# Installing and Configuring Avaya Aura® System Platform

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# Contents

# Chapter 1: System Platform installation overview

## Introduction

This section covers only new System Platform installations. To upgrade an existing version of System Platform to the latest version, refer to platform upgrade topics in your Avaya Aura® solution documentation.

## Installation process

### About this task

Installation of System Platform consists of the following tasks:

### Procedure

1. Install the server hardware.
2. Connect the server to the customer network.

   This step is for best practice and should be observed as such, although it is possible to install the System Platform software without an initial connection to the customer network.
3. Connect the two servers if using a System Platform High Availability option.

   **Note:**

   Cable interconnection requirements depend typically on the configured System Platform HA mode, Ethernet specifications, restrictions on the use of layer-2 switches to extend maximum cabling distance, and in a small percentage of site-specific scenarios, ambient electrical and signal noise (RFI) affecting the choice of Ethernet cable types (for example, CAT5E, CAT5A, CAT6A). For more details, see topics associated with System Platform HA cable requirements in your Avaya Solution documentation.
4. Install the System Platform software on the server. If using the High Availability Failover option, install the System Platform software on the standby server also.

5. Configure the Secure Access Link (SAL) Gateway for remote support and alarming. You can use the SAL Gateway that is included with System Platform or installed on a stand-alone SAL Gateway. See SAL Gateway on page 51.

   **Note:**

   On systems using High Availability operation, configure the SAL Gateway only on the primary server. When you enable High Availability operations, SAL Gateway will propagate to the standby server.

6. Install the solution template.

   **Important:**

   Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.

7. Configure High Availability if using that option.

# Software installation

To install System Platform, you must first download the ISO image from the Avaya PLDS Web site (http://plds.avaya.com) and then burn the ISO image to a DVD.

Use one of the following methods to install System Platform:

- Laptop connected to the services port on the server.
- Video monitor, keyboard, and mouse connected to the appropriate ports on the server.

**Note:**

You can complete the installation by using only a keyboard and monitor. If you do not have a mouse, use the Tab key to navigate between fields.

If you use a laptop to install the software, you must have an SSH and Telnet client application such as PuTTY installed on the laptop and Telnet must be enabled to install System Platform. Make sure that you change the network settings on the laptop before connecting to the server. See Configuring the laptop for direct connection to the server on page 25.

Use the provided worksheets and checklists during installation.

**Related topics:**

Configuring the laptop for direct connection to the server on page 25

# Chapter 2: Installation requirements for System Platform

## What Avaya provides

Avaya provides the following items for installing System Platform:

- One or two servers. One is for a standard configuration, and two are for High Availability Failover configuration.
- Slide rails to mount the servers in a standard 19-inch, 4-post rack that have square holes.
- System Platform installation software.
- Other hardware as ordered, such as an uninterruptible power supply (UPS). UPS is a required component.
- Product registration form. The form is available on http://support.avaya.com. Click **More Resources** > **Equipment Registration (Partners only)**. Click **Universal Install/SAL Product Registration Request Form** under **Non-Regional (Product) Specific Documentation**. For more information, see Registering the system on page 14.

**Note:**

Avaya provides the System Platform installation software. The customer must either purchase the System Platform DVD or download the ISO image and write that image to a DVD.

## What customer provides

The customer must provide the following items for installing System Platform.

- Standard equipment rack properly installed and solidly secured.
- USB keyboard, USB mouse, and VGA monitor or laptop with an Ethernet crossover cable.

**Note:**

Depending on the capabilities of the network interface card (NIC) in your laptop, you might be able to use a straight-through cable for this connection. See the documentation for your laptop.

The supported keyboard types are sg-latin1, sk-qwerty, slovene, sv-latin1, trq, uautf, uk, and us.

- DVDs written with the software for installing .
- A computer that can route to the System Platform server that has Internet Explorer 7 or Firefox 2 or Firefox 3 installed on it.
- Filled-out worksheets with the system and network information needed for installation and configuration.
- Access to the customer network.
- (Optional) VPN Gateway for providing remote access to Avaya Partners.

**Note:**

Avaya Partners must arrange for their own IP-based connectivity (for example, B2B VPN) to provide remote services. Modem connectivity is not supported.

# Chapter 3: Preinstallation tasks

## Preinstallation tasks for System Platform

### Preinstallation checklist for System Platform

Before starting the installation, make sure that you complete the tasks from the preinstallation checklist.

| No. | Task | Notes | ✔ |
|---|---|---|---|
| 1 | Complete and submit the Universal Install/SAL Product Registration Request form. When opening the Excel based form, click **Enable Macros**; otherwise, the form automation will not work. Submit the completed form using the built in e-mail button. See Registering the system on page 14. | ❗ **Important:**<br>Submit the registration form three weeks before the planned installation date. | |
| 2 | Gather the required information relating to installation, such as IP configuration information, DNS addresses, and address information for Network Time Protocol (NTP) servers.<br>See Installation checklist for System Platform on page 22. | | |
| 3 | Register for PLDS unless you have already registered. See Registering for PLDS on page 15. | | |
| 4 | Download the System Platform installer ISO image file from PLDS.<br>See Downloading software from PLDS on page 16. | | |
| 5 | Download the appropriate solution template and licenses from PLDS. | | |

| No. | Task | Notes | ✔ |
|---|---|---|---|
| | See Downloading software from PLDS on page 16. | | |
| 6 | Verify that the downloaded ISO images match the images on the PLDS Web site. See Verifying the ISO image on a Linux-based computer on page 17 and Verifying the ISO image on a Windows-based computer on page 17. | | |
| 7 | Write the ISO images to separate DVDs. See Writing the ISO image to DVD or CD on page 18. | **Note:**<br>If the software files you are writing on media are less than 680 Mb in size, you can use a CD instead of a DVD. | |

## Registering the system

### About this task

Registering System Platform and applications in the solution template ensures that Avaya has a record of the system and it is ready for remote support if needed.

Avaya assigns a Solution Element ID (SE ID) and Product ID to each SAL Gateway and managed device that is registered. In the context of System Platform, managed devices are the components of System Platform and of the applications that are included in the solution template. The SE ID makes it possible for Avaya Services or Avaya Partners to connect to the managed applications remotely. The Product ID is included in alarms that are sent to alarm receivers from the managed device. The Product ID identifies the device that generated the alarm. This data is critical for correct execution of various Avaya business functions and tools.

**Note:**

- For a description of any elements you must register along with your Solution Template, refer to your Avaya Aura® solution documentation.
- For solutions being deployed in a System Platform High Availability configuration, you must register two VSP solution elements, one for the primary server and one for the secondary server in the HA pair. For a description of any other solution elements you must register for the various System Platform High Availability deployments, refer to your Avaya Aura® solution documentation.

Registrations are performed in two stages: before installation of System Platform, the solution template, and SAL Gateway and after installation. The first stage of registration provides you with the SE IDs and Product Identifications required to install the products. The second stage of the registration makes alarming and remote access possible.

### Procedure

1. Access the registration form and follow the instructions. This form is available at http://support.avaya.com. In the navigation pane, click **More Resources** > **Equipment Registration**. Under Non-Regional (Product) Specific Documentation, click **Universal Install/SAL Product Registration Request Form**, or search *Universal Install/SAL Product Registration Request Form*.
2. Complete the Universal Install Product Registration page and submit it at least three weeks before the planned installation date.

   Provide the following:

   - Customer name
   - Avaya Sold-to Number (customer number) where the products will be installed
   - Contact information for the person to whom the registration information should be sent and whom Avaya can contact if any questions arise
   - Products that are included in the solution template and supporting information as prompted by the form

   Avaya uses this information to register your system. When processing of the registration request is complete, Avaya sends you an e-mail with an ART install script attached. This script includes instructions for installation and the SE IDs and Product IDs that you must enter in SAL Gateway to add managed devices.
3. Complete and submit the Universal Install Alarm Registration page after the installation is complete.

**Related topics:**

SAL Gateway on page 51

Configuration prerequisites on page 52

## Registering for PLDS

### Procedure

1. Go to the Avaya Product Licensing and Delivery System (PLDS) Web site at https://plds.avaya.com.
   The PLDS Web site redirects you to the Avaya single sign-on (SSO) Web page.
2. Log in to SSO with your SSO ID and password.
   The PLDS registration page is displayed.
3. If you are registering:

   - as an Avaya Partner, enter the Partner Link ID. If you do not know your Partner Link ID, send an e-mail to prmadmin@avaya.com.

   - as a customer, enter one of the following:
     - Company Sold-To
     - Ship-To number
     - License authorization code (LAC)

4. Click **Submit**.
   Avaya will send you the PLDS access confirmation within one business day.

## Downloading software from PLDS

### About this task

**Note:**

You can download product software from http://support.avaya.com also.

### Procedure

1. Type `http://plds.avaya.com` in your Web browser to access the Avaya PLDS Web site.
2. Enter your Login ID and password to log on to the PLDS Web site.
3. Select **Assets** from the Home page and select **View Downloads**.
4. Search for the downloads available using one of the following methods:
   - By Actual Download name
   - By selecting an Application type from the drop-down list
   - By Download type
   - By clicking **Search Downloads**
5. Click the download icon from the appropriate download.
6. When the confirmation box displays, select **Click to download your file now**.
7. If you receive an error message, click on the message, install Active X, and continue with the download.
8. When the security warning displays, click **Install**.

   When the install is complete, PLDS displays the downloads again with a checkmark next to the downloads that have been completed successfully.

# Verifying the downloaded ISO image

## Verifying the ISO image on a Linux-based computer

### About this task

Use this procedure to verify that the md5 checksum of the downloaded ISO image matches the md5 checksum that is displayed for the ISO image on the PLDS Web site.

Use this procedure if you downloaded ISO images to a Linux-based computer.

### Procedure

1. Enter `md5sum filename`, where *filename* is the name of the ISO image. Include the .iso file extension in the filename.
2. Compare the md5 checksum of the ISO image to be used for installation with the md5 checksum that is displayed for the ISO image on the PLDS Web site.
3. Ensure that both numbers are the same.
4. If the numbers are different, download the ISO image again and reverify the md5 checksum.

## Verifying the ISO image on a Windows-based computer

### About this task

Use this procedure to verify that the md5 checksum of the downloaded ISO image matches the md5 checksum that is displayed for the ISO image on the PLDS Web site.

Use this procedure if you downloaded ISO images to a Windows-computer.

### Procedure

1. Download a tool to compute md5 checksums from one of the following Web sites:
   - http://www.md5summer.org/
   - http://zero-sys.net/portal/index.php?kat=70
   - http://code.kliu.org/hashcheck/

   **Note:**

   Avaya has no control over the content published on these external sites. Use the content only as reference.
2. Run the tool on the downloaded ISO image and note the md5 checksum.

3. Compare the md5 checksum of the ISO image to be used for installation with the md5 checksum that is displayed for the ISO image on the PLDS Web site.
4. Ensure that both numbers are the same.
5. If the numbers are different, download the ISO image again and reverify the md5 checksum.

# Writing the downloaded software to DVD

## DVD requirements

Use high quality, write-once, blank DVDs. Multiple rewrite DVDs are prone to error and should not be used.

When writing the data to the DVD, use a slower write speed of 4X or a maximum 8X. Attempting to write to the DVD at higher or the maximum speed rated on the disc is likely to result in write errors.

**Note:**

If the software files you are writing on media are less than 680 Mb in size, you can use a CD instead of a DVD.

## Writing the ISO image to DVD or CD

### Before you begin

1. Download any required software from PLDS.
2. Verify that the md5 checksum of the downloaded ISO image matches the md5 checksum that is displayed for the ISO image on the PLDS Web site.

### About this task

If you are writing to a DVD, this procedure requires a computer or server that has a DVD writer and software that is capable of writing ISO images to DVD. If you are writing to a CD, this procedure requires a computer or server that has a CD writer and software that is capable of writing ISO images to CD.

**Important:**

When the ISO image is being written to the DVD, do not run other resource-intensive applications on the computer. Any application that uses the hard disk intensively can cause a buffer underrun or other errors, which can render the DVD useless.

### Procedure

Write the ISO image of the installer to a DVD or CD.

# EPW file

## An EPW file

An Electronic Pre-installation Worksheet (EPW) file plays an important role in installing an Avaya Aura® solution template on System Platform. Creating an EPW file helps you set up and save those parameters required during the template installation ahead of time. When installing the template, you upload the EPW file and let the installation happen with minimal intervention. For example, obtain the required IP addresses before the installation and enter those IP addresses when you create the EPW file. Then when you upload the EPW file at the customer site, the IP addresses are automatically populated in the installation wizard.

To reinstall a template, reuse the original EPW with all the correct specifications.

To create the EPW file, use a stand-alone version of the installation wizard that you install on a Windows-based computer. The stand-alone installation wizard displays the same configuration pages that appear in the installation wizard. The configuration pages displayed by the stand-alone installation wizard depend on which template you install.

## Creating an EPW file

### Before you begin

You must have the zip file for the stand-alone installation wizard downloaded from PLDS and installed on your computer.

### About this task

To create the EPW file, you use a stand-alone installation wizard. The stand-alone installation wizard is the same as the installation wizard that launches as part of the template installation. By downloading, installing, and filling out the fields in the stand-alone installation wizard file ahead of time, you save time during the template installation. The stand-alone installation wizard installs only on a Windows-based computer.

### Procedure

1. Unzip the stand-alone installation wizard file and extract the file to a location on your computer.

2. Locate the setup_wizard.exe file and click it to start the setup.
3. Click through the Setup screens to complete the installation.

   The installation creates a shortcut link within the **Start** > **Programs** menu.
4. To launch the stand-alone installation wizard, select **Start** > **Programs** > ***PreinstallWizardname*** > **Run*PreinstallWizardname***, where *PreinstallWizardname* is the name of the stand-alone installation wizard for the template, for example, SP Pre-installation Wizard.

   The stand-alone installation wizard opens in your default browser.
5. On the Load Files page, select the appropriate template, and then click **Next Step**.
6. Complete the fields on the rest of the screens. Click **Next Step** to move from screen to screen.
7. On the Save page, read the warning text, and then click **Accept**.
8. Click **Save EPW file**, and save the file to a location on your computer.

   Give the file a unique name that identifies the template.

# Chapter 4: Installing System Platform

## Installation methods

Use one of the following methods to install System Platform:

- Laptop connected to the services port on the server.
- Video monitor, keyboard, and mouse connected to the appropriate ports on the server.

**Note:**

You can complete the installation by using only a keyboard and monitor. If you do not have a mouse, use the Tab key to navigate between fields.

If you use a laptop to install the software, you must have an SSH and Telnet client application such as PuTTY installed on the laptop and Telnet must be enabled to install System Platform. Make sure that you change the network settings on the laptop before connecting to the server. See Configuring the laptop for direct connection to the server on page 25.

## Server requirements

Server hardware platforms must meet all requirements of the Avaya Aura® System Platform software, any feature-based configuration options (for example, High Availability), and the additional requirements of a specific Avaya Aura® solution template.

**Note:**

Since each Avaya Aura® solution template has different requirements for server resources, configuration, capacity, and performance, refer to customer documentation specific to the Avaya Aura® solution you are deploying in your network.

Avaya requires that you install each server with an uninterruptible power supply (UPS) unit. The UPS power ratings should exceed server peak power requirements under a sustained maximum processing load. (Consult with Avaya Support at http://support.avaya.com to ensure a reliable installation.)

## Installation checklist for System Platform

Use this checklist to guide you through installation of System Platform and the Services Virtual Machine (VM).

