Upgrading Linux-Based IP Office Servers to IP Office R12.0

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Chapter 1: Upgrading Linux-based IP Office systems to R12.0.x

This document details the upgrade processes for upgrading Linux-based IP Office servers from R11.1.3.x or earlier software to R12.0.x or higher.

Warning:

- You must use these processes when upgrading Linux-based IP Office servers from R11.1.3.x or earlier software to R12.0.x or higher.
  - Attempting to these upgrades using the standard `iso` file transfer processes will fail and will cause loss of data and other issues.
- The upgrade processes in this document are necessary because of the change of underlying Linux operating system from CentOS to Rocky Linux.
- You must use the processes in this document for all types of Linux-based IP Office server, except the Unified Communications Module (See below).
- Always use the latest available R11.1.3.x and R12.0.x service packs. These will contain the latest changes for the upgrade process.
- After upgrading, for further upgrades within R12.0.x, you can use the standard `iso` file transfer processes.

Using IP Office Unified Communications Module in R12.0.x and higher

The Unified Communications Module (UCM) cannot support the 64-bit Linux used for IP Office R12.0 and higher. Therefore, you cannot upgraded a UCM to run R12.0.x software. However, Avaya supports UCM modules running R11.1.3.2 software in IP Office R12.0 and higher systems.

Note:

Warning:

- If the existing Unified Communications Module is running pre-R11.1 software, you must upgrade it to R11.1.3.2 using the processes in the Upgrading Linux-based IP Office Systems to R11.1 manual.
- There will be no future updates to the IP Office software components provided on the UCM modules.
- There will be no any future updates for the CentOS Operating System and the security CVEs patches for the UCM modules.

Related links

Summary of the IP Office R12.0.x upgrade process on page 7

Upgrading a network of IP Office servers on page 8
Changes from the pre-R11.1 to R11.1 upgrade process on page 8

Summary of the IP Office R12.0.x upgrade process

The following is a summary of the upgrade process:

Step	Action	Notes
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.
2.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. Subscription IP Office systems do not require any subscription changes.
3.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers.
4.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • For existing R11.1 systems, use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition. • For pre-R11.1 systems, see Upgrading Linux-based IP Office Systems to R11.1.
5.	**Verify Correct Operation**	After upgrading to R11.1.3.x, verify the operation of all the IP Office services.
6.	**Backup the servers**	Before upgrading to R12.0.x, back up the IP Office servers.
7.	**Upgrade to R12.0**	Proceed with the upgrade from R11.1.3.x to R12.0.x. The method to use depends on the type of platform hosting the IP Office server: • Upgrading physical Linux-based IP Office servers to R12.0.x on page 10. • Upgrading IP Office VMware virtual machines to R12.0.x on page 19. • Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26. • Upgrading IP Office AWS instances to R12.0.x on page 32. • Upgrading IP Office Azure instances to R12.0.x on page 40.
8.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings.
9.	**Verify the upgrade**	After upgrading to R12.0.x, verify the operation of all services.
10.	**Update any other servers**	See Upgrading a network of IP Office servers on page 8.

Related links

Upgrading Linux-based IP Office systems to R12.0.x on page 6

Upgrading a network of IP Office servers

Recommend Upgrade Order

For a network of IP Office servers, you can use either of the following methods:

Single Server Upgrades	Simultaneous Server Upgrades
Upgrading servers one at a time allows resiliency support to users from other servers. The recommended upgrade order is: 1. Linux-based IP Office Expansion servers. 2. Secondary server. 3. Primary server. 4. IP500 V2 Expansion servers.	If you are confident with the upgrade process, you can run multiple upgrades in parallel using multiple USM upgrade keys or, for virtual machines, multiple copies of the upgrade file. However, whilst quicker, this removes the option for resiliency support for features between servers.

Reusing the upgrade media

You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

Upgrade Warnings

When upgrading IP Office servers in a Server Edition or Select network, you must update each Linux-based IP Office server in the network using the processes in this document.

- If **Upgrade Available** appears in IP Office Web Manager, do not use that option.
- If the **Consolidate Configuration Entries** menu opens in IP Office Web Manager, cancel the menu.

Related links

Upgrading Linux-based IP Office systems to R12.0.x on page 6

Changes from the pre-R11.1 to R11.1 upgrade process

The processes in this document are similar to those covered in Upgrading Linux-based IP Office Systems to R11.1. The differences are:

- For R11.1:
- - The upgrade was from CentOS 6 to CentOS 7.
  - The R11.1 upgrade included major changes to Media Manager to support data encryption. The upgrade process included steps that you must follow for Media Manager during the upgrade process.

- For R12.0:
  - The upgrade is from CentOS 7 to Rocky Linux 9.
  - The upgrade process does not require any special steps for Media Manager.

Related links

Upgrading Linux-based IP Office systems to R12.0.x on page 6

Chapter 2: Upgrading physical Linux-based IP Office servers to R12.0.x

This section describes the process for upgrading a physical PC-based IP Office server from IP Office R11.1.3.x to R12.0.x.

- This process applies to Server Edition, Select and IP Office Application Servers.

Related links

Checklist for an IP Office PC upgrade to R12.0.x on page 10
Required tools and software for an IP Office R12.0.x upgrade on page 11
Upgrade PC servers to IP Office R11.1.3.x on page 12
Creating a USB upgrade key for an IP Office R12.0.x PC upgrade on page 13
Checking the boot order on page 15
Upgrading a PC-based IP Office server to R12.0.x on page 15
Checking Media Manager on page 17

Checklist for an IP Office PC upgrade to R12.0.x

Step	Action	Notes	✓
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.	
2.	**Assemble the required tools and software**	See Required tools and software for an IP Office R12.0.x upgrade on page 11.	
3.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. • Subscription IP Office systems do not require any subscription changes.	
4.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	

Table continues…

Step	Action	Notes	✓
5.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • For existing R11.1 systems, use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition. • For pre-R11.1 systems, see Upgrading Linux-based IP Office Systems to R11.1.	
6.	**Verify Correct Operation**	After upgrading, verify the operation of all the IP Office services.	
7.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
8.	**Create a USB upgrade memory key**	Create a USB upgrade memory key using Rufus and the R12.0.x `iso` file. • See Creating a USB upgrade key for an IP Office R12.0.x PC upgrade on page 13.	
9.	**Check the PC boot settings**	Check the PC boots from USB. • See Checking the boot order on page 15.	
10.	**Upgrade to R12.0**	Upgrade from R11.1.3.x to R12.0.x using the USB upgrade memory key. • See Upgrading a PC-based IP Office server to R12.0.x on page 15.	
11.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 17.	
12.	**Verify correct operation**	After upgrading, verify the operation of all the IP Office services.	
13.	**Update any other servers**	If the server is part of an IP Office network, continue with updating the other servers. • See Upgrading a network of IP Office servers on page 8.	

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Required tools and software for an IP Office R12.0.x upgrade

You need the following tools and software for the upgrade process. Except for Rufus, you can download the software from the Avaya Support site (https://support.avaya.com).

- **IP Office R11.1.3.x server PC ISO file**

Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.

- **Rufus USB creation software**

  For processes in this document that use a USB memory key, you must download and use Rufus R4.4 or higher. You can download Rufus from https://rufus.ie/.

- **IP Office R12.0.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.

- **256GB+ USB memory key**

  PC server upgrades require a USB memory key of at least 256GB. The minimum size is important, as the upgrade process uses the USB memory key to store and restore IP Office data during the upgrade.

- **Keyboard, monitor and mouse**

  Whilst the upgrade process runs automatically following the server reboot, it is useful to see the progress.

- **R12 License File**

  PLDS licensed IP Office systems require a set of R12.0.x licenses. The R12.0.x licenses will also work for pre-R12.0.x IP Office servers.

  - The upgrade process in this document assume that you have added the licenses before upgrading to R12.0.x.
  - Subscription IP Office systems do not need new subscriptions.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Upgrade PC servers to IP Office R11.1.3.x

About this task

The first stage of upgrading to R12.0.x is to upgrade all IP Office servers to R11.1.3.x.

