



# **Upgrading Linux Based IP Office Servers to IP Office R11.1**

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# Chapter 1: Upgrading pre-R11.1 SP1 IP Office systems to R11.1

This document details the non-standard upgrade processes that you must use when upgrading Linux-based IP Office servers from pre-R11.1 to R11.1 or higher. You must use these non-standard processes due to the change of Linux operating system from CentOS 6 to CentOS 7.

You must use the processes in this document for all types of Linux-based IP Office server, including IP Office Application Servers and Unified Communications Module modules. These are one-off processes, for further upgrades within R11.1 you can use the standard `iso` file upgrade processes.

- **Software Versions**

This document uses the latest software versions available at the time of writing. However, if later versions are available when upgrading, use those versions as they can have changes relating to the upgrade process. That is, use the latest R11.0.4.x service pack and the latest R11.1.x service or feature pack.

- **IP500 V2 Control Units**

The processes in this document do not apply to IP500 V2 control units.

## Related links

[Summary of the upgrade process](#) on page 6

[Upgrading a network of IP Office servers](#) on page 8

[Media Manager considerations](#) on page 9

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## Summary of the upgrade process

The following is a summary of the upgrade process:

Step	Action	Notes
1.	<b>Understand and plan for the upgrade</b>	<p>Read this document in full and understand all the requirements before taking any other actions.</p> <ul style="list-style-type: none"> <li>For IP Office systems hosting Media Manager, see <a href="#">Media Manager considerations</a> on page 9.</li> <li>IP Office R11.1 does not use Windows servers to host its services. If using any such servers, for example for Avaya one-X® Portal for IP Office or Voicemail Pro, they must be replaced with Linux-based servers. See <a href="#">Windows Server migration</a> on page 47</li> </ul>
2.	<b>Back up the server(s)</b>	Before upgrading to R11.0.4.8, back up the IP Office servers and services.
3.	<b>Upgrade to the latest R11.0.4 service pack</b>	Upgrade the Linux-based IP Office server(s) to R11.0.4.8 using the standard ISO file transfer methods.
4.	<b>Verify Correct Operation</b>	After upgrading to R11.0.4.8, verify the operation of all services.
5.	<b>Backup the server(s)</b>	Before upgrading to R11.1.3, back up all the IP Office servers and services.
	<b>Upgrade to the latest R11.1 service or feature pack</b>	Proceed with the upgrade from R11.0.4.8 to R11.1.3 using the special one-off upgrade processes in this document.
	<ul style="list-style-type: none"> <li><b>Physical Linux-based IP Office Servers including IP Office Application Servers</b></li> </ul>	<p>This process uses a USB memory key created using the R11.1.3 ISO file.</p> <p>See <a href="#">Upgrading physical Linux-based IP Office servers</a> on page 10.</p>
	<ul style="list-style-type: none"> <li><b>Unified Communications Module</b></li> </ul>	<p>This process uses a USB memory key created using the R11.1.3 ISO file.</p> <p>See <a href="#">Upgrading a Unified Communications Module</a> on page 16.</p>
	<ul style="list-style-type: none"> <li><b>VMware Virtual Machines</b></li> </ul>	<p>This process uses a virtual hard disk (vmdk) file downloaded from Avaya. You can use the file to reboot and upgrade the server.</p> <p>See <a href="#">Upgrading VMware virtual machines</a> on page 20.</p>
	<ul style="list-style-type: none"> <li><b>Hyper-V Virtual Machines</b></li> </ul>	<p>This process uses a virtual hard disk (vhd) file downloaded from Avaya. You can use the file to reboot and upgrade the server.</p> <p>See <a href="#">Upgrading Hyper-V virtual machines</a> on page 25.</p>
	<ul style="list-style-type: none"> <li><b>AWS Instances</b></li> </ul>	<p>This process uses a virtual hard disk (vmdk) file downloaded from Avaya. You can use the file to reboot and upgrade the server.</p> <p>See <a href="#">Upgrading AWS instances</a> on page 29.</p>
6.	<b>Verify the upgrade</b>	<p>After upgrading to R11.1.3, verify the operation of all services except Media Manager.</p> <ul style="list-style-type: none"> <li>If issues are found, see <a href="#">Known upgrade issues</a> on page 35.</li> </ul>

*Table continues...*

Step	Action	Notes
7.	<b>Restart Media Manager</b>	<p>If the server needs to supports Media Manager, restart the service. This starts the database encryption process.</p> <ul style="list-style-type: none"> <li>You must let Media Manager complete this one-time encryption process. The time required depends on the number of recordings and the server resources and can take several hours.</li> </ul>
8.	<b>Update any other servers</b>	

**Related links**

[Upgrading pre-R11.1 SP1 IP Office systems to R11.1](#) on page 6

## Upgrading a network of IP Office servers

When upgrading IP Office servers in a Server Edition or Select network, you must update each Linux-based 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.

**Recommend Upgrade Order**

For a network of IP Office servers, the upgrade process can be approached as follows.