**Important:**

If you are installing with High Availability protection, install the same version of System Platform on the active and standby servers.

| No. | Task | Notes | ✔ |
|---|---|---|---|
| 1 | If you are installing System Platform from a laptop, perform the following tasks:<br>• Ensure that a Telnet and Secure Shell application are installed on the laptop. Avaya supports use of the open source Telnet/SSH client application PuTTY.<br>• Configure the IP settings of the laptop for direct connection to the server. See Configuring the laptop for direct connection to the server on page 25.<br>• Disable use of proxy servers in the Web browser on the laptop. See Disabling proxy servers in Microsoft Internet Explorer on page 26 or Disabling proxy servers in Mozilla Firefox on page 27 . | | |
| 2 | If you are installing System Platform from a laptop, connect your laptop to the services port with an Ethernet crossover cable. | If you do not have a crossover cable, use an IP hub.<br>**Note:**<br>Some laptop computer Network Interface Cards (NICs) provide a configurable internal crossover option, facilitating the use of a straight-through Ethernet cable for this connection. See your laptop computer user documentation to confirm whether this option is available. | |

| No. | Task | Notes | ✔ |
|---|---|---|---|
| 3 | If you are installing System Platform from the server console, connect a USB keyboard, USB mouse, and video monitor to the server. | | |
| 4 | Turn on the server. | | |
| 5 | Place the DVD in the DVD drive on the server.<br>See Starting the installation from your laptop on page 28 or Starting the installation from the server console on page 29 depending on your selection of installation method. | | |
| 6 | If using the server console to install System Platform, enter the **vspmediacheck** command and press **Enter**.<br>The **vspmediacheck** command verifies that the image on the System Platform DVD is not corrupt.<br>See Starting the installation from the server console on page 29. | | |
| 7 | If using your laptop to install System Platform, establish a Telnet connection to the server.<br>See Starting the installation from your laptop on page 28. | | |
| 8 | Select the required keyboard type.<br>See Selecting the type of keyboard on page 30. | | |
| 9 | Verify the System Platform server hardware.<br>See Verifying the System Platform server hardware on page 30. | | |
| 10 | Verify that the image on the System Platform DVD is not corrupt.<br>See Verifying the System Platform image on the DVD on page 31. | | |
| 11 | Configure the network settings for the System Domain (Domain-0).<br>See Configuring network settings for System Domain (Domain-0) on page 32. | | |
| 12 | Configure the network settings for the Console Domain. | | |

| No. | Task | Notes | ✔ |
|---|---|---|---|
| | See Configuring network settings for Console Domain on page 35. | | |
| 13 | Install the Services Virtual Machine (services_vm).<br>See Installing the Services Virtual Machine on page 36. | ❗ **Important:**<br>When the Services VM Network Configuration window appears at the beginning of the System Platform installation *for the standby server* in a System Platform High Availability configuration, deselect the **Enable Services VM** checkbox to ensure that you install the Services VM in a disabled state. If a failover occurs later during HA system operation, the failover subsystem activates the Services VM on the former standby (now active) server, propagates the current Services VM configuration to that server, and deactivates the Services VM on the former active (now standby) server. | |
| 14 | Configure the time zone for the System Platform server.<br>See Configuring the time zone for the System Platform server on page 39. | | |
| 15 | Configure the date and time or specify an NTP server time source.<br>See Configuring the date and time for the System Platform server on page 39. | | |
| 16 | Configure the System Platform passwords.<br>See Configuring System Platform passwords on page 40. | | |
| 17 | Verify that System Platform installed correctly.<br>See Verifying installation of System Platform on page 43. | | |
| 18 | Check for System Platform patches at http://support.avaya.com. Install any patches that are available. | | |

| No. | Task | Notes | ✔ |
|---|---|---|---|
| | See *Administering Avaya Aura® System Platform* for information on installing patches. | | |
| 19 | Install a solution template.<br>See Installing a solution template on page 70. | ❗ **Important:**<br>If you are running System Platform in any of its High Availability modes, do not install a solution template on the standby server. If you do, you will be unable to start High Availability operations. If you are using a bundled System Platform installation (with a solution template), disable template installation on the standby server. Starting High Availability automatically propagates the solution template from the active node to the standby node. | |
| 20 | Configure the SAL gateway for remote access and alarming.<br>See SAL Gateway on page 51. | | |
| 21 | If applicable, configure System Platform High Availability.<br>See Configuring locally redundant High Availability on page 90. | | |

# Connecting your laptop to the server

## Configuring the laptop for direct connection to the server

### About this task

You must manually configure the IP address, subnet mask, and default gateway of the laptop before you connect the laptop to the server.

**Note:**

The following procedure is for Microsoft Windows XP, but the steps can vary slightly with other versions of Windows.

### Procedure

1. Click **Start** > **Control Panel**.
2. Double-click **Network Connections** > **Local Area Connection**.
3. In the Local Area Connection Status dialog box, click **Properties**.
4. In the **This connection uses the following items** box, click **Internet Protocol (TCP/IP)**.
5. Click **Properties**.
6. In the Internet Protocol (TCP/IP) Properties dialog box, select **Use the following IP address** on the **General** tab.

   ⚠ **Caution:**

   Do not click the **Alternate Configuration** tab.
7. In the **IP address** field, type `192.11.13.5`.
8. In the **Subnet mask** field, type `255.255.255.252`.
9. In the **Default gateway** field, type `192.11.13.6`.
10. Click **OK**.

## Disabling proxy servers in Microsoft Internet Explorer

### About this task

To connect directly to the services port, you must disable the proxy servers in Internet Explorer.

### Procedure

1. Start Internet Explorer.
2. Click **Tools** > **Internet Options**.
3. Click the **Connections** tab.
4. Click **LAN Settings**.
5. Clear the **Use a proxy server for your LAN** option.

**Tip:**

To reenable the proxy server, select the **Use a proxy server for your LAN** option again.

6. Click **OK** to close each dialog box.

## Disabling proxy servers in Mozilla Firefox

### About this task

To connect directly to the services port, you must disable the proxy servers in Firefox.

**Note:**

This procedure is for Firefox on a Windows-based computer. The steps can vary slightly if you are running Linux or another operating system on your laptop.

### Procedure

1. Start Firefox.
2. Click **Tools** > **Options**.
3. Select the **Advanced** option.
4. Click the **Network** tab.
5. Click **Settings**.
6. Select the **No proxy** option.

   **Tip:**

   To reenable the proxy server, select the appropriate option again.
7. Click **OK** to close each dialog box.

# Starting the installation

## Starting the installation from your laptop

### Before you begin

- A Telnet/SSH application, such as PuTTY, is installed on your laptop.
- IP settings of the laptop are configured for direct connection to the server.
- Use of proxy servers is disabled.

### Procedure

1. Connect your laptop to the services port with an Ethernet crossover cable.

   If you do not have a crossover cable, use an IP hub.

   **Note:**

   Some laptop computer Network Interface Cards (NICs) provide a configurable internal crossover option, facilitating the use of a straight-through Ethernet cable for this connection. See your laptop computer user documentation to confirm whether this option is available.

2. Turn on the server.
3. Insert the System Platform DVD in the server DVD drive.
   The server boots from the DVD.
4. Verify that the laptop can ping the service port by performing the following steps:
   a. Click **Start** > **Run**.
   b. Type `ping -t 192.11.13.6`

   **Note:**

   Wait for the `ping` command to return several continuous responses before proceeding to the next step.

5. Open a Telnet session by performing the following steps:

   **Important:**

   If you use a Telnet client other than PuTTY or forget to set the proper terminal emulation for the PuTTY client, the system could display an incorrect Keyboard Type. This issue has no effect on the installation process.

   a. Open the PuTTY application.

b. In the **Host Name** field, enter `192.11.13.6`.
c. Under **Connection type**, select **Telnet**.
d. Under **Window** in the left navigation pane, select **Translation**.
e. Under **Received data assumed to be in which character set** , select **UTF-8** from the list.
f. Click **Open** to open a PuTTY session.

The system displays the Keyboard Type screen.

### Next steps

Select the required keyboard type. See Selecting the type of keyboard on page 30.

**Related topics:**

Connecting to the server through the services port on page 45

## Starting the installation from the server console

### Before you begin

Connect a USB keyboard, USB mouse, and video monitor to the server.

### Procedure

1. Turn on the server.
2. Insert the System Platform DVD in the server DVD drive.
   The server boots up from the System Platform DVD and displays the Avaya screen.
3. Within 30 seconds of the system displaying the Avaya screen, type **`vspmediacheck`** at the boot prompt on the Avaya screen, and press **Enter**.

   The **`vspmediacheck`** command verifies that the image on the System Platform DVD is not corrupt.

   > **Important:**
   >
   > If you do not press **Enter** or type **`vspmediacheck`** within 30 seconds of the system displaying the Avaya screen, the system disables installation through the server console and enables installation through the services port. The system then displays the Waiting for Telnet connection screen, and then you can connect to the server through Telnet. To install through the server console at this point, reset the server to restart the installation.

   The system displays the Keyboard Type screen.

### Next steps

Select the required keyboard type. See Selecting the type of keyboard on page 30.

## Selecting the type of keyboard

### Procedure

1. On the Keyboard Type screen, select the type of keyboard that you have.

   The supported keyboard types are sg-latin1, sk-qwerty, slovene, sv-latin1, trq, ua-utf, uk, and us.
2. Use the `Tab` key to highlight **OK** and press **Enter**.
   The system displays one of the following screens:
   - The system displays the CD Found screen if you are installing System Platform from a laptop, or if you are installing System Platform from the server console and entered the **`vspmediacheck`** command at the boot prompt on the Avaya screen.

     See Verifying the System Platform image on the DVD on page 31.
   - The system displays the System Domain Network Configuration screen if you are installing System Platform from the server console and did not enter the **`vspmediacheck`** command at the boot prompt on the Avaya screen. See Configuring network settings for System Domain (Domain-0) on page 32.

### Next steps

- Verify that the System Platform image was copied correctly to the DVD. See Verifying the System Platform image on the DVD on page 31.

  OR
- Configure the network settings for System Domain (Domain-0). See Configuring network settings for System Domain (Domain-0) on page 32

## Verifying the System Platform server hardware

### Before you begin

- You are performing a new installation of the System Platform software.
- You have just completed the task, Selecting the type of keyboard on page 30

### About this task

After Selecting the type of keyboard on page 30, the System Platform installer automatically performs a hardware check of the server platform. Since the servers supported by Avaya must meet all prerequisites for the System Platform , any platform options, and a specific solution template, the server hardware check normally passes. In this case, the System Platform installation proceeds transparently to the next phase, Verifying the System Platform image on the DVD on page 31. However, in the rare circumstance when the hardware check halts the System Platform installation, one or both of the following messages appear:

```
The installation is going to abort due to the following reasons:

  • The expected minimum size of hard disk is 80 GB, but the actual
    number of hard disk is 40 GB.

  • The expected number of hard disk is 1, but the actual number of
    hard disk is 2.
```

Or:

```
The installer has detected the following problems:

• The expected number of CPU(s) is 2, but the actual number of CPU(s)
  is 1.

Do you still want to continue the installation?
```

In either case, capture the exact details of the error message and contact your Avaya technical support representative for further instructions.

**Note:**

For any instance of the latter message, do not continue with the System Platform installation.

### Next steps

If the server hardware check passed, continue with Verifying the System Platform image on the DVD on page 31

## Verifying the System Platform image on the DVD

### About this task

Use this procedure to verify that the System Platform image was copied correctly to the DVD.

The system displays the CD Found screen if you are installing System Platform from a laptop, or if you are installing System Platform from the server console and entered the **`vspmediacheck`** command at the boot prompt on the Avaya screen.

### Procedure

On the CD Found screen, perform one of the following actions:

- To test the DVD, use the `Tab` key to select **OK**.
- To skip the test and begin the installation immediately, select **Skip**.

If you choose to test the DVD, the system displays another screen with a progress bar and the percentage of completion. After the test is complete, the system displays whether the image passed the test.

**Note:**

If the DVD you are using is corrupt, you must write a new DVD with the System Platform image. Before using the new DVD, make sure that you restart the server.

The system displays the System Domain Network Configuration screen.

### Next steps

Configure the network settings for System Domain (Domain-0). See Configuring network settings for System Domain (Domain-0) on page 32.

**Related topics:**

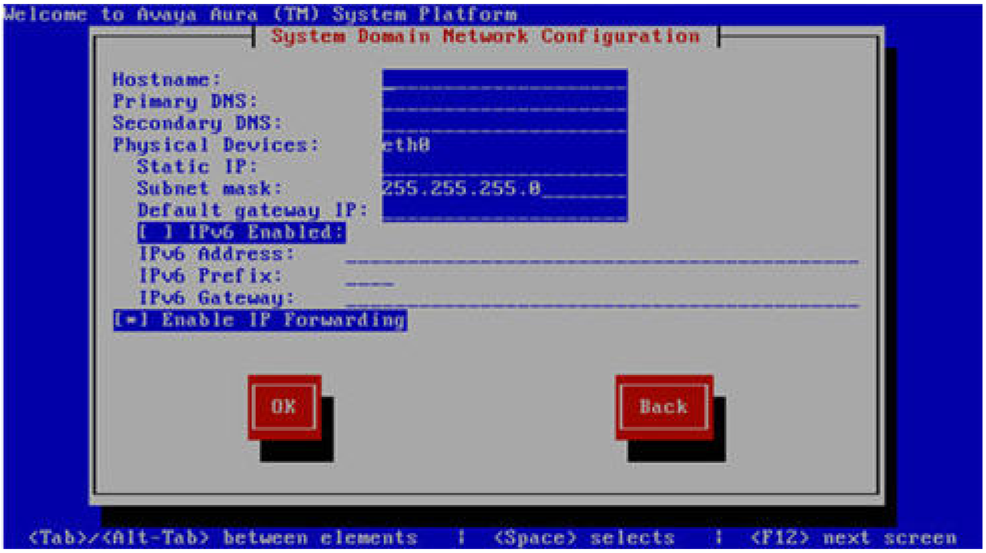
Writing the ISO image to DVD or CD on page 18

## Configuring network settings for System Domain (Domain-0)

### Procedure

1. On the System Domain Network Configuration screen, complete the following fields:
   - **Hostname**. Enter the host name for System Domain as an a fully qualified domain name (FQDN), for example, SPDom0.mydomainname.com.
   - **Primary DNS**
   - (Optional) **Secondary DNS**

   For descriptions of the fields on this page, see System Domain Network Configuration field descriptions on page 34.



```
Welcome to Avaya Aura (TM) System Platform
                 ┤ System Domain Network Configuration ├

        Hostname:
        Primary DNS:
        Secondary DNS:
        Physical Devices:      eth0
          Static IP:
          Subnet mask:         255.255.255.0
          Default gateway IP:
          [ ] IPv6 Enabled:
          IPv6 Address:
          IPv6 Prefix:
          IPv6 Gateway:
        [*] Enable IP Forwarding

                  OK                             Back

  <Tab>/<Alt-Tab> between elements   |  <Space> selects   |  <F12> next screen
```

2. Perform the following steps to configure the interface that is connected to the customer network:

   a. Use the Tab key to highlight the **Physical Devices** field.

   b. Complete the **Static IP** field.

   c. Modify the subnet mask if necessary. The server displays a default value of 255.255.255.0.

3. Complete the **Default gateway IP** field.

4. Use the Tab key to highlight the **IPv6 Enabled** field. Press the `Spacebar` to either enable or disable entering IP addresses in IPv6 format.

5. If you have enabled IPv6, fill in the following fields:

   - **IPv6 Address**
   - **IPv6 Prefix**
   - **IPv6 Gateway**

6. Use the Tab key to highlight the **Enable IP Forwarding** field. Press the Space bar to either enable or disable the IP forwarding as desired.

   **Note:**

   IP forwarding is enabled by default and is denoted by an asterisk (* character).

7. Use the Tab key to highlight **OK** and press **Enter** to accept the configuration.

8. If IP forwarding is enabled, a confirmation message is displayed. Use the Tab key to highlight **OK** and press **Enter**.
   The system displays the System Platform Console Domain Network Configuration screen.

### Next steps

Configure network settings for Console Domain. See Configuring network settings for Console Domain on page 35.