- For PLDS licensed systems, replace the existing licenses with the R12.0 licenses and verify operation.
- For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
- For R11.1 and higher systems, upgrade using standard `iso` file transfer process.

Warning:

- This process is essential. R11.1.3.x has changes used by R12.0.x upgrade process. Attempting to upgrade to R12.0.x or higher from an earlier release will fail and can cause the loss of data.

Procedure

1. For PLDS licensed systems, replace the existing licenses with the R12.0 licenses.
2. Verify the operation of the IP Office services.
3. Back up the IP Office services. See Creating an IP Office backup on page 50.
4. Upgrade the systems to R11.1.3.x:
   - For R11.1 and higher systems, upgrade using standard `iso` file process.
   - For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
5. Verify the operation of the IP Office services.

Next steps

- See Creating a USB upgrade key for an IP Office R12.0.x PC upgrade on page 13.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Creating a USB upgrade key for an IP Office R12.0.x PC upgrade

About this task

This process describes how to create a USB memory key for upgrading a PC based IP Office system from R11.1.3.x to R12.0.x.

- After creating a USB upgrade key, you can use the same USB upgrade key to upgrade multiple R12.0.x servers.

Warning:

- This process erases all existing files and folders on the USB key without any chance of recovery.

Before you begin

- **Rufus USB creation software**

  For processes in this document that use a USB memory key, you must download and use Rufus R4.4 or higher. You can download Rufus from https://rufus.ie/.
- **IP Office R12.0.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.
- **256GB+ USB memory key**

  PC server upgrades require a USB memory key of at least 256GB. The minimum size is important, as the upgrade process uses the USB memory key to store and restore IP Office data during the upgrade.

Procedure

1. Insert the USB memory key into a Windows PC.
2. Start Rufus.
3. Use the **Device** field to select the USB memory key.
4. Next to the **Boot selection** field, click **SELECT** and select the `iso` file.
   - Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.
5. Select the following other options:
   - **Volume label:** If necessary, change this to **AVAYA** with no quotation marks.
   - **File System:** Leave this as **Large FAT32**.
6. Click **Start**.
   a. Select **Write in ISO Image mode** and click **OK**.
   b. If Rufus displays a message about downloading `ldlinux.sys` and `ldlinux.bss` files, select **Yes**.
      - Rufus does this only once. It downloads the files to the `C:\Users\<name>\AppData\Local\Rufus` folder.
   c. When Rufus displays a warning about the process erasing all existing data, click **OK**.
   d. The application shows the progress of unpacking the `iso` file onto the USB memory key. This takes up to 10 minutes.
   e. When the process has completed, Rufus displays `"READY"`. Click **CLOSE**.
7. Open the USB memory key in file manager.
   a. Open the `USB` folder.
   b. Copy and paste the `avaya_autoupgrade.conf` and `syslinux.cfg` files to the root folder of the USB memory key.

      Warning:

      - **Do not copy any other files:** Copying any other files will cause the USB to run a new install and erase all existing files on the server.
8. The USB upgrade key is now ready for use.

Next steps

- See Checking the boot order on page 15.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Checking the boot order

This upgrade process requires the server PC to boot from the USB upgrade memory key. This may require you to change the boot order set in the server PC's settings.

- The IP Office R12.0 images support booting from UEFI settings or from legacy boot options. Avaya recommends using UEFI.

To add other devices to the boot order, or to change the order of usage, you must change the server's boot settings. The method of accessing those settings varies between servers. Refer to the PC manufacturer's documentation.

- Typically, an option to access a server's BIOS settings appears briefly when the server PC is starting. For example, "`Press Del for setup`".
- Whilst the PC displays its BIOS settings, the boot process stops.
- To boot from a USB memory key, ensure the boot settings list the USB option before the server hard disk. If there are multiple USB options, select `USB-FDD`.
- The server's hard disk must remain in the list of boot devices. The server boots from the hard disk after you have completed the upgrade process.
  - If necessary for security, after upgrading the server to R12.0, access the boot settings again and remove the USB option from the boot order.

Next steps

- See Upgrading a PC-based IP Office server to R12.0.x on page 15.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Upgrading a PC-based IP Office server to R12.0.x

About this task

To upgrade using the USB memory key, use the following process.

Before you begin

- You must upgrade the server to IP Office R11.1.3.x. See Upgrade PC servers to IP Office R11.1.3.x on page 12
- After upgrading to IP Office R11.1.3.x, back up all the servers and services before upgrading to R12.0.x. See Creating an IP Office backup on page 50.

Procedure

1. Connect the monitor, keyboard and mouse to the server.
2. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.

b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.

c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

Warning:

- Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.

3. Insert the USB upgrade key into the PC's USB port.
4. Restart the server.
5. Wait whilst the upgrade process takes place. The upgrade process can take an hour, during much of which the monitor is blank. When the server has finished upgrading, it automatically switches off.
6. Remove the USB upgrade key.
7. Restart the server.
8. Wait 10 minutes. During this time, the upgrade process will complete additional steps and reboot the server again.
9. When the server has restarted:
   a. Check that the version shown is R12.0.x. If not, see Failure to upgrade on page 48.
   b. Cancel any **Consolidate Configuration Entries** menu shown in IP Office Manager or IP Office Web Manager. The menu disappears after you have upgraded all IP Office servers in a network to R12.0.x.
   c. Ignore any **Upgrade Available** prompts shown in IP Office Web Manager. You must only upgrade other IP Office servers using the processes in this document.
10. For any IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 17.
11. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
12. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
    - You can use the same USB memory key to upgrade other servers. You do not need to recreate the USB memory key.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Checking Media Manager

About this task

For any IP Office primary server hosting local Media Manager, you must check the following.

Procedure

1. Check that the additional hard drive used by Media Manager is mounted on the IP Office server.
   a. Access **Platform View** > **Settings** > **System** > **Additional Hard Drive Settings** > **Mount**.
   b. The **Current Partition Mount Points** shows the partitions on the mounted drive. For example: `/additional-hdd#1/partition1`.
2. Check that the partition and associated folders has the owner set to Tomcat:
   a. Login to the server as `root`.
   b. List the folder permissions. For example: `ls -al /additional-hdd#1/partition1`
   c. If the owner is not set to Tomcat, run `chown -R tomcat:tomcat /additional-hdd#1/partition1`
3. Start the Media Manager service and let the restore process complete.
4. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
5. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
   - You can use the same USB memory key to upgrade other servers. You do not need to recreate the USB memory key.

Related links

Upgrading physical Linux-based IP Office servers to R12.0.x on page 10

Chapter 3: Upgrading an IP Office Unified Communications Module to R12.0.x

Using IP Office Unified Communications Module in R12.0.x and higher

The Unified Communications Module (UCM) cannot support the 64-bit Linux used for IP Office R12.0 and higher. Therefore, you cannot upgraded a UCM to run R12.0.x software. However, Avaya supports UCM modules running R11.1.3.2 software in IP Office R12.0 and higher systems.

Note:

Warning:

- If the existing Unified Communications Module is running pre-R11.1 software, you must upgrade it to R11.1.3.2 using the processes in the Upgrading Linux-based IP Office Systems to R11.1 manual.
- There will be no future updates to the IP Office software components provided on the UCM modules.
- There will be no any future updates for the CentOS Operating System and the security CVEs patches for the UCM modules.

Chapter 4: Upgrading IP Office VMware virtual machines to R12.0.x

The processes in this section cover the upgrading of VMware virtual machines from IP Office R11.1.3.x to R12.0.x.

