



# **Implementing Avaya Aura<sup>®</sup> Experience Portal on a single server**

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# Chapter 1: Introduction

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## Purpose

This document provides information about installing the Avaya Aura® Experience Portal software on a single server machine.

This document is intended for anyone who is involved with installing, configuring, and verifying Avaya Aura® Experience Portal in a single server environment at a customer site. The audience includes and is not limited to implementation engineers, field technicians, business partners, solution providers, and customers.

# Chapter 2: Avaya provided operating system installation

When you purchase an Avaya provided server offer for Avaya Aura® Experience Portal, Avaya supplies the hardware for each server that is a part of the Experience Portal system. With each server, Avaya may also include one or more additional dual in-line memory module (DIMM) cards and Avaya Secure Access Link (SAL) or the Avaya Access Security Gateway (ASG) solution.

The Avaya Aura® Experience Portal bundled server option includes the following:

- The hardware required for the number of Experience Portal servers.
- The Enterprise Linux installer that is used to install the Avaya Enterprise Linux operating system.
- The Experience Portal software that runs on each EPM and MPP server in the system.
- The Orchestration Designer software.

Orchestration Designer is an Eclipse plug-in tool that provides an integrated GUI for application design and implementation. Use Orchestration Designer to create speech applications that conform to the Experience Portal requirements and recommendations.

For details about installing steps for new common server R3 HP DL 360 G9, see [Installing the HP ProLiant DL360 G9 Server](#).

**\* Note:**

Ensure that you downloaded the Avaya Aura® Experience Portal ISO from the Avaya Support Site and burn the ISO to the DVD.

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## Preparing to connect to Avaya Enterprise Linux using a crossover Ethernet cable

To install Avaya Enterprise Linux on a server using a crossover connection from a laptop, you must configure the laptop to establish communication between the laptop and the server.

### Before you begin

- Install the Avaya provided hardware on the server.
- Install additional DIMM cards on the server.

- Ensure that eth1, which is also called port 2, is available for use when you connect to the server using a crossover network cable.
- Obtain the following equipment for the remote connection:
  - Telnet client and secure shell (SSH) client programs installed on the laptop.

**\* Note:**

PuTTY is a popular, free program that can function as both a Telnet client and as an SSH client.

- A crossover Ethernet or a CAT5 network cable that connects the laptop to the Services port on the server, eth1.

### About this task

Use the procedure to prepare the laptop to connect to Avaya Enterprise Linux using a crossover Ethernet cable.

### Procedure

1. Connect a crossover Ethernet (or CAT5) network cable from the laptop to the temporary services port eth1.

**\* Note:**

The eth1 port is also called port 2.

2. Configure the laptop with the following settings:

```
ipaddress=192.11.13.5
```

```
netmask=255.255.255.252
```

3. Verify link connectivity between the system and the server.

- a. At the command line prompt, enter the `ping 192.11.13.6` command.
- b. Check the LED on the temporary Services port and the LED on the network card of the laptop.

The LED light flashes green when the link is connected.

- c. The screen displays the response from the server that shows that the server is operational.

4. Insert the Enterprise Linux Installer software into a DVD drive on the Experience Portal server.

5. Reboot the server so that the server starts from the Avaya Enterprise Linux Installer software.

### Next steps

Install or upgrade Avaya Enterprise Linux.

---

# Installing and configuring Avaya Enterprise Linux

## Before you begin

Install the Avaya-provided hardware at the customer site.

If you install Avaya Enterprise Linux using a direct connection, ensure that you have a keyboard and monitor connected directly to the server machine.

If you use a crossover Ethernet connection from a laptop, ensure you have configured the laptop.

Have the completed [Single server configuration worksheet](#) on page 94 ready to help answer the questions raised during the installation.

### **Important:**

Installation of Avaya Enterprise Linux erases any existing data on the server. Ensure that you do not need any old data before you install.

## Procedure

1. Insert the Enterprise Linux Installer DVD into the DVD drive.
2. Reboot the server so that the server boots from the Enterprise Linux Installer software.
3. If you install from the console:

In the Avaya Enterprise Linux installer Welcome screen, type `1` and press `Enter` at the boot prompt to select the **Fresh Install** option.

### **Important:**

You must enter your selection in the Welcome screen within 60 seconds. Otherwise, the installer runs a search function to locate an Ethernet crossover connection on the `eth1` interface.

The system displays the file transfer message, and then the Warning screen.

4. If you install on a laptop through a crossover Ethernet connection to `eth1`:
  - a. On a command line, enter the `ping -t 192.11.13.6` command to determine when the server completes the reboot.
  - b. After the screen displays the response from the server, type `Ctrl+C` to stop the ping command.
  - c. Open a Telnet client, such as PuTTY, and connect to the IP address `192.11.13.6`.

### **Note:**

The default client is SSH. Ensure that you select telnet.

### **Important:**

Initiate the telnet session within 5 minutes of the server responding to the ping command. If you do not initiate the telnet session, the installer ejects the DVD and reboots the server.

**\* Note:**

To use the Windows command `telnet` as the telnet client:

- a. Enter the `telnet` command.
- b. At the Microsoft Telnet> prompt, enter the `set term vt100` command.
- c. At the Microsoft Telnet> prompt, enter the `open 192.11.13.6` command.

**Note:** When using telnet connection, the install screen might not display the information clearly.

The system displays the file transfer message and then the Warning screen.

5. On the Warning screen, type `Yes` and press `Enter` to continue with the installation.

**\* Note:**

Instead of displaying the Warning screen, the system might display the **No Disks found! /dev/sda missing** error. To resolve this error, type `n` and press `Enter` at the **Eject CD/DVD before rebooting** prompt.

The system displays the Network-related information screen.

6. Enter the following details on the Network-related information screen:

- **Hostname or FQDN:** Type the hostname of the server.
- **IP Address (eth0):** Type a static IP address of the server.
- **SubNetmask :** Type the subnet mask of the server.
- **Gateway:** Type the IP address of the gateway.
- **DNS Domain :** Type the domain name of the server.
- **DNS Server 1:** Type the IP address of the first DNS server.
- **DNS Server 2:** Type the IP address of the second DNS server.
- **DNS Server 3:** Type the IP address of the third DNS server.

7. Press `Enter`.

The system displays the network related information that you have entered.

8. Type `Yes` and press `Enter` to confirm the network related information.

The system displays the Time Zone selection screen.

9. Type the required option and press `Enter` to select a region.

The system displays the list of corresponding time zones.

10. Type the required option and press `Enter` to select a time zone.

The system displays the time zone information that you have specified.

11. Type `c` and press `Enter` to confirm the details.

The system displays the Date and Time screen.

12. Specify the date details:

- day of month
- month
- year

13. Specify the time details:

- hours

 **Note:**

Type the hour in 24 hour format.

- minutes

14. Press `Enter`.

The system displays the Date and Time that you have specified.

15. Type `yes` and press **Enter** to confirm the date and time information.

The system displays the NTP Configuration screen.

16. On the NTP Configuration screen, enter the following details:

- NTP server 1: Type the IP address of the first NTP server.
- NTP server 2: Type the IP address of the second NTP server.
- NTP server 3: Type the IP address of the third NTP server.

 **Note:**

You can leave all the NTP server addresses blank as the Experience Portal system automatically configures NTP on all servers, other than the primary EPM, to synchronize with the primary EPM.

17. Press `Enter`.

The system displays the NTP information that you have specified.

18. Type `yes` and press **Enter** to confirm the NTP details.

The system erases all existing data, and installs Avaya Enterprise Linux. When the installation is complete, the system ejects the DVD and reboots the server.

 **Important:**

Once the server reboots, you can no longer access the server remotely through telnet. You must use an SSH client, such as PuTTY.

PuTTY can function as an SSH client as well as a telnet client.

19. Remove the Avaya Enterprise Linux DVD from the DVD drive.

The installation is complete.

20. **(Optional)** Log in to Linux on the Experience Portal server after the server reboots.

The Enterprise Linux Installer creates the following accounts:

User name	Group	Purpose
root	root	Avaya Services root access
craft	susers	Avaya Services non-root access
cust	susers	Customer non-root access  <b>Note:</b> To enable this account, set your password as mentioned in the next step.
root	root	Customer root access  <b>Note:</b> To enable this account, set your password as mentioned in the next step.

 **Note:**

- The root login is disabled after the installation of Avaya Enterprise Linux. If you need the password for the sroot or the craft account, contact Avaya Services.
- You cannot log in directly as a root user except through the console. Log in as a non-root user and switch to a root account using the `su` command.
- If you install from the console, log in to the local Linux console as sroot.
- If you install through a crossover Ethernet connection to eth1:
  - Use a secure shell (SSH) client, such as PuTTY, to open an SSH connection to the 192.11.13.6 IP address.
  - Log in to Linux as craft and enter the `su - sroot` command to change to the user sroot.

21. **(Optional)** For security reasons, change the passwords of the two Linux customer-related accounts created during the installation.

 **Note:**

If this procedure is performed by an Avaya Services representative, you should either have the customer enter the new passwords, or enter default passwords. If you enter default passwords, share the passwords with the customers and request the customers to change the passwords immediately.

- a. Enter the `passwd root` command.
- b. Type the password and press `Enter`.
- c. Confirm the password at the prompt.
- d. Enter the `passwd cust` command.
- e. Type the password and press `Enter`.
- f. Confirm the password at the prompt.

Avaya provided operating system installation

### **Next steps**

Install the Experience Portal software as described in the *Implementing Avaya Aura Experience Portal on multiple servers* or *Implementing Avaya Aura Experience Portal on a single server*.

# Chapter 3: Customer provided operating system installation

When you purchase the Avaya Aura<sup>®</sup> Experience Portal software-only offer, you must obtain and install Red Hat Enterprise Linux 6.4 64 bit or later minor update. For security update, you must update RH to 6.7.

**\* Note:**

Major new releases such as Red Hat Enterprise Linux Release 7.0 are not supported.

In addition, Red Hat Enterprise Linux Server 6.4 64 bit that you must install:

- Run in 64-bit mode.
- Include the `bash` package.

**\* Note:**

To install the `mod_nss` package in the `Servers/ Web Servers` directory, configure the package to use an alternate port and not use any of the following reserved Experience Portal ports: 80, 443, 8005, 8009, 8080, 8443, and 9443.

For details about obtaining Red Hat Enterprise Linux Server 6.4 64 bit, see the Red Hat website, <http://www.redhat.com>.

For hardware requirements, see *Avaya Aura<sup>®</sup> Experience Portal Overview and Specification*.

If you have already installed Red Hat Enterprise Linux Server 6.4 64 bit and want to verify that you have the correct RPM versions, see [Identifying RPM issues](#) on page 79.

**\* Note:**

Before installing Red Hat Enterprise Linux Server 6.4 64 bit for the software-only offer, you must install and integrate all the new hardware into the system.

## Related links

[Installing Red Hat Enterprise Linux Server on a single server](#) on page 16

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# Installing Red Hat Enterprise Linux Server on a single server

## Before you begin

Have the completed [Single server configuration worksheet](#) on page 94 ready to help answer the questions raised during the installation.

## About this task

The default values provided for the Red Hat Enterprise Linux Server installation are suitable from an Experience Portal perspective. However, there are instances where you must select values other than the default. The following steps are guidelines to installing Red Hat Enterprise Linux Server and provide instructions for instances when the default values are not suitable for Experience Portal.

## Procedure

1. Reboot the server so that it boots from the media of a supported version of Red Hat Enterprise Linux Server.

The system displays the **Welcome to Red Hat Enterprise Linux** screen.

2. Select the **Install or upgrade an existing system** option.
3. Select **English** as the language to use during the installation process.
4. Select the U.S. English keyboard option.
5. Select **Basic Storage Devices** to install Red Hat Enterprise Linux Server.
6. Select the **Fresh Installation** option.
7. Enter a hostname for the system.
8. To configure the network:
  - a. Ensure that `eth0`, the main Ethernet interface, is enabled.
  - b. Select **Connect automatically** to start the connection automatically when the system boots.
  - c. On the **IPv4 Settings** tab, configure the following settings using the values specified on the installation worksheet:
    - Static IP address
    - Netmask
    - Gateway
    - DNS servers
    - Search domains
9. Enter the applicable timezone.
10. Enter the root password. Ensure that you enter the value that you have specified in the installation worksheet.
11. Select the **Use All Space** option on the partitioning screen.

12. Select **Basic Server** as the installation type as **Basic Server** is the recommended option.
13. **(Optional)** Select the **Customize now** option on the screen to customize the installation.

**\* Note:**

To include Red Hat Enterprise Linux Server languages other than English, press the **Customize now** button and install the languages.

14. Complete the installation and reboot the system.
15. After the system reboots, complete the post-installation configuration procedures.
  - a. Set the system clock.
  - b. Create a non-root account. Ensure that you use the value that you have specified in the installation worksheet.

**\* Note:**

After the Experience Portal software is installed, use a non-root account to log in and then change to `root` account by using the `su` command.

- c. Disable the firewall.
  - d. Disable SELinux.
16. Configure Avaya Secure Access Link (SAL) or the Avaya Access Security Gateway (ASG) solution if you have purchased a maintenance agreement with Avaya services, and the server is the Primary EPM server.

### Next steps

After you successfully install Red Hat Enterprise Linux Server, you can perform the software installation prerequisite tasks on this server as described in [Software installation on a single server prerequisites overview](#) on page 19.

### Related links

[Customer provided operating system installation](#) on page 15

# Chapter 3: Partition requirements for hard drive

## Recommended partitioning scheme

Consider either of the following options when partitioning the hard drive to ensure Experience Portal files are installed properly:

- All the directories, including /opt and /var are under the main root (/) partition.
- If you have separate root and /var partitions, ensure that minimum 20 to 40 gigs are in the main root partition or in /opt, if it is a separate partition. The rest of the available free space is allocated to the /var partition.

 **Note:**

The space in the /var partition should be as large as the space of the root partition.

# Chapter 4: Avaya Aura Experience Portal software installation prerequisites

## Software installation on a single server prerequisites overview

Complete these tasks before you install the Avaya Aura® Experience Portal software on a single server.

✓	Description
	Make sure that the hard drive is partitioned properly in order to create sufficient space for Experience Portal software installation. For more information, see <i>Partition requirements for hard drive</i> in <i>Administering Avaya Aura® Experience Portal</i> .
	Make sure that you have access to the Avaya Aura® Experience Portal site-specific licensing information from Avaya. Make sure that you have access to the Avaya Aura® Experience Portal site-specific licensing information from Avaya, as described in the <i>License Requirements</i> topic in <i>Upgrading to Avaya Aura® Experience Portal 7.1</i> .
	Verify that you can access the planned Experience Portal server using at least one of the following methods: <ul style="list-style-type: none"><li>• _____ A computer on the customer's network that has an SSH client to reach the target system</li><li>• _____ A keyboard, monitor, and mouse, attached directly to the target system</li><li>• _____ A cross-over cable that connects a second computer that has a keyboard, monitor, mouse, and an SSH client.</li></ul>
	Disable any firewall or anti-virus software on the target systems.
	Check to see if there are any Experience Portal patches available on the Avaya online support website, <a href="http://support.avaya.com">http://support.avaya.com</a> . If there are, download those patches before you begin the installation.
	Verify that all servers are running the correct version of Avaya Enterprise Linux or Red Hat Enterprise Linux as described in <a href="#">Verifying the Linux version number</a> on page 20.

*Table continues...*

✓	Description
	Verify that the planned Experience Portal server can communicate with the application server, speech servers, and the PBX. For details, see <a href="#">Verifying communication between the Experience Portal server and the external systems</a> on page 20.
	Make sure that none of the mount points are stale or hung. For details, see <a href="#">Checking for stale or hung mount points</a> on page 23.
	To connect your Experience Portal system to an external Oracle database, you must first obtain the JDBC driver from Oracle. For details, see <a href="#">Installing Oracle JDBC driver</a> on page 23.

---

## Verifying the Linux version number

### Procedure

1. On the Experience Portal server, log in to Linux as any user.
2. If you use Avaya Enterprise Linux, enter the `swversion` command.

The result should state that it is version RH6.7.64-AV02EP71 or later (if the operating system is upgraded) or RH6.4.64-AV13EP7 or later (if the operating system is not upgraded). If this version is not correct, contact Avaya technical support.

**+ Tip:**

If you are not sure which operating system a server is using, enter the `swversion` command. If the command returns information about your operating system, the server is running Avaya Enterprise Linux.

3. If you are using Red Hat Enterprise Linux, enter the `rpm -aq | grep redhat-release` command to ensure that the Linux build version is correct.

The result should state that it is build `redhat-releaseserver-6Server-6.7.0.3.el6.x86_64`. If this build is not correct, please obtain the latest 6.7 build from Red Hat.

---

## Verifying communication between the Experience Portal server and the external systems

### About this task

The planned Experience Portal server must have a static IP address and hostname, and it must be able to communicate with the external systems using either:

- A Domain Name Server (DNS) to translate hostnames to their corresponding IP addresses
- The `/etc/hosts` file to map the IP addresses and hostnames

## Procedure

1. On the Experience Portal server, log in to Linux as any user.
2. Verify the primary EPM server's IP address and hostname:

- a. Enter the `hostname -i` command.

This command should return the server's IP address and not `127.0.0.1`. If this check fails, you need to manually map the hostnames as described in *Implementing Avaya Aura® Experience Portal on multiple servers* on <http://support.avaya.com>.

- b. Enter the `hostname -s` command.

This command should return the server's hostname and not `localhost`. If both these checks fails, you need to manually map the hostnames as described in *Implementing Avaya Aura® Experience Portal on multiple servers* on <http://support.avaya.com>.

3. Verify that the EPM server can communicate with all the external servers:

- a. Enter the `ping -c 4 <server_hostname>` command, where:

`<server_hostname>` is the hostname of the one of the following external components attached to your Experience Portal system:

- A PBX server.
- An application server.
- A speech server.
- Communication Manager.
- Avaya SIP Enablement Services.

- b. Wait for the system to respond with the contact information.