Single Server Upgrades	Simultaneous Server Upgrades
<p>Upgrading servers one at a time allows resiliency support to users from other servers. When upgrading servers one at a time, the recommended upgrade order is:</p> <ol style="list-style-type: none"> <li>1. Linux-based IP Office Expansion servers.</li> <li>2. Secondary server.</li> <li>3. Primary server.</li> <li>4. IP500 V2 Expansion servers.</li> </ol>	<p>If you are confident with the upgrade process, you can run multiple upgrades in parallel using multiple USB upgrade keys or copies of the upgrade vmdk file.</p> <p>However, whilst quicker, this removes the option for resiliency support for features between server.</p>

**Related links**

[Upgrading pre-R11.1 SP1 IP Office systems to R11.1](#) on page 6

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## Media Manager considerations

For IP Office systems hosting Media Manager, special considerations apply for the upgrade to R11.1:

- Prior to IP Office R11.1, call recordings and call details in the recordings database were stored unencrypted. For IP Office R11.1 and higher, they are encrypted. To do that, after the upgrade to R11.1, when Media Manager is restarted it runs an automatic process to encrypted all existing call details in the recordings database.
- This encryption process only needs to run once. Once completed it is not run again.
- The duration of the encryption process depends on the number of call recordings and the server resources. For example, systems with a million call recordings have been seen to take up to 10 hours.
- Any interruptions to the encryption process, for example restarting the Media Manager service or the IP Office server, can cause Media Manager to create a new database with no previous call recording details. Therefore, you must:
  1. After upgrading to IP Office R11.0.4.8, include Media Manager in the backup.
  2. Before starting the upgrade to IP Office R11.1.3, stop the Media Manager service and disable its auto-start option.
  3. After the upgrade to IP Office R11.1.3, restart the Media Manager service. This starts the encryption process.
  4. Let the encryption process run until it has completed. You can see the status of the encryption process in the upgrade log files. See [Upgrade logs](#) on page 40..
- During the encryption process, call recording of new calls continues as that function is performed separately by the voicemail service.

### Related links

[Upgrading pre-R11.1 SP1 IP Office systems to R11.1](#) on page 6

# Chapter 2: Upgrading physical Linux-based IP Office servers

This section describes the process for upgrading a physical PC-based IP Office server from IP Office R11.0.4.8 to R11.1.3. This process applies to Server Edition, Select and IP Office Application Servers.

- For Unified Communications Module servers, see [Upgrading a Unified Communications Module](#) on page 16.

## Related links

- [Required tools and software](#) on page 10
- [Upgrade a server PC to IP Office R11.0.4.8](#) on page 11
- [Creating a PC-based server USB upgrade key](#) on page 12
- [Checking the boot order](#) on page 13
- [Upgrading a PC-based IP Office server to R11.1.3](#) on page 13

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## Required tools and software

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 R11.0.4.8 server PC ISO file**

The `iso` file name starts with "abe" followed by the version.

- **Rufus USB creation software**

You cannot use the Avaya USB Creator software application for the R11.0.4.8 to R11.1.3 upgrade of PC-based servers. Instead, download and use Rufus from <https://rufus.ie/>.

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

The `iso` file name starts with "abe" followed by the version.

- **256GB+ USB memory key**

PC server upgrades require a USB memory key of at least 256GB.

- **Keyboard, monitor and mouse**

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

**Related links**

[Upgrading physical Linux-based IP Office servers](#) on page 10

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## Upgrade a server PC to IP Office R11.0.4.8

**About this task**

The first stage of upgrading to R11.1.3 is to upgrade all IP Office servers to R11.0.4.8:

** Warning:**

- This process is essential. R11.0.4.8 has changes used by R11.1.3 upgrade process.
- Attempting to upgrade to R11.1.3 or higher from any earlier pre-R11.0 release will fail and cause the lose of data.

**Before you begin**

- Back up the servers before upgrading to R11.0.4.8. See [Creating an IP Office backup](#) on page 41.
- For servers already licensed for R11.0, those licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for R11.0.

**Procedure**

1. You can upgrade to R11.0.4.8 using the standard `iso` file transfer methods. However, you must refer to the IP Office technical bulletins and release notes.
2. Following the upgrade, test and verify the operation of all services, for example:
  - Incoming and outgoing calls.
  - Voicemail services.
  - Avaya one-X<sup>®</sup> Portal for IP Office if used.
  - Media Manager if used.

**Next steps**

- IP Office R11.1 does not use Windows servers to host its services. If using any such servers, for example for Avaya one-X<sup>®</sup> Portal for IP Office or Voicemail Pro, they must be replaced with Linux-based servers. See [Windows Server migration](#) on page 47
- See [Creating a PC-based server USB upgrade key](#) on page 12.

**Related links**

[Upgrading physical Linux-based IP Office servers](#) on page 10

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## Creating a PC-based server USB upgrade key

### About this task

This process describes how to create a USB memory key for upgrading a PC based IP Office system from R11.0.4.8 to R11.1.3.

- You can use the same USB upgrade key to upgrade multiple R11.0.4.8 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**

You cannot use the Avaya USB Creator software application for the R11.0.4.8 to R11.1.3 upgrade of PC-based servers. Instead, download and use Rufus from <https://rufus.ie/>.

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

The `iso` file name starts with "abe" followed by the version.

- **256GB+ USB memory key**

PC server upgrades require a USB memory key of at least 256GB.

### 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:** Change this to **AVAYA** with no quotation marks.
  - **File System:** Leave this as **Large FAT32**.
6. Click **Start**.
  - a. The application shows the progress of unpacking the ISO file onto the USB memory key. This takes up to 10 minutes depending on the USB memory key size.
  - b. When Rufus has completed the process and shows "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, erasing 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 13.

**Related links**

[Upgrading physical Linux-based IP Office servers](#) on page 10

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## Checking the boot order

This upgrade process requires the server PC to boot from the USB upgrade. However, the boot order set in the server PC's BIOS settings can differ.