## System Domain Network Configuration field descriptions

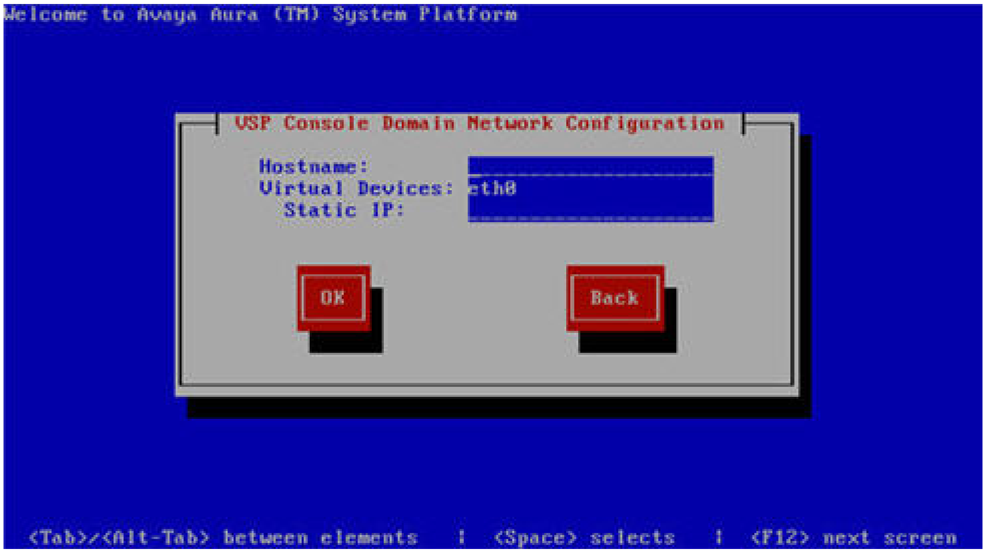
| Name | Description |
|---|---|
| **Hostname** | The host name for System Domain (Dom0). When using a Domain Name System (DNS) server in your network, the Dom0 hostname must be a Fully Qualified Domain Name (FQDN), for example, `SPCdom.mydomainname.com`. |
| **Primary DNS** | The primary Domain Name System (DNS) server address. |
| **Secondary DNS** | (Optional) The secondary DNS server address. |
| **Physical Devices** | This field displays the physical Ethernet interface (NIC) that connects to the customer network. You must configure this interface for IP.<br>The specific Ethernet interface number depends on the server model being used. |
| **Static IP** | The static IP address for the Ethernet interface that connects to the customer network. |
| **Subnet Mask** | The subnet mask for the Ethernet interface that connects to the customer network. |
| **Default gateway IP** | The default gateway IP address.<br>This default gateway IP address will be used for all the virtual machines if you do not specify gateway IP addresses for them. |
| **IPv6 Enabled** | The indicator to show whether the IP addresses required by System Platform must be IPv6-compliant. |
| **IPv6 Address** | The IPv6-compliant IP address of System Domain. |
| **IPv6 Prefix** | The IPv6 prefix for **IPv6 Address**. |
| **IPv6 Gateway** | The IP address of the default gateway for IPv6 traffic. |

| Name | Description |
|---|---|
| **Enable IP Forwarding** | The indicator to show whether IP forwarding is enabled.<br>An asterisk on the left of the field denotes that IP forwarding is enabled.<br>IP forwarding enables access through the services port to virtual machines on System Platform, including System Domain and Console Domain. IP forwarding must be enabled for both SSH and Web Console access. |

# Configuring network settings for Console Domain

## Procedure

1. On the VSP Console Domain Network Configuration screen, complete the following fields to set up the Console Domain network:
   - **Hostname**. Enter the host name for Console Domain as an FQDN, for example, SPCdom.mydomainname.com.
   - **Static IP**



```
Welcome to Avaya Aura (TM) System Platform

VSP Console Domain Network Configuration

      Hostname:
      Virtual Devices: eth0
        Static IP:

  <Tab>/<Alt-Tab> between elements   |  <Space> selects   |  <F12> next screen
```

2. Select **OK** and press **Enter** to accept the configuration and display the Services VM Network Configuration screen.

### Next steps

Install and configure the Services Virtual Machine. See Installing the Services Virtual Machine on page 36.

## System Platform Console Domain Network Configuration field descriptions

| Name | Description |
|---|---|
| **Hostname** | The host name for the Console Domain. When using a Domain Name System (DNS) server in your network, the Cdom hostname must be a Fully Qualified Domain Name (FQDN), for example, `SPCdom.mydomainname.com`. |
| **Static IP** | The IP address for the Console Domain.<br>**Note:**<br>The Console Domain does not have a physical interface. It has a virtual interface that uses the physical interface in System Domain (Domain-0). Because System Domain acts like a bridge, the IP address that you enter here must be a valid IP address. Further, the Console Domain must be on the same network as System Domain (Domain-0). |

## Installing the Services Virtual Machine

Beginning with System Platform release 6.2, the Secure Access Link Gateway (SAL gateway) no longer runs on the System Platform Console Domain (cdom) virtual machine. Instead, SAL 2.1 runs on an independent Services Virtual Machine (services_vm domain) on your Avaya Aura® solution server. As with the prior implementation of the SAL gateway running on the cdom virtual machine, this new configuration supports secure remote access to local server resources, and forwards alarms (SNMPv2 or v3 traps) from your local solution server to a remote Network Management System (NMS).

For *new System Platform installations* (not an upgrade procedure), you must install the Services Virtual Machine as part of the platform installation process. An exception to this requirement occurs when implementing a centralized SAL system, with the SAL Gateway running on a separate, dedicated server elsewhere in your network. In this case, you disable Services Virtual Machine installation during System Platform installation.

> **Important:**
>
> When the Services VM Network Configuration window appears at the beginning of the System Platform installation *for the standby server* in a System Platform High Availability configuration, deselect the **Enable Services VM** checkbox to ensure that you install the Services VM in a disabled state. If a failover occurs later during HA system operation, the failover subsystem activates the Services VM on the former standby (now active) server, propagates the current Services VM configuration to that server, and deactivates the Services VM on the former active (now standby) server.

For platform upgrades (not a new System Platform installation), the platform upgrade installer software manages installation of the new Services VM and SAL gateway transparently except where an administrator must enter configuration values.

For more information about SAL capabilities, see the *Secure Access Link 2.1 SAL Gateway Implementation Guide*, available from the Avaya Support portal (http://support.avaya.com/ > **View all documents** > **S** > **Secure Access Link**.)

## Before you begin

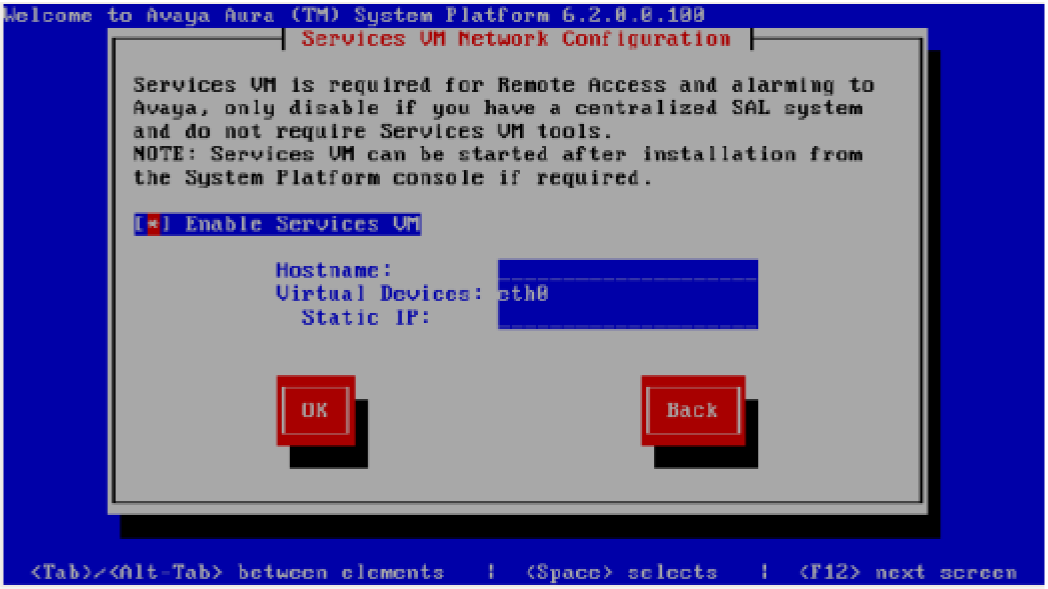
- You are performing a new installation of the System Platform.
- You have just completed the task, Configuring network settings for Console Domain on page 35
- If you plan to deploy a Stand-alone SAL gateway on a server elsewhere in your network, you must download, install, and configure the SAL 2.1 software on that server. For instructions, see the SAL gateway installation section of the *Avaya Secure Access Link 2.1 Gateway Implementation Guide.* at http://support.avaya.com/.

## About this task

Use this procedure to install or disable installation of the Services VM when the Services VM Network Configuration window appears during System Platform installation .

## Procedure

1. If you have a separate server dedicated for centralized SAL support, uncheck the **Enable Services VM** option in the Services VM Network Configuration window and click **OK**. Otherwise, leave the **Enable services VM** option enabled and begin with step 2 on page 37.
   If you disabled the **Enable Services VM** option, System Platform installation automatically resumes with Configuring the time zone for the System Platform server on page 39.
2. In the Services VM Network Configuration window, enter a **Hostname** for the Services Virtual Machine.



Welcome to Avaya Aura (TM) System Platform 6.2.0.0.100

Services VM Network Configuration

Services VM is required for Remote Access and alarming to Avaya, only disable if you have a centralized SAL system and do not require Services VM tools.
NOTE: Services VM can be started after installation from the System Platform console if required.

[*] Enable Services VM

Hostname:
Virtual Devices: eth0
Static IP:

OK
Back
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

3. Enter a **Static IP** address for the Services Virtual Machine.

   The IP address must be on the same subnet assigned to the Domain 0 (dom0) and Console Domain (cdom) virtual machines.

4. Click **OK**.
   System Platform installation proceeds to Configuring the time zone for the System Platform server on page 39.

### Next steps

Configuring the time zone for the System Platform server on page 39

**Related topics:**
Services VM Network Configuration field descriptions on page 38

## Services VM Network Configuration field descriptions

| Name | Description |
|---|---|
| **Enable Services VM** | Enables or disables remote access. Also supports local or centralized alarm reporting.<br>Default value: **Enabled**<br>Leave the **Enable services VM** option enabled (checkmark) for remote access and local SAL support, or disabled (no checkmark) if you have a separate server |

| Name | Description |
|---|---|
| | dedicated for independent/centralized remote access and SAL support.<br>In a System Platform High Availability configuration, the active node automatically propagates to the standby node, any change in the setting for this field |
| **Hostname** | The name you assign to the Services Virtual Machine. |
| **Static IP address** | The IP address you assign to the Services Virtual Machine. The address must be on the same subnet assigned to the Domain 0 (dom0) and Console Domain (cdom) virtual machines. |
| **Virtual devices** | The virtual device (port) assigned to the Services Virtual Machine. Default value (eth0) automatically assigned. No user input necessary. |

# Configuring the time zone for the System Platform server

### Procedure

1. On the Time Zone Selection screen, select the time zone in which the server is located.
2. Select **OK** and press **Enter** to accept the configuration and display the Date/Time and NTP setup screen.

### Next steps

Configure date and time for the System Platform server. See Configuring the date and time for the System Platform server on page 39.

# Configuring the date and time for the System Platform server

### About this task

For solution templates supporting the Network Time Protocol (NTP), the use of an NTP server within your network is the preferred configuration for synchronizing System Platform server time to a standards-based NTP time source. Otherwise, manually configure the System Platform server to a local time setting.

### Procedure

1. Set the current date and time on the Date/Time and NTP setup screen.

   **Note:**

   Ensure that the time set here is correct upon initial installation. Changing the time in a virtual machine environment causes virtual machines to reboot.

2. If you are using an NTP server, perform the following steps on the Date/Time and NTP setup screen:

   a. Select **Use NTP** if you are using one or more NTP servers.

   b. In the **NTP server** fields, enter the DNS name or the IP address of your preferred NTP servers.

3. Select **OK** and press **Enter** to accept the configuration and display the Passwords screen.

### Next steps

Configure System Platform passwords. See Configuring System Platform passwords on page 40.

## Configuring System Platform passwords

### Before you begin

Configure the date and time for the System Platform server.

### Procedure

1. On the Passwords screen, enter new passwords for all logins. You must enter each password twice to ensure that you are not making any mistakes in typing.

   If you do not enter new passwords, the defaults are used. The following table shows the default password for each login.

| Login | Default password | Capability |
|---|---|---|
| root | root01 | Advanced administrator |
| admin | admin01 | Advanced administrator |
| cust | cust01 | Normal administrator |

| Login | Default password | Capability |
|---|---|---|
| manager (for ldap) | root01 | Administrator for the System Platform local Lightweight Directory Access Protocol (LDAP) directory.<br>System Platform uses a local LDAP directory to store login and password details. Use this login and password to log in to the local LDAP directory.<br>This login does not have permissions to access the System Platform Web Console. |

**Important:**

Enter new passwords instead of using the default passwords. Exercising best practice for password security, make careful note of the passwords that you set for all logins. Customers are responsible for managing their passwords.

Passwords for all users, including `root`, must conform to all of the following content and usage rules. That is, Passwords:

- Must contain a minimum of 8 characters.
- Must contain one or more lowercase characters.
- Must contain one or more uppercase characters.
- Must contain one or more digits.
- Must contain one or more special characters.
- Must not be identical to any of the last 10 passwords.
- Must not be similar to the prior password. Passwords are similar when they share a sufficiently long common substring, where removal of that substring results in a weak new password.
- Must be changed within 90 days. At the end of this authorization interval, every user must change their password upon login to the Cdom (or Web Console) domain.

**Note:**

The Avaya Services craft login uses Access Security Gateway (ASG) for authentication. If you are using the craft login, you must have an ASG tool to generate a response for the challenge that is generated by the login page. Many ASG tools are available such as Avaya Token Mobile, Avaya Web Mobile, and Site Manager. The first two ASG tools must be able to reach the ASG manager servers behind the Avaya firewall. The Avaya Services representative uses Site

Manager to pull the keys specific to a site before visiting that site. At the site, the Avaya Services representative uses those keys to generate a response for the challenge generated by the Logon page.

2. Select **OK** and press **Enter** to accept the passwords and continue the installation.

### Result

The installation takes approximately 5 minutes. During this time, you can see the Image Installation page with progress bars, followed by the Running page, as the system completes the post-install scripts. After the installation is completed, the system ejects the DVD and reboots the server. If you are installing from server console, the system displays the Linux login page for System Domain (Domain-0) after the reboot.

**Important:**

If the DVD does not eject automatically, eject it manually. The system restarts the installation if the DVD is not ejected.

**Caution:**

Do not shut down or reboot the server during the first boot process of Console Domain. If you shutdown or reboot the server during the first boot of Console Domain, System Platform will not function correctly and will have to be reinstalled. To determine if Console Domain has booted, attempt to access the Web Console. See Accessing the System Platform Web Console on page 46.

### Next steps

Verify System Platform installation. See Verifying installation of System Platform on page 43.

## Passwords field descriptions

**Note:**

Passwords for all users, including `root`, must conform to all of the following content and usage rules. That is, Passwords:

- Must contain a minimum of 8 characters.
- Must contain one or more lowercase characters.
- Must contain one or more uppercase characters.
- Must contain one or more digits.
- Must contain one or more special characters.
- Must not be identical to any of the last 10 passwords.

- Must not be similar to the prior password. Passwords are similar when they share a sufficiently long common substring, where removal of that substring results in a weak new password.
- Must be changed within 90 days. At the end of this authorization interval, every user must change their password upon login to the Cdom (or Web Console) domain.

| Name | Description |
|---|---|
| **root Password** | The password for the root login. |
| **admin Password** | The password for the admin login. |
| **cust Password** | The password for the cust login. |
| **ldap Password** | The password for the ldap login.<br>System Platform uses a local LDAP directory to store login and password details. Use this login and password to log in to the local LDAP directory. This login does not have permissions to access the System Platform Web Console. |

# Verifying installation of System Platform

### Before you begin

To gain access to the System Platform Web Console from a laptop that is connected to the services port, enable IP forwarding. See Enabling IP forwarding to access System Platform through the services port on page 46.

### About this task

**Important:**

You cannot gain access to Console Domain until the system finishes the first boot process.

After installing System Platform, use this procedure to successfully log on to:

- The System Domain (Dom0) command line as `root`, and run the **`check_install`** command.
- The Console Domain (Cdom) Web Console as `admin`.
- The Console Domain as `cust`.

**Note:**

The System Platform installation program installs the Console Domain after installing the System Domain. Availability of the login prompt for the System Domain does not necessarily mean that the Console Domain was installed successfully.

The actions in this procedure collectively help to verify successful installation of System Platform, and identify various issues associated with an unsuccessful installation, as well.

## Procedure

1. Access the System Domain command line.

   See Accessing the command line for System Domain on page 48.

2. Enter the command, **`check_install`**.
   If **`check_install`** finds no issues, the following message appears in the command line interface:

   ```
   Cursory checks passed.
   ```

   If **`check_install`** command indicates a problem, wait a few minutes and run the command again. If the problem persists, contact Avaya using any of the technical support options at http://support.avaya.com.

3. Type **`exit`** to exit root login.

4. Type **`exit`** again to exit the System Domain.

5. Access the System Platform Web Console. See Accessing the System Platform Web Console on page 46.

6. Perform the following steps to log in to Console Domain as `admin`:

   a. Start PuTTY from your computer.
   b. In the **Host Name (or IP Address)** field, type the IP address of Console Domain.
   c. In the **Connection type** field, select **SSH**, and then click **Open**.
   d. When prompted, log in as `admin`, and type the password that you entered for the admin login during System Platform installation.
   e. Type `exit` to exit Console Domain.

7. Perform the following steps to log in to Console Domain as `cust`:

   a. Start PuTTY from your computer.
   b. In the **Host Name (or IP Address)** field, type the IP address of Console Domain.
   c. In the **Connection type** field, select **SSH**, and then click **Open**.
   d. When prompted, log in as `cust`, and type the password that you entered for the cust login during System Platform installation.
   e. Type `exit` to exit Console Domain.

   **Important:**

   If you cannot log in to Console Domain as `admin` or `cust` or access the System Platform Web Console, contact Avaya using any of the technical support options at http://support.avaya.com.

# Accessing System Platform

## Connecting to the server through the services port

### Before you begin

- A Telnet/SSH application, such as PuTTY, is installed on your laptop.
- IP settings of the laptop are configured for direct connection to the server.
- Use of proxy servers is disabled.