- c. If this check fails, enter the `ping -c 4 <server_ipaddress>` command, where:

`<server_ipaddress>` is the IP address of the server whose hostname you specified in the previous `ping` command.

- d. Wait for the system to respond with the contact information.

- e. If both these checks fails, you need to manually map the hostnames as described in *Implementing Avaya Aura® Experience Portal on multiple servers* on <http://support.avaya.com>.

- f. Repeat this procedure for each external server in your Experience Portal system.

---

# Manually mapping hostnames to connect the Experience Portal server with other servers in the system

## About this task

To manually map hostnames to IP addresses without a DNS, you need to edit the `/etc/hosts` file on the planned Experience Portal server so that it includes an entry for each speech server, application server, and PBX in the Experience Portal system.

## Procedure

1. Log into Linux on the planned Experience Portal server.
2. Back up the original file prior to editing it by entering the `cp /etc/hosts /etc/hosts.bak` command.
3. With the ASCII text editor of your choice, open the `/etc/hosts` file.
4. Make sure that the first line contains `127.0.0.1 localhost localhost.localdomain`, with the IP address and hostnames separated by spaces or tabs.

5. Create a new line for each server in the Experience Portal system using the format `IP_address hostname1 hostname2...` where:

`IP_address` is the IP address of a server in the Experience Portal system and `hostname1 hostname2...` is one or more hostnames, separated by tabs or spaces, to associate with the IP address.

You should have one entry for each of the following types of servers used in your Experience Portal system:

- All PBX servers.
- All application servers, unless you plan to install the application server on the Experience Portal server.
- All speech servers.
- Communication Manager
- Avaya SIP Enablement Services

6. Save and close the file.

## Example

The following shows a properly-formatted `/etc/hosts` file:

```
127.0.0.1 localhost.localdomain localhost
123.123.123.123 asr_server.domainname.com asr_server
123.123.123.124 tts_server.domainname.com tts_server
123.123.123.125 app_server.domainname.com app_server
123.123.123.126 pbx_server.domainname.com pbx_server
```

---

## Checking for stale or hung mount points

If you have file systems saved on the Experience Portal servers, check if the mounts points are stale or hung. Stale or hung mount points can cause RPM installations to not respond while installing the Experience Portal software.

### About this task

Use this procedure to check for stale or hung mount points on the Experience Portal servers.

### Procedure

1. On the Experience Portal server, log in to Linux as any user.
2. Enter the `df` command.

If the server:

- Responds to the command, the mount points are working.
- Does not respond to the command, then a mount point is stale or is not responding.

 **Note:**

Run the `umount` command to unmount any stale or hung mount points.

---

## Installing the Oracle JDBC driver

### Before you begin

To connect your Experience Portal system to an external Oracle database, you must first obtain the JDBC driver from Oracle. The Oracle JDBC driver is not shipped with Experience Portal.

Experience Portal supports the following Oracle Releases:

- Oracle 11g Release 2: Download the Oracle JDBC driver from <http://www.oracle.com/technetwork/apps-tech/jdbc-112010-090769.html>. Download files `ojdbc6.jar` and `orai18n.jar`.
- Oracle 12c Release 1: Download the Oracle JDBC driver from <http://www.oracle.com/technetwork/database/features/jdbc/default-2280470.html>. Download files `ojdbc7.jar` and `orai18n.jar`.

 **Important:**

Web browsers might change the file extension of the files to `.zip` when the files are downloaded. Rename the files to `ojdbc6.jar`, `ojdbc7.jar` and `orai18n.jar`.

Avaya recommends the following for better results:

- Use Oracle 11g drivers if you are using Experience Portal 7.0.2 or below.
- Use Oracle 11g drivers when you are upgrading to Experience Portal 7.1 and connecting to an Oracle 11g database.

- Use Oracle 12c drivers for fresh installation of Experience Portal 7.1 and connecting to either an Oracle 11g or 12c database.
- Use Oracle 12c drivers when you are upgrading to Experience Portal 7.1 and connecting to an Oracle 12c database.

### About this task

To have the Oracle JDBC driver installed by the Experience Portal install program, perform the following steps after you install or upgrade Linux. It is recommended that you perform the procedure before you install or upgrade Experience Portal.

The procedure also provides information about how to install the Oracle JDBC driver after you install or upgrade Experience Portal.

### Procedure

1. Log in to Linux on the Primary Experience Portal server as a root user.
2. Run the `mkdir ~/OracleJDBC` command to create the `~/OracleJDBC` folder.
3. Copy the `ojdbc6.jar/ojdbc7jar` and `orai18n.jar` driver files to the `~/OracleJDBC` folder.

#### Important:

Do not delete the Oracle JDBC driver files from the `~/OracleJDBC` directory after you install or upgrade Experience Portal. You will need the files if you reinstall or upgrade Experience Portal.

4. If you install the Oracle JDBC driver after you install or upgrade the Experience Portal server, you must do the following:
  - a. Run the `/sbin/service vpms stop` command to stop the vpms service.
  - b. Run the `cd $AVAYA_HOME/Support/Database` command to navigate to the appropriate directory.
  - c. Run the `bash InstallOracleJDBC.sh` command to install the JDBC driver.

#### Important:

Run the `InstallOracleJDBC.sh` command only after you download the Oracle driver in the `~/OracleJDBC` directory on the server.

- d. Run the `/sbin/service vpms start` command to start the vpms service.
5. Repeat the procedure on each Auxiliary Experience Portal server.

# Chapter 5: Installing Experience Portal

---

## Installing the Avaya Aura<sup>®</sup> Experience Portal software

### Before you begin

- Complete the [Single server configuration worksheet](#) on page 94 and have it available to help answer the questions raised during the installation.
- Before you install the software, read the Avaya Aura<sup>®</sup> Experience Portal release notes on the Experience Portal installation DVD under `Documentation`. These release notes contain information about the product that is not included in the formal documentation set.
- Download any patches for Avaya Aura<sup>®</sup> Experience Portal Release 7.1 from the Avaya Support Web site at <http://support.avaya.com>.
- Make sure you have completed the software prerequisites described in [Software installation on a single server prerequisites overview](#) on page 19.
- Ensure that you have the Experience Portal installation DVD that is shipped with the Experience Portal product or that you know where on the network the Experience Portal installation files reside.

### Procedure

1. Log into the server on which you want to install the Experience Portal software.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Insert the Avaya Aura<sup>®</sup> Experience Portal 7.1 software installation DVD into the DVD drive of the server.

#### Tip:

These instructions assume that you are going to access the Experience Portal installation DVD by mounting the appropriate DVD drive on the target system. If you want to access the installation DVD files from a shared network directory or a local directory, you can copy the files from the Experience Portal installation DVD to that

directory. However, that directory must be readable by all users on the system. If the directory is only readable by the root or `root` user, the installation script will encounter errors and will not complete successfully.

3. Mount the Avaya Aura® Experience Portal 7.1 software installation DVD. The `mount` command depends on the server's hardware and operating system.

- If you are working with Avaya Enterprise Linux, mount the DVD by entering the `mount /mnt/cdrom` command, where `/mnt/cdrom` is the mount point typically associated with the DVD drive in the `fstab` file.
- If you are working with a supported version of Red Hat Enterprise Linux Server, to mount the DVD:
  - Run the `mkdir /media/cdrom` command.

 **Note:**

This command is required only if the `/media/cdrom` mount point does not exist.

- Run the `mount /dev/cdrom /media/cdrom` command.

 **Warning:**

When Red Hat Enterprise Linux Server automatically mounts the DVD, the files on the DVD are not executable. You must manually mount the Experience Portal installation DVD using the commands shown above.

If the previous installation directory is different from the default directory, you must type the old path prior to pressing the enter key.

4. Change to the mount point directory.
5. Enter the `bash installvp` command and press `Enter` to start the installation script.

The system displays the message `For the Experience Portal installer to run, 32-bit glibc must be installed., if you have not installed 32-bit glibc.`

6. Type `Y` or press `Enter` to proceed with the 32-bit `glibc` installation.
7. On the Installation Destination screen, if you want to:

- Use the default `/opt/Avaya/ExperiencePortal` installation directory, press `Enter`.
- Change the directory, type the new installation directory name and press `Enter` to change the displayed directory.

Specify an absolute directory path containing only standard English alphanumeric characters and the symbols `/` (forward slash), `_` (underscore), `-` (hyphen), `~` (tilde), or `.` (period).

 **Important:**

When choosing installation options, wait for the next prompt before pressing a key. The installation stores your key presses in a buffer and enters all the key presses after the

current processing completes. For example, if you press the `Enter` key repeatedly while the system is performing its prerequisite checks, you might unintentionally skip options you want to change. Use the **Previous** option on any screen to go back and change your earlier choices.

8. Press `Enter` to move to the next screen.
9. On the Experience Portal Feature Selection screen:
  - a. Type `2` and press `Enter` to select **MPP**.  
The screen refreshes with **EPM**, **MPP**, and **Documentation** selected.
  - b. Press `Enter` to confirm your selections.
10. Press `Enter` to move to the next screen.
11. On the Version Confirmation screen, verify that:
  - The **Install Type** says **Full Install** for all selected features.
  - The **New Version** column indicates that you are installing release 7.1.
12. Press `Enter` to move to the next screen.
13. Read through the end user license agreement.
14. On the final End User License Agreement page, type `1` and press `Enter` to select option **1 - I accept the terms of the license agreement**.  
The screen refreshes with **1 - I accept the terms of the license agreement** as the selected option.
15. Press `Enter` to accept the agreement.
16. Press `Enter` to move to the next screen.  
Experience Portal automatically starts the Prerequisite Checker, which analyzes your system's hardware and operating system configuration.
17. After the configuration analysis is complete, the Prerequisite Checker displays a message stating whether all prerequisite checks passed followed by the first Prerequisite Status page. Press `Enter` to view the rest of the Prerequisite Status pages.  
  
If any of the prerequisite installation fails, examine the Prerequisite Status pages carefully to determine which checks failed. You must correct these issues before you can continue with this procedure.
18. When all prerequisite checks pass, press `Enter` to move to the next screen.  
Experience Portal automatically starts the Prerequisite Installer, which attempts to install the required software on the Experience Portal server.
19. After the Prerequisite Installer completes installing the required software, the installer displays the Installation Status pages. Press `Enter` to view the rest of the Installation Status pages.

If any prerequisite installations fail, examine the Installation Status pages carefully to determine which installations failed. You must correct these issues before you can continue with this procedure.

20. When all prerequisites are successfully installed, press `Enter` to move to the next screen.

21. On the EPM Type screen, press `Enter` to accept the default option **1 - Primary EPM**.

**!** **Important:**

This release of Experience Portal does *not* support the combination of a Auxiliary EPM and an MPP. Therefore, you can only install a Primary EPM in a single server system.

22. Press `Enter` to move to the next screen.

23. On the EPM Administrator screen:

- a. Type the name you want to use for a EPM user account that will have access to all Experience Portal management functions and press `Enter`.

The Experience Portal administrator uses this account to log in to the EPM Web interface to administer the Experience Portal system. The account is assigned the Administration user role as well as the Auditor and User Manager user roles. For details about User Roles, see *Administering Avaya Aura® Experience Portal* on <http://support.avaya.com>.

- b. Type the password for this account and press `Enter`.

**\* Note:**

All passwords you enter during the installation must:

- Be at least eight characters in length.
- Contain at least one alphabetic character and one digit.
- Not be the same as the associated user name.

- c. To confirm the password, type the password again and press `Enter`.

24. Press `Enter` to move to the next screen.

25. You can create a PostgreSQL database user account that can read the report data in the Experience Portal database. If you:

- Want to create the report reader database account:

- a. Type `1` and press `Enter`.

- b. Press `Enter` to confirm your selection.

- c. To use the account name in square brackets (`[ ]`), press `Enter` at the installation prompt. Otherwise, type a unique user name for the account and press `Enter`.

- d. Type a password for the account and press `Enter`.

- e. Confirm the password by typing the password again and press `Enter`.

- Do not want to create the report reader account:
  - a. Verify that option **2 - No** is selected. If it is not selected, type `2` and press `Enter`.
  - b. Press `Enter` to confirm your selection.

**\* Note:**

This user account can only read those tables in the Experience Portal database that store report data. Speech application developers can use this account to log in to the database to create custom reports using any SQL-enabled report generation tool.

26. Press `Enter` to move to the next screen.

27. On the Database Login for Auxiliary EPM screen, you can specify whether you want to create a PostgreSQL user account for the optional Auxiliary EPM server.

This account allows each Auxiliary EPM server limited access to the main Experience Portal database, and it is required if you plan to configure an Auxiliary EPM server.

- If you want to create the Auxiliary EPM login account:
  - a. Type `1` and press `Enter`.
  - b. Press `Enter` to confirm your selection.
  - c. Type the password for this account and press `Enter`.
  - d. Confirm the password by typing it again and pressing `Enter`.
- If you do not want to create the Auxiliary EPM account:
  - a. Verify that option **2 - No** is selected. If it is not selected, type `2` and press `Enter`.
  - b. Press `Enter` to confirm your selection.

28. Press `Enter` to move to the next screen.

29. On the Product ID screen, type the Product ID created with the Automatic Registration Tool (ART) for this Experience Portal system and press `Enter`.

The notification feature uses the Product ID to generate SNMP traps. SNMP traps are unsolicited notifications of significant events from an SNMP agent to an SNMP manager. The SNMP agent resides on a managed network device.

30. Press `Enter` to move to the next screen.

31. Experience Portal uses the ssl protocol to establish a secure connection between its servers. This connection requires a security certificate that can be created by Experience Portal or purchased from a third-party company. On the Security Certificate screen:

- If you want Experience Portal to create a security certificate:
  - a. Verify that option **1 - Create a new certificate for this server** is selected. If not, type `1` and press `Enter`.
  - b. Press `Enter` to confirm that selection.

**\* Note:**

The Experience Portal installer generates and installs a SHA256 2048 bit server certificate by default. The installer also generates and installs a SHA256 2048 bit EPM Root certificate.

- If you want to import a self-signed or third party certificate, ensure the following:
  - The certificate is in PKCS12 format. The certificate must be formatted as a PKCS#12 file. A PKCS#12 file always includes a certificate and the corresponding key, and the certificate is encrypted and requires a password. If the certificate is not self-signed then the PKCS#12 file must include the CA certificates.
  - If the “Extended Key Usage” is specified in the X509.V3 certificate extension, specify “Server Authentication” (also called “serverAuth”) and Client Authentication” (also called “clientAuth”), for the usage.
  - The certificate resides on the local server or on an NFS-mounted drive that is locally accessible.

To import a self-signed or third party certificate, do the following:

- a. Verify that option **2 - Import a certificate from a specified location** is selected. If not, type `2` and press `Enter`.
  - b. Press `Enter` to confirm that selection.
  - c. Type the full file path and name of the security certificate and press `Enter`.  
The screen displays the location that you entered for your verification.
  - d. Type the password for the security certificate and press `Enter`.
32. Press `Enter` to move to the next screen.
  33. On the Security Certificate Verification screen, verify the security certificate and press `Enter` to move to the next screen.
  34. On the Pre Installation Summary screen, verify the installation information and press `Enter` to install the Experience Portal software.

Experience Portal displays the Installation Progress screen and begins installing the software. During the install, it displays messages indicating its progress.

The installation process can appear completed or stopped even though it is still processing and installing the software. Wait until Experience Portal displays the Post Installation Summary screen.

35. On the Post Installation Summary screen, verify that the **Installation Progress Bar** has reached 100% and that the message `...done installing feature_name` appears for each feature that you selected on the Experience Portal Feature Selection screen.

**\* Note:**

If the **Installation Progress Bar** on the Installation Progress screen stops at 25% and the Post Installation Summary screen states that no summary information could be

found, see *Upgrading to Avaya Aura® Experience Portal 7.1* on <http://support.avaya.com>.

36. Press `Enter` to end the installation script.

During the installation process, Experience Portal creates several log files that you can use to verify what happened during installation. When the installation process is complete, Experience Portal moves these logs to the standard log directory and displays the exact path on the screen. You can view the detailed logs at `$AVAYA_HOME/logs/install_<date>`. For more information, see *Implementing Avaya Aura® Experience Portal 7.1 on multiple servers* on <http://support.avaya.com>.

37. Enter the `/sbin/service mpp status` command to verify that the MPP system manager is running.

The MPP server returns the message `mppsismgr (pid <pid>) is running, where <pid> is the process id.`

38. Check the status of the `vpms` service by entering the `service vpms status` command.

If the `vpms` service is running properly, the command displays messages indicating that the `tomcat`, `SL`, and `ActiveMQ` services are all running. The command ends with the message: `Overall Status: VPMS is running.`

39. To verify that NTP is operating properly on the server, enter the `/usr/sbin/ntpq -np` command.

A status message similar to the following is displayed:

```

  remote          refid          st t when poll reach  delay
offset jitter
=====
*127.127.1.0      73.78.73.84      5 1   4   64  377   0.000
0.000   0.001

```

Ensure that:

- The remote IP address is `*127.127.1.0`.
- The jitter value is *not* 4000.

40. To unmount and eject the DVD:

- a. Change the directory to a location that is outside the mount point. For example, enter the `cd /` command to change to the root directory.
- b. Unmount the DVD as described in the server documentation.
- c. To eject the Experience Portal installation DVD, press the button on the DVD drive or enter the `eject` command.

41. Load the environment variables created during the installation by logging out of Linux and then logging back in.

- a. Log out of the Linux system.

- b. If you are logged in remotely, log back in to Linux by entering a non-root user name and password at the prompts, and log back in as root or `sroot`.
  - On an Avaya Enterprise Linux server, enter the `su - sroot` command.
  - On a Red Hat Enterprise Linux Server, enter the `su -` command.
- c. If you are logged in directly through a console, log in to the local Linux console as `sroot`.