To add other devices to the boot order, or to change the order of usage, you must change the server's BIOS 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 that the USB option is listed before the server's 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 the software installation.

**Next steps**

- See [Upgrading a PC-based IP Office server to R11.1.3](#) on page 13.

**Related links**

[Upgrading physical Linux-based IP Office servers](#) on page 10

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## Upgrading a PC-based IP Office server to R11.1.3

**About this task**

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

**⚠ 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 used by the upgrade process.

## Before you begin

- You must upgrade the server to IP Office R11.0.4.8.
- After upgrading to IP Office R11.0.4.8, back up all the servers and services before upgrading to R11.1.3. See [Creating an IP Office backup](#) on page 41.

## 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. On the **System** tab, click **Show optional services**.
  - c. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
  - d. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which you will see the services shutting down.
2. Connect the monitor, keyboard and mouse to the server.
3. Insert the USB upgrade key into the PC's USB port.
4. Restart the server.
5. When the server has finished upgrading, it automatically switches off.
6. Remove the USB upgrade key and restart the server.
7. When the server has restarted:
  - a. Check that the version shown is R11.1.3. If not, see [Failure to upgrade](#) on page 38.
  - b. Following the upgrade, test and verify the operation of all services:
    - Incoming and outgoing calls.
    - Voicemail services.
    - Avaya one-X<sup>®</sup> Portal for IP Office if used.
    - If issues are found, see [Known upgrade issues](#) on page 35.
8. If the server hosts Media Manager:
  - a. Connect to the server's platform view/web control menus using port 7071.
  - b. On the **System** tab, click **Show optional services**.
  - c. For the **Local Media Manager** service, select the service's auto-start checkbox and then start the service. This starts the Media Manager database encryption process:
    - You must let Media Manager complete this one-time encryption process. The time required depends on the number of recordings and the server resources and can take several hours.
    - Interrupting the encryption process, for example restarting the Media Manager service or the IP Office server, can cause issues.
    - When completed, you can check recordings using the Media Manager menus.

9. If the server is part of a network, continue with the next server.

**Related links**

[Upgrading physical Linux-based IP Office servers](#) on page 10

# Chapter 3: Upgrading a Unified Communications Module

This section describes the process for upgrading a Unified Communications Module from IP Office R11.0.4.8 to R11.1.3.

## Related links

[Required tools and software](#) on page 16

[Upgrading a Unified Communications Module to R11.0.4.8](#) on page 17

[Creating a Unified Communications Module USB upgrade key](#) on page 18

[Upgrading a Unified Communications Module to R11.1.3](#) on page 19

---

## Required tools and software

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 R11.0.4.8 Unified Communications Module ISO file**

The `iso` file name starts with "c110" followed by the version.

- **Avaya USB Creator**

You use this software to create an auto-upgrade USB memory key for a Unified Communications Module.

- You cannot use Avaya USB Creator for the upgrade process if you are using a USB memory key of 64GB or larger. Instead, use Rufus (see [Creating a PC-based server USB upgrade key](#) on page 12) with the `c110` ISO file.

- **IP Office R11.1.3 Unified Communications Module ISO file**

The `iso` file name starts with "c110" followed by the version.

- **32GB+ USB memory key**

Unified Communications Module upgrades require a USB memory key of at least 32GB.

- You cannot use Avaya USB Creator for the upgrade process if you are using a USB memory key of 64GB or larger. Instead, use Rufus (see [Creating a PC-based server USB upgrade key](#) on page 12) with the `c110` ISO file.

- **HDMI monitor and USB keyboard/mouse**

Whilst the upgrade process runs automatically after the server reboot, it is useful to see the progress. You must connect the monitor, keyboard, and mouse before the Unified Communications Module restarts.

- **Windows PC with IP Office R11.1.3 Administration Suite**

#### Related links

[Upgrading a Unified Communications Module](#) on page 16

---

## Upgrading a Unified Communications Module to R11.0.4.8

### About this task

The first stage of upgrading to R11.1.3 is to upgrade all IP Office servers to R11.0.4.8:

#### Warning:

- This process is essential. R11.0.4.8 has changes used by R11.1.3 upgrade process.
- Attempting to upgrade to R11.1.3 or higher from any earlier pre-R11.0 release will fail and cause the lose of data.

### Before you begin

- Back up the servers before upgrading to R11.0.4.8. See [Creating an IP Office backup](#) on page 41.
- For servers already licensed for R11.0, those licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for R11.0.

### Procedure

1. You can upgrade the IP Office and Unified Communications Module to R11.0.4.8 using the standard upgrade methods. However, refer to the technical bulletins and release notes for any intermediate releases.
2. If the servers are already licensed for R11.0, the same licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for the servers at R11.0.4.8.
3. Following the upgrade, test and verify the operation of all services, for example:
  - Voicemail services.
  - Avaya one-X® Portal for IP Office

### Next steps

- See [Creating a Unified Communications Module USB upgrade key](#) on page 18.

#### Related links

[Upgrading a Unified Communications Module](#) on page 16

---

# Creating a Unified Communications Module USB upgrade key

## About this task

This process describes how to create a USB memory key for upgrading a Unified Communications Module from R11.0.4.8 to R11.1.3.

## Before you begin

- **Avaya USB Creator**

You use this software to create an auto-upgrade USB memory key for a Unified Communications Module.

- You cannot use Avaya USB Creator for the upgrade process if you are using a USB memory key of 64GB or larger. Instead, use Rufus (see [Creating a PC-based server USB upgrade key](#) on page 12) with the `c110` ISO file.

