



# **Implementing Avaya 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 Experience Portal software on a single server machine.

This document is intended for anyone who is involved with installing, configuring, and verifying Avaya 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.

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## Change history

Issue	Date	Summary of changes
1.1	20 October 2020	Updated the procedure of Installing Red Hat Enterprise Linux Server on a single server.

# Chapter 2: Avaya provided operating system installation

When you purchase an Avaya provided server offer for Avaya 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 Enhanced Access Security Gateway (EASG) solution.

The Avaya 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 common server R3 both HP DL 360 G9 and Dell R630, see [Installing the HP ProLiant DL360 G9 Server](#) or [Installing the Dell PowerEdge R630 Server](#).

## \* Note:

Ensure that you download the Avaya Experience Portal ISO from the Avaya Support Site.

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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.
- 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.

For details on Dell R630 specific issues related to which Ethernet port to use, see [Product Support Notice](#).

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 78 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 craft and sroot accounts but they are disabled with no predefined password. The craft and sroot accounts are Avaya Service Accounts and can only be enabled via EASG control. You should use the cust and root accounts to login to the server. Avaya Enterprise Linux 8.0 has assigned a default password for both accounts.

For more details, see [State of identity variables in Master Software Image and on first boot](#) on page 13

**\* Note:**

- 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 root.
- 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 cust and enter the `su -` command to change to the user root.

### Next steps

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

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## State of identity variables in Master Software Image and on first boot

After you install and configure Avaya Enterprise Linux, the Enterprise Linux Installer creates user accounts. The sroot and craft account passwords are disabled with no predefined password, unless EASG is enabled. You should use cust and root accounts to login to the server.

User name	Group	Purpose	Status of Account
sroot	root	Avaya Services root access	Disabled
root	root	Customer root access	Enabled
craft	susers	Avaya Services non-root access	Disabled
cust	susers	Customer non-root access	Enabled

### First boot

You will not be able to use the Avaya Service accounts, craft and sroot, to gain access to the server once the server is upgraded to Avaya Enterprise Linux 8.0. The craft and sroot accounts will be controlled via EASG as soon as Experience Portal is installed.

The craft and sroot users are disabled unless EASG is enabled. In this case, the craft and sroot users will use challenge/response authentication.

This applies to both non-OVA and OVA deployments.

### First root login

The root and cust users which have default values in the software image, are forced to be updated on first root login. These accounts that are needed to log into a newly created system use pre-defined passwords:

Account	User Name	Password
Non-root access	cust	custpw
Root access	root	rootpw

After you login to the server as root using the default password, Avaya Enterprise Linux 8.0 will enforce an Avaya First Login Experience which will prompt for a new bootloader, root and cust passwords.

To support headless configuration, root & cust are not forced to be updated on first boot, but are forced to be updated on the first root login.

---

## Restarting the Linux system in a single user mode for diagnostics

### About this task

This task must be done on the head of the server since it is executed prior to network services being available.

 **Note:**

Restarting the Linux system in a single user mode requires a password.

### Procedure

1. Reboot the system or power on the system.
2. As soon as BIOS ends, start typing `ESC`. The screen is blank at this time and the window is only a few seconds long.
3. If the grub screen shows up, proceed with the next step. Otherwise wait till the system boots and then reboot again.
4. Type `p` to enter the boot loader password.
5. Type in the boot loader password that you have set in first root login.
6. Type `a` to append the line.
7. Go to the end of the line, enter a space by pressing the space bar and then type `single`.
8. Press `Enter` to exit edit mode.

The system will then boot into single user mode.

9. Type the root password when the system prompts.
10. Type the command `runlevel`. It should respond **NS**, where the S stands for single user.
11. Perform diagnostics.
12. Press `Ctrl-D` to return to normal operation.

# Chapter 3: Customer provided operating system installation

When you purchase the Avaya Experience Portal software-only offer, you must obtain and install Red Hat Enterprise Linux 7.8 or 8.2 64 bit or later minor update. For security updates, you must update Red Hat Enterprise Linux to 7.8 or 8.2 64 bit or later minor update.

**\* 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 7.8 or 8.2 64 bit, see the Red Hat website, <http://www.redhat.com>.

For hardware requirements, see *Avaya Experience Portal Overview and Specification* on the Avaya Support website.

If you have already installed Red Hat Enterprise Linux Server 7.8 or 8.2 64 bit, the `aepinstall` bash script will check all required RPM packages.

**\* Note:**

Before installing Red Hat Enterprise Linux Server 7.8 or 8.2 64 bit for the software-only offer, you must install and integrate all the new hardware into the system.

---

## Installing Red Hat Enterprise Linux Server on a single server

### Before you begin

Have the completed [Single server configuration worksheet](#) on page 78 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 Red Hat Enterprise Linux** option.
3. Select **English** as the language to use during the installation process.
4. Select the U.S. English keyboard option.
5. Select **Installation Destination** and select the disk to install Red Hat Enterprise Linux..
6. Select **Network and Host name**.
7. Enter the host name and select **Apply**.

### **Note:**

All network configuration including the hostname and IP (and other properties specified in steps 7 and 8) must remain the same.

8. To configure the network:
  - a. Ensure that `eth0/ens192`, the main Ethernet interface, is enabled.
  - b. 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. Select **Begin Installation**.
11. Enter the root password. Ensure that you enter the value that you have specified in the installation worksheet.
12. Complete the installation and reboot the system.
13. After the system reboots, complete the post-installation configuration procedures.
  - a. Accept the **License Agreement** and **Finish Configuration** (RHEL 8.2).
  - b. Set the system clock.
  - c. 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.

- d. Disable the firewall.
  - e. Disable SELinux or set it to Permissive mode.
  - f. Configure a yum repository that has required Experience Portal packages.
14. Configure Avaya Secure Access Link (SAL) or the Enhanced Access Security Gateway (EASG) 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 20.