### Next steps

- Install any required patches that you download from the Avaya online support Web site, <http://support.avaya.com>.
- Install the Tomcat application server. For more information, see [Optional: Single server Avaya Aura Experience Portal and Application server configuration](#) on page 35.
- Configure and test the Experience Portal system as described in [basic system configuration overview](#) on page 46.
- For security reasons, change the password of the EPM user account created during the installation as described in the *Changing your account password* topic in the *Administering Avaya Aura® Experience Portal* guide. The Experience Portal administrator uses this account to log in to the EPM web interface to administer the Experience Portal system.

---

## Directory details of the EPM system components

Most Experience Portal components and log files are located in the directory that you specify during installation. However, several components cannot be relocated and are stored in fixed paths even if you specify a path that is different from the default installation directory.

The following table describes some of the components that are stored in fixed paths.

Standard RHEL packages that might be installed with or used by Experience Portal, such as Apache and NTP, are not included in this list.

Component	Directory
Experience Portal Manager web application	/opt/Tomcat/tomcat/webapps/VoicePortal
Avaya Aura® Experience Portal Management web services	/opt/Tomcat/tomcat/webapps/axis2
Application log manager	/opt/Tomcat/tomcat/webapps/axis
Alarm manager	/opt/Tomcat/tomcat/webapps/axis
Network log manager	/opt/Tomcat/tomcat/webapps/axis
Avaya License Manager	The co-located WebLM is installed in the /opt/Tomcat/tomcat/webapps/WebLM directory.

*Table continues...*

Component	Directory
	<p> <b>Note:</b></p> <p>If you use an external WebLM, the license manager may be installed in a different directory on the external system.</p>
Experience Portal database	<p>The Postgres files are installed in the /var/lib/pgsql directory.</p> <p> <b>Note:</b></p> <p>Most of the database data is in the /var/lib/pgsql/data directory.</p>
Java	/usr/java
Tomcat for EPM and HTML	/opt/Tomcat
Tomcat for SMS and Email Processor	/opt/MMServer
Apache Axis: web services container	/opt/Tomcat/tomcat/webapps/axis
Apache Axis2: Web services container	/opt/Tomcat/tomcat/webapps/axis2
Postgres Database	/var/lib/pgsql
Experience Portal Backup	/opt/Avaya/backup
Install Agent	/opt/Avaya/InstallAgent
Core Services	/opt/coreservices, /opt/Avaya/CoreServiceConfig, /opt/Avaya/CoreServiceInstall

## User accounts created during Experience Portal software installation

During Experience Portal software installation, the following user accounts are created for use on various systems to support Experience Portal operation and management.

System	User name	Password	Purpose
EPM Web interface	User defined	User defined	The Experience Portal administrator uses this account to administer and configure the Experience Portal system.
PostgreSQL on the primary and optional auxiliary EPM server	postgres	Automatically generated	<p>Since Experience Portal 7.0, this password is automatically generated in the database configuration file. This password is no longer user defined as in the case of previous releases.</p> <p>EPM uses this account to log in to the Experience Portal database to store and retrieve data.</p>

*Table continues...*

System	User name	Password	Purpose
			<p>The database administrator uses this account to access the Experience Portal database to install new updates or patches and perform database backups.</p> <p> <b>Note:</b></p> <p>If you make changes to the Experience Portal database, the EPM might not function properly, and data might be lost. You must then reinstall the EPM software.</p>
PostgreSQL on the primary and optional auxiliary EPM server	User defined Default user name is: reportwriter	User Defined	This user account can only read those tables in the Experience Portal database that store report data. Speech application developers can use this account to log in to the database to create custom reports using any SQL-enabled report generation tool.
PostgreSQL on the optional auxiliary EPM server	User defined Default user name is: report	User defined	This user account can only change the data in the tables that store report data in the Experience Portal database on the Auxiliary EPM server.
Linux on the EPM server	postgres	User defined	<p>Used to run the <code>psql</code> tool for interactive database access and internally used to run database processes.</p> <p> <b>Note:</b></p> <p>If you make manual changes to the Experience Portal database, the EPM might not function properly, and data might be lost. You must reinstall the EPM software.</p>
Linux on the EPM and MPP servers	avayavp	Login disabled	Used internally to run some Experience Portal processes.
	apache (UCID 48)	Login disabled	This account is created when the <code>httpd</code> RPM is installed and it is used by the Apache server.

# Chapter 6: Optional: Installing a Tomcat application server

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## Optional: Single server Avaya Aura<sup>®</sup> Experience Portal and Application server configuration

If you install Avaya Aura<sup>®</sup> Experience Portal, EPM, and the media server software on the same server, you can also install a Tomcat application. Avaya supports Tomcat 8.0.26 or later versions.

Avaya Aura<sup>®</sup> Experience Portal includes an installation script for the Tomcat 8.0.32 Tomcat 8.0.26 application server. For details, see [Optional: Installing a Tomcat 8.0.32 application server on the Experience Portal server](#) on page 36. You can also do a manual installation of the Tomcat 8.0.26 or later application. For details, see [Optional: Manually installing a Tomcat application server on the Experience Portal server](#) on page 38.

The performance of the EPM and media server software can have a negative impact if the applications running on the system require more memory. If the applications are memory intensive, you must install the Application server on a different server.

The server must have sufficient disk space for the EPM and media server software as well as any logs created by the applications. If the applications generate a large number of log files, ensure that you monitor the available disk space carefully. For information about generating an alarm when disk space usage exceeds a given percentage, see *Administering Avaya Aura<sup>®</sup> Experience Portal*.

### Requirements

To install an Application server on the Experience Portal server:

- Do not modify or gain access to the `VoicePortal` database or the version of Postgres that Experience Portal installs and uses.
- Do not modify or reconfigure the JDK installed during the Experience Portal software installation.
- Do not install another version of JDK or JRE on the Experience Portal system. Instead, you must use the version installed by Experience Portal.
- Experience Portal installs Tomcat server. You cannot:
  - Modify or reconfigure this Tomcat server. You must install a separate Tomcat server as an application server.
  - Deploy any applications on this Tomcat server. You must deploy Tomcat server as an application server.

- Ensure that the Application server does *not* use any of the following reserved Experience Portal ports: 80, 443, 3005, 3009, 4080, 4443, 6080, 6443, 8005, 8009, 8080, 8443, 9443, 10443, 11443, 52080, 52233.
- Ensure that you configure the applications to use the same ports as the Application server. By default, the Avaya-supplied Application server installation script sets the port for non-SSL connections to 5080 on Windows and to 7080 on Linux and the port for SSL connections to 5443 on Windows and 7443 on Linux.
- Do not modify or upgrade the PHP software that Experience Portal installs unless Avaya recommends the modification or upgrade.
- Do not modify the Apache `httpd.conf`, `ssl.conf` or `httpd-ssl.conf` files. To create an Apache configuration file, you must make sure that the settings of the custom `conf` file do not conflict with the Experience Portal configuration files `mpp.conf`, `ssl.conf`, `vpms.conf` and `vpms_*.conf`.

---

## Optional: Installing a Tomcat 8.0.32 application server on the Experience Portal server

If you cannot use a dedicated server for the Application server associated with the Experience Portal system, you can install a Tomcat application server on the same server as the Experience Portal software.

### Before you begin

- Install the Experience Portal software on the server. For more information, see *Implementing Avaya Aura® Experience Portal on a single server*.
- Ensure that you have the Experience Portal installation DVD that is shipped with the Experience Portal product or that you know where on the network the Experience Portal installation files reside.

### Procedure

1. Log in to Linux on the Experience Portal server in one of the following ways:

- Log in to the local Linux console as `sroot`.
- Log in remotely as a non-root user and then change the user to `sroot` by running the `su - sroot` command.

You can also log in to Linux locally as `root` or you can log in remotely as a non-root user and then change the user to `root` by running the `su -` command.

2. Navigate to the `Support/AppServer` directory in the Experience Portal installation directory by running the `cd $AVAYA_HOME/Support/AppServer` command.

`$AVAYA_VPMS_HOME` is the environment variable pointing to the name of the installation directory specified during the EPM software installation. If Linux does not recognize this environment variable, see *Implementing Avaya Aura® Experience Portal on multiple servers* or *Implementing Avaya Aura® Experience Portal on a single server*.

**+ Tip:**

This script is also available in the `Support/AppServer` directory of the Experience Portal installation DVD.

3. Run the installation script by running the `bash InstallAppServer.sh install_dir` command, where `install_dir` is the name of the directory in which you want to install the Application server.

For example, to install the Application server in the `/opt/AppServer` directory, run the `bash InstallAppServer.sh /opt/AppServer` command.

4. Follow the prompts that the script displays.

When the installation is complete, the system displays the message `Application Server Installation complete.`

**\* Note:**

The installation script also registers the Application server as a Linux service so that the Application server restarts whenever the server restarts.

5. Start the Application server by running the `/sbin/service appserver start` command.
6. Check the server status by running the following command: `/sbin/service appserver status.`

The server must respond that the appserver is running.

7. To administer the Tomcat server from the Tomcat Manager Web interface, you must add a Tomcat user as specified in [Adding Tomcat user accounts](#) on page 41.

**\* Note:**

You can gain access to the Tomcat Manager Web Interface from the **System Management > Application Server** menu in EPM with the Tomcat user account.

8. To administer the server, open a Web browser and go to `http://EPM-server:7080/`, where `EPM-server` is the hostname or IP address of the Experience Portal server.

## Next steps

After you install the Application server, you must deploy the speech applications on the Application server as described in the Application server documentation.

---

## Optional: Manually installing a Tomcat application server on the Experience Portal server

Experience Portal includes an automated installation script for the Tomcat 8.0.26 application server. You can use this script or manually install either the Tomcat 8.0.26 or later application server.

### Before you begin

- Install the Experience Portal software on the server.
- Experience Portal includes the Tomcat installation tar file for Tomcat 8.0.26. To install a later build of the 8.0 Tomcat application server, download the appropriate Tomcat installation tar file from the Apache website <http://jakarta.apache.org/tomcat/> and ensure that the file is available.

### About this task

#### Note:

For details about the automated installation script, see [Optional: Installing a Tomcat 8.0.32 application server on the Experience Portal server](#) on page 36.

### Procedure

1. Log in to Linux on the Experience Portal server in one of the following ways:
  - Log in to the local Linux console as `sroot`.
  - Log in remotely as a non-root user and then change the user to `sroot` by running the `su - sroot` command.

You can also log in to Linux locally as `root` or you can log in remotely as a non-root user and then change the user to `root` by running the `su -command` command.

2. Create the installation directory by running the `mkdir /opt/Tomcat/AppServer` command.

#### Important:

Before implementing this procedure, install the Application server in the `/opt/Tomcat/AppServer` directory. To install Tomcat in a different directory, replace `/opt/Tomcat/AppServer` with the relevant directory path in the following steps.

3. Navigate to the installation directory by running the `cd /opt/Tomcat/AppServer` command.

4. To:

- Use the Tomcat 8.0.26 installation tar file installed with Experience Portal, run the `cp $AVAYA_HOME/Support/AppServer/manual/apache-tomcat-8.0.26_ae.tar.gz .` command.
- Use the installation tar file you downloaded from the Apache website, copy that file to the directory by running the `cp pathname/tomcat-tar-file .` command, where `pathname/tomcat-tar-file` is the name of the Tomcat installation tar file.

5. Install the server by running the `tar -zxvf tomcat-tar-file` command, where `tomcat-tar-file` is the name of the Tomcat installation tar file.

The Tomcat files are extracted to `/opt/Tomcat/AppServer/tomcat-subdirectory`, where `tomcat-subdirectory` is the name of the Tomcat installation tar file without the `.tar.gz` extensions. For example, if you extract the `apache-tomcat-8.0.26_ae.tar.gz` installation file that was installed with Experience Portal, the installation subdirectory is `apache-tomcat-8.0.26`.

6. Create a soft link for the new directory by running the `ln -s /opt/Tomcat/AppServer/tomcat-subdirectory tomcat` command.
7. Navigate to the new Tomcat bin directory by running the `cd tomcat/bin` command.
8. Copy the configuration files by running the following commands:
  - `cp startup.sh startup.sh.old`
  - `cp shutdown.sh shutdown.sh.old`
9. Modify the **startup** configuration script:

- a. Open `startup.sh` in the ASCII editor of your choice.
- b. Add the following `export variable-name` statements at the top of the script:

```
export CATALINA_BASE=/opt/Tomcat/AppServer/tomcat
export CATALINA_HOME=/opt/Tomcat/AppServer/tomcat
export JAVA_OPTS="-server -Xmx1024M -XX:+UseConcMarkSweepGC -XX:+UseParNewGC
-XX:ThreadStackSize=512 -Davaya.appserver.type=tomcatappserver"
```

**!** **Important:**

Specify each `export variable-name` line on a separate line without line breaks. If you copy these lines from documentation, ensure that you remove the extra line break in the `export JAVA_OPTS` definition.

In addition, if you installed Tomcat in a directory other than `/opt/Tomcat/AppServer`, ensure you change the `export variable-name` statements accordingly.

- c. Save and close the file.
10. Modify the shutdown configuration script:
  - a. Open `shutdown.sh` in the ASCII editor of your choice.
  - b. Add the following environment variables at the top of the script:

```
export CATALINA_BASE=/opt/Tomcat/AppServer/tomcat
export CATALINA_HOME=/opt/Tomcat/AppServer/tomcat
```

- c. Save and close the file.
11. Modify the Tomcat configuration XML file:
  - a. Navigate to the configuration directory by running the `cd tomcat-subdirectory/conf` command.

Optional: Installing a Tomcat application server

- b. Copy the configuration file by running the `cp server.xml server.xml.old` command.
- c. Open `server.xml` in the XML editor of your choice.
- d. Change the port numbers as shown:

Change port number...	To port number...
8080	7080
8443	7443
8005	7005
8009	7009

- e. Save and close the file.
12. Before you configure the Application server to run as a Linux service, you must define an environment variable so that the service script can always find the Application server. To define the variable:
    - a. Run the `cd /etc/profile.d` command.
    - b. Copy the Avaya-provided configuration files to this directory by running the `cp $AVAYA_HOME/Support/AppServer/manual/appserver.* .` command.
    - c. If you installed Tomcat in a directory other than `/opt/Tomcat/AppServer`:
      - Open the `appserver.sh` script in an ASCII editor and change all occurrences of `/opt/Tomcat/AppServer` to the directory in which you installed Tomcat.
      - Open the `appserver.csh` script in an ASCII editor and change all occurrences of `/opt/Tomcat/AppServer` to the directory in which you installed Tomcat.
    - d. Set the configuration file permissions by running the `chmod 0755 appserver.*` command.
  13. Configure the Application server to run as a Linux service so that the Application server responds to the Linux **service** command and Linux automatically restarts the Application server if the machine reboots:
    - a. Run the `cd /etc/init.d` command.
    - b. Copy the Avaya-provided Application server script to this directory by running the `cp $AVAYA_HOME/Support/AppServer/appserver .` command.
    - c. If you installed Tomcat in a directory other than `/opt/Tomcat/AppServer`, open the `appserver` script in an ASCII editor and change all occurrences of `/opt/Tomcat/AppServer` to the directory in which you installed Tomcat.
    - d. Set the script permissions by running the `chmod 0755 appserver` command.
    - e. Change the ownership of the directories by entering the following commands:

```
chown -R avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/logs
chown -R avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/lib
```

```
chown -R avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/conf
chown avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/temp
chown avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/work
chown avayavp:avayavpgroup $APPSERVER_TOMCAT_DIR/webapps
```

- f. Register the service by running the `chkconfig --add appserver` command.
- g. Start the Application server by running the `service appserver start` command.
- h. Give the server time to start, and then check the server status by running the `/sbin/service appserver status` command.

The server must respond that the Tomcat service is running.

- i. If you want to administer the server, open a web browser and go to `http://EPM-server:7080/`, where `EPM-server` is the hostname or IP address of the Experience Portal server.

## Next steps

To run Orchestration Designer applications on your newly installed Tomcat Server, perform the following steps:

- Export the `runtimeSupportTomcatX.zip` from the Orchestration Designer ADE where you develop your Orchestration Designer apps from
- Copy the `runtimeSupportTomcatX.zip` to a temporary folder on your Tomcat machine and unzip it into the `TOMCAT_HOME/lib` for Tomcat 8 and above, `TOMCAT_HOME/common/lib` for Tomcat 7 and below, directory.

For example:

```
# cd /opt/Tomcat/AppServer/tomcat
# unzip /temp/runtimesupportTomcatX.zip
/sbin/service appserver restart
```

---

## Adding Tomcat user accounts

### About this task

After you install the Application server, you must add Tomcat user accounts to the server. If you use the Avaya-provided application installation script, the script automatically creates the required Avaya Aura® Experience Portal Tomcat user account. Otherwise, you must manually add the user account. Additionally, to administer the Tomcat server from the Tomcat Manager Web interface, you must add a Tomcat user. For details, see the Tomcat application server documentation.

These accounts authorize users to gain access to the Tomcat Manager Web interface from the Experience Portal system to deploy, remove, start, and stop applications on the Application server:

## Procedure

1. Navigate to the configuration directory by running the `cd installation_location/tomcat/conf` command where *installation\_location* is the location of the co-resident Application server.
2. Back up the configuration file of the users by running the `cp tomcat-users.xml tomcat-users.xml.old` command.
3. Open tomcat-users.xml in the XML editor of your choice.
4. Verify if there is a role with the rolename set to **manager-gui**. Otherwise, add a role with the rolename set to manager by adding `<role rolename="manager-gui"/>` in a new line immediately after the `<tomcat-users>` tag.
5. Verify if there is a user name set to **expportal**. Otherwise, add the following after the opening `<tomcat-users>` tag and before the closing `</tomcat-users>` tag:
  - a. A user with the user name set to **expportal**.
  - b. A password set to any password of your choice.
  - c. Roles set to **manager-gui**.

For example:

```
<tomcat-users>
<role rolename="manager-gui"/>
<user username="expportal" password="password" roles="manager-gui"/>
</tomcat-users>
```

### \* Note:

Ensure that no duplicate users with the same user name exist.