- **IP Office R11.1.3 Unified Communications Module ISO file**

The `iso` file name starts with "`c110`" followed by the version.

- **32GB+ USB memory key**

Unified Communications Module upgrades require a USB memory key of at least 32GB.

- You cannot use Avaya USB Creator for the upgrade process if you are using a USB memory key of 64GB or larger. Instead, use Rufus (see [Creating a PC-based server USB upgrade key](#) on page 12) with the `c110` ISO file.

## Procedure

1. Download and install Avaya USB Creator.
2. Insert the USB memory key into the Windows PC.
3. Start Avaya USB Creator.
4. Select the Unified Communications Module R11.1.3 ISO file. For a Unified Communications Module, the file name starts with "`c110`" followed by the software version.
5. Select the USB memory key.
6. Set the installation mode to **UCM - Auto Upgrade**.
7. Select the voicemail prompt languages to include. Ensure that this includes the languages already used by the voicemail service.
8. Click **Start**.
9. The progress of the unpacking of the ISO file onto the USB memory key is takes up to 10 minutes depending on the USB memory key size.
10. When the application shows "USB Creation Complete", close the application and remove the USB upgrade key.

## Next steps

- See [Upgrading a Unified Communications Module to R11.1.3](#) on page 19.

## Related links

[Upgrading a Unified Communications Module](#) on page 16

---

# Upgrading a Unified Communications Module to R11.1.3

## About this task

To install software from the USB memory key, use the following process.

## Before you begin

- You must upgrade the server to IP Office R11.0.4.8.
- After upgrading to IP Office R11.0.4.8, back up all the servers and services before upgrading to R11.1.3. See [Creating an IP Office backup](#) on page 41.

## Procedure

1. Connect a monitor to the Unified Communications Module using the HDMI cable.
2. Connect to the IP Office using System Status Application. Select **System > UC Modules** and select the module. The page shows the module status and other information.
3. Insert the USB upgrade memory key into the module's upper USB port.
4. In System Status Application, click on **Shutdown**.
5. When the module has shut down, click the **USB Boot** button.
6. After up to 2 minutes initializing, the module boots using the files on the USB memory key. The HDMI monitor will show the progress of the software installation. The process takes approximately 95 minutes after which the Unified Communications Module automatically restarts.
7. The software installation is complete when System Status Application shows the status "Operational".
8. Wait for the modules Status to change from "Applications Starting" to "Operational". This takes up to 10 minutes.
9. Check the status and operation of the Unified Communications Module services (voicemail, Avaya one-X<sup>®</sup> Portal for IP Office).

## Related links

[Upgrading a Unified Communications Module](#) on page 16

# Chapter 4: Upgrading VMware virtual machines

The processes in this section cover the upgrading of VMware virtual machines from IP Office R11.0.4.8 to R11.1.3.

## Related links

[Required tools and software](#) on page 20

[Upgrading to R11.0.4.8](#) on page 20

[Uploading and copy the VMDK file](#) on page 21

[Upgrading a VMware virtual machine to R11.1.3](#) on page 22

---

## Required tools and software

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 R11.0.4.8 server PC ISO file**

The `iso` file name starts with "abe" followed by the version.

- **R11.1 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 R11.1.3.

## Related links

[Upgrading VMware virtual machines](#) on page 20

---

## Upgrading to R11.0.4.8

### About this task

The first stage of upgrading to R11.1.3 is to upgrade all IP Office servers to R11.0.4.8:

 **Warning:**

- This process is essential. R11.0.4.8 has changes used by R11.1.3 upgrade process.

- Attempting to upgrade to R11.1.3 or higher from any earlier pre-R11.0 release will fail and cause the lose of data.

### Before you begin

- Back up the servers before upgrading to R11.0.4.8. See [Creating an IP Office backup](#) on page 41.
- For servers already licensed for R11.0, those licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for R11.0.

### Procedure

1. You can upgrade to R11.0.4.8 using the standard `iso` file transfer methods. However, you must refer to the IP Office technical bulletins and release notes.
2. Following the upgrade, test and verify the operation of all services, for example:
  - Incoming and outgoing calls.
  - Voicemail services.
  - Avaya one-X® Portal for IP Office if used.
  - Media Manager if used.

### Next steps

- See [Uploading and copy the VMDK file](#) on page 21.

### Related links

[Upgrading VMware virtual machines](#) on page 20



---


## 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(s).
  - b. Create a new folder by clicking the  add folder icon. Do not use folder holding the virtual machine's `vmx` and `vmdk` files.
  - c. Click on the  upload icon. If prompted to install the client integration plug-in, follow the instructions and then click on the upload icon again. 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. The process of copying within VMware expands the size of the `vmdk` file from 4.5GB to 200GB. You cannot use the file for upgrading until you have expanded it.
  - 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. Wait until the process displays "Complete". Note: The process also displays "100%" when nearly finished, however you must wait until it shows "Complete".

### Next steps

- See [Upgrading a VMware virtual machine to R11.1.3](#) on page 22.

### Related links

[Upgrading VMware virtual machines](#) on page 20

---

## Upgrading a VMware virtual machine to R11.1.3

### About this task

This process boots the virtual machine from the copied `VMDK` upgrade file. The boot process backs up the server and then upgrades its components to R11.1.3 before restoring the server data.