### Procedure

1. Connect your laptop to the services port with an Ethernet crossover cable.

   If you do not have a crossover cable, use an IP hub.

   **Note:**

   Some laptop computer Network Interface Cards (NICs) provide a configurable internal crossover option, facilitating the use of a straight-through Ethernet cable for this connection. See your laptop computer user documentation to confirm whether this option is available.

2. Start a PuTTY session.
3. In the **Host Name (or IP Address)** field, type `192.11.13.6`.

   The system assigns the IP address 192.11.13.6 to the services port.

4. For **Connection type**, select **SSH**.
5. In the **Port** field, type `22`.
6. Click **Open**.

   **Note:**

   The system displays the PuTTY Security Alert window the first time you connect to the server.

7. Click **Yes** to accept the server's host key and display the PuTTY window.
8. Log in as **admin** or another valid user.
9. When you finish the session, type **`exit`** and press **Enter** to close PuTTY.

**Related topics:**

Configuring the laptop for direct connection to the server on page 25
Disabling proxy servers in Microsoft Internet Explorer on page 26
Disabling proxy servers in Mozilla Firefox on page 27

## Enabling IP forwarding to access System Platform through the services port

### About this task

To gain access to virtual machines on System Platform by connecting a laptop to the services port, you must enable IP forwarding on System Domain (Domain-0). Enable IP forwarding to gain access to both SSH and Web Console.

You can set the IP forwarding status to enabled or disabled during System Platform installation. The system enables IP forwarding by default. To enable or disable IP forwarding, use the following procedure.

> ✱ **Note:**
>
> For security reasons, always disable IP forwarding after finishing your task.

### Procedure

1. To enable IP forwarding:
   a. Start an SSH session.
   b. Log in to System Domain (Domain-0) as administrator.
   c. In the command line, type **`service_port_access enable`** and press **Enter**.
2. To disable IP forwarding:
   a. Start an SSH session.
   b. Log in to System Domain (Domain-0) as administrator.
   c. In the command line, type **`ip_forwarding disable`** and press **Enter**.

      An alternative to the above command is **`service_port_access disable`**.

## Accessing the System Platform Web Console

### Before you begin

To gain access to the System Platform Web Console from a laptop that is connected to the services port, enable IP forwarding. See Enabling IP forwarding to access System Platform through the services port on page 46.

## About this task

**Important:**

You cannot gain access to Console Domain until the system finishes the first boot process.

You can access the System Platform Web Console from a Web browser on your laptop or another computer connected to the same network as the System Platform server.

## Procedure

1. Open a compatible Internet browser on your computer.

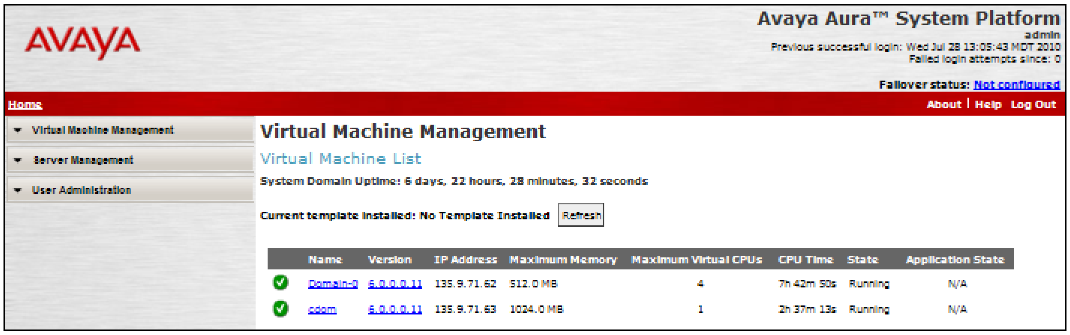
   Currently, System Platform supports Internet Explorer 7, and Firefox 3.6 and later.
2. Type the URL: `https://`*`ipaddress`*, where *ipaddress* is the IP address of the Console Domain that you configured during installation of System Platform.

   **Note:**

   This is a secure site. If you get a certificate error message, follow the instructions on your browser to install a valid certificate on your computer.
3. Enter a valid user ID.
4. Click **Continue**.
5. Enter a valid password.
6. Click **Log On**.

   The system displays the License Terms page when you log in for the first time.
7. Click **I Accept** to accept the end-user license agreement.

   The system displays the Virtual Machine List page in the System Platform Web Console.



admin
Previous successful login: Wed Jul 28 13:05:43 MDT 2010
Failed login attempts since: 0

Failover status: Not configured

Virtual Machine Management

Virtual Machine List

System Domain Uptime: 6 days, 22 hours, 28 minutes, 32 seconds

Current template installed: No Template Installed

| | Name | Version | IP Address | Maximum Memory | Maximum Virtual CPUs | CPU Time | State | Application State |
|---|---|---|---|---|---|---|---|---|
| ✓ | Domain-0 | 6.0.0.0.11 | 135.9.71.62 | 512.0 MB | 4 | 7h 42m 50s | Running | N/A |
| ✓ | cdom | 6.0.0.0.11 | 135.9.71.63 | 1024.0 MB | 1 | 2h 37m 13s | Running | N/A |

**Related topics:**

Enabling IP forwarding to access System Platform through the services port on page 46

# Accessing the command line for System Domain

## About this task

If you have physical access to the system, you can log in to the system directly. When you connect to the services port, you are connected to System Domain. Alternatively, use an SSH (Secure Shell) client such as PuTTY to set up a remote connection from your computer. After logging in, the system prompts you with the Linux command prompt.

**Note:**

Administrators access the command line for System Domain to perform a very small number of tasks. Access to the command line for System Domain is normally reserved only for Avaya or Avaya Partners for troubleshooting purposes.

## Procedure

1. Start PuTTY from your computer.
2. In the **Host Name (or IP Address)** field, type the IP address of System Domain.

   **Tip:**

   You can obtain the IP address of System Domain (Domain-0) from the Virtual Machine Management page of the Web Console. In the navigation pane of the Web Console, click **Virtual Machine Management** > **Manage**.
3. In the **Connection type** field, select **SSH**, and then click **Open**.
4. When prompted, log in as `admin`.
5. Once logged in, type the following command to log in as the root user: `su — root`
6. Enter the password for the *root* user.

   **Tip:**

   To access Console Domain from System Domain, type **`xm list`**, note the ID for *udom*, and then type **`xm console`** *`udom-id`*. When prompted, login as `admin`. Then type **`su — root`** and enter the root password to log in as root.

   To exit Console Domain and return to System Domain, press `Control+]`.
7. After performing the necessary tasks, type `exit` to exit root login.
8. Type `exit` again to exit System Domain.

# Accessing the command line for Console Domain

## About this task

**Important:**

You cannot gain access to Console Domain until the system finishes the first boot process.

**Note:**

Administrators access the command line for Console Domain to perform a very small number of tasks. Access to the command line for Console Domain is normally reserved only for Avaya or Avaya Partners for troubleshooting purposes.

## Procedure

1. Start PuTTY from your computer.
2. In the **Host Name (or IP Address)** field, type the IP address of Console Domain.

   **Tip:**

   The IP address of Console Domain (cdom) is the same as the IP address of the System Platform Web Console.
3. In the **Connection type** field, select **SSH**, and then click **Open**.
4. When prompted, log in as `admin`.
5. Once logged in, type the following command to log in as the root user: `su – root`
6. Enter the password for the *root* user.
7. After performing the necessary tasks, type `exit` to exit root login.
8. Type `exit` again to exit Console Domain.

# Chapter 5: Configuring SAL Gateway on System Platform

## SAL Gateway

Secure Access Link (SAL) Gateway provides Avaya support engineers and Avaya Partners with alarming and remote access to the applications on System Platform. System Platform includes an embedded SAL Gateway. SAL Gateway software is also available separately for stand-alone deployments. The SAL Gateway application on System Platform receives alarms from applications in the solution template and forwards them to Secure Access Core Concentrator Servers at Avaya and applicable Avaya Partners. SAL Gateway can also forward alarms to the customer's Network Management System (NMS) if configured to do so. The SAL gateway application also polls designated service providers for connection requests.

### Remote Serviceability

System Platform utilizes SAL as Avaya's exclusive method for remote delivery of services. System Platform can be serviced remotely, possibly eliminating a service technician visit to the customer site. System Platform uses the customer's existing Internet connectivity to facilitate remote support. All communication is outbound from the customer's environment using encapsulated Hypertext Transfer Protocol Secure (HTTPS). SAL requires upload bandwidth (customer to Avaya or Avaya Partner) of at least 90 KB/s with latency no greater than 150 ms (round trip). Business Partners without a SAL Core Concentrator Server must provide their own IP-based connectivity (for example, B2B VPN connection) to deliver remote services.

**Note:**

Avaya Partners and customers must register SAL at least three weeks prior to activation during System Platform installation. Avaya support will be delayed or circumvented if SAL is improperly implemented or not operational. System Platform and SAL do not support modem connections.

### Stand-alone SAL Gateway

You can choose to use a stand-alone SAL Gateway instead of the SAL Gateway that is embedded in System Platform. You might prefer a stand-alone gateway if you have a large network with many Avaya devices. The stand-alone gateway makes it possible to consolidate alarms from many Avaya devices and send those alarms from one SAL Gateway rather than multiple SAL Gateways sending alarms. See **Secure Access Link** on http://support.avaya.com for more information on stand-alone SAL Gateway.

If you use a stand-alone SAL Gateway, you must add it as an SNMP trap receiver for System Platform. See Adding an SNMP trap receiver on page 67. You can also disable the SAL

Gateway that is embedded in System Platform so that it does not send duplicate heart beat messages to Avaya. See Disabling SAL Gateway on page 68.

### SAL Gateway configuration

The SAL Gateway includes a Web-based user interface that provides status information, logging information, and configuration interfaces. You must configure the SAL Gateway and other devices for alarming and remote access. The devices include System Platform's System Domain (dom 0), Console Domain (cdom), and other products that are included in the solution template that is installed. For example, virtual machines might include Communication Manager, Communication Manager Messaging, Session Manager, and other applications that are included in the template.

To configure SAL, perform these high-level steps:

1. Register the system.

   You must submit the Universal Install/SAL Registration Request form to obtain from Avaya the information that you must enter in SAL Gateway.

   Avaya assigns a Solution Element ID (SE ID) and Product ID to each SAL Gateway and managed device that is registered. In the context of System Platform, managed devices are the components of System Platform and of the applications that are included in the solution template. The SE ID makes it possible for Avaya Services or Avaya Partners to connect to the managed applications remotely. The Product ID is included in alarms that are sent to alarm receivers from the managed device. The Product ID identifies the device that generated the alarm. This data is critical for correct execution of various Avaya business functions and tools.

2. Configure the SAL Gateway.

   The SAL Gateway provides remote access to those devices that are configured for remote access within it. It controls connections to managed elements, new or updated models, and verifies certificates for authentication.

**Note:**

On systems using High Availability operation, configure the SAL Gateway only on the primary server. When you enable High Availability operations, SAL Gateway will propagate to the standby server.

**Related topics:**

Registering the system on page 14

Configuration prerequisites on page 52

## Configuration prerequisites

Before configuring the SAL Gateway, you must start the registration process and receive product registration information from Avaya.

To register a product, download and complete the *Universal Install/SAL Registration Request* form and submit the form to Avaya. The form includes complete instructions. Open the Microsoft Excel form with macros enabled.

This form is available at http://support.avaya.com. In the navigation pane, click **More Resources** > **Equipment Registration**. Under Non-Regional (Product) Specific Documentation, click **Universal Install/SAL Product Registration Request Form**, or search *Universal Install/SAL Product Registration Request Form*.

**Note:**

Submit the registration form three weeks before the planned installation date.

**Related topics:**

Registering the system on page 14

SAL Gateway on page 51

# Changing the Product ID for System Platform

### Before you begin

You must have registered the system and obtained a Product ID for System Platform from Avaya. The Product ID is included in alarms that System Platform sends to alarm receivers. The Product ID identifies the device that generated the alarm. This data is critical for correct execution of various Avaya business functions and tools.

### About this task

When you install System Platform, a default Product ID of 100111999 is set. You must change this default ID to the unique Product ID that Avaya provides.

### Procedure

1. In the navigation pane of the System Platform Web Console, click **Server Management** > **SNMP Trap Receiver Configuration**.
2. On the SNMP Trap Receiver Configuration page, delete the ID that is displayed in the **Product ID** field and enter the unique Product ID for System Platform Console Domain.

   **Note:**

   VSPU is the model name for Console Domain.
3. Click **Save**.

# System and browser requirements for accessing the SAL Gateway user interface

Browser requirements for SAL Gateway:

- Internet Explorer 6.x and 7.x
- Firefox 3.5

System requirements:

A computer with access to the System Platform network.

# Starting the SAL Gateway user interface

### Procedure

1. Log in to the System Platform Web Console.
2. In the navigation pane of the System Platform Web Console , click **Server Management** > **SAL Gateway Management**.
3. On the **Server Management: SAL Gateway Management** page, click **Enable SAL Gateway**.
4. On the SAL Gateway Management page, click **Launch SAL Gateway Management Portal**.
5. When the SAL Gateway displays its Log on page, enter the same user ID and password that you used for the System Platform Web Console.

   To configure SAL Gateway, you must log in as `admin` or another user that has an advanced administrator role. Users that have an administrator role can only view configuration of the SAL Gateway.

   When you are successfully logged in, the Managed Element page of the SAL Gateway user interface is displayed. If the SAL Gateway is up and running, the system displays two messages at the top of the page:

   - `SAL Agent is running`
   - `Remote Access Agent is running`

# Configuring the SAL Gateway

## About this task

Use this procedure to configure the identity of the SAL Gateway. This information is required for the SAL Gateway to communicate with the Secure Access Concentrator Core Server (SACCS) and Secure Access Concentrator Remote Server (SACRS) at Avaya.

## Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Gateway Configuration**.
2. On the Gateway Configuration page, click **Edit**.
3. On the **Gateway Configuration** (edit) page, complete the following fields:
   - **IP Address**
   - **Solution Element ID**
   - **Alarm ID**
   - **Alarm Enabled**

   For field descriptions, see Gateway Configuration field descriptions on page 56.
4. (Optional) Complete the following fields if the template supports inventory collection:
   - **Inventory Collection**
   - **Inventory collection schedule**
5. Click **Apply**.

   **Note:**

   The configuration changes do not take effect immediately. The changes take effect after you apply configuration changes on the Apply Configuration Changes page.
6. If necessary to cancel your changes, click **Undo Edit**.

   The system restores the configuration before you clicked the **Edit** button.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

## Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

**Related topics:**

Gateway Configuration field descriptions on page 56<br>
Applying configuration changes on page 64

## Gateway Configuration field descriptions

| Name | Description |
|---|---|
| **Hostname** | A host name for the SAL Gateway.<br>⚠ **Warning:**<br>Do not edit this field as the SAL Gateway inherits the same hostname as the CentOS operating system that hosts both the System Platform Web Console and the SAL Gateway. |
| **IP Address** | The IP address of the SAL Gateway.<br>This IP address is the same as that of Console Domain (Solution Element Code is VSPU). |
| **Solution Element ID** | The Solution Element ID that uniquely identifies the SAL Gateway. Format is `(000)123-4567`.<br>If you have not obtained Solution Element IDs for the system, start the registration process as described in Registering the system on page 14.<br>The system uses the SAL Gateway Solution Element ID to authenticate the SAL Gateway and its devices with the Secure Access Concentrator Remote Server. |
| **Alarm ID** | The Product ID (also called Alarm ID) for the SAL Gateway. This ID should start with a 5 and include ten digits.<br>The system uses the value in the this field to uniquely identify the source of Gateway alarms in the Secure Access Concentrator Core Server. |
| **Alarm Enabled** | Enables the alarming component of the SAL Gateway. This check box must be selected for the SAL Gateway to send alarms. |
| **Inventory Collection** | Enables inventory collection for the SAL Gateway. |

| Name | Description |
|---|---|
| | When this check box is selected, SAL Gateway collects inventory information about the supported managed devices and sends it to the Secure Access Concentrator Core Server for Avaya reference. This feature is intended for services personnel working on tickets and must review the configuration of managed devices. For more information on this feature, see the *Secure Access Link Gateway 1.8 Implementation Guide*. This document is available at http://support.avaya.com |
| **Inventory collection schedule** | Interval in hours at which the SAL Gateway collects inventory data. |

# Configuring a proxy server

## About this task

Use the Proxy Server page to configure proxy settings if required for SAL Gateway to communicate with the Secure Access Concentrator Remote Server and the Secure Access Concentrator Core Server.

## Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Proxy**.
2. On the Proxy Server page, complete the following fields:
   - **Use Proxy**
   - **Proxy Type**
   - **Host**
   - **Port**
3. Click **Apply**.
4. (Optional) Once you complete configuration of SAL Gateway, you can use the **Test** button to test connectivity to the proxy server.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

### Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

**Related topics:**

Proxy server field and button descriptions on page 58

Applying configuration changes on page 64

## Proxy server field and button descriptions

The Proxy Server page of the SALGateway user interface provides you the options to view and update the proxy server configuration for SAL Gateway. SAL Gateway uses the proxy configured on this page to establish external connections.

The page displays the following fields:

| Name | Description |
|---|---|
| **Use Proxy** | Check box to enable the use of a proxy server. |
| **Proxy Type** | The type of proxy server that is used. Options are:<br>• **SOCKS 5**<br>• **HTTP** |
| **Host** | The IP address or the host name of the proxy server. SAL Gateway takes both IPv4 and IPv6 addresses as input. |
| **Port** | The port number of the Proxy server. |
| **Login** | Login if authentication is required for the HTTP proxy server.<br>**Important:**<br>SAL Gateway in System Platform does not support authenticating proxy servers. |
| **Password** | Password for login if authentication is required for the HTTP proxy server.<br>**Important:**<br>SAL Gateway in System Platform does not support authenticating proxy servers. |
| **Test URL** | The HTTP URL used to test the SAL Gateway connectivity through the proxy |

| Name | Description |
|---|---|
| | server. The Gateway uses the proxy server to connect to the URL you provide. |

The page displays the following buttons:

| Name | Description |
|---|---|
| **Test** | Initiates a test of the SAL Gateway connectivity through the proxy server to the URL specified in the **Test URL** field. You can initiate a test before or after applying the configuration changes. |
| **Edit** | Makes the fields on the Proxy Server page available for editing. |
| **Apply** | Saves the configuration changes. |

## Configuring SAL Gateway communication with a Secure Access Concentrator Core Server

### About this task

Use the Core Server (formerly SAL Enterprise) page of the SAL Gateway user interface to review settings for communication between SAL Gateway and a Secure Access Concentrator Core Server (SACCS) at Avaya Data Center. The SACCS handles alarming and inventory. Do not change the default settings unless you are explicitly instructed to do so.

### Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Core Server**.
   The Core Server page is displayed.
2. Do not change the default settings on this page.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.
3. (Optional) Once you complete configuration of SAL Gateway, you can use the **Test** button to test connectivity to the defined Secure Access Concentrator Core Servers.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

### Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

The system does not connect to the new Secure Access Concentrator Core Server until you restart the SAL Gateway.

**Related topics:**

Core Server field descriptions on page 60

Applying configuration changes on page 64

## Core Server field descriptions

| Name | Description |
|---|---|
| **Passphrase** | Default passphrase is `Enterprise-production`. Do not change the default unless you are explicitly instructed to do so. This passphrase is used to establish a channel for communication between the SAL Gateway and the Secure Access Concentrator Core Server. |
| **Primary Core Server** | IP Address or the host name of the primary Secure Access Concentrator Core Server.<br>The default value is `secure.alarming.avaya.com`. |
| **Port** | Port number of the primary Secure Access Concentrator Core Server.<br>The default value is `443`. |
| **Secondary Core Server** | This value must match the value in the **Primary Core Server** field. |
| **Port** | This value must match the value in the **Port** field for the primary server. |

# Configuring SAL Gateway communication with a Secure Access Concentrator Remote Server

## About this task

Use the Remote Server (formerly Remote Access) page of the SAL Gateway user interface to review settings for communication between SAL Gateway and a Secure Access Concentrator Remote Server (SACRS) at Avaya Data Center. The SACRS handles remote access, and updates models and configuration. Do not change the default settings unless you are explicitly instructed to do so.

## Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Remote Server**.
   The Remote Server page appears.
2. Do not change the default settings on this page unless you are explicitly instructed to do so.
3. (Optional) Once you complete configuration of SAL Gateway, you can use the **Test** button to test connectivity to the defined Secure Access Concentrator Remote Servers.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

## Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

The system does not connect to the new Secure Access Concentrator Remote Servers until you restart the SAL Gateway.

When you restart the SAL Gateway, the system terminates all active connections.

**Related topics:**

Remote Server field descriptions on page 62
Applying configuration changes on page 64

## Remote Server field descriptions

| Name | Description |
|---|---|
| **Primary Remote Server** | The IP address or host name of the primary Secure Access Concentrator Remote Server.<br>The default value is `sl1.sal.avaya.com`. |
| **Port** | The port number of the primary Secure Access Concentrator Remote Server.<br>The default value is `443`. |
| **Secondary Remote Server** | This value must match the value in the **Primary Remote Server** field. |
| **Port** | This value must match the value in the **Port** field for the primary server. |

# Configuring NMS

### About this task

Use this procedure to specify SNMP trap destinations. When you configure Network Management Systems (NMSs), the SAL Gateway copies traps and alarms (encapsulated in traps) to each NMS that you configure.

### Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **NMS**.
2. On the Network Management Systems page, complete the following fields:
   - **NMS Host Name/ IP Address**
   - **Trap port**
   - **Community**
3. Click **Apply**.
4. (Optional) Use the **Add** button to add multiple NMSs.

   See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

### Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

**Related topics:**

Network Management Systems field descriptions on page 63

Applying configuration changes on page 64

## Network Management Systems field descriptions

| Name | Description |
|---|---|
| **NMS Host Name/ IP Address** | The IP address or host name of the NMS server. |
| **Trap port** | The port number of the NMS server. |
| **Community** | The community string of the NMS server. Use `public` as the **Community**, as SAL agents support only public as community at present. |

# Managing service control and status

### About this task

Use this procedure to view the status of a service, stop a service, or test a service that the SAL Gateway manages.

### Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Service Control & Status**.
   The system displays the Gateway Service Control page. The page lists the following services:
   - **SAL Agent**
   - **Alarming**
   - **Inventory**
   - **Health Monitor**

- **Remote Access**
- **SAL Watchdog**
- **SAL SNMP Sub-agent**
- **Package Distribution**
- **SAL Agent Watchdog**

The Gateway Service Control page also displays the status of each service as:

- **Stopped**
- **Running**

2. Click one of the following buttons:
    - **Stop** to stop a service.
    - **Start** to start a service that is stopped.
    - **Test** to send a test alarm to the Secure Access Concentrator Core Server.

❗ **Important:**

Use caution if stopping the Remote Access service. Doing so will block you from accessing SAL Gateway remotely.

# Applying configuration changes

### Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Administration** > **Apply Configuration Changes**.
The system displays the Apply Configuration Changes page.
2. Click the **Apply** next to **Configuration Changes**.

    See the *Secure Access Link Gateway 2.1 Implementation Guide* for more information. This document is available at http://support.avaya.com.

    When you click **Apply**, the system restarts the SAL Gateway and updates the Gateway with the new values you configured.

    The SAL Gateway misses any alarms that are sent while it restarts.

# Adding a managed element

### Before you begin

Complete the Managed Element Worksheet for SAL Gateway. See Managed element worksheet for SAL Gateway on page 117.

### About this task

Perform this procedure for each Solution Element ID (SE ID) that is provided in the registration information from Avaya.

### Procedure

1. In the navigation pane of the SAL Gateway user interface, click **Secure Access Link Gateway** > **Managed Element**.
2. On the Managed Element page, click **Add new**.
3. Complete the fields on the page as appropriate.
4. Click **Add**.
5. Click **Apply** to apply the changes.

### Next steps

After completing configuration of SAL Gateway, you must apply configuration changes for the configuration to take effect. This task is performed on the Apply Configuration Changes page and restarts the SAL Gateway. To minimize disruption of services and alarms, apply configuration changes only after you finish configuration of SAL Gateway.

**Related topics:**

Applying configuration changes on page 64
Managed Element field descriptions on page 65

# Managed Element field descriptions

| Name | Description |
|---|---|
| **Host Name** | Host name for the managed device. This must match the host name on the Network Configuration page of the System Platform Web Console (**Server Management** > **Network Configuration** in the navigation pane). |

| Name | Description |
|---|---|
| **IP Address** | IP address of the managed device. |
| **NIU** | Not applicable for applications that are installed on System Platform. Leave this field clear (not selected). |
| **Model** | The model that is applicable for the managed device. |
| **Solution Element ID** | The Solution Element ID (SE ID) of the device.<br>The SE ID makes it possible for Avaya Services or Avaya Partners to connect to the managed applications remotely. |
| **Product ID** | The Product ID (also called Alarm ID).<br>The Product ID is included in alarms that are sent to alarm receivers from the managed device. The Product ID identifies the device that generated the alarm. |
| **Provide Remote Access to this device** | Check box to allow remote connectivity to the managed device. |
| **Transport alarms from this device** | (Optional) Check box to enable alarms from this device to be sent to the Secure Access Concentrator Core Server. |
| **Collect Inventory for this device** | Check box to enable inventory collection for the managed device.<br>When this check box is selected, SAL Gateway collects inventory information about the managed device and sends it to the Secure Access Concentrator Core Server for Avaya reference. This feature is intended for services personnel working on tickets and must review the configuration of managed devices. For more information on this feature, see the *Secure Access Link Gateway 1.8 Implementation Guide*. This document is available at http://support.avaya.com. |
| **Inventory collection schedule** | Interval in hours at which the SAL Gateway collects inventory information about the managed device. |
| **Monitor health for this device** | Check box to enable health monitoring of the managed device by SAL Gateway. SAL Gateway uses heartbeats to monitor health. Heartbeats must be configured on the device. |

| Name | Description |
|---|---|
| **Generate Health Status missed alarm every** | Interval in minutes at which SAL Gateway generates an alarm if it does not receive a heartbeat from the managed device.<br>You must restart the SAL Gateway for the configuration changes to take effect. SAL Gateway starts monitoring heartbeats from the device after the restart and generates alarms if it does not receive a heartbeat within the configured interval. |
| **Suspend health monitoring for this device** | Check box to suspend health monitoring for the managed device. |
| **Suspend for** | Number of minutes to suspend health monitoring for the managed device. SAL Gateway resumes monitoring the device after the configured time elapses. |

# Using a stand-alone SAL Gateway

## Adding an SNMP trap receiver

### About this task

Use this procedure to add an SNMP trap receiver for System Platform. If you are using a stand-alone SAL Gateway, you must add it as an SNMP trap receiver.

### Procedure

1. In the navigation pane of the System Platform Web Console, click **Server Management** > **SNMP Trap Receiver Configuration**.
2. On the SNMP Trap Receiver Configuration page, complete the following fields:
    - **IP Address**
    - **Port**
    - **Community**
3. Click **Add SNMP Trap Receiver**.

## Disabling SAL Gateway

The locally embedded SAL must be in a disabled state if your Avaya Aura® solution requires a stand-alone SAL Gateway server.

Disable the local SAL if your Avaya Aura® solution requires a higher-capacity, stand-alone SAL Gateway server. This configuration is more appropriate for handling SNMP trap/alarm forwarding and Avaya remote services for a larger Enterprise solution.

Disable the SAL Gateway running on the Services Virtual Machine if you determine, for example, that after expanding your existing Avaya Aura® solution, this SAL Gateway no longer has enough capacity to handle the increased requirements for trap/alarm forwarding and remote services. In this case, install and configure the SAL Gateway on an independent server elsewhere in your network.

### About this task

Use this procedure to disable the SAL Gateway running on the System Platform Services Virtual Machine.

**Note:**

- If you installed System Platform version 6.2 or later, and deselected the **Enable Services VM** default setting during that process, then neither the embedded SAL nor the local Services Virtual Machine will be active. (With System Platform version 6.2 or later, SAL no longer runs on the Cdom virtual machine, but instead runs on a Services Virtual Machine or services_vm.) In this scenario, you take no action to disable the embedded SAL Gateway before installing and launching the SAL Gateway on a stand-alone server.
- With System Platform version 6.2 or later, disabling the Services Virtual Machine also disables the local SAL gateway running on that virtual machine.

### Procedure

1. In the navigation pane of the System Platform Web Console , click **Server Management** > **SAL Gateway Management**.
2. On the SAL Gateway Management page, click **Disable SAL Gateway**.

# Chapter 6: Installing a solution template

## Template installation

After installing System Platform, install the solution templates.

After installing the templates, manage the templates from the System Platform Web Console.

**Note:**

The procedures for configuring a solution template differ depending on the template. See the documentation for the specific solution template for the configuration steps.

## Prerequisites for installing a solution template

- Stop High Availability Failover if it is running. You cannot install a solution template if High Availability Failover is running.
- Make sure that the IP addresses for the *avprivate* bridge do not conflict with any other IP addresses in your network.

  Go to the Network Configuration page on the System Platform Web Console (**Server Management** > **Network Configuration**) to view the addresses that are allocated to avprivate. The range of IP addresses starts with System Domain's (Domain-0) interface on avprivate. Console Domain automatically receives the consecutive IP address. Resolve any conflicts by assigning System Domain an IP address on a subnet that you know is not used in your network. Also keep in mind that some templates require additional addresses on the private bridge.

  The avprivate bridge is an internal, private bridge that allows virtual machines to communicate with each other. This private bridge has no connection to your LAN. During installation, System Platform runs an algorithm to find a set of IP addresses that do not conflict with the addresses configured on the System Domain Network Configuration page. However, it is still possible that the addresses selected conflict with other addresses in your network. Since this private bridge is isolated from your LAN, this address conflict could result in the failure of System Platform or an installed template to route packets correctly.

- Optional. Create an EPW file on page 19 to load configuration data into the template.
- Optional. Create an ABIT file to load station data into .

# Configuring a proxy

### About this task

If the template files are located on a different server (for example, Avaya PLDS or HTTP), configure a proxy server address and port.

### Procedure

1. Click **Virtual Machine Management** > **Solution Template**.
2. On the Search Local and Remote Template page, click **Configure Proxy**.
3. On the System Configuration page, select **Enabled** for the **Proxy Status** field.
4. Specify the proxy address.
5. Specify the proxy port.
6. Select the appropriate keyboard layout.
7. Enable or disable statistics collection.
8. Click **Save** to save the settings and configure the proxy.

**Related topics:**

System configuration field descriptions on page 74

# Installing a solution template

### Before you begin

- If using an Electronic Pre-installation Worksheet (EPW) file, you must have it saved in an accessible location. See An EPW file on page 19 for information about EPW files. If not using an EPW file, make sure you have the filled-out worksheet available.
- Ensure that your browser option to block pop-up windows is disabled.

### About this task

❗ **Important:**

Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.

❗ **Important:**

Some Avaya Aura solutions do not support template installation using all four of the possible file source options (PLDS, CD/DVD, USB, SP_Server). Refer to template installation topics in your Avaya Aura solution documentation to determine the correct option for installation of your solution template.

## Procedure

1. Log in to the System Platform Web Console as admin.
2. If installing from a USB flash drive, connect the flash drive to the server.
3. If installing from a single CD or DVD, insert the CD or DVD in the server CD or DVD drive.
4. If installing from multiple DVDs, copy the DVDs to the server:
   a. Click **Server Management** > **File Manager** in the navigation pane.
   b. Insert the first DVD.
   c. Click **View DVD/CD**.
   d. After the system mounts and reads the DVD, click **Copy Files**.
   The files are copied to the /vsp-template/cdrom directory on the server.
   e. When the system finishes copying the files, insert the second DVD.
   f. Click **View DVD/CD**.
   g. After the system mounts and reads the DVD, click **Copy Files**.
   The files are copied to the /vsp-template/cdrom directory on the server.
   h. Repeat for remaining DVDs
   i. After the system finishes copying the files, select the template in the ***/vsp-template/*** field of the **Copy from Server DVD/CD** area.
   j. Click **Finalize copy**.
   The files are copied to the template-specific directory that you selected in the previous step, and the cdrom directory is deleted.

   ❗ **Important:**

   If the writable DVD does not mount, write the ISO images to high quality DVDs and use a slower write speed.
5. Click **Virtual Machine Management** > **Templates** in the navigation pane.

   The system displays the Search Local and Remote Template page. Use this page to select the template to install on System Platform.
6. In the **Install Template From** field, select the location of the software to be installed.

   If you copied multiple DVDs to the server, select **SP Server**.

**Note:**

If the software is located on a different server (for example, Avaya PLDS or HTTP), and depending on your specific network environment, configure a proxy if necessary to access the software. See Configuring a proxy on page 70.

7. If you selected **HTTP** or **SP Server** in the **Install Template From** field, enter the complete URL or path of the template files.
8. Click **Search** to display a list of template descriptor files (each available template has one template descriptor file).
9. On the Select Template page, click the required template, and then click **Select** to continue.
   The system displays the Template Details page with information on the selected template and its Virtual Appliances.
10. Click **Install** to start the template installation.