If you add a user, you must restart the Tomcat application server.

6. To create another user for administering the system, add the following after the opening `<tomcat-users>` tag and before the closing `</tomcat-users>` tag:
  - a. A user with a username of your choice.
  - b. A password set to any password of your choice.
  - c. Roles set to **manager-gui**.

For example:

```
<tomcat-users>
<role rolename="manager-gui"/>
<user username="administrator" password="password" roles="manager-gui"/>
</tomcat-users>
```

 **Note:**

Ensure that no duplicate users with the same user name exist.

If you add a user, you must restart the Tomcat application server.

7. Save and close the file.
8. Restart the Tomcat application server from EPM after changing the user account.

# Chapter 7: Uninstalling the Tomcat application server

## Before you begin

- Make sure that the applications hosted by the co-resident application server are not handling any active calls.
- Backup the required configuration files, data files, web applications and associated components, libraries and binaries from the directory where the application server is installed.

## About this task

### Important:

By uninstalling the Tomcat application server:

- All the applications deployed on the co-resident application server are deleted.
- All the components or libraries deployed on the co-resident application server are deleted.
- All the customized configuration information of the application server are deleted.
- All log files under the application server directory are deleted.
- The Application Server menu is not available in the EPM.

## Procedure

1. Log on to Linux on the Experience Portal server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as root, or log in remotely as a non-root user and then change the user to root by entering the `su -` command.

2. Enter the `/sbin/service appserver stop` command to stop the Application server.
3. Change to the application server home by entering the `cd $APPSERVER_HOME` command.
4. Change to the parent directory by entering the `cd ..` command.
5. Remove the Tomcat soft link by entering the `rm -f tomcat` command.

6. Remove the Tomcat directory by entering the `rm -rf <tomcat-subdirectory>` where Tomcat-subdirectory is the directory where Tomcat is extracted. The directory form is `apache-tomcat*` or `jakarta-tomcat*`.
7. In the `/opt/Tomcat/tomcat/lib/config/voiceportal.properties` file, set the value of `enableLocalAppServer` to false.
8. Unregister the service by entering the `chkconfig --del appserver` command.
9. Remove the application server service script by entering the `rm /etc/init.d/appserver` command.
10. Remove the appserver scripts by entering the `rm /etc/profile.d/appserver.*` command.  
If the system prompts for confirmation, type `Y` and press `Enter`.
11. Restart the `vpms` service by entering the `/sbin/service vpms restart` command.  
When the command has successfully stopped all relevant components, it displays the message: `VPMS Shutdown Status: [ OK ]`. The command immediately starts the same components. When it has finished, it displays the message: `VPMS Start Status: [ OK ]`.
12. Check the status of the `vpms` service by entering the `/sbin/service vpms status` command. The command displays the message: `Overall Status: VPMS is running`.

# Chapter 8: Configuring and initializing the Avaya Aura Experience Portal single server system

## Experience Portal basic system configuration overview

After you install the Avaya Aura<sup>®</sup> Experience Portal software, you can configure and test a basic system. After the basic system has passed the tests, you can configure the optional Experience Portal features as desired.

 **Important:**

Because these steps build on each other, you must complete them in the order given or you may encounter errors during the procedures.

Step	Description	✓
1	Have the completed installation worksheets ready to help answer the questions raised during the configuration.  For a list of the available worksheets, see <a href="#">Installation worksheets for the Avaya Aura Experience Portal single server configuration</a> on page 94.	
2	If the customer plans to have their system maintained by Avaya Services, set up the Avaya Services access requirements as described in: <ul style="list-style-type: none"><li>• <a href="#">Configuring the Avaya Service accounts</a> on page 47</li></ul>	
3	Log onto the Experience Portal Manager (EPM) web interface.  If you are an Avaya Services representative, log in as described in <a href="#">Logging in to the EPM Web interface using the Avaya Services init account</a> on page 49.   <b>Tip:</b>  Once you have logged in, you can get help with any of the remaining tasks by clicking the <b>Help</b> button on the appropriate EPM web page.	
4	Install the Experience Portal license file as described in <a href="#">Installing the license file</a> on page 55.	

*Table continues...*

Step	Description	✓
5	Add at least one Voice over IP (VoIP) H.323 or SIP connection as described in <a href="#">Adding H.323 connections</a> on page 56 or <a href="#">Adding a SIP connection</a> on page 57.	
6	(Optional) Add multichannel applications, such as SMS, Email, and HTML applications. You must add at least one SMS, one Email and one HTML applications for each channel as described in <i>Administering Avaya Aura® Experience Portal</i> .	
7	Add the MPP server to the system and then start it as described in <a href="#">Add and start the MPP server</a> on page 57.	
8	If desired, add one or more Automatic Speech Recognition (ASR) servers as described in <a href="#">Adding ASR servers</a> on page 58.	
9	If desired, add one or more Text-to-Speech (TTS) servers as described in <a href="#">Adding TTS servers</a> on page 58.	
10	Add the Experience Portal test application as described in <a href="#">Adding the Experience Portal test application</a> on page 58	
11	Test the basic system by running the sample application as described in <a href="#">Running the sample application</a> on page 60.	
12	If desired, connect the EPM server to an external time source so that all servers in the Experience Portal system stay properly synchronized as described in <a href="#">External time sources</a> on page 67.	
13	The EPM can accept input in non-English languages if desired. If you are using Red Hat Enterprise Linux, the languages need to be installed with the operating system. If you are using Avaya Enterprise Linux, you can configure it to accept input in Chinese, Japanese, or Korean as described in: <ul style="list-style-type: none"> <li>• <a href="#">Configuring Chinese on Avaya Enterprise Linux</a> on page 69</li> <li>• <a href="#">Configuring Japanese on Avaya Enterprise Linux</a> on page 70</li> <li>• <a href="#">Configuring Korean on Avaya Enterprise Linux</a> on page 71</li> </ul>	
14	If you want to enable organization level access in Experience Portal, execute the <code>EnableOrganizations</code> command <i>as described in the Configuring organization level access in Avaya Aura® Experience Portal</i> section of the <i>Administering Avaya Aura® Experience Portal</i> guide.	

## Configuring the Avaya Service accounts

### Before you begin

Ensure that you have the Avaya Service Account authentication file generated by the Authentication File System (AFS) tool.

**!** Important:

After you run this script, customers using Avaya Enterprise Linux cannot log into the `sroot` account and therefore must use the `root` account. Before you run this script, log in as `root` to make sure that the password for the `root` account has been properly set. For more information, see [Installing and configuring Avaya Enterprise Linux](#) on page 10.

**\*** Note:

- When you run the AFS tool, select **New System – Product: Avaya Aura Experience Portal Release: 7.x** to generate the AFS file. This step is required for Experience Portal fresh install or upgrade to Avaya Aura® Experience Portal 7.1.

## Procedure

1. Log into Linux on the Experience Portal server. If you are using:
  - Avaya Enterprise Linux or if the Avaya Service accounts have already been installed on this server, log in to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.
  - Red Hat Enterprise Linux Server, log in to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.
2. Copy the Avaya Service Account authentication file to the `/tmp` directory on the server.
3. Navigate to the `$AVAYA_HOME/Support/VP-Tools` directory.
4. Enter the `bash AddServiceAccounts /<authentication_file_path>/authentication_file_name` command, where `authentication_file_path` is the fully-qualified path to the authentication file you copied to the server and `authentication_file_name` is the name of the authentication file you copied to the server.
5. Press `Enter` to continue adding Avaya service accounts for this system.

The following warning message is displayed:

```
Primary EPM found; creating EPM admin user init
Creating EPM service account
Checking System [EP,EP,]
  Added SDResource name=init type=USER desc=
    Added SDPropertyContainer name=Default category=Default desc=
      Added SDProperty name=roles
      Added SDProperty name=createTime
Return value for adding EPM admin user init: 0
Loading file /tmp/AF-7000112969-080808-155712.xml
useradd: warning: the home directory already exists.
Not copying any file from skel directory into it.

Utility has completed. Please review the information above for possible errors
```

**\*** Note:

This is an informational message and needs no corrective action.

The `AddServiceAccounts` script changes the following Linux accounts so that you can only log into them using the Avaya Services challenge/response authentication procedure:

User name	Group	Purpose
root	root	Avaya Services root access
craft	susers	Avaya Services non-root access

In addition, the script creates the EPM user account `init`, which has Administration, Auditor, and User Manager privileges and uses the same Avaya Services challenge/response authentication procedure.

---

## Logging in to the EPM Web interface using the Avaya Services init account

### Procedure

1. Open an Internet Explorer (IE) browser and enter the URL of your Experience Portal system.

The URL is: `http://EPM-server/VoicePortal`.

*EPM-server* is the hostname or the IP address of the system where the primary EPM software is installed.

 **Note:**

Enable TLS security in your IE browser.

2. In the **User Name** field, enter `init`.
3. Click **Submit**.
4. Use the challenge information to generate the appropriate response password for the `init` account, and enter the password in the **Password** field.
5. Click **Logon**.

The system logs you in to EPM.

---

## Logging in to the Experience Portal Web interface

The Experience Portal Manager (EPM) Web interface is the main interface to the Experience Portal system.

### Procedure

1. Open an Internet Explorer browser and enter the URL for your Experience Portal system.

The default URL is: `https://EPM-server/VoicePortal`, where *EPM-server* is the hostname or IP address of the system where the primary EPM software is installed.

**\* Note:**

TLS security must be enabled in the IE browser. For more information on configuring browsers to use TLS security, see [Configuring browsers to use TLS security](#) on page 51.

2. In the **User Name** field, enter the user name of the EPM Administration account that was created during the installation procedure.

The user name must match the specified Administration account name exactly, including case.

3. Click **Submit**.

4. In the **Password** field, enter the password assigned to the EPM Administration account during the installation procedure.

The password must match the password assigned to the specified user name exactly, including case.

5. Click **Logon**.

If the user name and password:

- Match what was specified for the Administration account during installation, the EPM displays the Avaya Aura Experience Portal Management System Home page with the Experience Portal version number and **Legal Notice** display text box.
- Do not match the Administration user account, the EPM displays an error message and returns you to the **User Name** prompt so that you can try again.

**! Important:**

Be careful when you enter the user name and password a second time, because the EPM will automatically lock the user account out of the system if you specify too many incorrect user name and password combinations.

---

## External systems configuration worksheet

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

✓	Description
	You need at least one Windows system with a Microsoft Internet Explorer (IE) browser that is configured to use TLS security as described in <a href="#">Configuring browsers to use TLS security</a> on page 51.
	For all speech servers running IBM WebSphere and Nuance RealSpeak 4.0.12 speech servers with Red Hat Enterprise Linux, you need to set the LD_ASSUME_KERNEL environment variable to

*Table continues...*

✓	Description
	handle a multi-threaded environment as described in <a href="#">Configuring Red Hat Enterprise Linux Server environment variables for speech servers</a> on page 52.
	If you are running Orchestration Designer applications with a WebSphere Application Server (WAS) and Nuance speech servers, you need to configure the MIME type declarations as described in <a href="#">Configuring a WebSphere Application Server to work with Nuance speech servers</a> on page 52.
	To use A-Law encoding with a Nuance server that supports Automatic Speech Recognition (ASR), you need to configure Nuance server as described in <a href="#">Configuring A-Law encoding for Nuance ASR servers</a> on page 53.
	If you want to use Nuance SWI_rawScore, you need to configure additional parameters on the Nuance speech server as described in the Nuance documentation.

### Related links

[Configuring browsers to use TLS security](#) on page 51

[Configuring Red Hat Enterprise Linux Server environment variables for speech servers](#) on page 52

For all IBM WebSphere and Nuance RealSpeak 4.0.12 speech servers running Red Hat Enterprise Linux Server in the Experience Portal system, you need to set the LD\_ASSUME\_KERNEL environment variable to handle a multithreaded environment.

[Configuring a WebSphere Application Server to work with Nuance speech servers](#) on page 52

If you are running Orchestration Designer applications with a WebSphere Application Server (WAS) and Nuance speech servers, you need to manually declare the grammars that Orchestration Designer uses on the WAS.

[Configuring A-Law encoding for Nuance ASR servers](#) on page 53

[Configuring parameters for getting recognition results from Nuance server](#) on page 54

---

## Configuring browsers to use TLS security

A web interface to the EPM for administering Experience Portal is included with the EPM software. To access the EPM Web interface, you must use a Microsoft Internet Explorer IE11 browser that is configured to use TLS security.

### Procedure

1. In an IE browser window, select **Tools > Internet Options**.
2. Go to the **Advanced** tab.
3. In the **Security** section, ensure that the **Use TLS 1.x** check box is selected. If not, select the check box.
4. Click **OK**.

## Related links

[External systems configuration worksheet](#) on page 50

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

---

## Configuring Red Hat Enterprise Linux Server environment variables for speech servers

For all IBM WebSphere and Nuance RealSpeak 4.0.12 speech servers running Red Hat Enterprise Linux Server in the Experience Portal system, you need to set the LD\_ASSUME\_KERNEL environment variable to handle a multithreaded environment.

### Procedure

1. If you are running IBM servers or Nuance servers started from the command line:
  - a. On each speech server in the Experience Portal system, open the `/etc/profile` file in an ASCII editor.
  - b. Add the line `Export LD_ASSUME_KERNEL=2.4.19v` to the file.
  - c. Save and close the file.
2. If you are running Nuance servers as a Linux service:
  - a. On each Nuance speech server in the Experience Portal system, open the `/etc/init.d/OSSservice` file in an ASCII editor.
  - b. Add the line `LD_ASSUME_KERNEL=2.4.19v; export LD_ASSUME_KERNEL` to the file.
  - c. Save and close the file.

## Related links

[External systems configuration worksheet](#) on page 50

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

---

## Configuring a WebSphere Application Server to work with Nuance speech servers

If you are running Orchestration Designer applications with a WebSphere Application Server (WAS) and Nuance speech servers, you need to manually declare the grammars that Orchestration Designer uses on the WAS.

### Procedure

1. Open a Web browser and go to `http://<WAS_ipaddress>:9090/admin`, where `<WAS_ipaddress>` is the IP address of your WAS server.

2. Log in as *AnyOne*.
3. Expand **Environment** in the left-hand pane.
4. Click **Virtual Hosts** in the expanded list.
5. In the right-hand pane, select the virtual host that manages your speech applications or, if you have not created a separate virtual host, select **default host**.
6. Click **MIME Types**.
7. Look for the `application/srgs+xml` MIME type. If it does not exist, click **New** and add it. If it does exist, select it and click **Edit**.
8. Add `grxml grammar` to the `application/srgs+xml` MIME type extensions.
9. Stop and then restart the WAS server.

#### Related links

[External systems configuration worksheet](#) on page 50

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

---

## Configuring A-Law encoding for Nuance ASR servers

If you want to use A-Law encoding with a Nuance server that supports Automatic Speech Recognition (ASR), you need to configure the additional parameters.

#### Procedure

1. On each Nuance server machine, log in to the operating system and navigate to the directory in which the Nuance `Baseline.xml` file is stored.
2. Open the `Baseline.xml` file in an ASCII editor.
3. Add the following additional value to *both* the `swirec_audio_media_type` and `swiep_audio_media_type` parameters:  

```
<value>audio/x-alaw-basic;rate=8000</value>
```
4. Save and close the file.
5. Restart the Nuance server.
6. Repeat this procedure for any other Nuance ASR servers in the Experience Portal system.

#### Related links

[External systems configuration worksheet](#) on page 50

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

---

## Configuring parameters for getting recognition results from Nuance server

You must configure parameters in the `NSSserver.cfg` and `Baseline.xml` files of the Nuance speech server to get the recognition results of *no match* from the Nuance server.

### Before you begin

#### About this task

Make sure that you have installed the following applications:

- NSS - 5.0.7 or higher
- NRec - 9.0.11 or higher

#### Procedure

1. On each Nuance server machine, log in to the operating system.
2. Navigate to the `usr/local/Nuance/SpeechServer/server/config` directory in which the Nuance `NSSserver.cfg` file is stored.
3. Open the `NSSserver.cfg` file in an ASCII editor.
4. Define the values as given below:

```
server.mrcp2.osrspeechrecog.mrcpdefaults.VSP.server.osrspeechrecog.r  
esult.sendnomatch VXIString true
```

```
server.mrcp1.osrspeechrecog.result.sendnomatch VXIString true
```

5. Save and close the file.
6. Open the `Baseline.xml` file in an ASCII editor.
7. Define the value as given below:

```
<param name="swisr_result_enable_speech_mode"> <value> 1 </value> </  
param>
```

8. Restart the NSSservice.

#### Related links

[External systems configuration worksheet](#) on page 50

In order to work with Experience Portal, you need to set configuration options in the 3rd party products.

---

## Installing the license file

You require a license file for the Experience Portal operation as the license file defines all features authorized to use. Avaya sends the Experience Portal license file separately in an email.

### Before you begin

If the WebLM server does *not* reside on the Experience Portal EPM server, you can upgrade the WebLM software to version 7.0 as described in the file `Support/WebLM/Licensing Installation Instructions.pdf` that is available on the Experience Portal server.

### About this task

#### Note:

If you do not receive a license file from Avaya, contact your Avaya representative or Avaya Partner representative.

Experience Portal provides an initial 30 day grace period for all features with restricted capacity for fresh installs with restricted capacity for fresh installs.

### Procedure

1. Open the email that contains the Experience Portal license file.
2. Detach the license file from the email and store the license file locally on either the WebLM server or on a computer that is accessible to the Experience Portal servers from a network connection.

For example, you can install the license file on any server from which you can access the EPM Web interface.

3. Log on to the EPM Web interface using an account with the Administration user role.
4. From the EPM main menu, select **Security > Licensing**.

The Licensing page displays the license information and the location of the License server.

5. If the **License Server URL** field is blank or if the location of WebLM has changed, type the location of the license server in the **Location** field.