### 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 used by the upgrade process.

### Before you begin

- You must upgrade the server to IP Office R11.0.4.8.
- After upgrading to IP Office R11.0.4.8, back up all the servers and services before upgrading to R11.1.3. See [Creating an IP Office backup](#) on page 41.

### 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. On the **System** tab, click **Show optional services**.
  - c. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
  - d. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which you will see the services shutting down.
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 uploaded `vmdk` file. It must be a copy of that file. If upgrading a network of servers, each server can use the same `vmdk` copy but not simultaneously.
  - d. Click **Next >**. Check the settings and click **OK**.
4. Adjust the boot order of the virtual machine's hard disks so that it reboots 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 and so on.
  - c. Click **OK**. and repeat the process for the other drives present.
  - d. When completed, the upgrade `vmdk` drive is `SCSI (0:0)`, the virtual machine's original drive `SCSI (0:1)` and, if present, the Media Manager drive `SCSI (0:2)`.
5. Click **Power on the virtual machine**.
6. Click **Summary** and then click on the screen image.
7. Monitor the upgrade process from the console. When completed, the server automatically switches off.
8. 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. Click the **x** icon.
  - c. Repeat the process in step 4 to return the remaining drives back to their original boot order. Put the original IP Office drive back to `SCSI (0:0)` and, if present, the Media Manager drive to `SCSI (0:1)`.
9. Restart the virtual server by clicking **Power on the virtual machine**.
10. When the server has restarted:
  - a. Check that the version shown is R11.1.3. If not, see [Failure to upgrade](#) on page 38.
  - b. Following the upgrade, test and verify the operation of all services:
    - Incoming and outgoing calls.
    - Voicemail services.

- Avaya one-X<sup>®</sup> Portal for IP Office if used.
  - If issues are found, see [Known upgrade issues](#) on page 35.
11. If the server hosts Media Manager:
    - a. Connect to the server's platform view/web control menus using port 7071.
    - b. On the **System** tab, click **Show optional services**.
    - c. For the **Local Media Manager** service, select the service's auto-start checkbox and then start the service. This starts the Media Manager database encryption process:
      - You must let Media Manager complete this one-time encryption process. The time required depends on the number of recordings and the server resources and can take several hours.
      - Interrupting the encryption process, for example restarting the Media Manager service or the IP Office server, can cause issues.
      - When completed, you can check recordings using the Media Manager menus.
  12. If the server is part of a network, continue with the next server.
  13. When satisfied with the operation of the upgraded servers, you can delete the copies of the vmdk file.

#### Related links

[Upgrading VMware virtual machines](#) on page 20

# Chapter 5: Upgrading Hyper-V virtual machines

The processes in this section cover the upgrading of Hyper-V virtual machines from IP Office R11.0.4.8 to R11.1.3.

## Related links

[Required tools and software](#) on page 25

[Upgrade Hyper-V to R11.0.4.8](#) on page 25

[Upgrading a Hyper-V virtual machine to R11.1.3](#) on page 26

---

## Required tools and software

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 R11.0.4.8 server PC ISO file**

The `iso` file name starts with "abe" followed by the version.

- **R11.1 upgrade 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 R11.1.3.

## Related links

[Upgrading Hyper-V virtual machines](#) on page 25

---

## Upgrade Hyper-V to R11.0.4.8

### About this task

The first stage of upgrading to R11.1.3 is to upgrade all IP Office servers to R11.0.4.8:

 **Warning:**

- This process is essential. R11.0.4.8 has changes used by R11.1.3 upgrade process.

- Attempting to upgrade to R11.1.3 or higher from any earlier pre-R11.0 release will fail and cause the lose of data.

### Before you begin

- Back up the servers before upgrading to R11.0.4.8. See [Creating an IP Office backup](#) on page 41.
- For servers already licensed for R11.0, those licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for R11.0.

### Procedure

1. You can upgrade to R11.0.4.8 using the standard `iso` file transfer methods. However, you must refer to the IP Office technical bulletins and release notes.
2. Following the upgrade, test and verify the operation of all services, for example:
  - Incoming and outgoing calls.
  - Voicemail services.
  - Avaya one-X<sup>®</sup> Portal for IP Office if used.
  - Media Manager if used.

### Next steps

- See [Upgrading a Hyper-V virtual machine to R11.1.3](#) on page 26.

### Related links

[Upgrading Hyper-V virtual machines](#) on page 25

---

## Upgrading a Hyper-V virtual machine to R11.1.3

### About this task

This process boots the virtual machine from the VHD upgrade file. The boot process backs up the server and then upgrades its components to R11.1.3 before restoring the server data.




#### **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 used by the upgrade process.

### Before you begin

- You must upgrade the server to IP Office R11.0.4.8.
- After upgrading to IP Office R11.0.4.8, back up all the servers and services before upgrading to R11.1.3. See [Creating an IP Office backup](#) on page 41.

## 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. On the **System** tab, click **Show optional services**.
  - c. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
  - d. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which you will see the services shutting down.
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 by clicking the  icon. The virtual machine reboots from the upgrade `vhd` file, which starts the process of upgrading the other virtual drives. 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 it back to `IDE Controller 0, Location 1`. Click **Apply**.
  - d. Click **OK**.
11. Restart the virtual machine by clicking the  icon.