Related links

Checklist for an IP Office VMware upgrade to R12.0.x on page 19
Required tools and software for an IP Office VMware R12.0.x upgrade on page 20
Upgrading to VMware servers to IP Office R11.1.3.x on page 21
Uploading and copy the VMDK file on page 22
Upgrading a VMware virtual machine to R12.0.x on page 22
Checking Media Manager on page 25

Checklist for an IP Office VMware upgrade to R12.0.x

Step	Action	Notes	✓
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.	
2.	**Assemble the required tools and software**	See Required tools and software for an IP Office VMware R12.0.x upgrade on page 20.	
3.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. • Subscription IP Office systems do not require any subscription changes.	
4.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	

Table continues…

Step	Action	Notes	✓
5.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • For existing R11.1 systems, use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition. • For pre-R11.1 systems, see Upgrading Linux-based IP Office Systems to R11.1.	
6.	**Verify Correct Operation**	After upgrading, verify the operation of all the IP Office services.	
7.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
8.	**Upload the VMDK file**	• See Uploading and copy the VMDK file on page 22.	
9.	**Upgrade to R12.0**	Proceed with the upgrade from R11.1.3.x to R12.0.x. • See Upgrading a VMware virtual machine to R12.0.x on page 22.	
10.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 25.	
11.	**Verify the upgrade**	After upgrading, verify the operation of all the IP Office services.	
12.	**Update any other servers**	If the server is part of an IP Office network, continue with updating the other servers. • See Upgrading a network of IP Office servers on page 8.	

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Required tools and software for an IP Office VMware R12.0.x upgrade

You need the following tools and software for the upgrade process. Except for Rufus, you can download the software from the Avaya Support site (https://support.avaya.com).

- **IP Office R11.1.3.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.

- **R12.0 upgrade VMDK file**

  You add this file to the virtual machine as an additional drive. When the virtual machine reboots from this drive, it upgrades the virtual machine to R12.0.x.

- **R12 License File**

  PLDS licensed IP Office systems require a set of R12.0.x licenses. The R12.0.x licenses will also work for pre-R12.0.x IP Office servers.

  - The upgrade process in this document assume that you have added the licenses before upgrading to R12.0.x.
  - Subscription IP Office systems do not need new subscriptions.

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Upgrading to VMware servers to IP Office R11.1.3.x

About this task

The first stage of upgrading to R12.0.x is to upgrade all IP Office servers to R11.1.3.x.

- For PLDS licensed systems, replace the existing licenses with the R12.0 licenses and verify operation.
- For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
- For R11.1 and higher systems, upgrade using standard `iso` file transfer process.

Warning:

- This process is essential. R11.1.3.x has changes used by R12.0.x upgrade process. Attempting to upgrade to R12.0.x or higher from an earlier release will fail and can cause the loss of data.

Procedure

1. For PLDS licensed systems, replace the existing licenses with the R12.0 licenses.
2. Verify the operation of the IP Office services.
3. Back up the IP Office services. See Creating an IP Office backup on page 50.
4. Upgrade the systems to R11.1.3.x:
   - For R11.1 and higher systems, upgrade using standard `iso` file process.
   - For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
5. Verify the operation of the IP Office services.

Next steps

- See Uploading and copy the VMDK file on page 22.

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Uploading and copy the VMDK file

About this task

This process uploads the upgrade `vmdk` file to the VMware datastore used by the IP Office virtual machine.

Procedure

1. Login to the VMware platform hosting the virtual machine.
2. Using the datastore browser, upload the upgrade `vmdk` to a folder on the datastore:
   a. Select the datastore hosting the virtual machine.
   b. Create a new folder by clicking the add folder icon. Do not use folder that contains the virtual machine's `vmx` and `vmdk` files.
   c. Click on the upload icon.
   d. If prompted to install the client integration plug-in, follow the instructions and then click on the upload icon again.
   e. Select the upgrade `vmdk` file and upload it to the new folder.
3. Copy the upgrade `vmdk` file to the first virtual machine that needs upgrading.
   a. Select the uploaded upgrade `vmdk` file and click on the copy icon.
   b. Browse to the datastore folder of the virtual machine and click **OK**.
   c. The process of copying the file within VMware will expand the size of the `vmdk` file from 4.5GB to 200GB. You cannot use the file for upgrading until you have expanded it.
   d. Wait until the process displays `"Complete"`. The process displays `"100%"` when nearly finished, however you must wait until it shows `"Complete"`.

Next steps

- See Upgrading a VMware virtual machine to R12.0.x on page 22.

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Upgrading a VMware virtual machine to R12.0.x

About this task

This process boots the virtual machine from the copy of the `VMDK` upgrade file. The boot process backs up the server data, upgrades it to R12.0.x, and then restores the server data.

Before you begin

- You must upgrade the server to IP Office R11.1.3.x. See Upgrade PC servers to IP Office R11.1.3.x on page 12
- After upgrading to IP Office R11.1.3.x, back up all the servers and services before upgrading to R12.0.x. See Creating an IP Office backup on page 50.

Procedure

1. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.
   b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
   c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

   Warning:

   - Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.
2. Login to the VMware platform hosting the virtual machine.
3. Mount the upgrade `vmdk` files as a new hard disk for the virtual machine:
   a. Select the virtual machine and click **Edit virtual machine settings**.
   b. On the **Virtual Hardware** tab, at the bottom set **New device** to **Existing Hard Disk** and click **Add**.
   c. Browse to the copy of the upgrade `vmdk` file and select that file.

   Important:

   - Do not use the originally `vmdk` file which you uploaded. You must use the copy of that file that you created.
   - If upgrading a network of servers, each server can use the same copied `vmdk` file. However, only one server can use the file at any time.

   d. Click **Next >**. Check the settings and click **OK**.
4. Adjust the boot order of the virtual machine hard disks to boot using the upgrade `vmdk` file:
   a. Expand the settings of the hard disk.
   b. Next to **Virtual Device Node**, click on the SCSI setting and select the drive's position in the boot order. `SCSI(0:0)` is the first drive and the one from which the server boots, `SCSI(0:1)` the second drive, and so on.
   c. Click **OK** and repeat the process for the other drives present.
   d. When completed, check that:
      - The upgrade `vmdk` drive is `SCSI(0:0)`.

- The original IP Office drive is `SCSI(0:1)`.
- If present, the Media Manager drive is `SCSI(0:2)`.

5. Click **Power on the virtual machine**.
6. Click **Summary**.
7. Click on the screen image to monitor the upgrade process from the console.
8. When completed, the server automatically switches off.
9. Remove the upgrade `vmdk` file from the virtual machine and reset the drive boot order:
   a. Select the virtual machine and click **Edit virtual machine settings**.
   b. Move the cursor to the right of the upgrade hard disk entry and click the **x** icon.
   c. Reverse the process in step 4 to return the remaining drives back to their original boot order.
   d. When complete, check that:
      - The original IP Office drive is `SCSI(0:0)`.
      - If present, the Media Manager drive to `SCSI(0:1)`.
10. Restart the virtual server by clicking **Power on the virtual machine**.
11. Wait 10 minutes. During this time, the upgrade process will complete additional steps and reboot the server again.
12. When the server has restarted:
    a. Check that the version shown is R12.0.x. If not, see Failure to upgrade on page 48.
    b. Cancel any **Consolidate Configuration Entries** menu shown in IP Office Manager or IP Office Web Manager. The menu disappears after you have upgraded all IP Office servers in a network to R12.0.x.
    c. Ignore any **Upgrade Available** prompts shown in IP Office Web Manager. You must only upgrade other IP Office servers using the processes in this document.
13. For any IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 25.
14. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
    - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.
15. When satisfied with the operation of the upgraded servers, you can delete the copies of the upgrade disk.
    - Only do this after when you are satisfied with the upgrade. The upgrade disk contains log files relating to the upgrade, see Upgrade logs on page 49. You need those log files to report upgrade issues.

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Checking Media Manager

About this task

For any IP Office primary server hosting local Media Manager, you must check the following.