# 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 Experience Portal software installation prerequisites

## Software installation on a single server prerequisites overview

Complete these tasks before you install the Avaya 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 Experience Portal</i> .
	Make sure that you have access to the Avaya Experience Portal site-specific licensing information from Avaya. Make sure that you have access to the Avaya Experience Portal site-specific licensing information from Avaya, as described in the <i>License Requirements</i> topic in <i>Upgrading to Avaya Experience Portal</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 24.

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 25.
	For Red Hat Enterprise Linux installations, ensure that you configure a yum repository containing all the required Experience Portal packages. Otherwise the prerequisite installation for the Experience Portal server may fail.
	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 27.

## Platform Vendor Independent Check

The Platform Vendor Independent Check (PVI checker) is the same utility that is executed by the AEP installer (aepinstall.sh). The PVI checker (pvicheck.sh) can be run by customers outside of installation. That is, a customer can check the prerequisites or preinstall these packages before installing Experience Portal.

The PVI checker is located under Support/PrereqChecker/Installer of the Experience Portal media.

### \* Note:

Experience Portal does not bundle any packages that are obtained from Red Hat. Experience Portal provides a PVI checker that installs all Red Hat Enterprise Linux packages that are needed to install Experience Portal, provided that customers configure a valid yum repository on the system that contains all required Experience Portal prerequisites. Customers can either run the Experience Portal PVI checker standalone outside of installation or alternatively run the PVI checker within the Experience Portal installer. All OS packages required by Experience Portal are standard Red Hat Enterprise Linux packages. Since Avaya Enterprise Linux for Experience Portal 8.0 already contains all the required prerequisites, this note primarily applies to software-only customers.

### PVI checker

The PVI checker can be executed by running the `bash pvichecker.sh` script. This checks all the pre-requisites required such as non-root account, hostname resolvable, SELinux not in enforcing mode, required Red Hat RPM packages installed, and then lists the ones that passed or failed.

If the PVI checker is invoked with the `-install` parameter, that is running `pvicheck.sh -install`, it installs any missing RPMs, provided a yum repository is configured. It also performs other correction tasks like adding hostname to `/etc/hosts` and disabling firewall.

The PVI checker can also be invoked with the `-headless` parameter which suppresses the need for user input.

---

## High level packages required for the installation of Experience Portal 8.0

The following lists the high level packages that are required for the installation of Experience Portal 8.0.

 **Note:**

If these packages are not already installed on the OS and a yum repository is configured, the Experience Portal installer will install them.

These packages do not include dependencies that may be required to install these packages. The exact dependency list will vary and depends on what the customer has installed on their OS.

You can view the full list of RPMs required for Avaya Experience Portal 8.0 by running `pvicheck.sh`.

### Red Hat 7.x and Red Hat 8.x pre-requisite RPMs:

`policycoreutils-python-utils.noarch`

`libgcc.x86_64`

`libgcc.i686`

`libstdc++.x86_64`

`libstdc++.i686`

`glibc.x86_64`

`glibc.i686`

`openssl.x86_64`

`openssl-libs.i686`

`httpd.x86_64`

`mod_ssl.x86_64`

`httpd-tools.x86_64`

`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`

`java-1.8.0-openjdk.x86_64`

libicu.x86\_64  
java-1.8.0-openjdk-headless.x86\_64  
java-1.8.0-openjdk-devel.x86\_64  
chrony.x86\_64  
net-tools.x86\_64  
hostname.x86\_64  
sysstat.x86\_64  
bc.x86\_64  
tcpdump.x86\_64  
wget.x86\_64  
perl.x86\_64  
libidn.i686  
krb5-libs.i686  
fontconfig.i686  
openldap.i686  
gd.i686  
libatomic.i686  
cairo.x86\_64  
lsof.x86\_64  
libpng12.i686  
libpng12.x86\_64  
pam.i686  
libcap.i686  
mlocate.x86\_64  
bind-utils.x86\_64  
traceroute.x86\_64  
dos2unix.x86\_64  
unzip.x86\_64  
zip.x86\_64  
nfs-utils.x86\_64  
libxml2.x86\_64  
**Red Hat 7.x pre-requisite RPMs**  
python3.x86\_64

## Red Hat 8.x pre-requisite RPMs

compat-openssl10.i686

compat-openssl10.x86\_64

libnsl2.i686

libnsl2.x86\_64

libnsl.i686

libnsl.x86\_64

nspr.i686

---

## 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 RH8.2.64-AV12EP8. 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 `cat /etc/redhat-release` command to ensure that the Linux build version is correct.

The result for both Red Hat 7.8 and Red Hat 8.2 should be the either of the following versions at a minimum:

- Red Hat Enterprise Linux Server release 7.8 (Maipo)
- Red Hat Enterprise Linux release 8.2 (Ootpa)



---

# 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 *If both these checks fails, you need to manually map the hostnames as described in [Implementing Avaya 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 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 Aura® Session Manager.

- 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 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 Aura<sup>®</sup> Session Manager
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.

# Chapter 5: Installing Experience Portal

---

## Installing the Avaya Experience Portal software

### Before you begin

- Complete the [Single server configuration worksheet](#) on page 78 and have it available to help answer the questions raised during the installation.
- Before you install the software, read the Avaya Experience Portal [Release notes](#) on the Avaya Support site. These release notes contain information about the product that is not included in the formal documentation set.
- Download any patches for Avaya Experience Portal Release 8.0 from the Avaya Support website 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 20.
- Ensure that you download the Avaya Experience Portal ISO file from the Avaya Support website and burn it to a DVD.
- Ensure that you configure a yum repository if you have installed Red Hat Enterprise Linux Server on a single server.

### \* Note:

You can run the prerequisite installer before installing Experience Portal. For more details, see [Platform Vendor Independent Check](#) on page 21

### Procedure

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

### \* Note:

By default, the `craft` and `sroot` users are disabled in Avaya Experience Portal 8.0 Avaya Enterprise Linux fresh installations. Avaya Service Login accounts can only access the Avaya Experience Portal system if they are EASG protected.