12. When the server has restarted:
  - a. Check that the version shown is R11.1.3. If not, see [Failure to upgrade](#) on page 38.
  - b. Following the upgrade, test and verify the operation of all services:
    - Incoming and outgoing calls.
    - Voicemail services.
    - Avaya one-X<sup>®</sup> Portal for IP Office if used.
    - If issues are found, see [Known upgrade issues](#) on page 35.
13. If the server hosts Media Manager:
  - a. Connect to the server's platform view/web control menus using port 7071.
  - b. On the **System** tab, click **Show optional services**.
  - c. For the **Local Media Manager** service, select the service's auto-start checkbox and then start the service. This starts the Media Manager database encryption process:
    - You must let Media Manager complete this one-time encryption process. The time required depends on the number of recordings and the server resources and can take several hours.
    - Interrupting the encryption process, for example restarting the Media Manager service or the IP Office server, can cause issues.
    - When completed, you can check recordings using the Media Manager menus.
14. If the server is part of a network, continue with the next server.

#### Related links

[Upgrading Hyper-V virtual machines](#) on page 25

# Chapter 6: Upgrading AWS instances

The processes in this section cover upgrading AWS virtual instances from IP Office R11.0.4.8 to R11.1.3.

## Related links

- [Required tools and software](#) on page 29
- [Upgrading to R11.0.4.8](#) on page 29
- [Preparing the AWS upgrade volume](#) on page 30
- [Upgrading an AWS instance to R11.1.3](#) on page 32

---

## Required tools and software

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 R11.0.4.8 server PC ISO file**

The `iso` file name starts with "abe" followed by the version.

- **R11.1 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 R11.1.3.

- **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 AWS instances](#) on page 29

---

## Upgrading to R11.0.4.8

### About this task

The first stage of upgrading to R11.1.3 is to upgrade all IP Office servers to R11.0.4.8:

 **Warning:**

- This process is essential. R11.0.4.8 has changes used by R11.1.3 upgrade process.
- Attempting to upgrade to R11.1.3 or higher from any earlier pre-R11.0 release will fail and cause the lose of data.

**Before you begin**

- Back up the servers before upgrading to R11.0.4.8. See [Creating an IP Office backup](#) on page 41.
- For servers already licensed for R11.0, those licenses are valid for R11.0.4.8 and R11.1.3. Otherwise, obtain a set of licenses for R11.0.

**Procedure**

1. You can upgrade to R11.0.4.8 using the standard `iso` file transfer methods. However, you must refer to the IP Office technical bulletins and release notes.
2. Following the upgrade, test and verify the operation of all services, for example:
  - Incoming and outgoing calls.
  - Voicemail services.
  - Avaya one-X<sup>®</sup> Portal for IP Office if used.
  - Media Manager if used.

**Next steps**

- See [Preparing the AWS upgrade volume](#) on page 30.

**Related links**

[Upgrading AWS instances](#) on page 29

---

## 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 matches the instances you are upgrading and click **Create**.
2. Upload the `vmdk` file to the bucket:

Click **Upload** and select the `vmdk` file. Wait until the upload of the file to the bucket has completed.

- 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}"
```

- Note the `ImportTaskID` shown in the output.

```
{
  "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"
}
```

- 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>
```

- Do not continue until the status in the command output shows as "Completed". For example:

```
{
  "ImportSnapshotTasks": [
    {
      "SnapshotTaskDetail": {
        "Status": "completed",
        "Description": "INSTALLER",
        ...
      }
    }
  ]
}
```

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

### Next steps

- See [Upgrading an AWS instance to R11.1.3](#) on page 32.

### Related links

[Upgrading AWS instances](#) on page 29

---

# Upgrading an AWS instance to R11.1.3

## About this task

This process boots the virtual machine from the copied `vmdk` upgrade file. The boot process backs up the server and then upgrades its components to R11.1.3 before restoring the server data.

### **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 used by the upgrade process.

## Before you begin

- You must upgrade the server to IP Office R11.0.4.8.
- After upgrading to IP Office R11.0.4.8, back up all the servers and services before upgrading to R11.1.3. See [Creating an IP Office backup](#) on page 41.

## 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. On the **System** tab, click **Show optional services**.
  - c. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
  - d. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which you will see the services shutting down.
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; the IP Office drive (`/dev/sda1`) and a Media Manager drive (`/dev/sdb`).
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`. 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. When the upgrade has finished, the instance automatically switches off. Wait until the instance status shows switched off:
    - a. Select **Instances**.
    - b. Locate the instance and verify the **Status Checks** column shows "Stopped".
  9. Detach all the current volumes again (the upgrade volume and the original IP Office volumes).
  10. Reattach the original IP Office volume as `/dev/sda1` and, if present, the Media Manager volume as `/dev/sdb`.
  11. When the server has restarted:
    - a. Check that the version shown is R11.1.3. If not, see [Failure to upgrade](#) on page 38.
    - b. Following the upgrade, test and verify the operation of all services:
      - Incoming and outgoing calls.
      - Voicemail services.
      - Avaya one-X® Portal for IP Office if used.
      - If issues are found, see [Known upgrade issues](#) on page 35.
  12. If the server hosts Media Manager:
    - a. Connect to the server's platform view/web control menus using port 7071.
    - b. On the **System** tab, click **Show optional services**.
    - c. For the **Local Media Manager** service, select the service's auto-start checkbox and then start the service. This starts the Media Manager database encryption process:
      - You must let Media Manager complete this one-time encryption process. The time required depends on the number of recordings and the server resources and can take several hours.
      - Interrupting the encryption process, for example restarting the Media Manager service or the IP Office server, can cause issues.
      - When completed, you can check recordings using the Media Manager menus.
  13. If the server is part of a network, continue with the next server.
  14. When satisfied with the operation of the upgraded instance(s), you can delete the upgrade volume.