Procedure

1. Check that the additional hard drive used by Media Manager is mounted on the IP Office server.
   a. Access **Platform View** > **Settings** > **System** > **Additional Hard Drive Settings** > **Mount**.
   b. The **Current Partition Mount Points** shows the partitions on the mounted drive. For example: `/additional-hdd#1/partition1`.
2. Check that the partition and associated folders has the owner set to Tomcat:
   a. Login to the server as `root`.
   b. List the folder permissions. For example: `ls -al /additional-hdd#1/partition1`
   c. If the owner is not set to Tomcat, run `chown -R tomcat:tomcat /additional-hdd#1/partition1`
3. Start the Media Manager service and let the restore process complete.
4. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
5. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
   - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

Related links

Upgrading IP Office VMware virtual machines to R12.0.x on page 19

Chapter 5: Upgrading IP Office Hyper-V virtual machines to R12.0.x

The processes in this section cover the upgrading of Hyper-V virtual machines from IP Office R11.1.3.x to R12.0.x.

Related links

Checklist for an IP Office Hyper-V upgrade to R12.0.x on page 26
Required tools and software for an IP Office Hyper-V R12.0.x upgrade on page 27
Upgrade Hyper-V servers to IP Office R11.1.3.x on page 28
Upgrading a Hyper-V virtual machine to R12.0.x on page 28
Checking Media Manager on page 30

Checklist for an IP Office Hyper-V upgrade to R12.0.x

Step	Action	Notes	✓
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.	
2.	**Assemble the required tools and software**	See Required tools and software for an IP Office Hyper-V R12.0.x upgrade on page 27.	
3.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. • Subscription IP Office systems do not require any subscription changes.	
4.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
5.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • For existing R11.1 systems, use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition. • For pre-R11.1 systems, see Upgrading Linux-based IP Office Systems to R11.1.	

Table continues…

Step	Action	Notes	✓
6.	**Verify Correct Operation**	After upgrading, verify the operation of all the IP Office services.	
7.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
8.	**Upgrade to R12.0**	Proceed with the upgrade from R11.1.3.x to R12.0.x. • See Upgrading a Hyper-V virtual machine to R12.0.x on page 28.	
9.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 30.	
10.	**Verify the upgrade**	After upgrading, verify the operation of all the IP Office services.	
11.	**Update any other servers**	If the server is part of an IP Office network, continue with updating the other servers. • See Upgrading a network of IP Office servers on page 8.	

Related links

Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26

Required tools and software for an IP Office Hyper-V R12.0.x upgrade

You need the following tools and software for the upgrade process. Except for Rufus, you can download the software from the Avaya Support site (https://support.avaya.com).

- **IP Office R11.1.3.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.
- **R12.0 upgrade Hyper-V VHD file**

  You add this file to the virtual machine as an additional drive. When the virtual machine reboots from this drive, it upgrades the virtual machine to R12.0.x.
- **R12 License File**

  PLDS licensed IP Office systems require a set of R12.0.x licenses. The R12.0.x licenses will also work for pre-R12.0.x IP Office servers.

  - The upgrade process in this document assume that you have added the licenses before upgrading to R12.0.x.
  - Subscription IP Office systems do not need new subscriptions.

Related links

Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26

Upgrade Hyper-V servers to IP Office R11.1.3.x

About this task

The first stage of upgrading to R12.0.x is to upgrade all IP Office servers to R11.1.3.x.

- For PLDS licensed systems, replace the existing licenses with the R12.0 licenses and verify operation.
- For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
- For R11.1 and higher systems, upgrade using standard `iso` file transfer process.

Warning:

- This process is essential. R11.1.3.x has changes used by R12.0.x upgrade process. Attempting to upgrade to R12.0.x or higher from an earlier release will fail and can cause the loss of data.

Procedure

1. For PLDS licensed systems, replace the existing licenses with the R12.0 licenses.
2. Verify the operation of the IP Office services.
3. Back up the IP Office services. See Creating an IP Office backup on page 50.
4. Upgrade the systems to R11.1.3.x:
   - For R11.1 and higher systems, upgrade using standard `iso` file process.
   - For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
5. Verify the operation of the IP Office services.

Next steps

- See Upgrading a Hyper-V virtual machine to R12.0.x on page 28.

Related links

Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26

Upgrading a Hyper-V virtual machine to R12.0.x

About this task

This process boots the virtual machine from the VHD upgrade file. The boot process backs up the server data, upgrades it to R12.0.x, and then restores the server data.

Before you begin

- You must upgrade the server to IP Office R11.1.3.x. See Upgrade PC servers to IP Office R11.1.3.x on page 12

- After upgrading to IP Office R11.1.3.x, back up all the servers and services before upgrading to R12.0.x. See Creating an IP Office backup on page 50.

Procedure

1. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.
   b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
   c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

   Warning:

   - Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.
2. Copy the `vhd` file to the folder on the Hyper-V platform used to store the virtual disks.
3. In Hyper-V Manager, right-click on the virtual machine and select **Connect** to display a console window.
4. Click the icon to stop the virtual machine.
5. Select **File** > **Settings**.
6. If the virtual machine has a virtual disk for Media Manager, click on that drive and change it to `IDE Controller 1, Location 0`. Click **Apply**.
7. Select the existing main hard disk and change it to `IDE Controller 0, Location 1`. Click **Apply**.
8. Click **IDE Controller 0** again:
   a. Select **Hard Drive** and click **Add**.
   b. Check that the **Controller** is set to **IDE Controller 0, Location 0**.
   c. In the **Virtual hard disk** field, browse for the upgrade `vhd` file and click **Open**. Click **Apply**.
   d. Click **OK**.
9. Restart the virtual machine:
   a. Click the icon.
   b. The virtual machine reboots from the upgrade `vhd` file. This starts the process of upgrading the other virtual drives.
   c. When completed, the server automatically switches off.
10. Reset the virtual drives back to their original boot order:
    a. Click on the upgrade `vhd` file and click **Remove**. Click **Apply**.

b. In the settings of the previous main drive, set the **Location** of the drive back to `IDE Controller 0, Location 0`. Click **Apply**.

c. If a Media Manager drive is also present, set the **Location** of the drive back to `IDE Controller 0, Location 1`. Click **Apply**.

d. Click **OK**.

11. Restart the server by clicking the icon.
12. Wait 10 minutes. During this time, the upgrade process will complete additional steps and reboot the server again.
13. When the server has restarted:
    a. Check that the version shown is R12.0.x. If not, see Failure to upgrade on page 48.
    b. Cancel any **Consolidate Configuration Entries** menu shown in IP Office Manager or IP Office Web Manager. The menu disappears after you have upgraded all IP Office servers in a network to R12.0.x.
    c. Ignore any **Upgrade Available** prompts shown in IP Office Web Manager. You must only upgrade other IP Office servers using the processes in this document.
14. For any IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 30.
15. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
    - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.
16. When satisfied with the operation of the upgraded servers, you can delete the copies of the upgrade disk.
    - Only do this after when you are satisfied with the upgrade. The upgrade disk contains log files relating to the upgrade, see Upgrade logs on page 49. You need those log files to report upgrade issues.

Related links

Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26

Checking Media Manager

About this task

For any IP Office primary server hosting local Media Manager, you must check the following.

Procedure

1. Check that the additional hard drive used by Media Manager is mounted on the IP Office server.
   a. Access **Platform View** > **Settings** > **System** > **Additional Hard Drive Settings** > **Mount**.
   b. The **Current Partition Mount Points** shows the partitions on the mounted drive. For example: `/additional-hdd#1/partition1`.
2. Check that the partition and associated folders has the owner set to Tomcat:
   a. Login to the server as `root`.
   b. List the folder permissions. For example: `ls -al /additional-hdd#1/partition1`
   c. If the owner is not set to Tomcat, run `chown -R tomcat:tomcat /additional-hdd#1/partition1`
3. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
4. Start the Media Manager service and let the restore process complete.
5. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
   - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

Related links

Upgrading IP Office Hyper-V virtual machines to R12.0.x on page 26

Chapter 6: Upgrading IP Office AWS instances to R12.0.x

The processes in this section cover upgrading AWS virtual instances from IP Office R11.1.3.x to R12.0.x.

