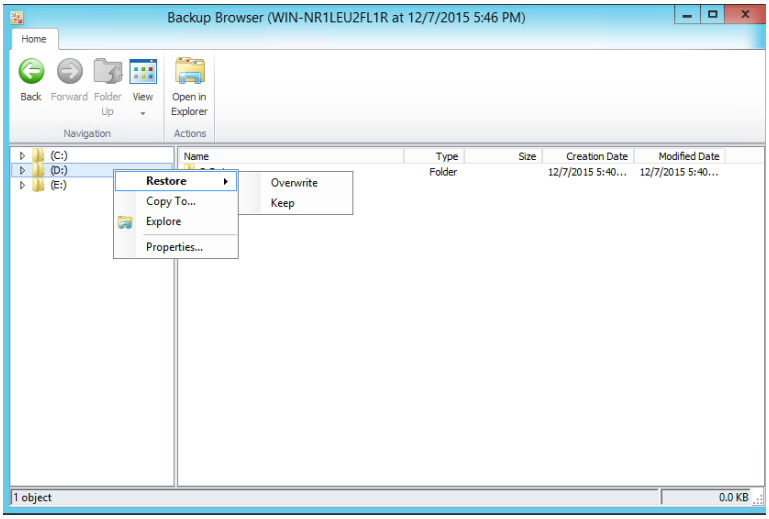
3. Click **Finish**.

Figure 44-35: File Level Restore - Summary



4. On the Backup Browser, select the drive you wish to restore.
5. Right-click on the appropriate drive.
6. Select **Restore** > **Overwrite**.

Figure 44-36: Backup Browser



44.10 Starting the Virtual Domain Controller

If the Domain Controller is a Virtual Machine, it automatically starts in **Safe** mode. If it does not, skip this procedure.

When the Domain Controller boots for the first time, it is actually in Active Directory Services Restore mode as you are booting from a backup file. However it should automatically re-boot.

➢ **To Start the Virtual Domain Controller:**

1. Login with the Directory services restore mode account (typically .\administrator)
2. Open the command prompt and run the following:

```
bcdedit /set safeboot dsrepair
bcdedit /deletevalue safeboot
```

3. Re-boot the virtual Domain Controller. It should re-boot in Normal mode.
4. Login to the Domain Controller with the domain administrator.
5. For more information, refer to the Microsoft Knowledge Base Article below for further details http://technet.microsoft.com/en-us/library/cc816897(WS.10).aspx.

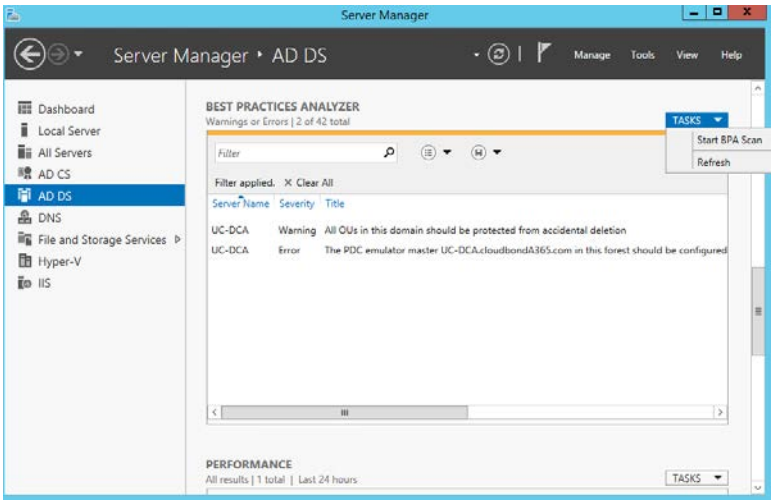
44.11 Restarting the CloudBond 365 Server and Testing the Restore

The procedure below describes the tests the need to perform to validate the restoreLog in and perform the following tests to confirm successful restore. These tests must be done to check that the restore process successfully completed.

➢ **To confirm that the restore process was successful:**

1. Restart the CloudBond 365 server.
2. If the Virtual Machine belongs to the domain, log in to every Virtual Machine as the Domain Administrator. If not, log in as the local Administrator. If a Trust error message appears, reset the computer account using the Active directory.
3. Check that all services are running.
4. Confirm that the date and time are correct and if necessary update them..
5. Check that the Windows License has been activated. If not activate it according to the instructions on the sticker.
6. Log in to SysAdmin and confirm that SysAdmin is working.
7. From the Server Manager, select the **AD DS** menu option.
8. From the 'TASKS' drop-down list, run the Best Practices Analyzer by selecting **Start BPA Scan**. Confirm that there are no errors which are as a result of the recovery.