Upgrading AWS instances

**Related links**

[Upgrading AWS instances](#) on page 29

# Chapter 7: Known upgrade issues

The following are known upgrading issues.

## Related links

[Voicemail call flows missing](#) on page 35

[Call recording archiver other than Media Manager](#) on page 35

[Media Manager does not start or shows "The list is empty"](#) on page 36

[Media Manager settings missing](#) on page 37

[Consolidation warning shown](#) on page 37

[Upgrade Available shown](#) on page 38

[Failure to upgrade](#) on page 38

---

## 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 35

---

## Call recording archiver other than Media Manager

### Condition

IP Office R11.1.3 uses Opus file format for new call recordings. Whilst Media Manager supports this, it is not compatible with other call recording archiving solutions such as ACR or XIMA.

## Solution

1. Using IP Office Web Manager, access the system configuration.
2. Select **Applications > Voicemail Pro - System Preferences** and select the server running the voicemail service.
3. If using a call recording archiving solution other than Media Manager, set the **Archive Solution** setting to **External**.
4. Click **Update**.
5. Restart the IP Office service.

## Related links

[Known upgrade issues](#) on page 35

---

# Media Manager does not start or shows "The list is empty"

## Condition

The Media Manager service does not start or the recordings menu only displays "The list is empty".

Prior to IP Office R11.1, call recordings and call details in the recordings database were stored unencrypted. For IP Office R11.1 and higher, they are encrypted. To do that, after the upgrade to R11.1, when Media Manager is restarted it runs an automatic process to encrypted all existing call details in the recordings database.

## Solution

1. No action is required. The encryption process run by Media Manager is a one-time process that runs automatically following the IP Office R11.1 upgrade.
  - The time required for completion depends on the number of recordings and resources of the server. For example, systems with over a million recordings have been seen to take up to 10-hours.
  - During this time, call recording continues as that function is performed by the voicemail service. The voicemail service can record up to 20GB (4000 hours of recordings) whilst waiting for Media Manager to complete its encryption process.
2. Any interruptions to the encryption process, for example restarting the Media Manager service or the IP Office server, can cause Media Manager to create a new database with no previous call recording details. If you suspect that has happened:
  - a. Restore the Media Manager database from the IP Office R11.0.4.8 backup. Restoring the unencrypted database restarts the database encryption process.

## Related links

[Known upgrade issues](#) on page 35

---

## 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. On the **System** tab, click **Show optional services**.
  - c. If the **Media Manager** service is running, deselect the service's auto-start checkbox and then stop the service.
  - d. Click **Shutdown** and click **Yes**. Wait approximately 90 seconds, after which you will see the services shutting down.

### Related links

[Known upgrade issues](#) on page 35

---

## Consolidation 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 35

---

## 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 35

---

## 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 R11.0.4.8. All upgrades to R11.1.3 must start from R11.0.4.8. When this occurs, the server adds the message "Version found <version> is not 11.0.4.8" 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 40.

**Related links**

[Known upgrade issues](#) on page 35

# Chapter 8: Upgrade logs

The upgrade process creates a number of log files. To raise a support ticket, you must obtain those log files.

Logs	Description
<b>USB upgrade key logs</b> <b>VMDK log files</b>	<p>The USB upgrade key/virtual hard disk stores logs for each server it is used to upgrade:</p> <ul style="list-style-type: none"><li>• /logs/backup_logs.txt This file has a record of the back up actions performed by the upgrade scripts.</li><li>• /logs/restore_logs.txt This file has a record of the restore actions performed by the upgrade scripts.</li></ul>
<b>Media Manager encryption log</b>	<p>Media Manager creates a log file for the encryption process it starts following the upgrade to IP Office R11.1.3:</p> <ul style="list-style-type: none"><li>• /opt/MediaManager/log_encrypt_migration.txt</li></ul> <p>The file contains:</p> <ul style="list-style-type: none"><li>- totalRecords N = The total number of records to be updated.</li><li>- ttttttt = The time taken in milliseconds.</li><li>- All record updated = Added when the encryption process has finished.</li></ul>
<b>Linux-based server logs</b>	<p>In addition to the logs above, to raise a support ticket you require the following log files:</p> <ul style="list-style-type: none"><li>• /opt/webcontrol/log/web.log</li><li>• /var/log/rsyslog</li><li>• /opt/MediaManager/MediaManagerService.log</li><li>• /opt/Avaya/apache-tomcat/logs/MediaManager.log</li><li>• The /opt/MediaManager/Backup/mmm_back.tar.gz if present.</li></ul>

# Chapter 9: 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<sup>®</sup> 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 41

[Enabling HTTP support](#) on page 43

[Creating a remote server link for backup/restore](#) on page 43

[Performing a backup](#) on page 44

[Testing restoration](#) on page 45

[Deleting existing backups](#) on page 45

---

## 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**  $\approx (0.8 \times \text{HDD Capacity}) - 92\text{GB}$  if HDD Capacity  $\geq 160\text{GB}$ , otherwise zero.
  - 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/Unified Communications Module**

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 41

---

## 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 41

---

## 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.
  - For a Unified Communications Module, browse to the IP Office system IP address and select **IP Office Web Manager on UCM**.
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

*Table continues...*

Protocol	Port	Remote Path	Credential
HTTPS	5433	/avaya/backup	None
HTTP	8000	/avaya/backup	None

5. Click **Save**.

#### Related links

[Creating an IP Office backup](#) on page 41

---

## 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 43.

### Procedure

1. Login to IP Office Web Manager on the server.
  - For a server network, do this through the network's primary server.
  - For a Unified Communications Module, browse to the IP Office system IP address and select **IP Office Web Manager on UCM**.
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 41

---

## 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.
  - For a Unified Communications Module, browse to the IP Office system IP address and select **IP Office Web Manager on UCM**.
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 41

---

## 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 45.

 **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 41

# Chapter 10: Windows Server migration

IP Office R11.1 does not support the Windows server based versions of Voicemail Pro and Avaya one-X<sup>®</sup> Portal for IP Office. For IP Office systems using those products Avaya recommends that they switch to Linux-based versions of those services after upgrading to R11.0.