The URL must be in the format `https://WebLM-machine:port_num/WebLM/LicenseServer`, where *WebLM-machine* is the hostname or IP address of the WebLM server and *:port\_num* is an optional parameter that consists of a colon followed by the port number for the WebLM server. If WebLM uses the default configuration, specify: 8443 or 52233. If no port number is specified, Experience Portal uses 443 as the port number.

If no port number is specified, Experience Portal uses 443 as the port number.

6. Click **Verify**.

The browser opens a separate window and displays the Avaya WebLM page, which contains a **License Administration** link.

7. Click **License Administration**.

The system displays the Web License Manager Logon page.

8. If you have done a fresh installation of the WebLM server, you have to do the following:

- a. Enter the default user name `admin`.
- b. Enter the default password `weblmadmin`.
- c. Press `Enter` or click the arrow button to log in.
- d. Enter the details on the Change Password page. Make sure that you type `weblmadmin` in the **Current Password** field.
- e. Click **Submit**.
- f. On the Logon page, log in with your new password.

9. If you have an existing WebLM server, you have to do the following:

- a. Type the user name.
- b. Type the password.
- c. Click **Log on**.

10. On the Install License page, click **Browse** to locate the Experience Portal license file and select the license file to use.

11. Select **Accept the License Terms & Conditions**, and click **Install**.

WebLM uploads the license file from your computer to the WebLM server and displays the message `License file installed successfully`.

12. Log out of the Web License Manager and close the Web License Manager page.

13. On the EPM Licensing page, click **Apply**.

14. Click **Save** to save the changes.

15. Verify that the new licensing information is correct.

---

## Adding H.323 connections

### Before you begin

Ensure that the switch is configured.

### Procedure

1. From the EPM main menu, select **System Configuration > VoIP Connections** and go to the H.323 tab.
2. Click **Add**.

3. On the Add H.323 Connection page, enter the appropriate information and click **Save**.
4. Repeat this procedure for each H.323 connection you want to add.

---

## Adding a SIP connection

### Before you begin

Configure Communication Manager.

### Procedure

1. From the EPM main menu, select **System Configuration > VoIP Connections** and go to the SIP tab.
2. Click **Add**.
3. On the Add SIP Connection page, enter the appropriate information and click **Save**.

---

## Add and start the MPP server

### Procedure

1. From the EPM main menu, select **System Configuration > MPP Servers**.
2. On the MPP Server page, click **Add**.
3. On the first Add MPP Server page, enter the appropriate information and click **Continue**.
4. On the second Add MPP Server page, enter the appropriate information and click **Save**.

If you logged in using the init account, ensure you enter the appropriate LDN number for the server in the **LDN** field. If you do not specify an LDN number, Experience Portal uses the default value (000)000-0000.

#### **Note:**

Make sure you verify the security certificate details in the **MPP Certificate** section, and check the **Trust new certificate** check box. You cannot save the MPP page unless the check box is selected.

5. At the bottom of the page, click **Save**.
6. From the EPM main menu, select **System Management > MPP Manager**.
7. On the MPP Manager page, look at the **Mode** column for this server. If it says **Offline**:
  - a. Select the check box next to the name of the MPP.
  - b. In the **Mode Commands** group, click **Online**.
  - c. In a few moments, click **Refresh** to verify that the **Mode** column now says **Online**.

8. Select the check box next to the name of the MPP.
9. In the **State Commands** group, click **Start** and confirm your selection when prompted.
10. In a few minutes, click **Refresh** to verify that the current **State** is **Running**.

---

## Adding ASR servers

### Procedure

1. From the EPM main menu, select **System Configuration > Speech Servers**.
2. On the ASR tab of the Speech Servers page, click **Add**.
3. On the Add ASR Server page, enter the appropriate information and click **Save**.
4. Repeat this procedure for each ASR server you want to add.

After you save the changes, the **System Monitor** webpage and the **MPP Manager** webpage on EPM display the **Restart Required** configuration status for MPPs that are in the **Running** state.

5. Restart the MPP server.

---

## Adding TTS servers

### Procedure

1. From the EPM main menu, select **System Configuration > Speech Servers**.
2. On the TTS tab of the Speech Servers page, click **Add**.
3. On the Add TTS Server page, enter the appropriate information and click **Save**.
4. Repeat this procedure for each TTS server you want to add.

After you save the changes, the **System Monitor** webpage and the **MPP Manager** webpage on EPM display the **Restart Required** configuration status for MPPs that are in the **Running** state.

5. Restart the MPP server.

---

## Adding the Experience Portal test application

### Before you begin

If you want to test Automatic Speech Recognition (ASR) resources, ensure that you add one or more ASR servers to the Experience Portal system.

If you want to test Text-to-Speech (TTS) resources, ensure that you add one or more TTS servers to the Experience Portal system.

### About this task

You can use the sample application that is installed with Experience Portal to test how the system handles telephony resource requests.

- If you run the sample application as a VoiceXML application, Experience Portal uses the default CCXML page installed on the MPP server to provide basic CCXML controls. The VoiceXML application tests:
  - ASR resources
  - TTS resources
  - Bridge transfers
  - Blind transfers
  - Supervised transfers
  - Several audio prompt formats
  - Audio prompt recording and playback
- If you run the sample application as a CCXML application, Experience Portal uses a more advanced CCXML page that provides all the functionality of the VoiceXML application and you can test the following CCXML features:
  - Call conferencing
  - Call classification
  - Call merge for calls using a SIP connection

### Procedure

1. From the EPM main menu, select **System Configuration > Applications**.
2. On the Applications page, click **Add**.  
EPM displays the Add Application page.
3. In the **Name** field, type the name you want to use to identify the application on the system. After you save the application, this name cannot be changed.

For example, type `Test_App`.

4. Enter the required parameters for the application.

The following table provides information on the parameters that you must enter for each application type.

Application type	Required parameters
<b>VoiceXML application</b>	<p>In the <b>MIME Type</b> field, select <b>VoiceXML</b>.</p> <p>In the <b>VoiceXML URL</b> field, type <code>http://MPP_Identifier/mpp/misc/avptestapp/intro.vxml</code>, where <i>MPP_Identifier</i> is the hostname or IP address of any one of the MPP servers in the Experience Portal system.</p>

Application type	Required parameters
<b>CCXML application</b>	In the <b>MIME Type</b> field, select <b>CCXML</b> .  In the <b>CCXML URL</b> field, type <code>http://MPP_Identifier/mpp/misc/avptestapp/root.ccxml</code> , where <i>MPP_Identifier</i> is the hostname or IP address of any one of the MPP servers in the Experience Portal system.

- Click **Verify** to make sure that the system can locate the sample application page.

If EPM can find the specified page, EPM displays the page in a separate browser window. If this check succeeds, continue with this procedure. Otherwise, correct the information in the **VoiceXML URL** or **CCXML URL** field and repeat this step until the system can locate the sample application page.

**\* Note:**

Instead of opening the file in a separate window, the browser might prompt you to save the file as a text file. You can choose to save the file and use text editor to open the file.

- If you want to test ASR resources, complete the following steps:
  - Select the type of ASR server you want to use from the **ASR** drop-down list.
  - From the **Languages** list, select **English(US) en-us**.
- If you want to test TTS, complete the following steps:
  - Select the type of TTS server you want to use from the **TTS** drop-down list.
  - From the **Voices** list, select one or more of the **English(US)** voices.
- To associate one or more incoming numbers with this application, enter the appropriate information in the **Application Launch** group.
- To test transcriptions, go to the **Transcription** section of the **Reporting Parameters** group and set the transcription parameters.

**\* Note:**

You can set the transcription parameters only if you have the Privacy Manager user role.

- Click **Save**.

EPM displays the Applications page with the test application listed in the table.

---

## Running the sample application

### Procedure

- Call the test application number.

The test application number is the number that you specify when you add the test application to the Experience Portal system.

2. If you run the test application as a VoiceXML application, press:
  - 1 for Automatic Speech Recognition (ASR)
  - 2 for Text-to-Speech (TTS)
  - 3 for Bridge Transfer
  - 4 for Blind Transfer
  - 5 for Consultative Transfer
  - 6 for Audio test
  - 7 to Exit
3. If you run the test application as a CCXML application, press:
  - 1 for Automatic Speech Recognition (ASR)
  - 2 for Text-to-Speech (TTS)
  - 3 for Bridge Transfer
  - 4 for Blind Transfer
  - 5 for Consultative Transfer
  - 6 for Audio test
  - 7 to test Conferencing
  - 8 to test Merge
  - 9 to test Call Classification
  - 0 to Exit

### Next steps

After you run the application, you can create reports to verify the application's performance and, if you have enabled transcriptions, view the transcription data.

### Related links

[Test Application result for Call Classification option](#) on page 61

[Test Application result for Call Conferencing option](#) on page 62

[Test Application result for Call Merge option](#) on page 63

---

## Test Application result for Call Classification option

When you run the test application as a CCXML application, and press 9 to test call classification, the application plays the following prompts based on the call status:

Call Status	Prompt
Line is busy	The busy tone is detected.
Invalid number is detected	Fail to create call.
Call is connected and human voice is heard	Detected live voice.
Call is connected and a recorded message is detected	Detected answering machine.
Call is connected and fax is detected	Detected fax.
Call is connected and sit tone is detected	The sit tone is detected.
Trunks are busy	The fast busy tone is detected.
Call classification detection does not detect anything within the specified timeout period	Timeout is detected.
Error occurs during call classification detection	Error occurs while detecting.
Call is not answered	No answer is detected.

**Related links**

[Running the sample application](#) on page 60

---

## Test Application result for Call Conferencing option

When you run the test application as a CCXML application, and press 7 to test call conferencing, the application plays the following prompts based on the call status:

Call Status	Prompt
Call to destination fails	Fail to create call.
Call is successful	Thank you.  <b>Note:</b> When the call conference is successful, the application plays additional prompts. For H323, enter 9 with the phone number. Otherwise, the call fails.

**Related links**

[Running the sample application](#) on page 60

---

## Test Application result for Call Merge option

When you run the test application as a CCXML application, and press 8 to test call merging, the application plays the following prompts based on the call status:

Call Status	Prompt
The application detects H.323 connection	This option is not supported in H.323. Please use SIP.
Merge is successful.	Thank you.  <b>Note:</b> After playing the thank you prompt, the application merges the call. This option is not supported for H.323.

### Related links

[Running the sample application](#) on page 60

---

## Configure and run the Application Interface test client

Use the Application Interface test client to validate the Application Interface web service and the Experience Portal outcall functionality. The Application Interface test client is available in `$AVAYA_HOME/Support/OutCallTest/VPAppIntfClient`.

### Related links

[Configuring Experience Portal for outcall](#) on page 63

[Running the Application Interface test client VPAppIntfClient.sh](#) on page 64

---

## Configuring Experience Portal for outcall

### About this task

#### Important:

This configuration is required only if you use Experience Portal to perform outcalls or the Application Interface web service to launch VXML and CCXML applications.

### Procedure

1. Ensure that at least one of the ports in the system is configured to allow outbound calls. For more information on configuring ports, see *Administering Avaya Aura® Experience Portal*.
2. The VPAppIntfService Web service version authenticates users that are configured as Experience Portal users. The user must have the Web Services role.

## Related links

[Configure and run the Application Interface test client](#) on page 63

---

# Running the Application Interface test client VAppIntfClient.sh

## Before you begin

Ensure that you configure Experience Portal for the Application Interface test client as described in [Configuring Experience Portal for outcall](#) on page 63.

## Procedure

1. Log in to Linux locally as `sroot`, or log in remotely as a non-root user and change the user to root by entering the `su - sroot` command.
2. Navigate to the Application Interface test client directory by entering the `cd $AVAYA_HOME/Support/OutCallTest/VAppIntfClient` command.
3. Enter the `./VAppIntfClient.sh -n <outcall-username> -p <outcall password>` command to request the number of available outbound ports.
  - `<outcall-username>` is an Experience Portal user configured from EPM Web interface.
  - `<outcall password>` is the password for `<outcall-username>` that is configured from the EPM Web interface .

 **Note:**

The user must have the Web Services user role.

4. Verify that the Application Interface test client displays a response that shows the total ports and unused ports available for outcalls.

For example:

```
Mon Jun 03 16:55:26 PDT 2013:VAppIntfServiceClient: queryResources succeeded, Total Resources = 0, Unused H323 = 0, Unused SIP = 0
```

```
Mon Jun 03 16:55:26 PDT 2013: VAppIntfServiceClient: exiting
```

5. Enter the `./VAppIntfClient.sh -R 1 -A <application-name> -T <number-to-dial> -n <outcall-username> -p <outcall password>` command to initiate an outcall and launch a VoiceXML application.
  - `<application-name>` is the name of the application that you specify on the application page.
  - `<number-to-dial>` is the phone number to place the outcall to.
  - `<outcall-username>` is the Experience Portal username configured with the Web Services role in the EPM .
  - `<outcall password>` is the password assigned to the outcall-username above that was configured on the **EPM -> Users** page.
6. Verify that the dialed phone number rings.

7. Answer the phone and verify that the specified application handles the call.

**\* Note:**

The application handles the call in the same way as when an actual user calls into the system.

8. Verify that the Application Interface test client displays the following:

- A response that shows the result of the LaunchVXML operation.
- The total ports and the unused ports available for outcalls.

For example:

```
Mon Jun 03 17:00:31 PDT 2013: VPAppIntfServiceClient: launchVXML succeeded,
SessionID = scaaep134-2013155001030-5, TotalRes = 100, UnusedH323 = 0, UnusedSIP =
99
```

```
Mon Jun 03 17:00:31 PDT 2013: VPAppIntfServiceClient: exiting
```

#### Related links

[Configure and run the Application Interface test client](#) on page 63

---

## Configuring Software Upgrade in EPM

You can upgrade the MPPs running on the Experience Portal system from the Software Upgrade page in the EPM web interface. If you want to use the Software Upgrade functionality, you need to authorize the EPM to upgrade the MPPs. For more information on Software Upgrade, see *Administering Avaya Aura® Experience Portal*.

If you don't want to use the Software Upgrade functionality to upgrade the MPPs, disable the InstallAgent RPM.

**\* Note:**

Disabling the InstallAgent package is optional.

Disable the InstallAgent package if you don't want EPM to use a public key-based SSH mechanism to remotely administer the MPP upgrades, and if you don't want this package installed on your system.

#### Related links

[Optional: Disabling the InstallAgent RPM](#) on page 66

[Reinstalling the InstallAgent RPM](#) on page 66

---

## Optional: Disabling the InstallAgent RPM

### Procedure

1. Delete the .ssh directory by entering the `rm -r /home/vpinstall/.ssh` command.

Or

If you want to save the .ssh directory for future reference, you can rename the directory. For example, to rename the .ssh file to .sshOld, enter the `mv /home/vpinstall/.ssh /home/vpinstall/.sshOld` command.

2. Enter the `chmod -s /opt/Avaya/InstallAgent/bin/InstallAgent` command to disable the InstallAgent RPM.

The command removes the user ID permission from the InstallAgent package.

### Related links

[Configuring Software Upgrade in EPM](#) on page 65

---

## Reinstalling the InstallAgent RPM

### About this task

If you have previously disabled the InstallAgent RPM, as described in [Optional Disabling the InstallAgent RPM](#) on page 66, and want to use the Software Upgrade feature to upgrade the MPPs, you need to reinstall the InstallAgent RPM.

### Procedure

On the Experience Portal server, enter the `rpm -U <IA RPM> --replacepkgs` command to reinstall the InstallAgent RPM.

For example, `rpm -U av-ia-6.0.0.0-3302.rpm --replacepkgs`.

### Note:

The InstallAgent RPM is located in the external/installagent directory of the Experience Portal installation image.

### Related links

[Configuring Software Upgrade in EPM](#) on page 65

---

## External time sources

To make sure that the reporting and logging activities across all servers in your network are synchronized to the same time, use the same external time source for the following:

- The server running the Primary EPM software
- Any application servers running on dedicated machines
- All available speech servers
- All PBX switches
- All email servers

You can use a corporate or a public time server as the external time source.

**\* Note:**

Avaya only provides guidelines for public time servers. Ensure that the servers you choose are accessible through your corporate firewall. Some public time servers either limit the amount of access a particular site has or charge for their services. If you select a public time server, make sure that the time server meets all requirements before you change the `ntp.conf` file on the Primary EPM server.

### Related links

[Configuring the Primary EPM server to point to an external time source](#) on page 67

---

## Configuring the Primary EPM server to point to an external time source

### Before you begin

Make sure you have the server names or IP addresses of one or two appropriate external time sources. For more information, see [External time sources](#) on page 67.

### Procedure

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Open the `/etc/ntp.conf` file in an ASCII text editor.

3. Edit the `/etc/ntp.conf` file to add the server you want to use as the primary external time source and an explicit declaration to set the local clock. If desired, you can also add a server to use as the secondary time source if the primary source cannot be found. The format is:

```
server xxxx           // primary external time server
server yyyy           // optional secondary external time server
server 127.127.1.0    // set local clock to time received from external server
fudge 127.127.1.0 stratum 10
driftfile /var/lib/ntp/drift
authenticate no
```

Where `xxxx` and `yyyy` are either server names or IP addresses of the external time servers you want to use.

**\* Note:**

The typical settings for `driftfile` and `authenticate` are shown above. If the `ntp.conf` file at your site has different settings, check with your system administrator before you change them.

The following uses the external time sources `clock.sjc.he.net` and `ntp-1.cede.psu.edu`:

```
server clock.sjc.he.net // primary external time server
restrict clock.sjc.he.net nomodify
server ntp-1.cede.psu.edu // secondary time server
restrict ntp-1.cede.psu.edu nomodify
server 127.127.1.0 // set local clock
fudge 127.127.1.0 stratum 10
driftfile /var/lib/ntp/drift
authenticate no
```

4. Save and close the file.
5. Using a text editor of your choice, open the `/etc/ntp/step-tickers` file.

This file is used for initial time setup on the EPM.