Related links

Checklist for an IP Office AWS upgrade to R12.0.x on page 32
Required tools and software for an IP Office AWS R12.0.x upgrade on page 33
Upgrading AWS servers to IP Office R11.1.3.x on page 34
Preparing the AWS upgrade volume on page 35
Upgrading an AWS instance to R12.0.x on page 36
Checking Media Manager on page 38

Checklist for an IP Office AWS upgrade to R12.0.x

Step	Action	Notes	✓
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.	
2.	**Assemble the required tools and software**	See Required tools and software for an IP Office AWS R12.0.x upgrade on page 33.	
3.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. • Subscription IP Office systems do not require any subscription changes.	
4.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	

Table continues…

Step	Action	Notes	✓
5.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • For existing R11.1 systems, use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition. • For pre-R11.1 systems, see Upgrading Linux-based IP Office Systems to R11.1.	
6.	**Verify Correct Operation**	After upgrading, verify the operation of all the IP Office services.	
7.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
8.	**Upgrade to R12.0**	Proceed with the upgrade from R11.1.3.x to R12.0.x. • See Upgrading an AWS instance to R12.0.x on page 36.	
9.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 38.	
10.	**Verify the upgrade**	After upgrading, verify the operation of all the IP Office services.	
11.	**Update any other servers**	If the server is part of an IP Office network, continue with updating the other servers. • See Upgrading a network of IP Office servers on page 8.	

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Required tools and software for an IP Office AWS R12.0.x upgrade

You need the following tools and software for the upgrade process. Except for Rufus, you can download the software from the Avaya Support site (https://support.avaya.com).

- **IP Office R11.1.3.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.

- **R12.0 upgrade VMDK file**

  You add this file to the virtual machine as an additional drive. When the virtual machine reboots from this drive, it upgrades the virtual machine to R12.0.x.

- **R12 License File**

PLDS licensed IP Office systems require a set of R12.0.x licenses. The R12.0.x licenses will also work for pre-R12.0.x IP Office servers.

- The upgrade process in this document assume that you have added the licenses before upgrading to R12.0.x.
- Subscription IP Office systems do not need new subscriptions.

- **AWS Command Line Interface**

  For a Windows PC, you can run the AWS command line from the Windows command prompt or PowerShell. Refer to https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-welcome.html for details.

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Upgrading AWS servers to IP Office R11.1.3.x

About this task

The first stage of upgrading to R12.0.x is to upgrade all IP Office servers to R11.1.3.x.

- For PLDS licensed systems, replace the existing licenses with the R12.0 licenses and verify operation.
- For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
- For R11.1 and higher systems, upgrade using standard `iso` file transfer process.

Warning:

- This process is essential. R11.1.3.x has changes used by R12.0.x upgrade process. Attempting to upgrade to R12.0.x or higher from an earlier release will fail and can cause the loss of data.

Procedure

1. For PLDS licensed systems, replace the existing licenses with the R12.0 licenses.
2. Verify the operation of the IP Office services.
3. Back up the IP Office services. See Creating an IP Office backup on page 50.
4. Upgrade the systems to R11.1.3.x:
   - For R11.1 and higher systems, upgrade using standard `iso` file process.
   - For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
5. Verify the operation of the IP Office services.

Next steps

- See Preparing the AWS upgrade volume on page 35.

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Preparing the AWS upgrade volume

About this task

This process uploads the upgrade `vmdk` file to an AWS storage bucket.

Procedure

1. If you do not already have one, create an S3 bucket in the same region as the instances:
   a. In the AWS Management Console, under **STORAGE** select **S3**.
   b. Select **Create Bucket** and enter a memorable name, for this example `"vmdk-ipo"`.
   c. Select the **Region** that is hosting the instances you are upgrading and click **Create**.
2. Upload the `vmdk` file to the bucket:
   a. Click **Upload** and select the `vmdk` file.
   b. Wait until the upload of the file to the bucket has completed.
3. From the AWS command line, create a snapshot from the `vmdk` file using the following command:

```
aws ec2 import-snapshot --description "INSTALLER" --disk-container 
"Format=VMDK,UserBucket={S3Bucket=vmdk-ipo,S3Key=ABE-upgradedisk.vmdk}"
```

4. Note the `ImportTaskID` shown in the output. For example:

```
{
"SnapshotTaskDetail": {
"Status": "active",
"Description": "INSTALLER",
"DiskImageSize": 0.0,
"UserBucket": {
"S3Bucket": "demogermany",
"S3Key": "ABE-11.1.100-59-upgradedisk.vmdk"
},
"Progress": "0",
"StatusMessage": "pending"
},
"Description": "INSTALLER",
"ImportTaskId": "import-snap-0c938d492b68484da"
}
```

5. Check the status of snapshot using the following command. Replace the `<snap-id>` with the `ImportTaskID` value shown in the previous step.

```
aws ec2 describe-import-snapshot-tasks --import-task-ids <snap-id>
```

6. Do not continue until the status shown in the command output is `"Completed"`. For example:

```
{
"ImportSnapshotTasks": [
{
"SnapshotTaskDetail": {
"Status": "completed",
"Description": "INSTALLER",
…
```

7. After the snapshot import has completed, create a volume based on the snapshot:
   a. Select **Elastic Block Storage** > **Snapshots**.
   b. Select the snapshot and select **Actions** > **Create Volume**.
   c. For **Volume Type**, select **General Purpose SSD (gp2)**.
   d. For **Size (GiB)**, enter 200GB.
   e. For **Availability Zone**, select the same zone as the instances you are upgrading.

Next steps

- See Upgrading an AWS instance to R12.0.x on page 36.

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Upgrading an AWS instance to R12.0.x

About this task

This process boots the virtual machine from the copied `vmdk` upgrade file. The boot process backs up the server data, upgrades it to R12.0.x, and then restores the server data.

Before you begin

- You must upgrade the server to IP Office R11.1.3.x. See Upgrade PC servers to IP Office R11.1.3.x on page 12
- After upgrading to IP Office R11.1.3.x, back up all the servers and services before upgrading to R12.0.x. See Creating an IP Office backup on page 50.

Procedure

1. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.
   b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
   c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

⚠ Warning:

- Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.

2. Check that the server has completed its shutdown:
   a. In EC2, select **Instances** and select the instance.
   b. Select **Actions** > **Instance State** > **Stop** and confirm the action.
3. The **Description** > **Block devices** section shows links for the instance's virtual disks:
   - `/dev/sda1` = The IP Office drive.
   - `/dev/sdb` = The optional Media Manager drive.
4. Click on the `/dev/sda1` link and then the **EBS ID** link:
   a. Note the **Volume ID**. Click the **Name** field and give the volume a distinctive name if not already done.
   b. Click and then select **Actions** > **Detach**.
5. If also present, click on the `/dev/sdb` link. Note the **Volume ID** and then select **Actions** > **Detach**.
6. Attach the upgrade volume as the drive from which the instance boots:
   a. Select **Elastic Block Storage** > **Volumes**.
   b. Select **Actions** > **Attach Volume**.
   c. In the **Instance** field, select the matching instance.
   d. For the **Device**, enter `/dev/sda1`.
   e. Repeat the process to reattach the original IP Office volume but the **Device** now set to `/dev/sdb`.
   f. You do not need to reattach the Media Manager volume at this stage.
7. Restart the instance:
   a. Select **Instances** and select the instance.
   b. Select **Actions** > **Instance State** > **Start** and confirm the action.
8. The instance boots from the upgrade volume and starts the upgrade process.
9. When the upgrade has finished, the instance automatically switches off.
   a. Select **Instances**.
   b. Locate the instance and verify the **Status Checks** column shows `"Stopped"`.
10. Detach the upgrade volume and the original IP Office volume.
11. Reattach the original IP Office volume as `/dev/sda1`.
12. If present, reattach the Media Manager volume as `/dev/sdb`.