2. Insert the Avaya Experience Portal 8.0 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 Experience Portal installation ISO image to that directory. However, that directory must be readable by all users on the system. If the directory is only readable for root users, the installation script will encounter errors and will not complete successfully.

3. Mount the Avaya Experience Portal 8.0 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 -p /media/cdrom` command.

**\* Note:**

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

- Run the `mount -o ro /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.

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

The `bash aepinstall.sh` script first checks to make sure the calling user has root privileges and that FIPS is disabled:

The system displays the following message:

```
20200914-14:17:23 - Installation of AEP started
Check if calling user has root privileges
Check if FIPS is enabled. Installation / Upgrade with FIPS enabled is not
currently supported.
```

```
-----
                Avaya Experience Portal (AEP) Install
                   Version: 8.0.0.0.0498
            Copyright 2020 Avaya Inc. All Rights Reserved
            -----
```

```
=====
Overview
-----
```

```
This installer adds Avaya Experience Portal - to your Linux server.
```

```
All pre-requisite Redhat Linux RPMs will be installed as part of this installation
A yum repo MUST be configured prior to launching this installer.
=====
Logging to file: /opt/Avaya/InstallLogs/aepinstall.log
PRESS <ENTER> TO CONTINUE:
```

6. Press any key to continue.
7. Read through the end user license agreement and select **Y** to accept the terms of the license agreement.

Experience Portal automatically starts the PVI checker, which analyzes your system's hardware and operating system configuration. The PVI checker does the following:

- Checks to ensure that a non-root user account has been created.
  - Asks the user to confirm that one of these accounts is the non-root account the user has configured, and to set the password.
  - Checks for any missing pre-requisite RPMs and installs any if missing.
  - Creates a log file in `/opt/Avaya/InstallLogs/pvichk.log`.
8. After the configuration analysis is complete, the PVI checker displays a message stating whether all prerequisite checks passed followed by the first Prerequisite Status page.
  9. From the installation options, enter 4 to select Single server - Primary EPM and MPP and confirm.
  10. On the EPM Administrator section, do the following
    - a. Type the name you want to use for the 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 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`.
11. On the Database Logins section, you can create a PostgreSQL database user account that can read the report data in the Experience Portal database. Select `y` or `n`.

If you select `y`, do the following:

- a. Enter the account name or press `Enter` to use the default account [report].
- b. Type a password for the account and press `Enter`.
- c. Confirm the password by typing the password again and press `Enter`.

The system displays the EASG (Enhanced Access Security Gateway) Acceptance of Terms.

12. Read through the EASG Acceptance of Terms.

- To enable EASG, Type `y` and press `Enter`.
- To disable EASG, type `n` and press `Enter`.

13. On the Database Login for Auxiliary EPM section, 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.

Answer `y` or `n` when the system prompts if you would like to configure this Primary EPM to support one or more Auxiliary EPM server.

If you select `y`, then do the following:

- a. Type the password for this account and press `Enter`.
- b. Confirm the password by typing the password again and press `Enter`.

14. On the Product ID section, 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.

15. 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.

By default, the installer generates and installs a SHA256 2048 bit server certificate. The installer also generates and installs a SHA256 2048 bit EPM Root certificate. External certificates (CAs) or third party certificates can be installed after the AEP installer is completed.

16. When the system displays a summary of all of the inputs entered, do the following:

- Press `y` to continue with these settings
- Press `n` to re-enter the settings.

17. Experience Portal 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.

Please wait until the `aepinstall.sh` script completes installing and displays the message:

```
20200917-04:04:15 Finished Installation
The aepinstall.sh script creates log file: /opt/Avaya/InstallLogs/aepinstall.log.
This log file can be checked to verify installation success.
```

18. 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.

19. Check the status of the `vpms` service and all other services by running the following command:

```
systemctl is-active vpms tomcat sl activemq httpd postgresql
epmcompmgr
```

A list appears for each service. If the `vpms` service is running properly, the command displays `Active` for all the services in the list.

## Next steps

- To verify if the installation or upgrade was successful, go to `http://EPM-Server/VoicePortal` and log into the Experience Portal web interface.

Where, `EPM-server` is the hostname or the IP address of the system where the primary EPM logon using EPM Administrator account.

- Install any required patches that you download from the Avaya online support website, <http://support.avaya.com>.
- Add the MPP Server using EP web admin.
- 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 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 default installation directory that you specify during installation. However, several components cannot be relocated and are stored in fixed paths even if you specify a different path than the default installation directory.

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

This table does not include standard RHEL packages, such as Apache and NTP, that are installed with or used by Experience Portal.



Component	Directory
Experience Portal Manager web application	/opt/Tomcat/tomcat/webapps/VoicePortal
Avaya Experience Portal Management web services	/opt/Tomcat/tomcat/webapps/axis2
Avaya License Manager	The collocated WebLM is installed in the /opt/Tomcat/tomcat/webapps/WebLM directory.  * <b>Note:</b> If you use an external WebLM, the license manager can be installed in a different directory on the external system.
Experience Portal database	The Postgres files are installed in the /var/lib/pgsql directory.  * <b>Note:</b> Most of the database data is in the /var/lib/pgsql/data directory.
Tomcat for EPM and HTML	/opt/Tomcat
Tomcat for SMS and Email Processor	/opt/MMServer
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.

*Table continues...*

System	User name	Password	Purpose
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> <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: report	User Defined	This user account allows external Experience Portal servers to read the data in the tables that store report data on the Primary EPM server.
PostgreSQL on the optional auxiliary EPM server	User defined Default user name is: reportwriter	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

---

## Optional: Single server Avaya Experience Portal and Application server configuration

If you install Avaya Experience Portal, EPM, and the media server software on the same server, you can also install a Tomcat application. Tomcat 8.5.57 is the version that is shipped with Avaya Experience Portal. Tomcat 8.5.57 is available in the `$AVAYA_HOME/Support/AppServer` directory.