6. Add a line in the file to specify the time source server names or IP addresses.

For example, if you are using the servers `clock.sjc.he.net` and `ntp-1.cede.psu.edu`, you would add the following lines:

```
clock.sjc.he.net
ntp-1.cede.psu.edu
```

7. Save and close the file.
8. Restart the `ntpd` daemon by entering the `/sbin/service ntpd restart` command.

The system returns:

```
Shutting down ntpd: [OK]
Synchronizing with time server [OK]
Starting ntpd: [OK]
```

## Related links

[External time sources](#) on page 67

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# Non-English language support

---

## Non-English character support on the EPM web pages

While the EPM You can use non-English characters when entering field values if you have the appropriate languages installed on the EPM server. Avaya Enterprise Linux, Avaya provides font files for Chinese, Japanese, and Korean.

### Related links

[Configuring Chinese on Avaya Enterprise Linux](#) on page 69

[Configuring Japanese on Avaya Enterprise Linux](#) on page 70

[Configuring Korean on Avaya Enterprise Linux](#) on page 71

## Configuring Chinese on Avaya Enterprise Linux

### Procedure

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Navigate to the Linux font directory by entering the `cd /usr/share/fonts` command.

#### **Note:**

If the font directory does not already exist, create the directory by entering the `mkdir /usr/share/fonts` command, then navigate to the directory you just created.

3. Copy the Chinese font file to the font directory by entering the `cp $AVAYA_HOME/Support/fonts/zh_CN/TTzh_CN.tar .` command.

#### **Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

4. Extract the font file by entering the `tar -xvf TTzh_CN.tar` command.
5. Copy the system language file to the Linux system configuration directory by entering the `cp $AVAYA_HOME/Support/fonts/zh_CN/i18n /etc/sysconfig/` command.
6. Navigate to the Java fonts directory by entering the `cd $JAVA_HOME/jre/lib/fonts` command.

7. Create the fallback directory by entering the `mkdir fallback` command.
8. Navigate to the fallback directory by entering the `cd fallback` command.
9. Copy the Chinese font files to the fallback directory by entering the `cp /usr/share/fonts/zh_CN/TrueType/*.ttf .` command.

**! Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

10. Reboot the EPM server machine by entering the `reboot` command.

**Related links**

[Non-English character support on the EPM web pages](#) on page 69

## Configuring Japanese on Avaya Enterprise Linux

### Procedure

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Navigate to the Linux font directory by entering the `cd /usr/share/fonts` command.

**\* Note:**

If the font directory does not already exist, create the directory by entering the `mkdir /usr/share/fonts` command, then navigate to the directory you just created.

3. Copy the Japanese font file to the font directory by entering the `cp $AVAYA_HOME/Support/fonts/ja/TTja.tar .` command.

**! Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

4. Extract the font file by entering the `tar -xvf TTja.tar` command.
5. Copy the system language file to the Linux system configuration directory by entering the `cp $AVAYA_HOME/Support/fonts/ja/i18n/etc/sysconfig/` command.
6. Navigate to the Java fonts directory by entering the `cd $JAVA_HOME/jre/lib/fonts` command.

7. Create the fallback directory by entering the `mkdir fallback` command.
8. Navigate to the fallback directory by entering the `cd fallback` command.
9. Copy the Japanese font files to the fallback directory by entering the `cp /usr/share/fonts/ja/TrueType/*.ttf .` command.

**! Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

10. Reboot the EPM server machine by entering the `reboot` command.

### Related links

[Non-English character support on the EPM web pages](#) on page 69

## Configuring Korean on Avaya Enterprise Linux

### Procedure

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Navigate to the Linux font directory by entering the `cd /usr/share/fonts` command.

**\* Note:**

If the font directory does not already exist, create the directory by entering the `mkdir /usr/share/fonts` command, then navigate to the directory you just created.

3. Copy the Korean font file to the font directory by entering the `cp $AVAYA_HOME/Support/fonts/ko/TTko.tar .` command.

**! Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

4. Extract the font file by entering the `tar -xvf TTko.tar` command.
5. Copy the system language file to the Linux system configuration directory by entering the following command:

```
cp $AVAYA_HOME/Support/fonts/ko/i18n /etc/sysconfig/ command.
```

6. Navigate to the Java fonts directory by entering the `cd $JAVA_HOME/jre/lib/fonts` command.
7. Create the fallback directory by entering the `mkdir fallback` command.
8. Navigate to the fallback directory by entering the `cd fallback` command.
9. Copy the Korean font files to the fallback directory by entering the `cp /usr/share/fonts/ko/TrueType/*.ttf .` command.

**! Important:**

Make sure you include the `.` (period) at the end of the `cp` command to indicate that you want Linux to copy the files to the current directory.

10. Reboot the EPM server machine by entering the `reboot` command.

**Related links**

[Non-English character support on the EPM web pages](#) on page 69

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## Disabling the display of avayavp user name in the RedHat Enterprise Linux GUI login page user list

### About this task

If you have installed a graphical interface for RHEL 6.x, the RHEL 6.x GUI login page displays a list of users on the startup screen.

This list also includes the avayavp user. To eliminate potential security hazard, you must disable the RHEL 6.x GUI login page from listing users.

### Procedure

1. To disable the login page from listing users, enter the following command on the console:  

```
sudo -u gdm gconftool-2 --type bool --set /apps/gdm/simple-greeter/disable_user_list true
```
2. To verify that the user list is disabled on the login page, enter the following command on the console:

```
sudo -u gdm gconftool-2 --get /apps/gdm/simple-greeter/disable_user_list
```

If the command returns the value as `True`, then the login page does not display the list of users.

# Chapter 9: Troubleshooting installation issues

---

## Installation log files

The installation log files contain detailed information about the installation process.

You can run the `EPInstallationVerifier` script to check if the installation or upgrade was successful. The script parses the install logs and reports if the installation or upgrade was successful. To run the script, enter the `./EPInstallationVerifier <InstallationLogDirectory>` command where `<InstallationLogDirectory>` is located in `/opt/Avaya/ExperiencePortal/logs` and is specified at the end of each upgrade. An example of the command: `./EPInstallationVerifier /opt/Avaya/ExperiencePortal/logs/install_2012-06-25.000`.

Avaya Aura® Experience Portal creates several log files during the installation process. If the installation process:

- Completes successfully, Experience Portal copies the log files to `$AVAYA_HOME/logs/install_date`, where `$AVAYA_HOME` is the environment variable pointing to the installation path you specified on the Installation Destination installation screen and `date` is the date the installation process was run. The default installation directory is `/opt/Avaya/ExperiencePortal`.
- Does not complete successfully, Experience Portal leaves the log files in `/opt/_Avaya_Voice-Portal_temp`.

### General installation log files

Log filename	Description
<code>VP_Install.log</code>	Main log containing output from all EPM and MPP installation processes. This is the first log file you should consult if you need to troubleshoot an installation issue.   <b>Note:</b> This file contains detailed log messages which might appear to be warnings or errors, but can safely be ignored, particularly if those warnings do not appear in the installation summary ( <code>ISSummary.log</code> ).
<code>ISSummary.log</code>	Summary of the Experience Portal installation, including any warning or error messages encountered during the installation.

*Table continues...*

Log filename	Description
ISOpt.log	InstallShield generated log containing internal data.
installSequence.log	Subset of ISOpt.log
prereqchecker.log	Detailed information from the Prerequisite Checker.
prereqchecker.out.log	Results from the Prerequisite Checker.
prereqchecker.err.log	Any internal errors encountered by the Prerequisite Checker.
prereqinstaller.log	Detailed information from the Prerequisite Installer.
prereqinstaller.out.log	Results from the Prerequisite Installer.
prereqinstaller.err.log	Any internal errors encountered by the Prerequisite Installer.
SetIAVersion<component>.log	Version history of the Experience Portal components installed. The <component> can be VPMS, MPP, or Docs.
ExtensionsPersistFiles.log	A directory containing files used to preserve properties during EPM upgrades.
installStatus.log	Log file generated for use by auto upgrade to log and track major steps during the installation
GetIAVersionVPMS.err.log	Log file containing any warning messages generated while trying to retrieve version information as part of an upgrade. The presence of a warning in this log file does not necessarily indicate an error.

### MPP-specific installation log files

Log filename	Description
av-mpp-<buildnumber>-Install-<date>.log	mppinstall.sh script output.
av-mpp-<buildnumber>-Install-rpm-<date>.log	Output from the Red Hat Package Manager (RPM) during the MPP software installation.
mpp.cert.gen.out.log	Results from the security certificate generation process.
mpp.cert.gen.err.log	Any internal errors generated from the certificate generation process.
mpp.cert.import.out.log	Results from the security certificate import process.
mpp.cert.import.err.log	Any internal errors generated from the certificate import process.
mpp.key.import.out.log	Results from the public key import process from the EPM.
mpp.key.import.err.log	Any internal errors generated from the public key import process from the EPM.
mpp.key.log	Summary and fingerprint information about the public key imported by the MPP from the Primary EPM.

### EPM-specific installation log files

Log filename	Description
vpms.cert.gen.out.log	Results from the security certificate generation process.
vpms.cert.gen.err.log	Any internal errors generated from the certificate generation process.

*Table continues...*

Log filename	Description
<code>vpms.cert.import.out.log</code>	Results from the security certificate import process.
<code>vpms.cert.import.err.log</code>	Any internal errors generated from the certificate import process.
<code>vpms.cert.log</code>	Summary and fingerprint information about the certificate generated during EPM installation that is used for communication with the MPP and any Auxiliary EPMs.

## Fixing Prerequisite Checker failures

### Solution

1. Examine the Prerequisite Checker pages to determine exactly what problems were encountered.

**+ Tip:**

If the error is `UnknownHostException: localhost`, see [Prerequisite Checker fails with UnknownHostException:localhost](#) on page 75.

2. Upgrade your system to meet the minimum hardware and operating system requirements for Experience Portal
3. If you aborted the installation, enter `installvp/autoupgradevp` to start the installation.
4. After you upgrade your system, you can resume the Experience Portal installation script at the current point as long as you did *not* exit the installation script or restart your Experience Portal server. If you want to:
  - Resume the script, type `2` and press `Enter` until you go past the first Prerequisite Status page. Experience Portal reruns the Prerequisite Checker and you can then continue with the installation instructions.
  - Quit the installation script, type `3` and press `Enter`, then type `1` and press `Enter` to confirm.

### Related links

[Prerequisite Checker fails with UnknownHostException:localhost](#) on page 75

## Prerequisite Checker fails with UnknownHostException:localhost

If you receive an error during the prerequisite check for the `localhost`, or a `faultString` reporting `UnknownHostException:localhost` during Experience Portal installation or upgrade, it is likely that the `/etc/hosts` file of the server is not properly set up. As a result, the installation script cannot deploy certain Experience Portal components correctly.

The `/etc/hosts` file is a simple text file that associates IP addresses with one or more hostnames. The format is one line per IP address, with the associated hostnames separated by white space (spaces or tabs).

## Solution

1. Log into Linux on the EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Back up the original file prior to editing it by entering the `cp /etc/hosts /etc/hosts.bak` command.
3. With the ASCII text editor of your choice, open the `/etc/hosts` file.
4. Verify that:
  - The first line contains `127.0.0.1 localhost localhost.localdomain`, with the IP address and hostnames separated by spaces or tabs
  - If the file has other entries, each entry must be in the form `IP_address hostname1 hostname2...`, where `IP_address` is the IP address of a server in the Experience Portal system and `hostname1 hostname2...` is one or more hostnames, separated by tabs or spaces, to associate with the IP address.

## Related links

[Fixing Prerequisite Checker failures](#) on page 75

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## Fixing Prerequisite Installer failures

The Prerequisite Installer installs additional software required for Experience Portal such as the Apache Web Server, Tomcat, and php. The majority of this software comes from RPMs installed by the Prerequisite Installer.

### Cause

Installer failures are generally the result of installing Experience Portal on a server running a:

- More recent supported version of Red Hat Enterprise Linux Server. Although Experience Portal does support updates to Red Hat Enterprise Linux Server, some system RPMs in the newer updates can conflict with some of the RPMs that Experience Portal is attempting to install.
- Customized Red Hat Enterprise Linux Server installation that is missing an RPM required by one of the Experience Portal prerequisite RPMs.

### Solution

1. Examine the Prerequisite Installer report to determine exactly what problems were encountered and what log file, if any, is available for more information.

For an example of one such error, see [Sample Prerequisite Installer error message](#) on page 77.

2. If you are using a supported version of Red Hat Enterprise Linux Server and the Prerequisite Installer fails for any of the php RPMs, install the following RPMs from your Red Hat Enterprise Linux Server installation DVD or the Red Hat support website:
  - `php-common.x86_64`
  - `php-cli.x86_64`
  - `php.x86_64`
  - `php-soap.x86_64`
  - `php-xml.x86_64`
  - `php-pgsql.x86_64`
  - `php-process.x86_64`
3. If that does not solve the problem, see [Identifying RPM issues](#) on page 79 for more information.
4. If you aborted the installation, enter `installvp/autoupgradevp` to start the installation.
5. After you fix any prerequisite software issues, you can resume the Avaya Aura® Experience Portal installation script at the current point as long as you did *not* exit the installation script or restart your Avaya Aura® Experience Portal server. If you want to:
  - Resume the script, type `2` and press `Enter` until you go past the first Installation Status page. Avaya Aura® Experience Portal reruns the Prerequisite Installer and you can then continue with the installation instructions.
  - Quit the installation script, type `3` and press `Enter`, then type `1` and press `Enter` to confirm.

### Sample Prerequisite Installer error message

The following is an example of the error messages produced by the Prerequisite Installer when the installer encounters a more recent version of the JDK than Experience Portal was about to install. You can use this example as a guideline for solving any Prerequisite Installer issues you encounter.

```
=====
=====
Installation Status
=====
=====
- Third-Party
Software=====
| - Semanage Libraries-----Success
| - ActiveMQ-----Success
| - GCC and C++ Shared Libraries -----Success
| - Java(TM) 2 SDK Standard Edition-----Failed
```

*The following line indicates the start of the error information:*

```
| | Error: RPM Installation failed with the following detail.
| | =====
| | jdk-1.7.0_45-fcs.x86_64.rpm install
```

```
| | - original directory='/mnt/cdrom/external'
| | - RPM install directory='/mnt/cdrom/external/J2SDK'
| | - RPM name ='jdk-1.7.0_45-fcs.x86_64.rpm'
| | - LOG file = '/tmp/Avaya/install-rpm.log'
| | -----
| | >>>>>Starting RPM installation: 'rpm -U --replacepks
jdk-1.7.0_45-fcs.x86_64.rpm'
```

*The following two lines show the installed JDK version and why it does not match the version Experience Portal needs to install:*

```
| | package jdk-1.7.0_48-fcs (which is newer than jdk-1.7.0_45-fcs)
is
| | Already Completed
| | >>>>>RPM Installation failed: Exit Code: 2
| | =====
```

*The following three lines restate the error that the version found was not the version expected:*

```
| | RPM installation check: Expecting 'Found' = 'Expected'.
| | Expected: jdk-1.7.0_45-fcs.x86_64.rpm
| | Found: jdk-1.7.0_45-fcs Out of Date
| | Non-compliant Java SDK found. Enter "rpm -e j2sdk" in the
command line
| | to uninstall the SDK, then run the prerequisite installer
again.
```

```
=====
Install aborted due to installation failure.
=====
```

**Solution**

1. If you want to verify that this version is actually installed, enter the `rpm -q jdk` command.
2. Before you remove the more recent RPM version that you have installed, check the Avaya online support Web site, <http://support.avaya.com>, to make sure that a solution to this issue has not been posted. If no solution is available:

- a. Look at the RPM installation check line, which is the third highlighted line in the example.

In this case, the Prerequisite Installer expected that the version it found installed on the system would be identical to the version it was installing. The solution is to remove the more recent version and let the Prerequisite Installer install the JDK version Experience Portal requires.

- b. To remove the installed JDK version, enter the `rpm -e jdk` command.
- c. Once the JDK has been removed, return to the Experience Portal installation script and resume the installation.

## Identifying RPM issues

If you have installed a supported version of Red Hat Enterprise Linux Server, you should also verify that the correct RPMs are installed on your system. If you are registered with Red Hat to automatically receive updates, there might be a conflict with one or more of the updated RPMs.

The Experience Portal installation included a file that lists the RPMs and version numbers in the supported version of Red Hat Enterprise Linux Server. This file is installed in `$AVAYA_HOME/Support/RedHat-RPM-Lists` and on the Experience Portal installation DVD under `Support/RedHat-RPM-Lists`.

You can generate a listing of the RPMs that are currently installed on your system and then compare the RPMs you have installed against what has been verified. Other versions than the ones verified might cause your Experience Portal system not to operate.

### \* Note:

If the list of RPMs installed on your system does not exactly match the list of RPMs in the `RedHat-RPM-Lists` file that is located in the Support directory of the Experience Portal installation DVD, it does not necessarily mean there is a problem. However, if you are still experiencing problems after you have reviewed the installation log files and initial configuration settings, you might bring your system in line with the verified list of RPMs to see if that solves the problem.

### Solution

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as root, or log in remotely as a non-root user and then change the user to root by entering the `su -` command.

2. Enter the `cat /etc/issue` command.
3. Verify that the version is Release 6.4 64 bit or later, but not RHEL 7.x.
4. To get a list of the RPMs installed on your system and redirect the list to a file, enter the `rpm -qa --qf='%{name} %{arch}\n' | sort > /tmp/rpmlist.txt` command.

When the system has finished generating `rpmlist.txt`, it stores the file in the `/tmp` directory.

5. To find any differences between the RPMs currently installed and the RPMs that are required for Experience Portal, enter the `diff /tmp/rpmlist.txt $AVAYA_HOME/Support/RedHat-RPM-Lists/RHEL6.7.txt` command.
6. Review the reported differences and bring the installed RPMs in line with the RPMs listed in the `Support > RedHat-RPM-Lists` directory of the Experience Portal installation DVD.
7. If you need the correct version of an RPM, download it from Red Hat website, <http://www.redhat.com>.