Figure 44-37: Server Manager



9. From the command line, run the **dcdiag** command on the Domain Controller. All tests should pass (ignore if the MSDFS test fails).
10. One day after the Restore process has completed, confirm that the backup process still works automatically.
11. For BPA / Pool Pairing, run **repadmin /showreps** from the command line and then confirm that the DC was replicated.
12. If the system was installed in Resource Forest mode, confirm that the trust with the company forest is valid.
13. Confirm that the VBR Job has been enabled. If not, re-scan the repository (right click on the repository – and select Re-scan) when finishing enabling the job.
14. Run the backup job and confirm that you are able to backup.
15. One day after the restore, confirm that the backup is still working automatically for the VEB.
16. Validate that all VMs don't have Checkpoints – in case they have need to delete it.

45 Creating the Veeam Recovery Media USB

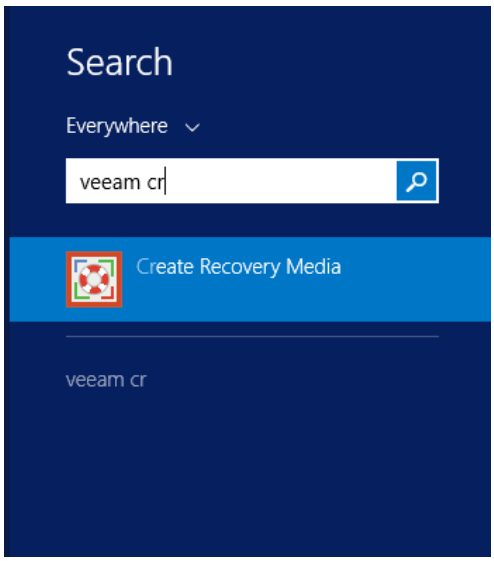
It is recommended to update the Restore Recovery USB that you get with the system, according to the following procedure. It keeps several settings which are relevant for your server (Drivers/IP). The USB minimum required size 4 GB.

This chapter describes how to create a Veeam Recovery Media USB.

➢ To create a Veeam Recovery Media USB:

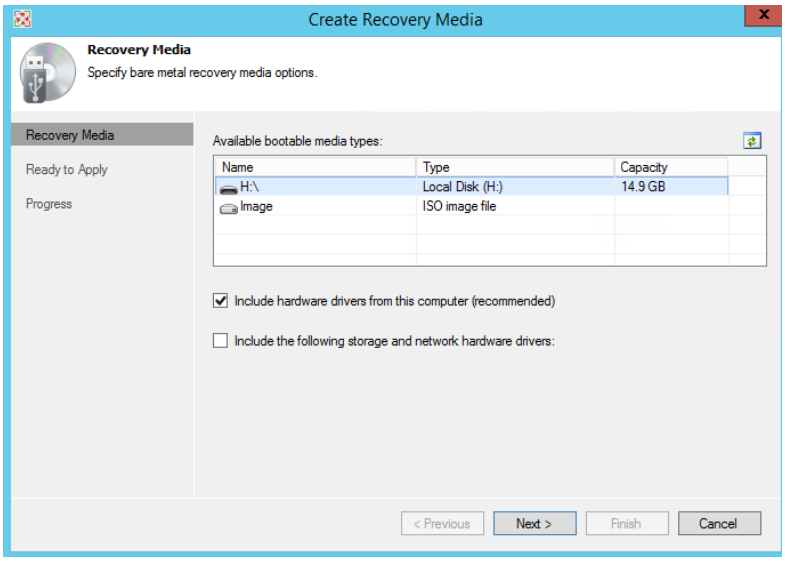
1. Insert the USB in to the CloudBond 365 device.
2. From the Start menu, run the Veeam Create Recovery Media.

Figure 45-1: Create Recovery Media



3. On the Recovery Media screen, select the USB drive.

Figure 45-2: Create Recovery Media – Recovery Media



4. Click **Next** until the Progress step is displayed.
5. When the process has completed, click **Finish**.
6. Remove the USB from the device.

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46 Preparing for Veeam’s Software Installation on CloudBond 365 Server

The following must be done before installing Veeam's software on the CloudBond 365 server.