Avaya Experience Portal includes an installation script for the Tomcat application server. For details, see [Optional: Installing a Tomcat application server on the Experience Portal server](#) on page 36. You can also do a manual installation of the Tomcat application. For details, see [Optional: Manually installing a Tomcat application server on the Experience Portal server](#) on page 37.

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 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.
- 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 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 [Installing the Avaya Experience Portal software](#) on page 28.
- Ensure that you download the Avaya Experience Portal ISO file from the Avaya Support website and burn it to a DVD.

### Procedure

1. Log in to Linux on the Experience Portal server in one of the following ways:
  - Log on to the local Linux console as root.
  - Log on remotely as a non-root user, and then change the user to root by entering the `su - root` command.
2. Navigate to the `Support/AppServer` directory in the Experience Portal installation directory by running the `cd $AVAYA_HOME/Support/AppServer` command.  
  
`$AVAYA_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 [Reloading the Experience Portal environment variables](#) on page 76.
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.

**\* Note:**

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

4. Follow the prompts that the script displays.

When the installation is complete, the system displays the message `The Application Server page under System Management of the EPM web admin is now enabled. To be able to view this page, the EPM must be restarted..`

The script then prompts to restart the `vpms` service.

5. Enter `y` to restart the `vpms` service or `n` to not to start the `vpms` service.
6. Start the Application server by running the `systemctl start appserver` command.
7. Check the server status by running the following command: `systemctl is-active appserver`.

The server must respond that the `appserver` is active.

8. 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.

9. To administer the Tomcat server from the Tomcat Manager Web interface, go to `http://EPM-server:7080/manager/html`, 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 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 8.5.57 application server.

### Before you begin

- Install the Experience Portal software on the server.

- Experience Portal includes the Tomcat installation tar file for Tomcat 8.5.57. To install a later build of the 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 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 on to the local Linux console as root.
  - Log on remotely as a non-root user, and then change the user to root by entering the `su - root` command.
2. Create the installation directory by running the `mkdir /opt/Tomcat/AppServer` command.
3. Navigate to the installation directory by running the `cd /opt/Tomcat/AppServer` command.
4. To:
  - Use the Tomcat 8.5.57 installation tar file installed with Experience Portal, run the `cp $AVAYA_HOME/Support/AppServer/manual/apache-tomcat-8.5.57_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-8.5.57_ae.tar.gz` installation file that was installed with Experience Portal, the installation subdirectory is `apache-tomcat-8.5.57`.
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. Also, retype the hyphens to remove hidden characters.

In addition, if you installed Tomcat in a directory other than `/opt/Tomcat/AppServer`, ensure that 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.
- 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. Modify the Tomcat context configuration XML file:

- a. Navigate to the configuration directory by running the `cd tomcat-subdirectory/webapps/manager/META-INF` command.
- b. Copy the configuration file by running the `cp context.xml context.xml.old` command.
- c. Open context.xml in the XML editor of your choice.
- d. Comment out the Value xml tag with className set to `"org.apache.catalina.valves.RemoteAddrValue"` using the `<!--` start comments and `-->` end comment tags as shown below:

```
<!--  
<Valve className="org.apache.catalina.valves.RemoteAddrValue"  
    allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" />  
-->
```

- e. Save and close the file.

13. 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.
- e. Log out and re-log in for the environment variables to take effect.

14. Configure the Application server to run as a Linux systemd service so that the Application server responds to the Linux `systemd service` command and the Linux automatically restarts the Application server if the machine reboots:

- a. Run the `cd /etc/systemd/system` command.
- b. Copy the Avaya-provided Application server script to this directory by running the `cp $AVAYA_HOME/Support/AppServer/appserver.service .` command.
- c. Set the script permissions by running the `chmod 0755 appserver.service` command.
- d. Open the `appserver.service` script in an ASCII editor and change all instances of `%%APPSERVER_HOME%%` with the directory you installed on the appserver.



- e. Change the ownership of the directories by entering the following commands:

```
chown -R avayavp:avayavpgroup $APPSERVER_HOME/logs
chown -R avayavp:avayavpgroup $APPSERVER_HOME/lib
chown -R avayavp:avayavpgroup $APPSERVER_HOME/conf
chown -R avayavp:avayavpgroup $APPSERVER_HOME/bin
chown -R avayavp:avayavpgroup $APPSERVER_HOME/temp
chown -R avayavp:avayavpgroup $APPSERVER_HOME/work
chown -R avayavp:avayavpgroup $APPSERVER_HOME/webapps
```

- f. Copy the Avaya-provided Application server pre-script to the \$APPSERVER\_HOME directory by running the command:

```
cp $AVAYA_HOME/Support/AppServer/appserver-pre.sh
$APPSERVER_HOME
```

- g. Set the script permissions by running the `chmod 0755 $APPSERVER_HOME/appserver-pre.sh` command.

- h. Register the service by running the following commands:

```
systemctl daemon-reload
systemctl enable appserver.service
```

- i. Start the Application server by running the `systemctl start appserver.service` command.

- j. Give the server time to start, and then check the server status by running the `systemctl is-active appserver` command.

The server must respond that the Tomcat service is running.

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

15. In the `/opt/Tomcat/tomcat/lib/config/voiceportal.properties` file, set the value of `enableLocalAppServer` to true and then restart the vpms service.

16. Restart the `vpms` service by entering the `/sbin/service vpms restart` command.

---

## 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 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 `$APPSERVER_HOME/conf` command where `$APPSERVER_HOME` 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, the Avaya Service accounts will not be available after the Avaya Enterprise Linux upgrade. The Avaya Service accounts will be available through EASG configuration during the Experience Portal upgrade.