8. Once you have identified the problems and downloaded any required RPMs:

- To upgrade an RPM to a different version, enter the `rpm -U <path>/rpmname` command, where `<path>` is the complete path and `rpmname` is the filename of the RPM you are updating.
- To install an RPM, enter the `rpm -i path/rpmname` command, where `path/rpmname` is the complete filename and path of the RPM you are installing.
- To remove an RPM, enter the `rpm -e rpmname` command, where `rpmname` is the name of the RPM you are removing.

**! Important:**

Do not specify a file path when you remove an RPM.

## Installation Progress Bar stops at 25% completed

If the **Installation Progress Bar** does not advance beyond 25% completed and the Post Installation Summary screen states that no summary information could be found, then InstallShield has encountered an internal error and the Experience Portal installation or upgrade was not successful.

This error condition is shown in the following example:

```

Installation Progress
Note: The last portion of the install might take several minutes to
complete.
Please be patient and wait for the Post Installation Summary to be
displayed.
Installing Avaya Aura Experience Portal. Please wait...
|-----|-----|-----|-----|
0%          25%          50%          75%          100%
|||||||||
-----
-----
Post Installation Summary
The Avaya Aura Experience Portal
  installation has completed. Review the following information.
If there are errors or warnings, then please review the installation
logs.
No summary information could be found; please check the log files for
more
information
Press 3 to Finish or 5 to Redisplay [3]
java.io.IOException: java.io.IOException: /opt/_Avaya_Voice-Portal_temp/
MoveLogFiles: not found
    at java.lang.UNIXProcess.<init>(UNIXProcess.java:143)
    at java.lang.Runtime.execInternal(Native Method)
    at java.lang.Runtime.exec(Runtime.java:566)
    at com.installshield.util.Java2ProcessExec.processExec(Unknown
Source)
    at com.installshield.util.ProcessExec.executeProcess(Unknown
Source)
    
```

```

    at
com.installshield.wizardx.actions.ExecWizardAction.executeProcess (Unknown
  Source)
    at com.installshield.wizardx.actions.ExecWizardAction.run (Unknown
Source)
    at java.lang.Thread.run (Thread.java:534)

```

In this case, no Experience Portal software was actually installed or upgraded.

### Solution

1. Type 3 to finish the aborted installation or upgrade process.
2. Return to the beginning of the installation or upgrade procedure you were following and rerun the Experience Portal installation script `installvp` or `autoupgradevp`.

---

## EPM install finishes with an Axis error

A known issue with Axis sometimes affects the EPM software installation. If this problem occurs, the EPM software installer displays either `Exception: AxisFault` or `Warning: Axis may not be accepting new applications properly`, as shown in the following Post Installation Summary screens.

First sample Post Installation Summary screen:

```

Installing EPM...
Possible Error during operation: Register vpappLog with Axis
- Start error description -
Exception: AxisFault
faultCode: {http://schemas.xmlsoap.org/soap/envelope/}Server.generalException
  faultSubcode:
  faultString: Couldn't find an appropriate operation for XML QName
{http://xml.apache.org/axis/wsdd/}deployment
  faultActor:
  faultNode:
  faultDetail:
  {http://xml.apache.org/axis/}hostname:takuma.avaya.com

- End error description -
Possible Error during operation: Deploy Core Services (Part 2/2)
- Start error description -
Error: Could not deploy network log server: 255
Error: Could not deploy alarm server: 255
- End error description -

```

Second sample Post Installation Summary screen showing the `Warning: Axis may not be accepting new applications properly` message:

```

Installing Documentation...
...done installing Documentation
Installing EPM...

```

```
Possible Error during operation: Start Tomcat
- Start error description -
Warning: Axis may not be accepting new applications properly
- End error description -
...done installing EPM
Installing MPP...
...done installing MPP
```

In this case, you need to:

### Solution

1. Type 3 to finish the incomplete installation process.
2. Return to the beginning of the installation procedure you were following and rerun the Experience Portal installation script `installvp` or `autoupgradevp`.

---

## Install hangs at Post Installation Summary screen

A known InstallShield issue sometimes causes the software installation to hang, especially if there is a long delay between steps.

In this case, the Post Installation Summary screen displays:

```
Post Installation Summary
```

```
The Avaya Aura Experience Portal installation has completed. Review the
following
information. If there are errors or warnings, then please review the
installation logs.
```

```
Installing Documentation...
Press 3 to Finish or 5 to Redisplay [3]
```

### Solution

Restart the installation script from the beginning, making sure that you do not pause too long between steps.

The Post Installation Summary screen should display messages similar to the following:

```
Post Installation Summary
```

```
The Experience Portal installation has completed. Review the following
information. If there are errors or warnings, then please review the
installation logs.
```

```
Installing Documentation...
...done installing Documentation
```

```
Installing EPM...
...done installing EPM
```

```
Press 3 to Finish or 5 to Redisplay [3] 3
Moving installation logs to: /opt/Avaya/ExperiencePortal/logs/install_2013-12-12.000
```

```
[sroot@vpms-server cdrom]# reboot
```

---

## MPP installation is hanging

Any hung or stale NFS mount points can cause RPM installations to hang while installing the Experience Portal software.

### Solution

1. On the MPP server, enter the `df` command.
2. If the server:
  - Responds to this command, then all NFS mount points are operational. Make sure that the EPM and MPP clocks are properly synchronized .
  - Does not respond to the command, continue with this procedure.
3. Enter the `umount -l` command to unmount any file systems.
4. If not already done, exit the Experience Portal installation script.
5. If the automount feature is enabled, disable it by commenting out the appropriate lines in the server's `/etc/fstab` file.
6. Reboot the server.
7. Restart the installation script from the beginning.

---

## MPP could not import EPM key

The EPM installs correctly but the Public Key Verification screen displayed during the MPP installation contains the error:

```
Failed to import key from specified host. Please check the following:  
URL: http://EPM-server/cert.pem
```

The most common cause of this error is that the `iptables` firewall is enabled on the primary EPM server.

### Solution

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as root, or log in remotely as a non-root user and then change the user to root by entering the `su -` command.

2. Determine whether the `iptables` firewall is active by entering the `service iptables status` command.
3. If the firewall is:
  - Running, disable it by entering the `chkconfig --del iptables` command and proceed to Step 4.
  - Not running, try to manually download the certificate by entering the `curl http://EPM-server/cert.pem` command, where *EPM-server* is the domain name or IP address of the system where the Primary EPM software is installed.

If the command displays the lines `-----BEGIN CERTIFICATE-----` and `-----END CERTIFICATE-----`, regardless of what information is displayed between those lines, continue with this procedure. Otherwise, contact your Avaya Services representative.
4. Restart the `vpms` service by entering the `/sbin/service vpms restart` command.
 

You will see a series of messages as the command starts to shut down EPM components. When the command has successfully stopped all relevant components, the system displays the message: `VPMS Shutdown Status: [ OK ]`.

The command immediately starts the relevant components. When the command is run successfully, the system displays the message: `VPMS Start Status: [ OK ]`.
5. Verify that you can log in to the EPM Web interface as described in the *Logging in to the Avaya Aura® Experience Portal web interface* topic in the *Administering Avaya Aura® Experience Portal* guide.
6. Return to the MPP server and either continue the current installation or restart the installation process.

---

## Changing PostgreSQL user account passwords

### Before you begin

If you have installed the EPM software and are still logged in to the EPM server, ensure that the environment variables are properly loaded.

### About this task

Experience Portal uses the following PostgreSQL user accounts:

Default account name	Description
postgres	The database administrator can use this account to log in to the local Avaya Aura® Experience Portal database and perform database administration tasks.

*Table continues...*

Default account name	Description
	<p>The password for this account is automatically generated. You cannot add other accounts of this type, delete this account, or change the account name.</p> <p><b>!</b> <b>Important:</b></p> <p>Contact the Avaya Services representative to modify the local VoicePortal database as the database contains critical configuration information used to run the system.</p>
report	<p>This user account can only read those tables in the Experience Portal database that store report data. Speech application developers can use this account to log in to the database to create custom reports using any SQL-enabled report generation tool.</p> <p>You can have any number of accounts of this type with any account names.</p>
reportwriter	<p>This user account can only change the data in the tables that store report data in the Experience Portal database on the Auxiliary EPM server.</p> <p>You can have any number of accounts of this type with any account names.</p> <p><b>!</b> <b>Important:</b></p> <p>Contact the Avaya Services representative to modify the tables that store report data in the local VoicePortal database.</p>
vpcommon	<p>This account allows each Auxiliary EPM server limited access to the main Experience Portal database, and it is required if you plan to configure an Auxiliary EPM server.</p> <p>You can delete this account or set the password for this account, but you cannot add other accounts of this type or change the account name.</p>

Use the `SetDbPassword.sh` script to change all account passwords and add and delete all accounts except for `postgres`, which you cannot delete.

## Procedure

1. Log on to Linux on the Primary or Auxiliary EPM server.

If you are an Avaya Services representative and are using Avaya Enterprise Linux, or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `root`.
- Or log on remotely as a non-root user and enter the `su - sroot` command to change the user to `root`.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and enter the `su -` command to change the user to `root`.

2. Navigate to the `Support/VP-Tools/SetDbPassword` directory under the Experience Portal installation directory.

3. Enter the `cd $AVAYA_HOME/Support/VP-Tools/SetDbPassword` command, where `$AVAYA_HOME` is an environmental variable pointing to the name of the installation directory specified during the Experience Portal software installation.
4. Enter the `bash SetDbPassword.sh update -u username` command, where `username` is the name of the user account whose password you want to change.
5. Type the password you want to use for this account and press `Enter`.

When you change the password for the postgres account, Experience Portal stops and then restarts the **vpms** service.

6. Enter the `/sbin/service vpms status` command to verify if the **vpms** service has started.

### Next steps

If you change the password for the vpcommon account on the primary EPM server, you must also change the password on the auxiliary EPM server.

---

## Time synchronization problems

Experience Portal uses Network Time Protocol (NTP) to control and synchronize the clocks when the EPM and MPP software is running on different servers. The dedicated MPP servers and the optional auxiliary EPM server point to the primary EPM server as the reference clock.

### \* Note:

If the time difference is too large, NTP cannot synchronize the client and server clocks immediately. A workaround is to manually synchronize the clocks before starting NTP. After NTP starts, it adjusts the clients clock with the server timings slowly. The slow process is by design so that confusion with other processes that are running and depends on the clock can be avoided.

To troubleshoot synchronization errors, perform the following procedures in the order given, advancing to the next procedure only if the problem continues to persist.

### Related links

[Determining whether the servers are synchronized](#) on page 87

[Verify that the NTP service is operating properly](#) on page 87

[Synchronizing the MPP or auxiliary EPM clock with the primary EPM](#) on page 88

[Advanced time synchronization troubleshooting](#) on page 89

[Time Synchronization between external database and EPM servers](#) on page 91

---

## Determining whether the servers are synchronized

### Procedure

1. Simultaneously log in to Linux on the EPM server, each MPP server, and, if configured, the optional auxiliary EPM server.
2. On each server, during the same time enter the `date` command.
3. Verify that each MPP server and the optional auxiliary EPM server are synchronized with the primary EPM server.
4. If you find one or more unsynchronized servers, follow the procedure [Verify that the NTP service is operating properly](#) on page 87 below.

### Related links

[Time synchronization problems](#) on page 86

---

## Verify that the NTP service is operating properly

### Procedure

1. If necessary, log in to Linux on each unsynchronized MPP or auxiliary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Enter the `/sbin/service ntpd status` command.

If the server returns a message stating that the NTP service is running, continue with this procedure. Otherwise, go to [Synchronizing the MPP or auxiliary clock with the primary](#) on page 88.

3. To verify that the NTP service is operating properly, enter the `/usr/sbin/ntpq -np` command.
4. A status message similar to the following appears:

```

remote          refid          st  t  when  poll  reach  delay
offset  jitter
=====
=====
123.123.123.123  LOCAL(0)      6   u   23    64     1     0.354
0.361          0.004

```

If the `jitter` value displayed is 4000, go to [Synchronizing the MPP or auxiliary clock with the primary](#) on page 88.

**\* Note:**

The remote IP address displayed should point to the primary EPM server.

**Related links**

[Time synchronization problems](#) on page 86

---

## Synchronizing the MPP or auxiliary EPM clock with the primary EPM

### Procedure

1. If you are working with an MPP server and the MPP software is running, stop it using the EPM Web interface:
  - a. Log on to the EPM Web interface using an account with the Administration or Operations user role.
  - b. From the EPM main menu, select **System Management > MPP Manager**.
  - c. On the MPP Manager page, click the selection box associated with the MPP that you want to stop, then click **Stop** in the **State Commands** group.
  - d. Confirm the action when requested.
  - e. Wait until the operational state changes to Stopped.

To check this, click **Refresh** and look at the **State** field.

**\* Note:**

The operational state changes when the last active call completes or the operational grace period expires, whichever comes first.

2. If necessary, log in to Linux on the server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

3. If you are working with:

- An MPP server, stop the `mpp` process by entering the `/sbin/service mpp stop` command.

- The auxiliary EPM server, stop the *vpms* service by entering the `/sbin/service vpms stop` command.
4. Restart the NTP process by entering the `/sbin/service ntpd restart` command.

The system returns:

```
Shutting down ntpd: [OK]
Synchronizing with time server [OK]
Starting ntpd: [OK]
```

**\* Note:**

After you restart the NTP process, wait up to 10 minutes for the server to synchronize with the EPM.

5. After you give the servers enough time to synchronize themselves, verify that the process worked by entering the `/usr/sbin/ntpq -np` command.

A status message similar to the following appears:

```
remote          refid      st  t  when  poll  reach  delay
offset jitter
=====
123.123.123.123 LOCAL(0)  6   u   23    64    1    0.354
0.361  0.004
```

**\* Note:**

The remote IP address displayed should point to the primary EPM server.

6. If the `jitter` value is still set to 4000, go to [Advanced time synchronization troubleshooting](#) on page 89 below. Otherwise continue with this procedure.
7. If you are working with:
  - An MPP server, start the `mpp` process by entering the `/sbin/service mpp start` command.
  - The auxiliary EPM server, start the `vpms` service by entering the `/sbin/service vpms start` command.
8. Verify the service has started by entering the `/sbin/service mpp status` or `/sbin/service vpms status` command.

### Related links

[Time synchronization problems](#) on page 86

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## Advanced time synchronization troubleshooting

### Procedure

1. If necessary, log in to Linux on the MPP or auxiliary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as root.
- Or log on remotely as a non-root user and then change the user to root by entering the `su - root` command.

Otherwise, log on to Linux locally as root, or log in remotely as a non-root user and then change the user to root by entering the `su -` command.

2. Using an ASCII text editor, open the following files on the server and ensure that the hostname or the IP address of the primary EPM server is correct:
  - `/etc/ntp.conf`
  - `/etc/ntp/step-tickers`
3. If the IP address or hostname is incorrect in either of the above files, fix it then save and close the files. Otherwise simply close the files.
4. If the primary EPM server is synchronized with an external clock, verify that the `/etc/ntp.conf` file on the primary EPM server is properly set up.
5. If you made any changes to the files:
  - a. Stop the appropriate service by entering the `service mpp stop` or `/sbin/service vpms stop` command.
  - b. Restart the NTP process by entering the `/sbin/service ntpd restart` command.

The system returns:

```
Shutting down ntpd: [OK]
Synchronizing with time server [OK]
Starting ntpd: [OK]
```

**\* Note:**

After you restart the NTP process, wait up to 10 minutes for the server to synchronize with the EPM.

- c. After you give the servers enough time to synchronize themselves, verify that the process worked by entering the `/usr/sbin/ntpq -np` command.

A status message similar to the following appears:

```
remote          refid          st  t  when  poll  reach
delay  offset jitter
=====
123.123.123.123 LOCAL(0)    6   u   23    64    1
0.354   0.361  0.004
```

**\* Note:**

The remote IP address displayed should point to the primary EPM server.

6. If the `jitter` value is still set to 4000:
  - a. Reboot the server.
  - b. Enter the `/usr/sbin/ntpq -np` command.
  - c. If the `jitter` value is still set to 4000, reinstall the MPP or auxiliary EPM software.

**Related links**

[Time synchronization problems](#) on page 86

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## Time Synchronization between external database and EPM servers

If you connect a Experience Portal system to an external database, you may want to make sure that you synchronize the time so that it is same across all servers. While Experience Portal only requires that the EPM and MPP server time be synchronized, you can also synchronize all the servers that Experience Portal connects to. For more information, see the *External time sources* topic in the *Implementing Avaya Aura® Experience Portal on multiple servers* guide.

**Related links**

[Time synchronization problems](#) on page 86

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## Changing the Avaya Enterprise Linux network configuration for an existing Avaya Aura® Experience Portal server

### Procedure

To change the Avaya Enterprise Linux network configuration after you have installed the operating system, enter the `system-config-network` command and follow the prompts.

---

## Changing the Product ID for an existing Experience Portal system

### Before you begin

If you have just installed or upgraded the Experience Portal software and are still logged into the server, verify that you reloaded the environment variables as described in [Reloading the Experience Portal environment variables](#) on page 92.

### Procedure

1. Log on to Linux on the Experience Portal Primary EPM server.

If you are an Avaya Services representative, and use Avaya Enterprise Linux or if the Avaya Service accounts are installed on this server:

- Log on to the local Linux console as `sroot`.
- Or log on remotely as a non-root user and then change the user to `sroot` by entering the `su - sroot` command.

Otherwise, log on to Linux locally as `root`, or log in remotely as a non-root user and then change the user to `root` by entering the `su -` command.

2. Navigate to the `Support/VP-Tools` directory by entering the `cd /opt/Avaya/ExperiencePortal/Support/VP-Tools` command.
3. Stop `vpms` service by entering the `service vpms stop` command.
4. To run the script:
 

**On Linux:** Enter the `bash ResetProductID New_ProductID` command where `New_ProductID` is the product ID that you want to use.
5. Restart `vpms` service by entering the `service vpms restart` command.
6. Restart all MPPs by entering the `service mpp restart` command.
7. Follow any on-screen instructions displayed by the script.