13. Restart the instance.
14. Wait 10 minutes. During this time, the upgrade process will complete additional steps and reboot the server again.
15. When the server has restarted:
    a. Check that the version shown is R12.0.x. If not, see Failure to upgrade on page 48.
    b. Cancel any **Consolidate Configuration Entries** menu shown in IP Office Manager or IP Office Web Manager. The menu disappears after you have upgraded all IP Office servers in a network to R12.0.x.
    c. Ignore any **Upgrade Available** prompts shown in IP Office Web Manager. You must only upgrade other IP Office servers using the processes in this document.
16. For any IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 38.
17. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
    - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.
18. When satisfied with the operation of the upgraded servers, you can delete the copies of the upgrade disk.
    - Only do this after when you are satisfied with the upgrade. The upgrade disk contains log files relating to the upgrade, see Upgrade logs on page 49. You need those log files to report upgrade issues.

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Checking Media Manager

About this task

For any IP Office primary server hosting local Media Manager, you must check the following.

Procedure

1. Check that the additional hard drive used by Media Manager is mounted on the IP Office server.
   a. Access **Platform View** > **Settings** > **System** > **Additional Hard Drive Settings** > **Mount**.
   b. The **Current Partition Mount Points** shows the partitions on the mounted drive. For example: `/additional-hdd#1/partition1`.

2. Check that the partition and associated folders has the owner set to Tomcat:
   a. Login to the server as `root`.
   b. List the folder permissions. For example: `ls -al /additional-hdd#1/partition1`
   c. If the owner is not set to Tomcat, run `chown -R tomcat:tomcat /additional-hdd#1/partition1`
3. Start the Media Manager service and let the restore process complete.
4. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
5. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
   - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

Related links

Upgrading IP Office AWS instances to R12.0.x on page 32

Chapter 7: Upgrading IP Office Azure instances to R12.0.x

The processes in this section cover upgrading Azure virtual instances from IP Office R11.1.3.x to R12.0.x.

Related links

Checklist for an IP Office Azure upgrade to R12.0.x on page 40
Required tools and software for an IP Office Azure R12.0.x upgrade on page 41
Upgrade Azure servers to IP Office R11.1.3.x on page 42
Preparing the Azure upgrade disk on page 42
Upgrading an Azure virtual machine to R12.0.x on page 43
Checking Media Manager on page 45

Checklist for an IP Office Azure upgrade to R12.0.x

Step	Action	Notes	✓
1.	**Understand and plan for the upgrade**	Read this document in full and understand all the requirements before taking any actions.	
2.	**Assemble the required tools and software**	See Required tools and software for an IP Office Hyper-V R12.0.x upgrade on page 27.	
3.	**Add the R12 licenses**	For PLDS licensed IP Office systems, the R12 licenses will work on pre-R12 systems. • Subscription IP Office systems do not require any subscription changes.	
4.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
5.	**Upgrade to the latest R11.1.3.x service pack**	Upgrade the Linux-based IP Office servers to R11.1.3.x. • Use the standard `iso` transfer method of upgrading. See Deploying IP Office Server Edition.	
6.	**Verify Correct Operation**	After upgrading, verify the operation of all the IP Office services.	

Table continues…

Step	Action	Notes	✓
7.	**Backup the servers**	If upgrading to R11.1.3.x, backup the IP Office servers. • See Creating an IP Office backup on page 50.	
8.	**Upgrade to R12.0**	Proceed with the upgrade from R11.1.3.x to R12.0.x. • See Upgrading an Azure virtual machine to R12.0.x on page 43.	
9.	**Check Media Manager**	For an IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 45.	
10.	**Verify the upgrade**	After upgrading, verify the operation of all the IP Office services.	
11.	**Update any other servers**	If the server is part of an IP Office network, continue with updating the other servers. • See Upgrading a network of IP Office servers on page 8.	

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Required tools and software for an IP Office Azure R12.0.x upgrade

You need the following tools and software for the upgrade process. Except for Rufus, you can download the software from the Avaya Support site (https://support.avaya.com).

- **IP Office R11.1.3.x server PC ISO file**

  Ensure that you select the correct `iso` file. For PC servers, the file name starts with `abe`, followed by the software version.

- **R12.0 upgrade Azure VHD file**

  You add this file to the virtual machine as an additional drive. When the virtual machine reboots from this drive, it upgrades the virtual machine to R12.0.x.

- **R12 License File**

  PLDS licensed IP Office systems require a set of R12.0.x licenses. The R12.0.x licenses will also work for pre-R12.0.x IP Office servers.

  - The upgrade process in this document assume that you have added the licenses before upgrading to R12.0.x.
  - Subscription IP Office systems do not need new subscriptions.

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Upgrade Azure servers to IP Office R11.1.3.x

About this task

The first stage of upgrading to R12.0.x is to upgrade all IP Office servers to R11.1.3.x.

- For PLDS licensed systems, replace the existing licenses with the R12.0 licenses and verify operation.
- For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
- For R11.1 and higher systems, upgrade using standard `iso` file transfer process.

Warning:

- This process is essential. R11.1.3.x has changes used by R12.0.x upgrade process. Attempting to upgrade to R12.0.x or higher from an earlier release will fail and can cause the loss of data.

Procedure

1. For PLDS licensed systems, replace the existing licenses with the R12.0 licenses.
2. Verify the operation of the IP Office services.
3. Back up the IP Office services. See Creating an IP Office backup on page 50.
4. Upgrade the systems to R11.1.3.x:
   - For R11.1 and higher systems, upgrade using standard `iso` file process.
   - For pre-R11.1 systems, follow the processes in Upgrading Linux-based IP Office Systems to R11.1.
5. Verify the operation of the IP Office services.

Next steps

- See Preparing the Azure upgrade disk on page 42.

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Preparing the Azure upgrade disk

About this task

This process uploads the upgrade `vhd` file to an Azure storage bucket. The file is used to create a virtual hard disk from which you can boot Azure virtual machines to upgrade.

Procedure

1. Upload the Azure vhd file to a blob in azure.
    a. In the Azure portal, select **Storage accounts**.
    b. Select the storage account to which you want to upload the `.vhd` file.
    c. Under **BLOB SERVICE**, select **Containers**.
    d. Select the container to which you want to upload the `.vhd` file.
    e. Click **Upload** and select the `.vhd` file to upload.
    f. Set the **Blob type** to **Page Blob**. This process can take a long time depending on your network connection and the location of your Azure storage account.
2. Under **Settings** > **Disks**, click **Create managed disk**.
    a. Select the **Resource group**.
    b. Enter the disk name in **Disk name**.
    c. Select the **Region**.
    d. Select **Source type**.
    e. Select **Source blob**. Browse to and select the upgrade `.vhd` file.
    f. Select the **OS type**.
    g. Select the require disk size to 256GB. The disk must be that size to accommodate backup and restore archives during the upgrade process.
    h. Click **Review + create**.

Next steps

- See Upgrading an Azure virtual machine to R12.0.x on page 43.

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Upgrading an Azure virtual machine to R12.0.x

About this task

This process boots the virtual machine from the VHD upgrade file. The boot process backs up the server data, upgrades it to R12.0.x, and then restores the server data.

Before you begin

- You must upgrade the server to IP Office R11.1.3.x. See Upgrade PC servers to IP Office R11.1.3.x on page 12
- After upgrading to IP Office R11.1.3.x, back up all the servers and services before upgrading to R12.0.x. See Creating an IP Office backup on page 50.