- 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.
2. Enter the `systemctl stop appserver.service` 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 `systemctl disable appserver` command.
9. Remove the application server service script by entering the `rm /etc/systemd/system/appserver.service` 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 `systemctl restart vpms` command.  
This command shuts down and restarts the `vpms` server.
12. Check the status of the `vpms` service by entering the `systemctl is-active vpms` command.  
The command displays the message: `active`


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

## Experience Portal basic system configuration overview

After you install the Avaya 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 Experience Portal single server configuration</a> on page 77.	
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>• Configuring the Avaya Service accounts</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 47.   <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 51.	

*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 53 or <a href="#">Adding a SIP connection</a> on page 54.	
6	(Optional) Add multichannel applications, such as SMS, Email, and HTML applications. You can add one SMS, one Email and one HTML applications for each channel as described in <i>Administering Avaya 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 54.	
8	If desired, add one or more Automatic Speech Recognition (ASR) servers as described in <a href="#">Adding ASR servers</a> on page 55.	
9	If desired, add one or more Text-to-Speech (TTS) servers as described in <a href="#">Adding TTS servers</a> on page 55.	
10	Add the Experience Portal test application as described in <a href="#">Adding the Experience Portal test application</a> on page 55	
11	Test the basic system by running the sample application as described in <a href="#">Running the sample application</a> on page 57.	
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 66.	
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 68</li> <li>• <a href="#">Configuring Japanese on Avaya Enterprise Linux</a> on page 69</li> <li>• <a href="#">Configuring Korean on Avaya Enterprise Linux</a> on page 70</li> </ul>	
14	If you want to enable organization level access in Experience Portal, execute the <code>EnableOrganizations</code> command as described in the <i>Configuring organization level access in Avaya Experience Portal</i> section of the <i>Administering Avaya Experience Portal</i> guide.	

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

### Procedure

1. Open a compatible 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 49.

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 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 49.
	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 50
	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 50.
	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.

---

## 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**.

---

## 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.

---

## 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.

---

## 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.

### About this task

Make sure that you have installed a supported version on Nuance Speech Server and Nuance Recognizer. For Nuance version information, see the *Avaya Experience Portal Overview and Specification*.

### 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.result.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`.

---

## Installing the license file

A license file is required 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 7.0.1 as described in the file `/opt/Avaya/ExperiencePortal/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.

## 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 by 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.

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 that 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 displays 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 displays 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
VoiceXML application	In the <b>Type</b> field, select <b>VoiceXML</b> . 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.



Application type	Required parameters
<b>CCXML application</b>	In the <b>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.

---

## 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.


*Table continues...*

Call Status	Prompt
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.

---

## 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	<p>Thank you.</p> <p> <b>Note:</b></p> <p>When the call conference is successful, the application plays additional prompts.</p> <p>For H323, enter 9 with the phone number. Otherwise, the call fails.</p>

---

## 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.

---

## 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`.

---

## 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 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.

---

## Running the Application Interface test client VPAppIntfClient.sh

### About this task

Use this procedure to run the Application Interface test client `VPAppIntfClient.sh`, and verify if the Application Interface test client shows the total and unused ports available for outcalls, and the result of the LaunchVXML operation.

**\* Note:**

If FIPS is enabled on the system where `VPAppIntfClient.sh` is being launched, you need to specify the following additional command line arguments:

- `-K <Java Truststore>`: The Java truststore file name including the path which contains all the trusted certificates. If the command is running on Primary EPM, the Primary EPM truststore can be specified using the value `EPM_TRUSTSTORE`.
- `-O <Java Truststore password>`: The password for the Java truststore file. If the command is running on Primary EPM, the Primary EPM truststore password can be specified using the value `EPM_TRUSTSTORE_PASS`

**Before you begin**

Ensure that you configure Avaya Experience Portal for the Application Interface test client as described in [Configuring Experience Portal for outcall](#) on page 60.

**Procedure**

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

If you are an Avaya Services representative, and use Avaya Enterprise Linux, the Avaya Service accounts will not be available after the Avaya Enterprise Linux upgrade. The Avaya Service accounts will be available through EASG configuration during the Experience Portal upgrade.

- 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.

2. Navigate to the Application Interface test client directory by entering the `cd $AVAYA_HOME/Support/OutCallTest/VPAppIntfClient` command.

3. Use the following examples to show calling Application Interface test client using different authentication schemes:

- a. Password Authentication

Enter the `./VPAppIntfClient.sh -n <outcall-username> -p <outcall password>` command to request the number of available outbound ports.

- `<outcall-username>` is an Experience Portal user configured on the Users page of the EPM web interface..
- `<outcall password>` is the password for `<outcall-username>` that is configured on the Users page of the EPM web interface.

**\* Note:**

The user must have the Web Services user role.

- b. Certificate Authentication

Enter the `./VPAppIntfClient.sh -y certificate -k <Java Keystore> -o <Java Keystore password>` command to request the number of available outbound ports.

- -y: <certificate> the authentication type is certificate.
- -k: <Java Keystore> the Java keystore file name including the path. The Java keystore should contain the User identity certificate including the private key.
- -o: <Java Keystore password> the password for the Java keystore file.

**\* Note:**

Import the User identity certificate to the EPM and ensure that the certificate is assigned to a user of Certificate type.

The user must have the Web Services user role.

c. Password and Certificate Authentication

Enter the `./VPAppIntfClient.sh -n <outcall-username> -p <outcall password> -y password+certificate -k <Java Keystore> -o <Java Keystore password>` command to request the number of available outbound ports.

- <outcall-username> is an Experience Portal user configured on the Users page of the EPM web interface..
- <outcall password> is the password for <outcall-username> that is configured on the Users page of the EPM web interface..
- -y: <password+certificate> the authentication type is password and certificate.
- -k: <Java Keystore> the Java keystore file name including the path. The Java keystore should contain the User identity certificate including the private key.
- -o: <Java Keystore password> the password for the Java keystore file.

**\* Note:**

Import the User identity certificate to the EPM and ensure that the certificate is assigned to the <outcall-username> and the user authentication type is Password and Certificate.