---

## Reloading the Experience Portal environment variables

After you install or upgrade an Experience Portal server, you need to load the new environment variables.

### Procedure

1. Log completely out of the Linux system.
2. If you are on the console and are working with:
  - Avaya Enterprise Linux, enter the `su - sroot` command.

- Red Hat Enterprise Linux Server, enter the `su -` command.

**\* Note:**

If you are a remote user, log in to Linux by entering a non-root user name and password at the prompts.

---

## File system check (fsck) reports number of day's error

If a file system check (fsck) is performed during the boot up process and indicates an error of extremely large number of days since the file system was checked, it is likely that:

- The system's clock was set backwards manually.
- NTP was reconfigured and then restarted at the time of OS or software installation.

Following is an example of the error message:

```
Sep 20 13:34:35 i3250-mpp fsck: RHE4.0-AV11.3EP2 has gone 49706 days
without being checked, check forced.
```

```
Sep 20 13:34:35 i3250-mpp fsck: RHE4.0-AV11.3EP2:
```

### Related links

[Solution](#) on page 93

---

## Solution

### Procedure

You can ignore the number of days reported since the last check. Regardless of the exact number of days since the file system was last checked, fsck performs this check and reports the file system errors.

### Related links

[File system check \(fsck\) reports number of day's error](#) on page 93

# Chapter 10: Installation worksheets

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## Installation worksheets for the Avaya Aura<sup>®</sup> Experience Portal single server configuration

Before you begin the installation of the Avaya Aura<sup>®</sup> Experience Portal software on a single server, you should complete these installation worksheets. They are your guide to collecting the information necessary for a successful Experience Portal installation and configuration.

All users should complete the [Single server configuration worksheet](#) on page 94.

In addition, if this deployment includes:

- H.323 connections, complete the [H.323 installation worksheet](#) on page 100.
- SIP connections, complete the [SIP installation worksheet](#) on page 102.
- Automatic Speech Recognition (ASR) servers, complete one copy of the [ASR server installation worksheet](#) on page 98 for each ASR server
- Text-to-Speech (TTS) servers, complete one copy of the [TTS server installation worksheet](#) on page 99 for each TTS server
- Speech applications, complete one copy of the [Speech application installation worksheet](#) on page 103 for each application that will be deployed on the Experience Portal system.

---

## Single server configuration worksheet

Complete this worksheet if you are installing the Experience Portal EPM and MPP software on the same server.

Requirement/ Information Needed	Your value	Notes
Ensure that the hardware meets the minimum requirements. For more information on minimum server		

*Table continues...*

Requirement/ Information Needed	Your value	Notes
machine hardware requirements, see <i>Avaya Aura® Experience Portal</i> Overview and Specification on <a href="http://support.avaya.com">http://support.avaya.com</a> .		
What access method are you going to use?	<input type="checkbox"/> Local keyboard, mouse, and monitor <input type="checkbox"/> Remote access via SSH client	
Server information	IP address _____ Host name _____	The host name cannot contain spaces or periods.
Corporate LAN IP address	_____	
PBX LAN IP address, if different from the corporate LAN	_____	
Avaya Enterprise Linux network configuration information	Subnet mask on Corporate LAN _____ Subnet mask on PBX LAN, if different from Corporate LAN _____ Default gateway _____ Primary DNS Server _____ DNS domain name _____ Time zone _____	See the <i>Avaya-provided server installation</i> chapter in the <i>Implementing Avaya Aura® Experience Portal on multiple servers</i> guide.
For customer-provided hardware, is Release 6.4 64 bit or later installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	See <a href="#">Customer provided operating system installation</a> on page 15.

Table continues...

Requirement/ Information Needed	Your value	Notes
Is the default language for Linux set to English?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If No, set the default language to English. You can change the default language after Experience Portal is installed.
Can all planned Experience Portal servers communicate with one another?	<input type="checkbox"/> Yes <input type="checkbox"/> No	For more information, see the <i>Verifying server communication worksheet</i> in the <i>Implementing Avaya Aura® Experience Portal on multiple servers</i> on <a href="http://support.avaya.com">http://support.avaya.com</a> .
For Avaya Enterprise Linux, user account passwords	cust account password: _____ root account password: _____	
For Red Hat Enterprise Linux Server 6.x 64 , user accounts and passwords	root account password: _____ Non-root account name: _____ Non-root account password: _____	
Installation directory, if different from default	_____	Default directory: /opt/Avaya/ExperiencePortal  Specify an absolute directory path containing only standard English alphanumeric characters and the symbols / (forward slash), _ (underscore), - (hyphen), ~ (tilde), or . (period).
EPM Web interface administration user name and password	User name: _____ Password: _____	The Experience Portal administrator uses this account to log in to the EPM Web interface to administer the Experience Portal system. The account is assigned the Administration user role as well as the Auditor and User Manager user roles. For details about User Roles, see <i>Administering Avaya Aura® Experience Portal</i> on <a href="http://support.avaya.com">http://support.avaya.com</a> .
postgres database account password	Do you want to create a database account that can access the report information in the database? _____	From EP 7.0 onwards, this password is automatically generated.
Do you want to create a database account that can access the	<input type="checkbox"/> Yes <input type="checkbox"/> No	Default user name is: report

Table continues...

Requirement/ Information Needed	Your value	Notes
report information in the database?	If Yes, account user name, if different from the default: _____ Password: _____	This user account can only read those tables in the Experience Portal database that store report data. Speech application developers can use this account to log in to the database to create custom reports using any SQL-enabled report generation tool.  * <b>Note:</b> The report user name cannot be the same as any of the EPM Web interface administration user account names or the report writer user account name.
What is the Product ID for this system?	_____	For information about license requirements, see <i>Avaya Aura® Experience Portal Overview and Specification</i> on <a href="http://support.avaya.com">http://support.avaya.com</a> .
Third-party SSL certificate information.	The location of the existing certificate: _____ The existing certificate's password: _____	
Maximum simultaneous calls	_____	The maximum number of calls that this MPP can handle at any one time. It is equivalent to the maximum number of ports that Experience Portal will allocate to this MPP.  For assistance in sizing your MPP server capacity and setting the correct value for the <b>Maximum Simultaneous Calls</b> parameter for each MPP server, contact your Avaya Services representative or Avaya Business Partner. For more information about MPP server capacity, see <i>Avaya Aura® Experience Portal Overview and Specification</i> on <a href="http://support.avaya.com">http://support.avaya.com</a> .
Will Avaya Services maintain this server?	_____ Yes _____ No If Yes, what is the Listed Directory Number (LDN) for this server?	

Table continues...

Requirement/ Information Needed	Your value	Notes
	_____ Where is the Avaya Service Account authentication file located? _____	
WebLM information	License server URL, if not located on the EPM server: _____ WebLM password: _____	
The external time sources that the EPM server should be synchronize with, if desired	The name or IP address of primary time source: _____ The name or IP address of secondary time source: _____	
Do you want to enter values in the EPM in languages other than English?	_____ Yes _____ No	

## ASR server installation worksheet

Complete a copy of the following worksheet for each Automatic Speech Recognition (ASR) server in the Experience Portal system.

Requirement or information needed	Your value
Server name	_____
IP address	_____
Server type	_____ Loquendo, minimum version: _____ _____ Nuance Recognizer (using Real Speak), minimum version: _____ _____ Nuance Recognizer (using Vocalizer), minimum version: _____  <b>Note:</b> For information about the supported minimum versions, see the Self Service Compatibility Matrix on the Avaya Support site at <a href="http://support.avaya.com">http://support.avaya.com</a> .

*Table continues...*

Requirement or information needed	Your value
Total number of Nuance or Loquendo licenses available on this speech server	_____
Configured languages	_____ _____ _____ _____ _____
Will Avaya Services maintain this server?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, what is the Listed Directory Number (LDN) for this server? _____

## TTS server installation worksheet

Complete a copy of the following worksheet for each Text-to-Speech (TTS) server in the Experience Portal system.

Requirement or information needed	Your value
Server name	_____
IP address	_____
Server type	<input type="checkbox"/> Loquendo, minimum version: _____ <input type="checkbox"/> Nuance RealSpeak, minimum version: _____ <input type="checkbox"/> Nuance Vocalizer, minimum version: _____   <b>Note:</b> For information about the supported minimum versions, see the Self Service Compatability Matrix on the Avaya Support site at <a href="http://support.avaya.com">http://support.avaya.com</a> .
Total number of Nuance or Loquendo licenses available on this speech server	_____
Configured voices	_____

*Table continues...*

Requirement or information needed	Your value
	<hr/> <hr/> <hr/> <hr/> <hr/>
Will Avaya Services maintain this server?	<input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, what is the Listed Directory Number (LDN) for this server? <hr/>

## H.323 installation worksheet

Complete the following worksheet for each H.323 connection that you want to use with this Experience Portal system.

**!** **Important:**

Configure the PBX.

Requirement or information needed	Your value
Do you want to use supervised transfers or perform outbound calling with the Application Interface web service?	<input type="checkbox"/> Yes <input type="checkbox"/> No <div style="margin-top: 10px;"> <span style="color: green; font-weight: bold;">*</span> <b>Note:</b>                      If Yes, you need Communication Manager 3.1 build 369 or later with the Avaya Special Application SA8874 feature.                 </div>
PBX name	<hr/>
Gatekeeper IP address	<hr/>
Alternative Gatekeeper IP address	<hr/>
Codecs installed on the switch	<hr/> <hr/> <hr/> <hr/> <hr/>

*Table continues...*

Requirement or information needed	Your value
Does the PBX use Media Encryption?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>Hunt Group information -- Group 1</i>	
Pilot number	_____
Station range	_____
First station password	_____
What type of passwords does the group use?	<input type="checkbox"/> Identical <input type="checkbox"/> Sequential
What type of calls are the ports used for?	<input type="checkbox"/> Inbound only <input type="checkbox"/> Inbound and outbound <input type="checkbox"/> Maintenance
<i>Hunt Group information -- Group 2</i>	
Pilot number	_____
Station range	_____
First station password	_____
What type of passwords does the group use?	<input type="checkbox"/> Identical <input type="checkbox"/> Sequential
What type of calls are the ports used for?	<input type="checkbox"/> Inbound only <input type="checkbox"/> Inbound and outbound <input type="checkbox"/> Maintenance
<i>Hunt Group information -- Group 3</i>	
Pilot number	_____
Station range	_____
First station password	_____
What type of passwords does the group use?	<input type="checkbox"/> Identical <input type="checkbox"/> Sequential
What type of calls are the ports used for?	<input type="checkbox"/> Inbound only <input type="checkbox"/> Inbound and outbound <input type="checkbox"/> Maintenance
<i>Hunt Group information -- Group 4</i>	
Pilot number	_____
Station range	_____
First station password	_____

Table continues...

Requirement or information needed	Your value
What type of passwords does the group use?	<input type="checkbox"/> Identical <input type="checkbox"/> Sequential
What type of calls are the ports used for?	<input type="checkbox"/> Inbound only <input type="checkbox"/> Inbound and outbound <input type="checkbox"/> Maintenance
<i>Hunt Group information -- Group 5</i>	
Pilot number	_____
Station range	_____
First station password	_____
What type of passwords does the group use?	<input type="checkbox"/> Identical <input type="checkbox"/> Sequential
What type of calls are the ports used for?	<input type="checkbox"/> Inbound only <input type="checkbox"/> Inbound and outbound <input type="checkbox"/> Maintenance

## SIP installation worksheet

Complete the following worksheet for each SIP connection that you want to configure on this Experience Portal system.

You can configure as many SIP connections as you need. However, only one SIP connection can be enabled at any one time.

**!** **Important:**

Configure the PBX and Avaya Aura® Session Manager.

Requirement or information needed	Your value
Do you want to use Secure Real-time Transport Protocol (SRTP)?	<input type="checkbox"/> Yes <input type="checkbox"/> No  <span style="color: green;">*</span> <b>Note:</b> If Yes, you need Avaya Aura® Session Manager with Communication Manager version 5.2.
PBX name	_____

*Table continues...*

Requirement or information needed	Your value
What proxy transport do you want to use?	_____ TCP _____ TLS
SIP Domain	_____
Proxy server address	_____
Proxy server port, if different from the default	_____ <p><b>* Note:</b> The default for TCP is 5060, and the default for TLS is 5061.</p>
Listener port, if different from the default	_____ <p><b>* Note:</b> The default for TCP is 5060, and the default for TLS is 5061.</p>
P-Asserted-Identity, if used	_____
Simultaneous call settings	_____ Maximum number of calls that this connection can handle at any one time If desired, specify the number of simultaneous calls that can be: _____ Inbound _____ Outbound <p><b>* Note:</b> If you specify the number of inbound and outbound calls, the values should add up to the maximum number of calls.</p>

## Speech application installation worksheet

Complete the following worksheet for each speech application you want to deploy on the Experience Portal system.

**\* Note:**

For information about using Orchestration Designer to create speech applications, see the Orchestration Designer documentation at <http://support.avaya.com/>.

Requirement or information needed	Your value
Application name	_____
What is the application MIME type?	_____ VoiceXML _____ CCXML

*Table continues...*

Requirement or information needed	Your value
	_____ CCXML/VoiceXML
If the MIME type is VoiceXML or CCXML/VoiceXML, what is the URL to the initial VoiceXML page?	_____ _____
If the MIME type is CCXML or CCXML/VoiceXML, what is the URL to the initial CCXML page?	_____ _____
If the application uses Automatic Speech Recognition (ASR) resources, which are the languages that you require?	_____ _____ _____ _____
If the application uses Text-to-Speech (TTS) resources, which are the voices that you require?	_____ _____ _____ _____
What is the application used for?	_____ Specific inbound calls _____ Inbound calls not handled by another application _____ Outbound calls  <b>* Note:</b> If the application is used for outbound calls, configure the Application Interface web service. For details, see <i>Administering Avaya Aura® Experience Portal</i> .
Which dialed numbers are associated with the application?	_____ _____ _____ _____
Which server performs DTMF processing?	_____ The ASR server. You must select this option if the DTMF grammar uses the ECMA script. _____ The MPP server.

Table continues...

Requirement or information needed	Your value
If the application is not developed using Orchestration Designer, do you want to add the log and call flow data information to the Experience Portal report database so that the information appears in the application reports?	<input type="checkbox"/> Yes <input type="checkbox"/> No   <b>Note:</b> If Yes, configure the Application Logging web service.

# Chapter 11: Resources

## Documentation

The following table lists the documents related to Experience Portal. Download the documents from the Avaya Support website at <http://www.avaya.com/support>:

<b>Title</b>	<b>Description</b>	<b>Audience</b>
<i>Avaya Aura® Experience Portal Documentation Roadmap</i>	Lists all the documents related to Experience Portal and describes the organization of content across the documents.	Avaya Professional Services Implementation engineers
<i>Avaya Aura® Experience Portal Overview and Specification</i>	Describes tested product characteristics and capabilities, including product overview and feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Implementation engineers
<i>Implementing Avaya Aura® Experience Portal on multiple servers</i>	Provides procedures to install and configure Avaya Aura® Experience Portal software on two or more dedicated servers.	Implementation engineers
<i>Upgrading to Avaya Aura® Experience Portal 7.1</i>	Describes how to upgrade your Avaya Aura® Experience Portal 6.0 or 7.0 to Experience Portal 7.1.	Implementation engineers
<i>Deploying Avaya Aura® Experience Portal in an Avaya Customer Experience Virtualized Environment</i>	Provides procedures for deploying the Experience Portal virtual application in the Avaya Customer Experience Virtualized Environment. This document includes installation, configuration, initial administration, troubleshooting, and basic maintenance checklists and procedures.	Implementation engineers
<i>Administering Avaya Aura® Experience Portal</i>	Provides general information about and procedures for	Implementation engineers

*Table continues...*

Title	Description	Audience
	administering and configuring specific Avaya Aura® Experience Portal functions and features using a web-based interface.	
<i>Troubleshooting Avaya Aura® Experience Portal</i>	Provides general information about troubleshooting and resolving system problems. This document also provides detailed information and procedures for finding and resolving specific problems.	Implementation engineers
<i>Avaya Aura® Experience Portal Security White Paper</i>	Provides information about the security strategy for Experience Portal 7.1 and provides suggestions that companies can use to improve the security of their Experience Portal systems and applications.	Implementation engineers
Avaya Aura® Experience Portal 7.1 Mobile Web Best Practices White Paper	Provides recommended strategies for deploying Avaya Aura® Orchestration Designer Mobile Web applications with Avaya Aura® Experience Portal 7.1, detailing configuration for security, scalability and high availability.	Avaya Professional Services Implementation engineers

### Related links

[Finding documents on the Avaya Support website](#) on page 107

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## Finding documents on the Avaya Support website

### About this task

Use this procedure to find product documentation on the Avaya Support website.

### Procedure

1. Use a browser to navigate to the Avaya Support website at <http://support.avaya.com/>.
2. At the top of the screen, enter your username and password and click **Login**.
3. Put your cursor over **Support by Product**.
4. Click **Documents**.
5. In the **Enter your Product Here** search box, type the product name and then select the product from the drop-down list.

6. If there is more than one release, select the appropriate release number from the **Choose Release** drop-down list.
7. Use the **Content Type** filter on the left to select the type of document you are looking for, or click **Select All** to see a list of all available documents.  
  
For example, if you are looking for user guides, select **User Guides** in the **Content Type** filter. Only documents in the selected category will appear in the list of documents.
8. Click **Enter**.

### Related links

[Documentation](#) on page 106

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## Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

### About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

### Procedure

- To find videos on the Avaya Support website, go to <http://support.avaya.com> and perform one of the following actions:
  - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.
  - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.
- To find the Avaya Mentor videos on YouTube, go to [www.youtube.com/AvayaMentor](http://www.youtube.com/AvayaMentor) and perform one of the following actions:
  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
  - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

#### **Note:**

Videos are not available for all products.

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## Support

Go to the Avaya Support website at <http://support.avaya.com> for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

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