Procedure

1. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.
   b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
   c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

   Warning:

   - Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.
2. In the Azure portal, click **Virtual machines**.
3. Select the virtual machine and click **Stop**.
4. Use Switch OS from the VM Disks interface to set the R12.0 upgrade disk as the OS disk.
5. Set the original OS disk as a Data disk.
6. Select the virtual machine and click **Start**.
7. During the upgrade process, you can monitor the progress on screenshots displayed at Boot Diagnostics. The virtual machine is not accessible until the upgrade has finished.
8. When the virtual machine status shows as stopped, detach the upgrade OS disk.
9. Repeat the switch OS process to reset the original OS disk back to being the main OS disk.
10. Select the virtual machine and click **Start**.
11. Wait 10 minutes. During this time, the upgrade process will complete additional steps and reboot the server again.
12. When the server has restarted:
    a. Check that the version shown is R12.0.x. If not, see Failure to upgrade on page 48.
    b. Cancel any **Consolidate Configuration Entries** menu shown in IP Office Manager or IP Office Web Manager. The menu disappears after you have upgraded all IP Office servers in a network to R12.0.x.
    c. Ignore any **Upgrade Available** prompts shown in IP Office Web Manager. You must only upgrade other IP Office servers using the processes in this document.
13. For any IP Office primary server hosting local Media Manager, check the Media Manager settings. See Checking Media Manager on page 45.
14. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.

    - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

15. When satisfied with the operation of the upgraded servers, you can delete the copies of the upgrade disk.
    - Only do this after when you are satisfied with the upgrade. The upgrade disk contains log files relating to the upgrade, see Upgrade logs on page 49. You need those log files to report upgrade issues.

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Checking Media Manager

About this task

For any IP Office primary server hosting local Media Manager, you must check the following.

Procedure

1. Check that the additional hard drive used by Media Manager is mounted on the IP Office server.
   a. Access **Platform View** > **Settings** > **System** > **Additional Hard Drive Settings** > **Mount**.
   b. The **Current Partition Mount Points** shows the partitions on the mounted drive. For example: `/additional-hdd#1/partition1`.
2. Check that the partition and associated folders has the owner set to Tomcat:
   a. Login to the server as `root`.
   b. List the folder permissions. For example: `ls -al /additional-hdd#1/partition1`
   c. If the owner is not set to Tomcat, run `chown -R tomcat:tomcat /additional-hdd#1/partition1`
3. Start the Media Manager service and let the restore process complete.
4. Test and verify the operation of all services. If you find any issues, see Known upgrade issues on page 46.
5. If the server is part of a network, continue with the next server. See Upgrading a network of IP Office servers on page 8.
   - You can reuse the upgrade image to upgrade multiple servers in sequence. However, you must only use an upgrade image to upgrade one server at a time.

Related links

Upgrading IP Office Azure instances to R12.0.x on page 40

Chapter 8: Known upgrade issues

The following are known upgrading issues.

Related links

Voicemail call flows missing on page 46
Consolidate Configuration Entries warning shown on page 46
Media Manager settings missing on page 47
Upgrade Available shown on page 47
Failure to upgrade on page 48

Voicemail call flows missing

Condition

During the upgrade, the customized call flows are not migrated (the voicemail service `.mdb` file). However, the original call flows are still present in the editable file used by the Voicemail Pro client (the `.vmp` file).

Solution

1. Connect to the voicemail service using the Voicemail Pro client.
2. Check that the customized call flows are present.
3. Click **Save & Make live**.

Related links

Known upgrade issues on page 46

Consolidate Configuration Entries warning shown

Condition

When upgrading servers in an IP Office network, when accessing the configuration using IP Office Manager or IP Office Web Manager, a request to consolidate the configuration appears.

Solution

1. Cancel the consolidation menu and continue with upgrading all servers in the network.
2. Upgrading all servers in the network automatically resolves the consolidation issue.

Related links

Known upgrade issues on page 46

Media Manager settings missing

Condition

The Media Manager settings were lost during the upgrade. For example; the call storage path is blank.

Cause

The causes of this are:

- The Media Manager service not running before shutting down the server.
- Not shutting down the server correctly using the web control menus as detailed below.

Solution

1. Before upgrading, ensure that the Media Manager service has started. Check by accessing the service settings in IP Office Web Manager (**Applications** > **Media Manager**).
2. Shut down the server using the following method:
   a. Connect to the server's platform view/web control menus using port 7071.
   b. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
   c. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which on the connected monitor you will see services shutting down.

Warning:

- Do not use any other method to shut down the server. Doing so will cause the loss of data and settings. This method creates files which the upgrade process uses.

Related links

Known upgrade issues on page 46

Upgrade Available shown

Condition

When logged in to IP Office Web Manager after upgrading, IP Office Web Manager shows **Upgrade Available** next to other servers in the network.

Solution

1. Upgrade all other Linux-based IP Office servers in the network using the processes in this document.
2. Do not use the upgrade options within IP Office Web Manager. They will not upgrade the servers correctly.

Related links

Known upgrade issues on page 46

Failure to upgrade

Condition

The upgrade scripts include checks for certain conditions which if not matched, cause the upgrade process to stop without performing the upgrade.

Cause

Possible causes of the failure to upgrade are:

- If the server starts as normal rather than upgrading:
  - The boot source for the upgrade was not the USB upgrade key. Correct the server's boot settings and reattempt the upgrade.
- If the server automatically shuts down following the upgrade attempt:
  - The system was not running IP Office R11.1.3.x. All upgrades to R12.0.x must start from R11.1.3.x. When this occurs, the server adds the message "`Version found <version> is not 11.1.3.1`" to the `/logs/backup_logs.txt` file.
  - The system shut down using a method other than the **Shutdown** button shown in its web control menus.
  - Media Manager has run in the past but was not running when the system shut down. The Media Manager server must be running to back up any previous Media Manager settings and data.

Solution

1. Correct the cause of the failure to upgrade above and reattempt the upgrade.
2. If the upgrade still fails, collect the logs files before raising a support request. See Upgrade logs on page 49.

Related links

Known upgrade issues on page 46

Chapter 9: Upgrade logs

To raise a support ticket, you must obtain provide the following log files:

Logs	Description
Upgrade log files	The USB upgrade key/virtual hard disk stores the following logs for each server you upgrade: • `/logs/backup_logs.txt` This file has a record of the backup actions performed by the upgrade scripts. • `/logs/restore_logs.txt` This file has a record of the restore actions performed by the upgrade scripts.
Linux-based server logs	You must include the following additional logs: • `/opt/webcontrol/log/web.log` • `/var/log/rsyslog` • `/opt/MediaManager/MediaManagerService.log` • `/opt/Avaya/apache-tomcat/logs/MediaManager.log` • The `/opt/MediaManager/Backup/mm_back.tar.gz` if present.

Chapter 10: Creating an IP Office backup

You must always take a full system backup before any major action such as a system upgrade. Whilst you do not need a backup for the actual upgrade, it is an important provision for system recovery if any issues occur in the upgrade process.

Avaya supports IP Office Web Manager back up/restore between Linux-based IP Office servers using HTTPS, HTTP or SFTP. You can use the following options:

- The Server Edition ISO installed on a non-Avaya PC and ignited as an IP Office Application Server, without enabling the Avaya one-X® Portal for IP Office and Voicemail Pro services.
- The IP Office Server Edition `OVA` file installed in VMware Player on a PC and ignited as an IP Office Application Server.

Related links

Assessing the backup space requirement on page 50
Enabling HTTP support on page 52
Creating a remote server link for backup/restore on page 52
Performing a backup on page 53
Testing restoration on page 53
Deleting existing backups on page 54

Assessing the backup space requirement

When considering a server's suitability as a backup server; you must assess its backup space and the requirements of the servers you want to backup.

The backup server backup quota

The backup server needs a 160GB or larger hard disk. The server calculates the backup quota as follows:

- **Backup Quota** ≈ (0.8 x HDD Capacity) – (92GB if HDD Capacity ≥ 160GB)
  - For example: For a 500GB hard disk, the backup quota is approximately 308GB.
  - Note that this is approximate. The quoted disk capacity from a disk manufacturer or a virtual server platform differs from the capacity reported by the operating system.

You can check the actual quota available for backups using the process below.

To check a server's backup quota

1. Login to the backup server's web manager menus.
2. Click and select **Platform View**.
3. On the **System** tab, note the **Quota available for backup data** value. Note this is the total space usable for backups, it does not account for the space already used by any existing backups.
4. Click **Solution** to exit the platform view.