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 2017:VPAppIntfServiceClient: queryResources succeeded,
Total Resources = 0, Unused H323 = 0, Unused SIP = 0
```

```
Mon Jun 03 16:55:26 PDT 2017: VPAppIntfServiceClient: exiting
```

5. Use the following examples to show calling Application Interface test client using different authentication schemes.

## Password Authentication

- a. Enter the `./VPAppIntfClient.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 on the Users page of the EPM web interface..
  - <outcall password> is the password assigned to the outcall-username above that was configured on the Users page of the EPM web interface.

**\* Note:**

The user must have the Web Services user role.

## Certificate Authentication

- b. Enter the `./VPAppIntfClient.sh -R 1 -A <application-name> -T <number-to-dial> -y certificate -k <Java Keystore> -o <Java Keystore 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.
  - -y: <certificate> the authentication type is certificate.
  - -k: <Java Keystore> the Java keystore file name including the path. The Java keystore should contain the User identity certificate including the private key.
  - -o: <Java Keystore password> the password for the Java keystore file.

**\* Note:**

Import the User identity certificate to the EPM and ensure that the certificate is assigned to the user of Certificate type.

The user must have the Web Services user role.

## Password and Certificate Authentication

- c. Enter the `./VPAppIntfClient.sh -R 1 -A <application-name> -T <number-to-dial> -n <outcall-username> -p <outcall password> -y password+certificate -k <Java Keystore> -o <Java Keystore password>` command to initiate an outcall and launch a VoiceXML application, where:
- <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 user name configured from EPM Web interface.
- <outcall password> is the password for <outcall-username> that is configured from the EPM Web interface.
- -y: <password+certificate> the authentication type is password + certificate.
- -k: <Java Keystore> the Java keystore file name including the path. The Java keystore should contain the User identity certificate including the private key.
- -o: <Java Keystore password> the password for the Java keystore file.

**\* Note:**

Import the User identity certificate to the EPM, ensure that the certificate is assigned <outcall-username>, and the user authentication type is **Password and Certificate**.

The user must have the Web Services user role.

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 2017: VPApplIntfServiceClient: launchVXML succeeded,
SessionID = scaaep134-2013155001030-5, TotalRes = 100, UnusedH323 = 0, UnusedSIP
= 99
```

```
Mon Jun 03 17:00:31 PDT 2017: VPApplIntfServiceClient: exiting
```

---

## Software Upgrade functionality

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 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.

---

## 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.

---

## 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 65, 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> --replacepks` command to reinstall the InstallAgent RPM.

For example, `rpm -U av-ia-8.0.0.0-0626.rpm --replacepks`.

**\* Note:**

The InstallAgent RPM is located in the `Support/PrereqCheckerInstaller/ExternalPackages/installagent` directory of the Experience Portal installation image.

---

## 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.

---

## 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 66.

### 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 root.
  - Otherwise, log on remotely as a non-root user, and then change the user to root by entering the `su - root` command.
2. Open the `/etc/chrony.conf` file in an ASCII text editor.
3. Edit the `/etc/chrony.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 `chrony.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 `chronyd` daemon by entering the `systemctl restart chronyd` command.

The system returns:

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

---

## 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.

### 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 root.
  - Otherwise, log on remotely as a non-root user, and then change the user to root by entering the `su - root` 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.

 **Note:**

If the fonts directory does not already exist, create the directory by entering the `mkdir $JAVA_HOME/jre/lib/fonts` command, then navigate to the directory that you just created.

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.

## 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 root.
  - Otherwise, log on remotely as a non-root user, and then change the user to root by entering the `su - root` 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.

**\* Note:**

If the fonts directory does not already exist, create the directory by entering the `mkdir $JAVA_HOME/jre/lib/fonts` command, then navigate to the directory that you just created.

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.

## 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 root.
  - Otherwise, log on remotely as a non-root user, and then change the user to root by entering the `su - root` 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/il8n /etc/sysconfig/ command.
```

6. Navigate to the Java fonts directory by entering the `cd $JAVA_HOME/jre/lib/fonts` command.

**\* Note:**

If the fonts directory does not already exist, create the directory by entering the `mkdir $JAVA_HOME/jre/lib/fonts` command, then navigate to the directory that you just created.

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.

---

## 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.

Avaya Experience Portal creates several log files during the installation process. The installation process creates the `/opt/Avaya/InstallLogs/aepinstall.log` log file. The PVI checker creates the `/opt/Avaya/InstallLogs/pvichecker.log` log file.

### General installation log files

Log filename	Description
<code>aepinstall.log</code>	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>SetIAVersion&lt;component&gt;.log</code>	Version history of the Experience Portal components installed. The <code>&lt;component&gt;</code> can be VPMS, MPP, or Docs.
<code>GetIAVersionVPMS.err.log</code>	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
<code>av-mpp-&lt;buildnumber&gt;-Install-&lt;date&gt;.log</code>	<code>mppinstall.sh</code> script output.
<code>av-mpp-&lt;buildnumber&gt;-Install-rpm-&lt;date&gt;.log</code>	Output from the Red Hat Package Manager (RPM) during the MPP software installation.



## 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.

# 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	<p>The database administrator can use this account to log in to the local Avaya Experience Portal database and perform database administration tasks.</p> <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	You can have any number of accounts of this type with any account names.
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 and 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, the Avaya Service accounts will not be available after the Avaya Enterprise Linux upgrade. The Avaya Service accounts will be available through EASG configuration during the Experience Portal upgrade. So,

- Log on to the local Linux console as root.
  - Or log on remotely as a non-root user and enter the `su - root` command to change the user to root.
2. Navigate to the `Support/Security-Tools` directory under the Experience Portal installation directory.
  3. Enter the `cd $AVAYA_HOME/Support/Security-Tools` command, where `$AVAYA_HOME` is an environmental variable pointing to the name of the installation directory specified during the Experience Portal software installation.
  4. Enter the command `bash SetDbPassword.sh` followed by the additional parameters to perform the required operation. For details on the supported operations, see the following table. If you want to:

<b>Update the password for the vpccommon user on the local database on the Primary EPM server</b>	Enter the <code>bash SetDbPassword.sh update_primary_vpccommon</code> command.
<b>Update the password for the local postgres user on the Primary EPM server</b>	Enter the <code>bash SetDbPassword.sh update -u postgres</code> command.
<b>Update the password for the report user name rptuser on the local database on the Primary EPM server</b>	Enter the <code>bash SetDbPassword.sh update -u &lt;rptuser&gt;</code> command.
<b>Set random password for local postgres user on the Primary EPM server</b>	Enter the <code>bash SetDbPassword.sh reset_postgres</code> command.
<b>Update the password for the Primary EPM's vpccommon user on the Auxiliary EPM server</b>	Enter the <code>bash SetDbPassword.sh update_primary_vpccommon</code> command.
<b>Update the password for the vpccommon user on the local database on the Auxiliary EPM server</b>	Enter the <code>bash SetDbPassword.sh update_aux_vpccommon</code> command.
<b>Update password for the local postgres user on the Auxiliary EPM server</b>	Enter the <code>bash SetDbPassword.sh update -u postgres</code> command.
<b>Update the password for the report user name rptuser on the local database on the Auxiliary EPM server</b>	Enter the <code>bash SetDbPassword.sh update -u &lt;rptuser&gt;</code> command.
<b>Set random password for local postgres user on the Auxiliary EPM server</b>	Enter the <code>bash SetDbPassword.sh reset_postgres</code> command.

The script displays a message prompt to enter the password

5. Enter the password.

After the password is accepted and updated, the script prompts a message indicating the services to be restarted and asks if the user wants to proceed.

6. Type one of the following:

- `Y` to restart the services that are listed.
- `n` to cancel the restarting services.

 **Note:**

If you cancel restating the services, you should manually restart the services for the changes to take effect.

### 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.

---

## 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 76.

### 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 root.
  - Otherwise, log on remotely as a non-root user, and then change the user to root by entering the `su - root` 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`
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 - root` 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:
```