**Note:**

System Platform automatically performs a hardware check of the server platform at this time. Servers supported by Avaya must meet all prerequisites for the System Platform, any platform options, and a specific solution template. If the server hardware check performed at this time passes, template installation proceeds normally. However, in a circumstance where the hardware check halts template installation, one or both of the following messages appear:

- Template Future Upgrade warning – `There is enough disk space to proceed with the current template installation/upgrade. However, there might not be enough disk space for a future template upgrade.`
- Insufficient disk space or memory resources message – `Insufficient resources to install this template (<template_name>).`

In either case, capture the exact details of the error message and contact your Avaya technical support representative for further instructions.

If the template you selected supports an Electronic Pre-installation Worksheet (EPW), the system prompts you to continue without an EPW or to provide an EPW file. The system also prompts you with pages that require your input such as IP addresses for the applications that are included in the template. These pages vary according to the template you are installing. If you provided an EPW file, some of these pages typically contain data from the EPW.

**Important:**

If you are installing from a USB flash drive, remove the flash drive when the installation is complete. The presence of a flash drive connected to the server could prevent that server from rebooting.

**Related topics:**

Prerequisites for installing a solution template on page 69
Search Local and Remote Template field descriptions on page 73

# Field Descriptions

## Search Local and Remote Template field descriptions

Use the Search Local and Remote Template page to select the template to install on System Platform, to upgrade an installed template, or to delete an installed template.

| Name | Description |
|---|---|
| **Install Template From** | Locations from which you can select a template and install it on System Platform. Available options are as follows:<br>**Avaya Downloads (PLDS)**<br>The template files are located in the Avaya Product Licensing and Delivery System (PLDS) Web site. You must enter an Avaya SSO login and password. The list will contain all the templates to which your company is entitled. Each line in the list begins with the “sold-to” number to allow you to select the appropriate template for the site where you are installing. Hold the mouse pointer over the selection to view more information about the “sold-to” number.<br>**HTTP**<br>The template files are located on an HTTP server. You must enter the template URL information.<br>**SP Server**<br>The template files are located in the `/vsp-template` file system in the Console Domain of the System Platform server.<br>**SP CD/DVD**<br>The template files are located on a CD or DVD in the CD/DVD drive on the server.<br>**SP USB Disk**<br>The template files are located on a USB flash drive connected to the server. |

| Name | Description |
|---|---|
| **SSO Login** | Active only when you select the **Avaya Downloads (PLDS)** option to search for a template.<br>Login id for logging on to Single Sign On. |
| **SSO Password** | Active only when you select the **Avaya Downloads (PLDS)** option to search for a template.<br>Password for Single Sign On. |

### Search Local and Remote Template button descriptions

| Name | Description |
|---|---|
| **Install** | Installs the solution template. This button is displayed only if no template is currently installed on System Platform. |
| **Configure Proxy** | Active only when you select the HTTP option to search for a solution template.<br>Lets you configure a proxy for the HTTP address.<br>If necessary, configure a proxy for Secure Access Link (SAL) and alarming functions to access the internet. |
| **Upgrade** | Upgrades the installed solution template from the selected template location option. This button is displayed only if a template is installed on System Platform. |
| **Delete Installed Template** | Deletes the currently installed and active template. This button is displayed only if a template is installed on System Platform. |

## System configuration field descriptions

Use the System Configuration page to configure Internet proxy server settings, change the current keyboard language setting, configure Web LM server information, disable or reenable collection of System Platform statistics, disable or reenable autodiscovery of System Platform servers, and configure various elements of the installed solution template.

**Note:**

If an administrator modifies WebLM parameters in the System Configuration page — for example, to configure an alternate WebLM Server – the web console halts the local instance of WebLM. If the administrator clicks the License Manager menu option, the web console goes to the alternate instance of WebLM. If the administrator blanks out WebLM host and port values, the Web console recovers WebLM default values, resaves them, and then restarts the local instance of WebLM.

Refer to the Release Notes for more information about any known issues relating to WebLM behaviour.

| Name | Description |
|---|---|
| **Proxy Configuration Area:** | |
| **Status** | Specifies whether an http proxy should be used to access the Internet, for example, when installing templates, upgrading patches, or upgrading platform. |
| **Address** | The address for the proxy server. |
| **Port** | The port address for the proxy server. |
| **WebLM Configuration Area:** | |
| **SSL** | Specifies whether the Secure Sockets Layer (SSL) protocol will be used to invoke the WebLM server. Select **Yes** if the alternate WebLM application has an HTTPS web address. Otherwise, select **No** if the alternate WebLM application has an HTTP web address. Default value = **Yes**. |
| **Host** | The IP address or hostname extracted from the web address of the WebLM application. Default value = **<cdom_IP_address>**. |
| **Port** | The logical port number extracted from the web address of the WebLM application, for example, **4533**. Default value = **52233** |
| **Other System Configuration Area:** | |
| **Syslog IP Address** | IP address of the Syslog server, which collects log messages generated by the System Platform operating system. |
| **Keyboard Layout** | Determines the specified keyboard layout for the keyboard attached to the System Platform server. |
| **Statistics Collection** | If you disable this option, the system stops collecting the statistics data.<br>**Note:**<br>If you stop collecting statistics, the system-generated alarms will be disabled automatically. |
| **SNMP Discovery** | By default, this feature enables SNMPv2 management systems to automatically discover any System Platform server in an Avaya Aura®-based network, including retrieval of server status and vital statistics. This is useful, for example, when using System Manager to view the entire inventory of System Platform servers across multiple Avaya Aura® enterprise solutions at a glance. This feature eliminates the tedious and error-prone task of manually adding a large number of System Platform servers to an SNMP management system, where that system typically |

| Name | Description |
|---|---|
| | requires three or more IP addresses for each System Platform server instance. SNMP management systems can also query any recognized System Platform server for its logical configuration.<br>System Platform supports network discovery of values for the following MIB objects:<br>• RFC 1213 (MIB-2, autodiscovery): sysDescr, sysObjectID, sysUpTime, sysContact, sysName, sysLocation, and sysServices<br>• RFC 2737 (Entity MIB) get/getnext/getbulk: entPhysicalTable – One table entry for the Dom0 physical interface.<br>entLogicalTable – One table entry for the Cdom virtual machine, and one table entry for each virtual machine associated with the installed solution template. Each entry contains the virtual machine name, type, software version, and IP address.<br>If you disable this option, SNMP manager systems will be unable to automatically discover this System Platform server. |

**Related topics:**

Configuring a proxy on page 70

# Chapter 7: Installing license files and authentication files

## Installing license files

### License files

Use the Avaya Product Licensing and Delivery System (PLDS) to generate and download license files for the template that is installed. PLDS is an online, Web-based tool for managing license entitlements and electronic delivery of software and related license files.

After you obtain the license file, use WebLM to install it. WebLM is a Web-based application for managing licenses and is installed as part of System Platform in the Console Domain.

The license file is an Extensible Markup Language (XML) file. It contains information regarding the product, major release, and license features and capacities.

A 30-day grace period applies to new installations or upgrades of the template that is installed. You have 30 days from the day of installation to install a license file.

### PLDS Overview

The Avaya Product Licensing and Delivery System (PLDS) provides customers, Avaya Partners, distributors, and Avaya Associates with tools for managing license entitlements and electronic delivery of software and related license files. Using PLDS, you can perform operations such as license activations, license upgrades, license moves, and software downloads.

Installation software packages for Avaya products are available as ISO files on PLDS. Users can download the ISO images to a PC, and choose to either burn a DVD for installation or transfer the ISO file to the target server for installation.

You can check PLDS to determine if a later service pack or software release is available. If updates do exist, see the appropriate upgrade procedures, contact Avaya, or contact the Avaya Partner Service representative.

When you place an order for a PLDS-licensed software product such as , the license entitlements on the order are automatically created in PLDS. Once these license entitlements are created, you receive an e-mail notification from PLDS. This e-mail notification includes a license activation code (LAC). Using the LAC, you can quickly find and activate the newly purchased license entitlements in PLDS. You can then download the license file.

**Important:**

You must provide the WebLM host ID to activate the license file in PLDS. The primary WebLM host ID is the MAC address of a physical network interface card (NIC) on the server.

See Obtaining the WebLM host ID on page 78 for information on how to obtain the WebLM host ID.

Examples of license management tasks that you can perform in PLDS include:

- Adding more license entitlements to an existing activation
- Upgrading a license file to a new major release
- Moving license entitlement activations between license hosts
- Regenerating a license file with an new host ID

## Accessing WebLM from the System Platform Web Console

### About this task

### Procedure

1. Start the System Platform Web Console and log in.
2. In the navigation pane, click **Server Management** > **License Management**.
3. On the License Management page, click **Launch WebLM License Manager** .
4. When WebLM displays its Logon page, enter the user name and password for WebLM. For initial login to WebLM, the user name is `admin`, and the password is `weblmadmin`. However, you must change the password the first time that you log in to WebLM.

## Obtaining the WebLM host ID

### About this task

You must provide the WebLM host ID to activate the license file in PLDS. The primary WebLM host ID is the MAC address of a physical network interface card (NIC) on the server.

### Procedure

1. Start the WebLM Web interface and log in.

2. In the left navigation pane, click **Server Properties**.
3. Make a note of the MAC address that is displayed in the **Primary Host ID** field.

## Activating license entitlements in PLDS

### Before you begin

You know the Host ID of the License Host if you are activating license entitlements on a new License Host.

### About this task

Use the License Activation Code (LAC) to activate one or more license entitlements. You can activate all of the licenses, or you can specify a number of licenses to activate from the quantity available. Upon successful activation of the license entitlements, PLDS creates an Activation Record and sends an Activation Notification e-mail message to the customer who is registered with the entitlements. The Activation Record and Activation Notification provide details on the number of activated licenses and the License Host. The license file can be accessed on the License/Keys tab of the Activation Record in PLDS and is also an attachment to the Activation Notification e-mail message. You must install the license file on WebLM to use the licenses.

For more information on PLDS, see *Getting Started with Avaya PLDS* at http://support.avaya.com.

### Procedure

1. Type `http://plds.avaya.com` in your Web browser to access the Avaya PLDS Web site.
2. Enter your Login ID and password to log on to the PLDS Web site.
3. In the **LAC(s)** field of the Quick Activation section, enter the LAC that you received in an e-mail message.

   **Note:**

   If you do not have an e-mail message with your LAC, you can search for your entitlements and locate the LAC. See “Searching for entitlements” in *Getting Started with Avaya PLDS*.

   **Note:**

   The Quick Activation automatically activates all license entitlements on the LAC. However, you can remove line items or specify a number of licenses to activate from the quantity available.

4. Enter the License Host information.

   You can either create a new license host or use an existing license host.

5. Click **Next** to validate the registration detail.
6. Enter the License Host Information.

   The Host ID is the MAC address of the server hosting the WebLM server. The Host ID is obtained from the Server Properties page of the WebLM server where the license file will be installed.
7. Enter the number of licenses to activate.
8. Review the Avaya License Agreement and accept the agreement if you agree.
9. Perform the following steps to send an activation notification e-mail message:
   a. In the **E-mail to** field, enter e-mail addresses for any additional activation notification recipients.
   b. Enter any comments or special instructions in the **Comments** field.
   c. Click **Finish**.
10. Click **View Activation Record**.
    - The **Overview** tab displays a summary of the license activation information.
    - The **Ownership** tab displays the registration information.
    - The **License/Key** tab displays the license files resulting from the license activation. On the **License/Key** tab, you can view and download the license files. Each license file must be installed on the WebLM server that is associated with the License Host.

## Installing a license file in WebLM

### Before you begin

Obtain the license file from the Avaya Product Licensing and Delivery System (PLDS) Web site at https://plds.avaya.com.

### About this task

### Procedure

1. Start the WebLM Web interface and log in.
2. In the left navigation pane, click **Install license**.
3. On the Install license page, enter the license file path. You can also click **Browse** to select the license file.
4. Click **Install** to install the license file.

WebLM displays a message upon successful installation of the license file. The installation of the license file can fail for various reasons, such as:

- WebLM finds an invalid digital signature on the license file. If you get such an error, request PLDS to redeliver the license file.
- The current capacity use exceeds the capacity in the installed license.

# Installing authentication files

## Authentication files

The authentication file contains Access Security Gateway (ASG) keys and the server certificate for the template that is installed. ASG keys make it possible for Avaya Services to securely access the customer’s system.

System Platform and the template that is installed share the same authentication file. A default authentication file is installed with System Platform. The default authentication file has an authentication file ID (AFID) of 7100000000. However the default file must be replaced with a unique file. Unique authentication files are created by Authentication File System (AFS) at http://rfa.avaya.com. After you create and download the authentication file, you install it from the System Platform Web Console of the server. When you install the authentication file in System Platform, the file is automatically installed on all virtual machines on the server.

Every time that you upgrade the template to a new major release, for example, from 5.2 to 6.1, or from 6.2 to 7.0, you must generate and install an authentication file for the upgrade. The updated authentication file has the same AFID as the previous file but contains new ASG keys.

### About the authentication file

AFS authentication files have a plain text XML header with encrypted authentication data and an encrypted server certificate.

Each authentication file contains an authentication file ID (AFID) that identifies it. Use this AFID to create a new authentication file for an upgrade or to replace the current authentication file on the server.

## Starting the AFS application

### Before you begin

AFS is available only to Avaya service personnel and Avaya Partners. If you are a customer in need of an authentication file, contact Avaya or your authorized Avaya Partner.

You must have a login ID and password to start the AFS application. You can sign up for a login at http://rfa.avaya.com.

### About this task

### Procedure

1. Type `http://rfa.avaya.com` in your Web browser.
2. Enter your login information and click **Submit**.
3. Click **Start the AFS Application**.
   A security message is displayed.
4. Click **I agree**.
   The AFS application starts.

# Creating an authentication file

## Creating an authentication file for a new system

### About this task

You can choose to download the authentication file directly from AFS to your computer, or you can have the authentication file sent in an e-mail message.

### Procedure

1. Start and log in to AFS. See Starting the AFS application on page 81.
2. In the **Product** field, select **SP System Platform**.
3. In the **Release** field, select the release number of the software, and then click **Next**.
4. Select **New System**, and then click **Next**.
5. Enter the fully qualified domain name (FQDN) of the host system where the template is installed.
6. To download the authentication file directly from AFS to your computer:
   a. Click **Download file to my PC**.
   b. Click **Save** in the File Download dialog box.
   c. Select the location where you want to save the authentication file, and then click **Save**.
   d. Click **Close** in the Download complete dialog box to complete the download.

   After the authentication file is created, AFS displays a confirmation message that contains the system type, release, and authentication file ID (AFID).

7. To have the authentication file sent in an e-mail message:
    a. Enter the e-mail address in the **Email Address** field.
    b. Click **Download file via email**.
    AFS sends the e-mail message that includes the authentication file as an attachment and the AFID, system type, and release in the message text.
    c. Save the authentication file to a location on the e-mail recipient's computer.

    After the authentication file is created, AFS displays a confirmation message that contains the system type, release, and authentication file ID (AFID).
8. To view the header information in the authentication file, go to the location where the file is saved and use WordPad to open the file.

    The header includes the AFID, product name and release number, and the date and time that the authentication file was generated.

## Creating an authentication file for a file replacement

### Before you begin

You must have the AFID of the authentication file that you are replacing. See Obtaining the AFID from System Platform Web Console on page 84.

### About this task

You can choose to download the authentication file directly from AFS to your computer, or you can have the authentication file sent in an e-mail message.

### Procedure

1. Start and log in to AFS. See Starting the AFS application on page 81.
2. In the **Product** field, select **SP System Platform**.
3. In the **Release** field, select the release number of the software, and then click **Next**.
4. Select **Upgrade or Re-deliver for Existing System**.
5. In the **Authentication File ID** field, enter the AFID for the authentication file that is currently installed on the system, and then click **Next**.
6. Select one of the following options:
    - If you use an Avaya Services login to access the template application, read the product access instructions. After reading the instructions, select **I read and understand the Product Access Instructions**.
    - If you do not use an Avaya Services login to access the template application, select **I do not use Avaya Services logins**.
7. To download the authentication file directly from AFS to your computer:

   a. Click **Download file to my PC**.
   b. Click **Save** in the File Download dialog box.
   c. Select the location where you want to save the authentication file, and then click **Save**.
   d. Click **Close** in the Download complete dialog box to complete the download.

   After the authentication file is created, AFS displays a confirmation message that contains the system type, release, and authentication file ID (AFID).

8. To have the authentication file sent in an e-mail message:

   a. Enter the e-mail address in the **Email Address** field.
   b. Click **Download file via email**.
      AFS sends the e-mail message that includes the authentication file as an attachment and the AFID, system type, and release in the message text.
   c. Save the authentication file to a location on the e-mail recipient's computer.

   After the authentication file is created, AFS displays a confirmation message that contains the system type, release, and authentication file ID (AFID).

9. To view the header information in the authentication file, go to the location where the file is saved and use WordPad to open the file.