Estimating the space required for a full backup

The tables below show the space needed for a worst-case full backup. That is, a backup which assumes that all users have used their voicemail mailbox and other facilities to maximum capacity.

The minimum disk size column indicates the hard disk size required to have a sufficiently large backup quota (see above) for at least one full backup.

Table 1: Server Edition/Select Network.

Users	Full backup size	Minimum server disk size
100	35GB	160GB
750	78GB	214GB
1500	127GB	275GB
2000	158GB	320GB
2500	189GB	360GB

Table 2: IP Office Application Server

Voicemail Pro users	Full backup size	Minimum server disk size
20	30GB	160GB
50	32GB	160GB
100	34GB	160GB
150	37GB	165GB

A backup server can, subject to available space, support up to 14 backups where each backup contains details for multiple services on multiple servers in a network.

- When the backup server has 14 backups, any additional backup causes the backup server to delete the oldest previous backup.
- Similarly, if the available backup space is exhausted, the backup server deletes the oldest previous backup to create space.

Related links

Creating an IP Office backup on page 50

Enabling HTTP support

About this task

By default, the Linux-based IP Office servers does not support HTTP for backup/restore. Enabling HTTP removes the requirement to setup certificates for the temporary backup server.

Procedure

1. Login to the backup server's web manager menus.
2. Click and select **Platform View**.
3. Select **Settings** and then **System**.
4. In the **HTTP Server** section, select **Enable HTTP file store for backup/restore**.
5. Click **Save**.
6. Click **Solution** to exit the platform view.

Related links

Creating an IP Office backup on page 50

Creating a remote server link for backup/restore

About this task

Use the following process to specify the link from the Linux-based IP Office server to the temporary backup server.

Procedure

1. Login to IP Office Web Manager on the server. For a server network, do this through the network's primary server.
2. Click **Solution Settings** and select **Remote Server**.
3. Click **Add Remote Server**.
4. Enter the details to match the backup server:
   a. **Server Name** - Enter a name that shows the link's purpose.
   b. **Remote Server Address** - Enter the IP address or FQDN of the backup server.

Protocol	Port	Remote Path	Credential
SFTP	22	`/var/www/html/avaya/backup`	Administrator account name and password
HTTPS	5433	`/avaya/backup`	None
HTTP	8000	`/avaya/backup`	None

5. Click **Save**.

Related links

Creating an IP Office backup on page 50

Performing a backup

About this task

Use the following process to back up existing server settings to the backup server.

Before you begin

- Create a link to the backup server. See Creating a remote server link for backup/restore on page 52.

Procedure

1. Login to IP Office Web Manager on the server. For a server network, do this through the network's primary server.
2. On a primary server, click on the checkbox to select all the servers in the network.
3. Click **Actions** and select **Backup**.
4. In the **BACKUP CONFIGURATION** section, select the options to backup. The server grays out the options for services that are not running.
5. For **Select Remote Server**, select the remote server that was setup for connections to the backup server.
6. Click **Start**.
7. When the backup starts, the **Solution** menu shows information about its progress. If the backup is successful, the menu displays `Backup complete` for each server included.

Related links

Creating an IP Office backup on page 50

Testing restoration

About this task

After performing an IP Office Web Manager backup, test restoration.

Procedure

1. Login to IP Office Web Manager on the server. For a server network, do this through the network's primary server.
2. On a primary server, click on the checkbox to select all the servers in the network.
3. Click **Actions** and select **Restore**.

4. For **Select Remote Server**, select the remote server that was setup for connections to the backup server.
5. Click **Get Restore Points**. The server requests details of the backups available for the servers selected.
6. Within the full backup, highlight all the server sets that you want to restore. Since this a test, select just a single option to restore.
7. Click **Restore**.
8. Click **Yes**.
9. The **Solution** menu shows the progress of the restoration.

Related links

Creating an IP Office backup on page 50

Deleting existing backups

About this task

A server used as the backup server can store a maximum of 14 backups.

- The space needed for each backup can limit the actual number of backups.
- The system prefixes all files associated with a backup with the number in the format `NN_`, from `00_` to `13_`. Since it reuses the `NN_` prefixes, the prefixes do not necessarily match the date order.
- If necessary, you can delete previous backups to increase the available backup space. Verify the prefix to delete by using the restore process to see the list of existing backups. See Test Restoration on page 53.

Warning:

- Only delete files with numeric prefix `00_` to `13_`. The backup server uses other files in the folder for management of the backup file sets.

Procedure

1. Connect to the backup server using an SSH file management client and web manager Administrator account.
2. Browse to `/var/www/html/avaya/backup` folder.
3. To delete a backup set, select and delete all files with the same `NN_` file prefix. Do not delete any other files.

Related links

Creating an IP Office backup on page 50

Chapter 11: Additional Help and Documentation

The following pages provide sources for additional help.

Related links

Additional Manuals and User Guides on page 55
Getting Help on page 55
Finding an Avaya Business Partner on page 56
Additional IP Office resources on page 56
Training on page 57

Additional Manuals and User Guides

The Avaya Documentation Center website contains user guides and manuals for Avaya products including IP Office.

- For a listing of the current IP Office manuals and user guides, look at the Avaya IP Office™ Platform Manuals and User Guides document.
- The Avaya IP Office Knowledgebase and Avaya Support websites also provide access to the IP Office technical manuals and users guides.
  - Note that where possible these sites redirect users to the version of the document hosted by the Avaya Documentation Center.

For other types of documents and other resources, visit the various Avaya websites (see Additional IP Office resources on page 56).

Related links

Additional Help and Documentation on page 55

Getting Help

Avaya sells IP Office through accredited business partners. Those business partners provide direct support to their customers and can escalate issues to Avaya when necessary.

If your IP Office system currently does not have an Avaya business partner providing support and maintenance for it, you can use the Avaya Partner Locator tool to find a business partner. See Finding an Avaya Business Partner on page 56.

Related links

Additional Help and Documentation on page 55

Finding an Avaya Business Partner

If your IP Office system currently does not have an Avaya business partner providing support and maintenance for it, you can use the Avaya Partner Locator tool to find a business partner.

Procedure

1. Using a browser, go to the Avaya Website at https://www.avaya.com
2. Select **Partners** and then **Find a Partner**.
3. Enter your location information.
4. For IP Office business partners, using the **Filter**, select **Small/Medium Business**.

Related links

Additional Help and Documentation on page 55

Additional IP Office resources

In addition to the documentation website (see Additional Manuals and User Guides on page 55), there are a range of website that provide information about Avaya products and services including IP Office.

- Avaya Website (https://www.avaya.com)

  This is the official Avaya website. The front page also provides access to individual Avaya websites for different regions and countries.
- **Avaya Sales & Partner Portal** *(*https://sales.avaya.com*)*

  This is the official website for all Avaya business partners. The site requires registration for a username and password. Once accessed, you can customize the portal to show specific products and information type that you want to see.
- **Avaya Support** *(*https://support.avaya.com*)*

  This site provide access to Avaya product software, documentation and other services for Avaya product installers and maintainers.

  - **Avaya Support Forums** *(*https://support.avaya.com/forums/index.php*)*

    This site provides forums for discussing product issues.

- **International Avaya User Group** *(*https://www.iuag.org*)*

  This is the organization for Avaya customers. It provides discussion groups and forums.

- **Avaya Learning** *(*https://www.avaya-learning.com/*)*

  This site provides access to training courses and accreditation programs for Avaya products.

Related links

Additional Help and Documentation on page 55

Training

Avaya training and credentials ensure our Business Partners have the capabilities and skills to successfully sell, implement, and support Avaya solutions and exceed customer expectations. The following credentials are available:

- Avaya Certified Sales Specialist (APSS)
- Avaya Implementation Professional Specialist (AIPS)
- Avaya Certified Support Specialist (ACSS)

Credential maps are available on the Avaya Learning website.

Related links

Additional Help and Documentation on page 55

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