---

## 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.

# Chapter 10: Installation worksheets

---

## Installation worksheets for the Avaya Experience Portal single server configuration

Before you begin the installation of the Avaya 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 78.

In addition, if this deployment includes:

- H.323 connections, complete the [H.323 installation worksheet](#) on page 83.
- SIP connections, complete the [SIP installation worksheet](#) on page 86.
- Automatic Speech Recognition (ASR) servers, complete one copy of the [ASR server installation worksheet](#) on page 82 for each ASR server
- Text-to-Speech (TTS) servers, complete one copy of the [TTS server installation worksheet](#) on page 83 for each TTS server
- Speech applications, complete one copy of the [Speech application installation worksheet](#) on page 87 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 machine hardware requirements, see <i>Avaya Experience Portal Overview and Specification</i> 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.
Do you want to enable EASG on the Primary EPM?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Corporate LAN IP address	_____	
PBX LAN IP address, if different from the corporate LAN	_____	

*Table continues...*

Requirement/ Information Needed	Your value	Notes
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 Experience Portal on multiple servers</i> guide.
For customer-provided hardware, is Release 7.8 or 8.2 64 bit or later installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	See <a href="#">Customer provided operating system installation</a> on page 16.
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 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 RHEL 7.8 or 8.2 64 bit, user accounts and passwords	root account password: _____ Non-root account name: _____ Non-root account password: _____	

Table continues...

Requirement/ Information Needed	Your value	Notes
Installation directory, if different from default	_____	<p>Default directory: /opt/Avaya/ExperiencePortal</p> <p>Specify an absolute directory path containing only standard English alphanumeric characters and the symbols / (forward slash), _ (underscore), - (hyphen), ~ (tilde), or . (period).</p>
EPM web interface administration user name and password	User name: _____ Password: _____	<p>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 Experience Portal</i> on <a href="http://support.avaya.com">http://support.avaya.com</a>.</p>
postgres database account password	Do you want to create a database account that can access the report information in the database? _____	<p>From EP 7.0 onwards, this password is automatically generated.</p>
Do you want to create a database account that can access the report information in the database?	_____ Yes _____ No If Yes, account user name, if different from the default: _____ Password: _____	<p>Default user name is: reportwriter</p> <p><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.</p>
What is the Product ID for this system?	_____	<p>For information about license requirements, see <i>Avaya Experience Portal Overview and Specification</i> on <a href="http://support.avaya.com">http://support.avaya.com</a>.</p>
Third-party SSL certificate information.	The location of the existing certificate: _____ The existing certificate's password: _____	

Table continues...



Requirement/ Information Needed	Your value	Notes
Maximum simultaneous calls	_____	<p>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.</p> <p>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 Experience Portal Overview and Specification</i> on <a href="http://support.avaya.com">http://support.avaya.com</a>.</p>
Will Avaya Services maintain this server?	<p>_____ Yes</p> <p>_____ No</p> <p>If Yes, what is the Listed Directory Number (LDN) for this server?</p> <p>_____</p> <p>Where is the Avaya Service Account authentication file located?</p> <p>_____</p>	
WebLM information	<p>License server URL, if not located on the EPM server:</p> <p>_____</p> <p>WebLM password:</p> <p>_____</p>	
The external time sources that the EPM server should be synchronize with, if desired	<p>The name or IP address of primary time source:</p> <p>_____</p> <p>The name or IP address of secondary time source:</p> <p>_____</p>	
Do you want to enter values in the EPM in languages other than English?	<p>_____ Yes</p> <p>_____ No</p>	


## 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> .
Total number of Nuance or Loquendo licenses available on this speech server	_____
Configured languages	_____ _____ _____ _____ _____
Will Avaya Services maintain this server?	_____ Yes _____ 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	_____ Loquendo, minimum version: _____ _____ Nuance RealSpeak, minimum version: _____ _____ 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	_____ _____ _____ _____ _____
Will Avaya Services maintain this server?	_____ Yes _____ No  If Yes, what is the Listed Directory Number (LDN) for this server? _____