The options are:

1. Install a Unified Communications Module or IP Office Application Server with the Voicemail Pro service enabled.
2. Back up the R11.0 Windows Voicemail Pro data using the Voicemail Pro client.
3. Restore the data onto the Linux-based R11.1 server (the Unified Communications Module or IP Office Application Server).

## Additional Notes

1. By default, R11.1 disables access to the voicemail server using the Voicemail Pro client. To enable client access, in IP Office Web Manager select **Application > Voicemail Pro - System Preferences > Enable Voicemail Pro Client Interface**.
2. There is no process for migration of the Avaya one-X<sup>®</sup> Portal for IP Office settings. If the customer wants to retain any settings such as widgets, you must manually export and then import the widget settings.

## Related links

[Backing up the Windows voicemail server](#) on page 47

[Restoring onto the Linux server](#) on page 48

---

## Backing up the Windows voicemail server

### About this task

Using the Voicemail Pro client, on the Windows Voicemail Pro server create an immediate backup.

### Procedure

1. Open the Voicemail Pro client application and connect to voicemail server.
2. From the **Administration** menu, select **Preferences > General**.
3. Click the **Backup & Restore** tab.
4. Click **Backup Now**.

5. Select all the following settings for a full backup:
  - **Voicemails** - The voice messages received in the user and hunt group mailboxes.
  - **User Greetings & Settings** - The personal and temporary greetings, greeting configuration settings, mailbox configuration settings, outcalling configuration settings, and custom recordings.
  - **Campaigns** - The responses received for campaigns.
  - **Callflows, Modules & Conditions** - The call flows, modules, conditions, and meta information for campaigns.
  - **Module Recordings** - The recordings for the various modules.
  - **System Settings** - The settings like Voicemail Pro settings, COS settings, debug settings, and so on.
6. To save the backup files locally, enter a local file path.
7. Click **OK** to start the backup. Whilst the backup is in progress, the **Restore & Backup** dialog box displays **Abort** instead of **Backup Now**.

#### Related links

[Windows Server migration](#) on page 47

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## Restoring onto the Linux server

### About this task

On a Linux-based voicemail server, you cannot use the Voicemail Pro client to restore previous backups. However, you can copy the backup files to the server and restore them using the web control menus.

### Before you begin

#### Warning:

- **Close any Voicemail Pro client before restoring**

The restoration process requires the voicemail service to restart. That will not occur whilst any Voicemail Pro client is connected to the service.

### Procedure

1. Connect to the Linux-based server using an SSH File transfer tool.
2. Copy the backup folder to the `/opt/vmpro/Backup/Scheduled/OtherBackups` folder on the Unified Communications Module or IP Office Application Server.
3. Using a web browser, login directly to the server's web control menus on port 7071.
4. Click **Settings**, and select the **General** tab.
5. In the **Backup and Restore** section, click **Restore** for the Voicemail service.

6. Select the backup file that you want to restore.
7. Click **OK**.

**Related links**

[Windows Server migration](#) on page 47

# Chapter 11: Additional Help and Documentation

The following pages provide sources for additional help.

## Related links

- [Additional Manuals and User Guides](#) on page 50
- [Getting Help](#) on page 50
- [Finding an Avaya Business Partner](#) on page 51
- [Additional IP Office resources](#) on page 51
- [Training](#) on page 52

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## 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 51).

## Related links

- [Additional Help and Documentation](#) on page 50

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## 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 51.

#### Related links

[Additional Help and Documentation](#) on page 50

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## 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](https://www.avaya.com) 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 50

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## Additional IP Office resources

In addition to the documentation website (see [Additional Manuals and User Guides](#) on page 50), there are a range of website that provide information about Avaya products and services including IP Office.

- [Avaya Website \(https://www.avaya.com\)](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 \(https://sales.avaya.com\)](https://sales.avaya.com)

This is the official website for all Avaya business partners. The site requires registration for a user name and password. Once accessed, you can customize the portal to show specific products and information type that you want to see.

- [Avaya IP Office Knowledgebase \(https://ipofficekb.avaya.com\)](https://ipofficekb.avaya.com)

This site provides access to an online, regularly updated version of IP Office user guides and technical manual.

- [Avaya Support \(https://support.avaya.com\)](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) (<https://support.avaya.com/forums/index.php>)

This site provides forums for discussing product issues.

- [International Avaya User Group](https://www.iuag.org) (<https://www.iuag.org>)

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

- [Avaya DevConnect](https://www.devconnectprogram.com/) (<https://www.devconnectprogram.com/>)

This site provides details on APIs and SDKs for Avaya products, including IP Office. The site also provides application notes for third-party non-Avaya products that interoperate with IP Office using those APIs and SDKs.

- [Avaya Learning](https://www.avaya-learning.com/) (<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 50

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## 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 50

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