Note: Installing backup may require a server restart.

Before installing Veeam’s Software on CloudBond 365 Server, do the following:

1. Decide which backup architecture is required according to the available options.
2. Confirm that all servers are working (up and running).
3. To install Veeam software, you must use the Remote Desktop Connection to the CloudBond 365 and to the Backup server (VBR).
4. Download the software on the VBR server.
5. CloudBond 365 may require Windows updates to support the backup.

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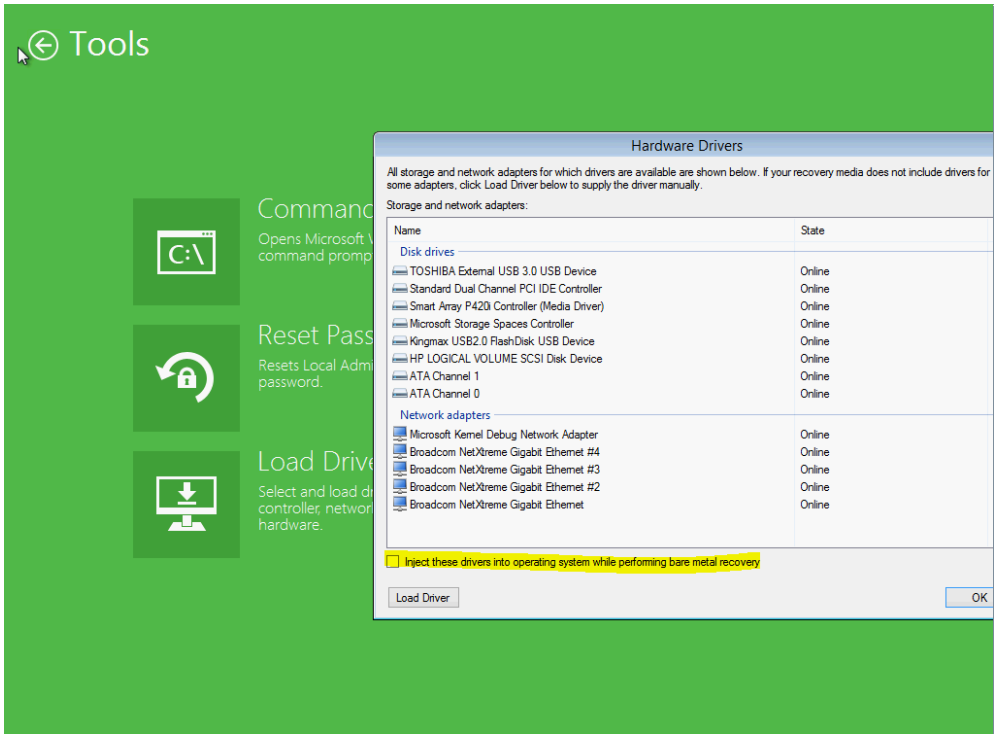
47 Troubleshooting

The following provides information to assist you in troubleshooting issues.

47.1 Restoring Host Server using VEB if no or some Network Cards are Available

Make sure that when you are restoring the Host server using VEB, you first clear the 'Inject these drivers…' checkbox. If you didn't do this, perform the restore procedure again correctly.

Figure 47-1: Hardware Drivers – Clear Check Box



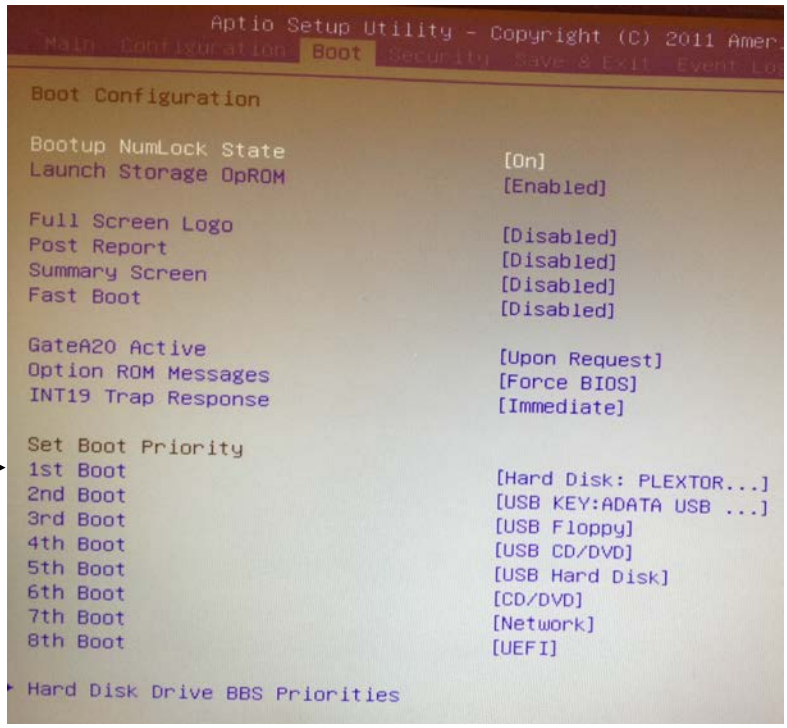
➢ **To restore the Host Server using VEB if no or some network cards are available:**