## 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 <p><b>* Note:</b> If Yes, you need Communication Manager 3.1 build 369 or later with the Avaya Special Application SA8874 feature.</p>
PBX name	_____
Gatekeeper IP address	_____
Alternative Gatekeeper IP address	_____
Codecs installed on the switch	_____ _____ _____ _____
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

*Table continues...*

Requirement or information needed	Your value
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	_____
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 <p><b>* Note:</b> If Yes, you need Avaya Aura® Session Manager with Communication Manager version 5.2.</p>
PBX name	_____
What proxy transport do you want to use?	<input type="checkbox"/> TCP <input type="checkbox"/> TLS
SIP Domain	_____
Proxy server address	_____
Proxy server port, if different from the default	<p>_____</p> <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>_____</p> <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	<p>_____ Maximum number of calls that this connection can handle at any one time</p> <p>If desired, specify the number of simultaneous calls that can be:</p> <p>_____ Inbound</p> <p>_____ Outbound</p> <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 _____ 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?	_____ _____ _____ _____

*Table continues...*

Requirement or information needed	Your value
What is the application used for?	<input type="checkbox"/> Specific inbound calls <input type="checkbox"/> Inbound calls not handled by another application <input type="checkbox"/> 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 Experience Portal</i> .
Which dialed numbers are associated with the application?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Which server performs DTMF processing?	<input type="checkbox"/> The ASR server. You must select this option if the DTMF grammar uses the ECMA script. <input type="checkbox"/> The MPP server.
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 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 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 Experience Portal on multiple servers</i>	Provides procedures to install and configure Avaya Experience Portal software on two or more dedicated servers.	Implementation engineers
Upgrading to Avaya Experience Portal 8.0	Describes how to upgrade your Avaya Experience Portal 6.0, 7.0 or 7.1, 7.2 to Experience Portal 8.0.	Implementation engineers
<i>Deploying Avaya 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

*Table continues...*

Title	Description	Audience
<i>Administering Avaya Experience Portal</i>	Provides general information about and procedures for administering and configuring specific Avaya Experience Portal functions and features using a web-based interface.	Implementation engineers
<i>Troubleshooting Avaya 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 Experience Portal Security White Paper</i>	Provides information about the security strategy for Experience Portal 8.0 and provides suggestions that companies can use to improve the security of their Experience Portal systems and applications.	Implementation engineers
Avaya Experience Portal 8.0 Mobile Web Best Practices White Paper	Provides recommended strategies for deploying Avaya Orchestration Designer Mobile Web applications with Avaya Experience Portal 8.0, detailing configuration for security, scalability and high availability.	Avaya Professional Services Implementation engineers

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## Finding documents on the Avaya Support website

### Procedure

1. Go to <https://support.avaya.com>.
2. At the top of the screen, type your username and password and click **Login**.
3. Click **Support by Product > Documents**.
4. In **Enter your Product Here**, type the product name and then select the product from the list.
5. In **Choose Release**, select the appropriate release number.  
The **Choose Release** field is not available if there is only one release for the product.
6. In the **Content Type** filter, click a document type, or click **Select All** to see a list of all available documents.

For example, for user guides, click **User Guides** in the **Content Type** filter. The list only displays the documents for the selected category.

7. Click **Enter**.

---



## Avaya Documentation Center navigation

The latest customer documentation for some programs is now available on the Avaya Documentation Center website at <https://documentation.avaya.com>.


### **Important:**

For documents that are not available on Avaya Documentation Center, click **More Sites > Support** on the top menu to open <https://support.avaya.com>.

Using the Avaya Documentation Center, you can:

- Search for content by doing one of the following:
  - Click **Filters** to select a product and then type key words in **Search**.
  - From **Products & Solutions**, select a solution category and product, and then select the appropriate document from the list.
- Sort documents on the search results page.
- Click **Languages** (  ) to change the display language and view localized documents.
- Publish a PDF of the current section in a document, the section and its subsections, or the entire document.
- Add content to your collection by using **My Docs** (  ).

Navigate to the **Manage Content > My Docs** menu, and do any of the following:

- Create, rename, and delete a collection.
- Add topics from various documents to a collection.
- Save a PDF of selected content in a collection and download it to your computer.
- Share content in a collection with others through email.
- Receive collection that others have shared with you.
- Add yourself as a watcher using the **Watch** icon (  ).

Navigate to the **Manage Content > Watchlist** menu, and do the following:

- Enable **Include in email notification** to receive email alerts.
- Unwatch selected content, all content in a document, or all content on the Watch list page.

As a watcher, you are notified when content is updated or deleted from a document, or the document is removed from the website.

- Share a section on social media platforms, such as Facebook, LinkedIn, and Twitter.

- Send feedback on a section and rate the content.

**\* Note:**

Some functionality is only available when you log on to the website. The available functionality depends on the role with which you are logged in.

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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.

- To find videos on the Avaya Support website, go to <https://support.avaya.com/> and do one of the following:
  - In **Search**, type `Avaya Mentor Videos`, click **Clear All** and select **Video** in the **Content Type**.
  - In **Search**, type the product name. On the Search Results page, click **Clear All** and select **Video** in the **Content Type**.

The **Video** content type is displayed only when videos are available for that product.

In the right pane, the page displays a list of available videos.

- To find the Avaya Mentor videos on YouTube, go to [www.youtube.com/AvayaMentor](http://www.youtube.com/AvayaMentor) and do one of the following:
  - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
  - Scroll down Playlists, and click a topic name to see the list of videos available for the topic. For example, Contact Centers.

**\* Note:**

Videos are not available for all products.

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## Technical onboarding of Avaya Experience Portal 7.x and 8.x

For more information see, [How to Register and Onboard Avaya Experience Portal](#) on the Avaya Support website.

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## Support

Go to the Avaya Support website at <https://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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