   The header includes the AFID, product name and release number, and the date and time that the authentication file was generated.

## Obtaining the AFID from System Platform Web Console

### About this task

To replace an authentication file, you must have the AFID of the currently installed authentication file.

### Procedure

1. Start the System Platform Web Console and log in.
2. In the navigation pane, click **User Administration** > **Authentication File**.

**Related topics:**

Creating an authentication file for a file replacement on page 83

# Installing an authentication file

### Before you begin

You must create and download the authentication file from AFS.

## About this task

System Platform and the template applications share the same authentication file. When you install the authentication file in System Platform, the file is automatically installed on all virtual machines on the server.

## Procedure

1. Start the System Platform Web Console and log in.
2. Click **User Administration** > **Authentication File**.
3. Click **Upload**.
4. In the Choose File to Upload dialog box, find and select the authentication file, and then click **Open**.

   **Note:**

   To override validation of the AFID and date and time, select **Force load of new file** on the Authentication File page. Select this option if you:

   - must install an authentication file that has a different unique AFID than the file that is currently installed, or
   - have already installed a new authentication file but must reinstall the original file

   Do not select this option if you are replacing the default authentication file with a unique authentication file.

   **Caution:**

   Use caution when selecting the **Force load of new file** option. Certificate errors and login issues typically follow if you install the wrong authentication file.
5. Click **Install**.
   The system uploads the selected authentication file and validates the file. The system installs the authentication file if it is valid.

# Chapter 8: Configuring System Platform High Availability

## About System Platform High Availability

System Platform High Availability is an optional feature that provides different levels of services continuity. This feature is available with some, but not all, Avaya Aura® solution templates. For example, the Communication Manager template does not currently use the System Platform High Availability feature.

For more details about System Platform High Availability, refer to administration topics relevant to this functionality in your Avaya Aura® solution documentation.

## Template administration during High Availability operation

System Platform does not support installation, upgrade, or deletion of templates while running the system in an active High Availability mode. The web console displays a warning message on template pages, and you cannot perform any actions associated with them.

To install, upgrade, or delete a template, you must first stop High Availability operation. Next, System Platform removes any installed templates from the standby node.

You must perform all template operations while logged on to the preferred node. Once you finish template configuration, you can restart High Availability operation in the desired mode

> **Important:**
>
> Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.

# Prerequisites for High Availability configuration

## Introduction to High Availability prerequisites

For Avaya Aura® solutions that support System Platform High Availability operation, configuration prerequisites exist in two areas:

1. Common prerequisites for all System Platform High Availability configurations
2. Prerequisites for a specific type of System Platform High Availability (for example, locally redundant HA)

System Platform supports Locally Redundant High Availability configurations

You must satisfy all of the Common and HA-specific prerequisites before attempting to configure System Platform High Availability.

Note also that some solution templates support alternatives to System Platform High Availability. To determine specific support for either System Platform High Availability or an alternative template-driven implementation of solution High Availability, refer to feature support information in your Avaya Aura® solution documentation.

## Common prerequisites for all High Availability modes

If your Avaya Aura® solution template supports any mode of System Platform High Availability operation, you must satisfy all applicable prerequisites identified in this topic.

### Servers

- Two servers with the same hardware configuration. At a minimum, the servers must have identical memory, number of processors, total disk space or free disk space as determined by template requirements.
- The servers must have a spare Gigabit network interface to be dedicated exclusively to System Platform High Availability services. The servers must be connected on the same ports on both machines.
- Verify that System Platform and the solution template both support the specific server.

### Cabling

The System Platform High Availability physical configuration requires an Ethernet CAT5E cable with straight-through wiring for the connection from local server port eth0 to a port on the local default gateway router. This provides each server with connectivity to the public IP network. This connection also carries Ping traffic between each server and the default gateway router.

### Software

- Verify that the same version of System Platform, including software patch updates, have been installed on the primary and secondary servers.

  **Note:**

  For Avaya Aura solutions deployed in a System Platform High Availability configuration, you must install/apply patches on both the primary and secondary servers independently. The primary server does not automatically replicate System Platform patches to the secondary server.

- Record the cdom username and password for logon to the primary and secondary System Platform servers when necessary.
- Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.

## Prerequisites for locally redundant High Availability

If your Avaya Aura® solution template will be using System Platform FRHA, and/or MPHA with LMHA High Availability modes, you must satisfy all of the common prerequisites for all HA modes, plus the prerequisites specifically for Locally Redundant High Availability described in this topic.

### Network Interface Cards (NICs)

- Both servers should have a spare network interface dedicated exclusively to High Availability data replication, as follows:
  - FRHA: 1 Gb/s interface
  - MPHA and LMHA: 10 Gb/s interface

### Cabling

- Both servers must be in close proximity for interconnection by means of a high-speed Ethernet cable with crossover signal wiring. This cable carries data replication traffic between the primary and secondary servers. It also carries heartbeat messaging between the two servers.

  **Note:**

  The Ethernet specification limit for the length of this cable between the primary and secondary servers is 100 meters. This interconnection must not include a layer-2 switch. The same Ethernet port on each server must be used to create the crossover connection, for example, eth2 to eth2, eth3 to eth3, or eth4 to eth4. The minimum acceptable cable type for this node-to-node crossover connection is Ethernet CAT5E. For installation sites with higher than normal electrical or signal noise in some areas, use Ethernet type CAT5A cabling for the crossover connection. Type CAT6A cable provides the best levels of shielding against crosstalk and external signal interference.

- For FRHA operation, use a type CAT5E Ethernet cable *with cross-over wiring* for the high-speed crossover connection between a 1Gb/sec NIC port on the primary server to a 1 Gb/sec NIC port on the secondary server. You must use the same port on both servers, typically eth 2 to eth2. If eth2 is unavailable, you cannot use eth 0 or eth1 for the crossover connection, but you can use other available 1Gb/s Ethernet ports on the two servers.
- For MPHA (and implicitly LMHA operation for standard Cdom and Services virtual machines), use a type CAT6A Ethernet 10 Gb/sec cable *with cross-over wiring* for the high-speed crossover connection between a 10Gb/sec NIC port on the primary server to a 10 Gb/sec NIC port on the secondary server. You must use the same port on both servers, typically eth 2 to eth2. If eth2 is unavailable, you cannot use eth 0 or eth1 for the crossover connection, but use other available 10 Gb/s Ethernet ports on the two servers.

### Networking for locally redundant High Availability

- Install both servers on the same IP subnetwork.
- Document IP addresses for the following Ping targets:
  - The IP address of the default gateway router interface local to the primary (preferred) server. (The primary server requires this target to assure connectivity to the public network.)
  - The IP address of the default gateway router interface local to the standby server. (The standby server requires this target to assure connectivity to the public network.)
  - The IP address of any servers (not including System Platform servers) deployed as part of your Avaya Aura® solution. Add these servers as optional Ping targets, to help extend connectivity monitoring (using Ping) throughout the solution topology. Refer to the requirements of your specific solution template.
- Ensure that the default gateway replies to ICMP pings from each of the System Platform nodes. Use each server's command line to check:

  `ping <default_gateway_IP_address>`.

  Verify the ping responses to each server from the default gateway, each containing a ping response time.

# Configuring System Platform High Availability

## Configuring locally redundant High Availability

### Before you begin

You must have a user role of Advanced Administrator to perform this task.

You must complete:

1. Common prerequisites for all System Platform High Availability configurations
2. Prerequisites for a specific type of System Platform High Availability (for example, locally redundant HA)

### About this task

- Perform this task only on the System Platform server chosen to be the Preferred (primary) Node in the High Availability pair.
- The primary server propagates its configuration to the secondary (standby) server when you start High Availability operation.
- This procedure synchronizes all required configuration settings from the preferred node to the standby node so that the standby node can assume the role of active node if required.
- Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.
- During disk synchronization (typically while HA operations are starting up) the High Availability software automatically adjusts the default rate of disk synchronization (typically 100 MB/sec) to the speed of the crossover interface between the two nodes.
- After starting HA, you can log on to the Web Console of the active server.

### Procedure

1. Log in to the Web Console of the server chosen to be the preferred node.

   Use the IP address of the server's Cdom virtual machine when logging on to the Web Console.

2. Click **Server Management** > **High Availability**.

   The High Availability page displays the current status of the High Availability configuration.

3. Click **Configure HA**.

   > **Note:**
   >
   > The **Configure HA** button in the Web Console will be disabled whenever the server has no physical or logical interfaces available for High Availability configuration.

4. On the Configure HA page, enter the appropriate information to configure High Availability operation for all template virtual machines.

   If your Avaya Aura® solution template supports any enhanced System Platform High Availability modes in addition to the default (Fast Reboot High Availability, or FRHA), you can change the mode of High Availability protection on template virtual machines. To verify solution support for any System Platform enhanced High Availability modes, refer to your solution documentation. The Web Console displays different HA configuration fields, according to the HA modes supported by your solution template.

5. Click **Create**.
6. After the system finishes creating the High Availability configuration, click **Start HA** and confirm the displayed warning.

   The Start HA button is visible only if High Availability is fully configured but inactive.
7. Click **Server Management** > **High Availability**.

   You can check the status of virtual machines on the High Availability page and ensure that the data replication software is synchronizing virtual machine disk volumes on the active and standby servers.

   For virtual machines configured for Fast Reboot High Availability (FRHA), the HA virtual machine status on the High Availability page should display `Ready for Interchange` when the logical disk volumes on the active and standby servers achieve synchronization.

   For virtual machines supporting for Machine Preserving High Availability (MPHA), the HA virtual machine status on the High Availability page should display `Ready for Interchange` when both disk and memory on the active and standby servers achieve synchronization.

## Configuring locally redundant High Availability field descriptions

Enter required values for these fields when deploying your primary and secondary System Platform servers in a locally redundant High Availability configuration.

| Name | Description |
|---|---|
| **Remote cdom IP address** | IP Address of Console Domain on the standby node. |
| **Remote cdom user name** | User name for Console Domain on the standby node. |
| **Remote cdom password** | Password for Console Domain on the standby node. |
| **Crossover network interface** | Network interface connected to the standby server. |

# High Availability start/stop

### High Availability start

You can **Start HA** (start High Availability) operation after committing the feature to the active node configuration. The active node will propagate this configuration to the standby node at commit time. When you start High Availability operation, the console domain and template virtual machines restart on the active and standby nodes.

**Important:**

Do not install a template on the standby node. If you do, you will be unable to start High Availability operation. If you are using a bundled System Platform installation (with a solution template), disable the template installation on the standby server. The solution template is propagated from the active node to the standby node when you start High Availability operation.

### High Availability stop

Stopping High Availability operation (using the **Stop HA** button) returns System Platform to standard operation without High Availability protection. (This action does not remove the High Availability configuration from either node.)

**Important:**

Stopping High Availability operations during disk synchronization could corrupt the file system of the standby console domain. Check the status of virtual machine disk synchronization on the High Availability page of the web console.

Once High Availability operations halt:

- the two nodes function independently in simplex mode.
- the system no longer propagates VM disk changes (FRHA, LMHA) or VM CPU memory changes (MPHA) from the active node to the standby node.
- you can access the Web Console on the standby server by using its IP address (provided during configuration of the High Availability feature).

**Related topics:**

Starting System Platform High Availability on page 93
Stopping System Platform High Availability on page 94

# Starting System Platform High Availability

This procedure synchronizes all required configuration settings from the preferred node to the standby node so that the standby node can assume the role of active node if required.

### About this task

Whether you have completed a new System Platform installation or a System Platform upgrade, your Avaya Aura solution documentation should indicate which of the two High Availability servers will be the preferred node. You must **Start HA** from that node.

**Important:**

If you are performing a platform upgrade, do not start High Availability operation until after you commit the platform upgrade on both the primary and secondary servers.

**Note:**

- If you are restarting Fast Reboot High Availability (FRHA) operation after performing **Stop HA**, you can restart anytime after FRHA halts.
- If you are restarting Machine Preserving (and implicitly, Live Migration) High Availability (MPHA/LMHA), you can restart anytime after MPHA/LMHA halts.

**Note:**

When starting HA, System Platform removes all bonded interfaces defined earlier on the standby node, but then automatically propagates (duplicates) all bonded interfaces defined on the active node to the standby node. This operation assures that both nodes have the same bonded interface configuration after HA startup.

### Procedure

1. Click **Server Management** > **High Availability**.
2. Click **Start HA** and confirm the displayed warning.
3. Click **Server Management** > **High Availability**.

   Verify the progress of virtual machine replication on the High Availability page.

## Stopping System Platform High Availability

### Before you begin

**Important:**

Stopping High Availability operations during disk synchronization could corrupt the file system of the standby console domain. Check the status of virtual machine replication on the High Availability page of the Web Console.

### About this task

This procedure stops Fast Reboot High Availability (FRHA) operation but does not remove its configuration from System Platform. You can restart FRHA operation anytime after performing this procedure.

The same is true for Machine Preserving and Live Migration high availability modes of operation (MPHA/LMHA).

### Procedure

1. Click **Server Management** > **High Availability**.
2. Click **Stop HA** and confirm the displayed warning.

   Verify the status of virtual machine replication on the High Availability page.

## Manually switching High Availability server roles

### Before you begin

- All virtual machine disks on the active and standby nodes must be in a synchronized state (contain the same data). Check the **Disk Status** area of the High Availability page.
- MPHA-protected virtual machine memory on the active and standby nodes must be in a synchronized state (contain the same data). Check the **Disk Status** and **Memory Status** areas of the High Availability page.

### About this task

Use this procedure for a variety of administrative, maintenance, or troubleshooting tasks affecting only one server. For example, use this procedure prior to replacing a hardware module on the active node in an Avaya Aura® system enabled with High Availability protection.

### Procedure

1. From the **Server Management** menu, click **High Availability**.
2. Click **Manual Interchange** on the High Availability page.
3. Click **OK** to confirm the warning message.

## Removing the High Availability configuration

Use this procedure to permanently remove the High Availability configuration.

### Before you begin

- You have stopped System Platform High Availability.

### About this task

Use this procedure, for example:

- to remove the HA configuration from Avaya Aura® solution servers prior to a System Platform upgrade. Removing the HA configuration from the primary/active HA server also removes the HA configuration from the standby server automatically.
- to restore Avaya Aura® solution servers in an HA configuration to simplex operation

### Procedure

1. Log on to the Web Console for the primary/active HA server.
2. Click **Server Management > High Availability**.
3. Click **Remove HA** and confirm the displayed warning.

# Chapter 9: Troubleshooting the installation

## Template DVD does not mount

The template DVD does not mount automatically.

### Troubleshooting steps

#### About this task

#### Procedure

1. Log in to the Console Domain as admin.
2. Type `su -`
3. Enter the root password.
4. Run the following commands:

```
> ssh dom0.vsp /opt/avaya/vsp/template/scripts/udomAttachCd
> mount /dev/xvde /cdrom/
```

## Cannot ping Console Domain or access the Web Console

Use this procedure to determine if the state of the Console Domain virtual machine is the reason why you are unable to access the System Platform Web Console.

### Troubleshooting steps

#### About this task

The Web Console runs on the Console Domain virtual machine, so if output of the **`xm list`** command described in this procedure shows that the Console Domain virtual machine is in either a normal or abnormal shutdown state, then the administrator is likely to lose access to the Web Console.

**Important:**

If you encounter these symptoms after completing the following procedure, contact Avaya Support at http://support.avaya.com. Take no further action to troubleshoot the issue locally.

### Procedure

1. Log in to the System Domain (Domain-0) as `admin`.
2. Enter **`su -`** to log in as root.
3. At the prompt, type **`xm list`**.

   The **`xm list`** command shows information about the running virtual machines in a Linux screen.

   You should see two virtual machines running at this time: System Domain (shown as `Domain-0`) and Console Domain (shown as `udom` in **`xm list`**).

   A state of `r` indicates that the virtual machine is running. A state of `b` indicates that the virtual machine blocked.

   **Note:**

   The blocked state does not mean that there is a problem with the virtual machine. It only means that the virtual machine is currently not using any CPU time.

   Other possible virtual machine states are:

   - p: paused
   - s: shutdown
   - c: crashed

   For more information on the information displayed, see the Linux manual page for the **`xm`** command.

4. On the Linux screen, type **`exit`** to log off as root. Type `exit` again to log off from System Domain (Domain-0).

### Example

**`xm list` output:**

```
Name                                        ID   Mem VCPUs      State   Time(s)
Domain-0                                     0   512     2     r-----  60227.8
aes                                         15  1024     1     -b----  12674.4
cm                                          17  1024     1     -b----  14898.2
cobar                                       14   512     1     -b----   8492.7
ses                                         19  1024     1     -b----   4775.0
udom                                        16  1024     1     -b----   9071.6
utility_server                              18   512     1     -b----   1909.0
```

If High Availability Failover is enabled, the output of the **`xm list`** command differs for the active server and the standby server. The output for the active server is similar to that shown above.