1. Open the device manager and enable the 'Shown hidden device' option from the **View** menu.
2. Delete all the network cards which are marked with an error flag.
3. From **Action** menu select the **Scan** option.
4. Ensure that all networks are available now.
5. Restart the server.
6. Define the HyperV virtual switch again, using the same names as was done previously (e.g., LAN and DMZ).

47.2 No Boot Device Error – Setting Boot Priority

If a USB (Key or Disk) is connected to the server, confirm that the boot order in the BIOS is correct and that the hard disk is set as the first priority, as shown in the figure below.

Figure 47-2: Hardware Drivers – Setting Boot Priority



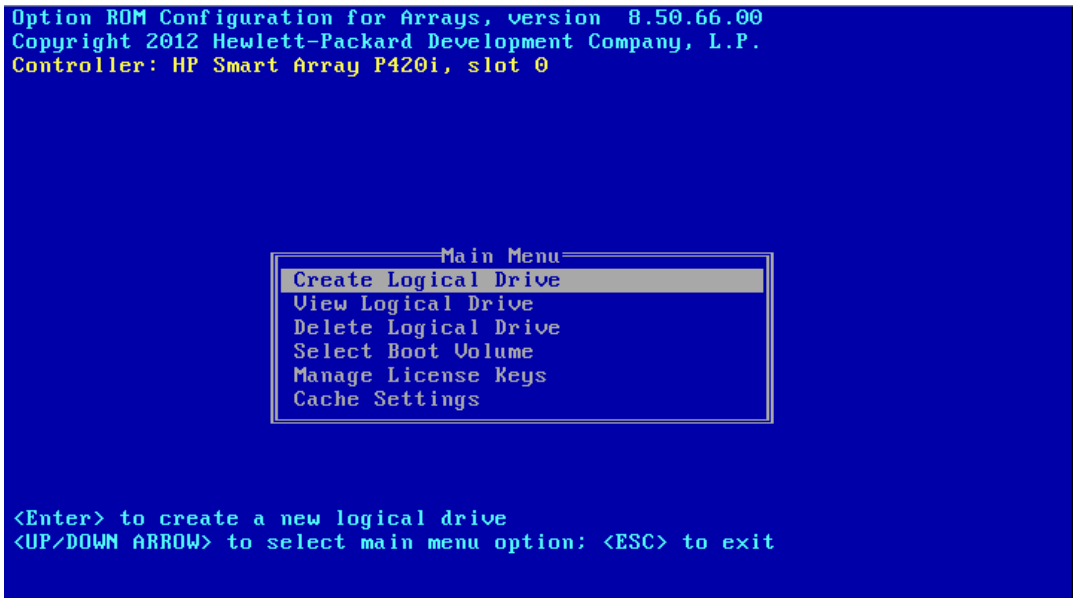
47.3 No Boot Device Error - How to Define Logical Drive and Selecting Boot Volume

This section is relevant only for CloudBond 365 Pro Box and Enterprise Box editions.

➢ **To define the logical drive and select the boot volume:**

1. Re-boot the CloudBond 365 server, and then press **F8**; the following screen appears:

Figure 47-3: Defining a Logical Drive



From this menu you can:

- View a logical drive. For the Pro Box edition, the name of the drive should be **RAID 1**. For the Enterprise Box edition it should be **RAID 5**.
- Delete the current logical Drive
- Create a logical drive
- Select the boot volume

If the RAID setup is incorrect, delete the current one and define the correct one. If you see a Boot Error message, select the boot volume as the logical drive that attaches to the server.

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Document #: LTRT-26318