**`xm list` output for the standby server:**

If High Availability Failover is enabled, the output for the standby is similar to the following:

```
Name                                        ID   Mem VCPUs      State   Time(s)
Domain-0                                     0   512     2     r-----  21730.2
aes                                             1024     1              2786.0
cm                                              1024     1              3023.7
cobar                                            512     1              1745.1
ses                                             1024     1              1021.7
udom                                            1024     1              2714.1
utility_server                                   512     1               400.0
```

# SAL does not work

## Troubleshooting steps

If the Secure Access Link (SAL) in your Avaya Aura solution is not operating normally, Avaya Support will not receive alarms and other important messages originating from the various components and applications in your system. Neither will Avaya Support be able to connect to your system for remote diagnosis. If you suspect a malfunctioning SAL in your system, try this procedure.

### About this task

If you do not see results similar to those shown in the **ping** and **wget** examples following these troubleshooting steps, contact your corporate IT organization.

### Procedure

1. Ping the DNS server in the customer network.
2. Ping the proxy server in the customer network.
3. Ping support.avaya.com to check DNS is working.
4. Try a **`wget`** using the proxy from the command line to check that the proxy is working.

### Example

*Ping for server DNS or proxy server reachability:*

```
ping 135.9.69.123

Pinging 135.9.69.123 with 32 bytes of data:

Reply from 135.9.69.123: bytes=32 time=111ms TTL=54

Reply from 135.9.69.123: bytes=32 time=101ms TTL=54

Reply from 135.9.69.123: bytes=32 time=100ms TTL=54

Reply from 135.9.69.123: bytes=32 time=100ms TTL=54

Ping statistics for 135.9.69.123:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 100ms, Maximum = 111ms, Average = 103ms
```

*Ping for Avaya support server reachability*

```
ping support.avaya.com
```

Pinging support.avaya.com [198.152.212.23] with 32 bytes of data:

```
Reply from 198.152.212.23: bytes=32 time=101ms TTL=244

Reply from 198.152.212.23: bytes=32 time=101ms TTL=244

Reply from 198.152.212.23: bytes=32 time=101ms TTL=244

Reply from 198.152.212.23: bytes=32 time=102ms TTL=244
```

```
Ping statistics for 198.152.212.23:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 101ms, Maximum = 102ms, Average = 101ms
```

*WGET for HTTP response from Avaya support*

```
wget http://support.avaya.com
HTTP request sent, awaiting response... 200 OK
```

# Multiple reinstallations can result in an out of memory error

If an installation wizard is used to install a template and you reinstall the template by deleting and installing it multiple times, an out of permanent generation memory space (PermGen) error can occur.

## Troubleshooting steps

### About this task

Perform the troubleshooting steps given here to ensure that a PermGen error does not occur.

### Procedure

1. Delete the template.
2. Restart Tomcat by performing the following steps:
    a. Log in to Console Domain as admin.
    b. Type `su`
    c. Type `/sbin/service tomcat restart`
3. Start the pre-installation Web application.
4. Install the template.

# Appendix A: Preinstallation checklist for System Platform

Before starting the installation, make sure that you complete the tasks from the preinstallation checklist.

| No. | Task | Notes | ✔ |
|---|---|---|---|
| 1 | Complete and submit the Universal Install/SAL Product Registration Request form. When opening the Excel based form, click **Enable Macros**; otherwise, the form automation will not work. Submit the completed form using the built in e-mail button. See Registering the system on page 14. | ❗ **Important:**<br>Submit the registration form three weeks before the planned installation date. | |
| 2 | Gather the required information relating to installation, such as IP configuration information, DNS addresses, and address information for Network Time Protocol (NTP) servers.<br>See Installation checklist for System Platform on page 22. | | |
| 3 | Register for PLDS unless you have already registered. See Registering for PLDS on page 15. | | |
| 4 | Download the System Platform installer ISO image file from PLDS.<br>See Downloading software from PLDS on page 16. | | |
| 5 | Download the appropriate solution template and licenses from PLDS.<br>See Downloading software from PLDS on page 16. | | |
| 6 | Verify that the downloaded ISO images match the images on the PLDS Web site.<br>See Verifying the ISO image on a Linux-based computer on page 17 and Verifying the ISO image on a Windows-based computer on page 17. | | |

| No. | Task | Notes | ✔ |
|---|---|---|---|
| 7 | Write the ISO images to separate DVDs. See Writing the ISO image to DVD or CD on page 18. | **Note:**<br>If the software files you are writing on media are less than 680 Mb in size, you can use a CD instead of a DVD. | |

# Appendix B: Installation worksheet for System Platform

The System Platform installer application requires you to fill in various fields. Having the values required for these fields in advance helps the installation to progress more efficiently and accurately. It is likewise important and useful to gather information in advance about other key fields important for System Platform administration immediately following installation.

Print out the following tables and work with your network administrator to fill in the rows.

## System Configuration

| Name | Value | Description |
|---|---|---|
| **Proxy Configuration:** | | |
| **Status** | | Specifies whether an http proxy should be used to access the Internet, for example, when installing templates, upgrading patches, or upgrading platform. |
| **Address** | | The address for the proxy server. |
| **Port** | | The port address for the proxy server. |
| **WebLM Configuration:** | | |
| **SSL** | | Specifies whether the Secure Sockets Layer (SSL) protocol will be used to invoke the WebLM server. Select **Yes** if the alternate WebLM application has an HTTPS web address. Otherwise, select **No** if the alternate WebLM application has an HTTP web address. Default value = **Yes**. |
| **Host** | | The IP address or hostname extracted from the web address of the WebLM application. Default value = **<cdom_IP_address>**. |

| Name | Value | Description |
|---|---|---|
| **Port** | | The logical port number extracted from the web address of the WebLM application, for example, **4533**. Default value = **52233** |
| **Other System Configuration:** | | |
| **Syslog IP Address** | | IP address of the Syslog server, which collects log messages generated by the System Platform operating system. |
| **Keyboard Layout** | | Determines the specified keyboard layout for the keyboard attached to the System Platform server. |
| **Statistics Collection** | | If you disable this option, the system stops collecting the statistics data.<br>**Note:**<br>If you stop collecting statistics, the system-generated alarms will be disabled automatically. |
| **SNMP Discovery** | | By default, this feature enables SNMPv2 management systems to automatically discover any System Platform server in an Avaya Aura-based network, including retrieval of server status and vital statistics. This is useful, for example, when using System Manager to view the entire inventory of System Platform servers across multiple Avaya Aura enterprise solutions at a glance. This feature eliminates the tedious and error-prone task of manually adding a large number of System Platform servers to an SNMP management system, where that system often requires three or more IP addresses for each System Platform server. SNMP management systems can also query any recognized System |

| Name | Value | Description |
|---|---|---|
|  |  | Platform server for its logical configuration.<br>System Platform supports network discovery of values for the following MIB objects:<br>• RFC 1213 (MIB-2, autodiscovery): sysDescr, sysObjectID, sysUpTime, sysContact, sysName, sysLocation, and sysServices<br>• RFC 2737 (Entity MIB) get/getnext/getbulk: entPhysicalTable – One table entry for the Dom0 physical interface. entLogicalTable – One table entry for the Cdom virtual machine, and one table entry for each virtual machine associated with the installed solution template. Each entry contains the virtual machine name, type, software version, and IP address.<br>If you disable this option, SNMP manager systems will be unable to automatically discover this System Platform server. |

## Enable IPv6 Configuration

| Name | Value | Description |
|---|---|---|
| **Turn On IPv6** |  | Enables IPv6. |

## General Network Settings Configuration

| Name | Value | Description |
|---|---|---|
| **Default Gateway** |  | The default gateway IP address. |
| **Primary DNS** |  | The primary Domain Name System (DNS) server address. |
| **Secondary DNS** |  | (Optional) The secondary DNS server address. |

| Name | Value | Description |
|---|---|---|
| **Domain Search List** | | The search list, which is normally determined from the local domain name. By default, it contains only the local domain name. You can change this by listing the desired domain search path following the *search* keyword, with spaces or tabs separating the names. |
| **Cdom Hostname** | | The host name for the Console Domain. When using a Domain Name System (DNS) server in your network, the Cdom hostname must be a Fully Qualified Domain Name (FQDN), for example, `SPCdom.mydomainname.com`. |
| **Dom0 Hostname** | | The host name for System Domain (Dom0). When using a Domain Name System (DNS) server in your network, the Dom0 hostname must be a Fully Qualified Domain Name (FQDN), for example, `SPCdom.mydomainname.com`. |
| **Physical Network Interface** | | The physical network interface details for eth0 and eth1 (and eth2 in case of High Availability Failover is enabled). |
| **Domain Dedicated NIC** | | Applications with high network traffic or time-sensitive traffic often have a dedicated NIC. This means the virtual machine connects directly to a physical Ethernet port and typically requires a separate cable connection to the customer network.<br>See template installation topics for more information. |
| **Bridge** | | The bridge details for the following:<br>• **avprivate**: This is called a private bridge because it does |

| Name | Value | Description |
|---|---|---|
| | | not use any Ethernet interface, so it is strictly internal to the server. The System Platform installer attempts to assign IP addresses that are not in use.<br>• **avpublic**: This bridge uses the Ethernet interface associated with the default route, which is usually eth0, but can vary based on the type of the server. This bridge generally provides access to the LAN for System Platform elements (System Domain (Dom-0) and Console Domain) and for any guest domains that are created when installing a template. The IP addresses specified during System Platform installation are assigned to the interfaces that System Domain (Dom-0) and Console Domain have on this bridge.<br>• **template bridge**: These bridges are created during the template installation and are specific to the virtual machines installed. |
| **Domain Network Interface** | | The domain network interface details for System Domain (Dom-0) or Console Domain that are grouped by domain based on your selection. |
| **Global Template Network Configuration** | | The set of IP addresses and host names of the applications hosted on System Platform. Also includes the gateway address and network mask. |
| **VLAN** | | Required only when installing System Platform on the S8300D server. |

## Services Virtual Machine Configuration

| Name | Value | Description |
|---|---|---|
| **Enable Services VM** | | Enables or disables remote access. Also supports local or centralized alarm reporting.<br>Default value: **Enabled**<br>Leave the **Enable services VM** option enabled (checkmark) for remote access and local SAL support, or disabled (no checkmark) if you have a separate server dedicated for independent/centralized remote access and SAL support.<br>In a System Platform High Availability configuration, the active node automatically propagates to the standby node, any change in the setting for this field |
| **Hostname** | | The name assigned to the Services Virtual Machine |
| **Static IP address** | | The IP address assigned to the Services Virtual Machine. The address must be on the same subnet assigned to the Domain 0 (dom0) and Console Domain (cdom) virtual machines. |
| **Virtual devices** | | The virtual device (port) assigned to the Services Virtual Machine. Default value (eth0) automatically assigned. No user input necessary. |

## Ethernet Configuration

| Name | Value | Description |
|---|---|---|
| **Speed** | | Sets the speed in MB per second for the interface. Options are:<br>• 10 Mb/s half duplex<br>• 10 Mb/s full duplex<br>• 100 Mb/s half duplex |

| Name | Value | Description |
|---|---|---|
| | | • 100 Mb/s full duplex<br>• 1000 Mb/s full duplex<br>Auto-Negotiation must be disabled to configure this field. |
| **Port** | | Lists the available Ethernet ports.<br>Auto-Negotiation must be disabled to configure this field. |
| **Auto-Negotiation** | | Enables or disables auto-negotiation. By default it is enabled, but might cause some problems with some network devices. In such cases you can disable this option. |

## Bonding Interface Configuration

| Name | Value | Description |
|---|---|---|
| **Name** | | Is a valid bond name.<br>It should match regular expression in the form of “bond[0-9]+”. |
| **Mode** | | Is a list of available bonding modes that are supported by Linux.<br>The available modes are:<br>• Round Robin<br>• Active/Backup<br>• XOR Policy<br>• Broadcast<br>• IEEE 802.3ad<br>• Adaptive Transmit Load Balancing<br>• Adaptive Load Balance<br>For more information about bonding modes, refer to http://www.linuxhorizon.ro/bonding.html. |

| Name | Value | Description |
|---|---|---|
| | | **Note:**<br>The default mode of new bonding interface is Active/ Backup. |
| **Slave 1/Primary** | | Is the first NIC to be enslaved by the bonding interface.<br>If the mode is Active/Backup, this will be the primary NIC. |
| **Slave 2/Secondary** | | Is the second NIC to be enslaved by the bonding interface.<br>If the mode is Active/Backup, this will be the secondary NIC. |

## Static Route Configuration

| Name | Value | Description |
|---|---|---|
| **Interface** | | The bridge through which the route is enabled. |
| **Network Address** | | The IP address of a destination network associated with an Avaya (or Avaya Partner) remote services host. |
| **Network Mask** | | The subnetwork mask for the destination network. |
| **Gateway** | | The address of a next-hop gateway that can route System Platform traffic to or from a remote services host on the destination network. |

## SNMP Trap Receiver Configuration

| Name | Value | Description |
|---|---|---|
| **Product Id** | | Product ID for System Platform Console Domain.<br>When you install System Platform, a default Product ID of 100111999 is set. You must change this default ID to the unique Product ID that Avaya provides. |

| Name | Value | Description |
|---|---|---|
| | | **Note:**<br>VSPU is the model name for Console Domain. |
| **IP Address** | | IP address of the trap receiver. |
| **Port** | | Port number on which traps are received. |
| **Community** | | SNMP community to which the trap receiver belongs. Must be `public`. |
| **Device Type** | | Default setting is **INADS**. Do not change this settings. |
| **Notify Type** | | Default setting is **TRAP**. Do not change this setting. |
| **Protocol Version** | | Default setting is **V2c**. Do not change this setting. |

## Password Configuration

**Note:**

Passwords must be at least six characters long. Use uppercase and lowercase alphabetic characters and at least one numeral or special character.

| Name | Value | Description |
|---|---|---|
| **root Password** | | The password for the root login. |
| **admin Password** | | The password for the admin login. |
| **cust Password** | | The password for the cust login. |
| **ldap Password** | | The password for the ldap login. System Platform uses a local LDAP directory to store login and password details. Use this login and password to log in to the local LDAP directory. This login does not have permissions to access the System Platform Web Console. |

## Network Time Protocol Configuration

| Name | Value | Description |
|---|---|---|
| **NTP server 1** | | The hostname or IP address of an NTP server, visible in the Web Console when you click **Query State** in theDate and Time Configuration page, under **Server Management**. When displayed, either of the following special characters precede each server hostname or IP address. Each character has a special meaning, as follows:<br>• Asterisk character (*): The preferred server (currently referenced by the local system), chosen by System Platform.<br>• Plus character (+): Indicates a high-quality candidate for the reference time that System Platform can use if its currently selected time source becomes unavailable.<br>Avaya preconfigures several server names prior to system delivery. You can add more NTP reference servers by clicking **Add** in theDate and Time Configuration page under **Server Management**. |
| **NTP server 2** | | |
| **NTP server 3** | | |
| **NTP server 4** | | |

## Locally Redundant High Availability Configuration

Populate this table only if your Solution Template support System Platform High Availablity configurations.

| Name | Value | Description |
|---|---|---|
| **Remote cdom IP address** | | IP Address of Console Domain on the standby node. |

| Name | Value | Description |
|---|---|---|
| **Remote cdom user name** | | User name for Console Domain on the standby node. |
| **Remote cdom password** | | Password for Console Domain on the standby node. |
| **Primary network interface** | | Network interface connected to the customer network. |
| **Crossover network interface** | | Network interface connected to the standby server. |

# Appendix C: Managed element worksheet for SAL Gateway

Use this worksheet to record the information required by an administrator to add managed devices to the SAL Gateway.

| Managed device (virtual machine) | IP Address | SE ID | Product ID | Model | Notes |
|---|---|---|---|---|---|
| System Domain (Dom 0) | | | | VSP_2.0.0.0 | System Domain (Dom 0) does not have alarming enabled; however, it has its own Product ID (Alarm ID). Console Domain (cdom or udom) has alarming enabled. System Domain sends all syslog (system logs) to Console Domain, which then triggers alarms on behalf of System Domain.<br>**Important:**<br>For High Availability Failover configurations, you must have two different |

| Managed device (virtual machine) | IP Address | SE ID | Product ID | Model | Notes |
|---|---|---|---|---|---|
| | | | | | solution element IDs (SEIDs) for System Domain (Dom 0): one for the active System Domain and one for the standby System Domain. You must administer both SEIDs in the SAL Gateway user interface. |
| Console Domain (cdom or udom) | | | | VSPU_2.1.1.2 | |
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| Managed device (virtual machine) | IP Address | SE ID | Product ID | Model | Notes |
|---|---|---|---|---|---|
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