Installing and Configuring the Healthcare Listener

Technical Paper
Casper Suite v9.100.0 or Later
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jamf

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Introduction

What's in This Guide

This guide explains how to install a Jamf Infrastructure Manager instance that hosts a Healthcare Listener and configure the Healthcare Listener to automatically send remote commands to mobile devices with the Jamf Software Server (JSS) v9.100.0 or later.

Additional Resources

- *Casper Suite Administrator's Guide*
  Find more information about the Jamf Infrastructure Manager and mobile device management with the Casper Suite.
- *Jamf Infrastructure Manager Installation Guide*
  Find more information about how to install the Jamf Infrastructure Manager.

Overview

The Healthcare Listener is a service that receives ADT messages from a healthcare management system and allows traffic to pass securely from the healthcare management system to the Jamf Software Server (JSS).

To use the Healthcare Listener, you must install an Infrastructure Manager instance. When you install an instance of the Jamf Infrastructure Manager, the JSS allows you to enable and configure the Healthcare Listener.

After the Healthcare Listener is enabled and configured, it can receive ADT messages. When the Healthcare Listener receives an ADT message, the JSS interprets the message to automatically send remote commands to mobile devices based on rules you configure. (For more information about the communication process of the Healthcare Listener, see the Healthcare Listener Communication Knowledge Base article.)

For example, you could configure a rule so that when the Healthcare Listener receives a "Patient Discharge" ADT message, the JSS sends a Wipe Device command to the device assigned to the patient room.

After a remote command is sent to a mobile device, you can view the date/time of the remote command for a specific mobile device in the device's inventory information.

General Requirements

To configure the Healthcare Listener and take full advantage of its latest features and enhancements, you must install the latest version of the JAMF Infrastructure Manager that hosts a Healthcare Listener. Contact your Jamf account representative for the installer.

Mobile devices must be enrolled with the JSS v9.100.0 or later to ensure the following:

- Remote commands can be sent to mobile devices automatically
- Email notifications can be sent when a remote command fails to send or remains in a pending state

In addition, you need to ensure that your healthcare management system is compliant with Health Level Seven (HL7) messaging. For more information about HL7 messaging, see www.hl7.org.

Install a Jamf Infrastructure Manager Instance that Hosts a Healthcare Listener

Jamf Infrastructure Manager instances can be installed on Linux and Windows. When you install an Infrastructure Manager instance, it is enrolled with the JSS. You can install as many instances as your organization requires.

Note: You can only install one Infrastructure Manager instance per computer.

After an Infrastructure Manger instance is installed, you can edit the settings and view inventory information. For more information, see [Jamf Infrastructure Manager Instances](#) in the *Casper Suite Administrator's Guide.*

Requirements

The Jamf Infrastructure Manager Installer requires a computer with the following:

- One of the following operating systems:

  - Ubuntu 14.04 LTS Server (64-bit) or Ubuntu 16.04 LTS Server (64-bit)
  - Red Hat Enterprise Linux (RHEL) 7.0, 7.1, or 7.2
  - Windows Server 2008 R2 (64-bit), Windows Server 2012 (64-bit), or Windows Server 2012 R2 (64-bit)

- A 64-bit capable Intel processor

- 2 GB of RAM

- 300 MB of disk space available

- Java 1.8 (For more information, see the [Installing Java and MySQL](#) Knowledge Base article.)

On the JSS, the built-in CA or a trusted third-party CA must be configured.

Installing a Jamf Infrastructure Manager Instance on Ubuntu

1. Copy the Infrastructure Manager Installer for Linux (jamf-im.deb) to the computer on which you plan to install it.
   Contact your Jamf account representative for the installer.

2. Log in to the server as a user with superuser privileges.

3. Initiate the installer by executing a command similar to the following:

   ```
   sudo dpkg --install /path/to/jamf-im.deb
   ```

4. When prompted, enter the JSS URL. For example, "https://jss.mycompany.com:8443/".

5. When prompted, enter credentials for a JSS user account with the "Infrastructure Manager" privilege.

6. When prompted, enter the JSS password.

7. When prompted, enter the hostname of the computer on which the Infrastructure Manager is installed. For example, "computername.mycompany.com".
Note: The hostname must be entered as a fully qualified domain name.

8. Follow the onscreen instructions to complete the installation.

When the Infrastructure Manager instance installation is complete, the JSS allows you to enable the Healthcare Listener.

Installing a Jamf Infrastructure Manager Instance on Red Hat Enterprise Linux

1. Copy the Infrastructure Manager Installer for Linux (jamf-im.rpm) to the computer on which you plan to install it.
Contact your Jamf account representative for the installer.

2. Log in to the server as a user with superuser privileges.

3. Initiate the installer by executing a command similar to the following:

```
sudo rpm -i /path/to/jamf-im-1.1.0-1.noarch.rpm
```

4. When prompted, execute the following command:

```
sudo jamf-im enroll
```

5. When prompted, enter the JSS URL. For example, "https://jss.mycompany.com:8443/".

6. When prompted, enter credentials for a JSS user account with the "Infrastructure Manager" privilege.

7. When prompted, enter the JSS password.

8. When prompted, enter the hostname of the computer on which the Infrastructure Manager is installed. For example, "computername.mycompany.com".
Note: The hostname must be entered as a fully qualified domain name.

9. Follow the onscreen instructions to complete the installation.

When the Infrastructure Manager instance installation is complete, the JSS allows you to enable the Healthcare Listener.

Installing a Jamf Infrastructure Manager Instance on Windows

1. Copy the Infrastructure Manager Installer for Windows (Jamf-Infrastructure-Manager-version.msi) to the computer on which you plan to install it.
   Contact your Jamf account representative for the installer.
   Note: "Version" is the version of the Infrastructure Manager you are using. For example, "Jamf-Infrastructure-Manager-1.1.0.msi".

2. Run the installer.
   Note: The installer must be run as an administrator.

3. When prompted, select setup type.

4. When prompted, enter the JSS URL. For example, "https://jss.mycompany.com:8443/".

5. When prompted, enter credentials for a JSS user account with the "Infrastructure Manager" privilege.

6. When prompted, enter the JSS password.

7. When prompted, enter the hostname of the computer on which the Infrastructure Manager is installed. For example, "computername.mycompany.com".
   Note: The hostname must be entered as a fully qualified domain name.

8. Follow the onscreen instructions to complete the installation.

   When the Infrastructure Manager instance installation is complete, the JSS allows you to enable the Healthcare Listener.

Configure the Healthcare Listener

After you install a Jamf Infrastructure Manager instance, the JSS allows you to enable and configure the Healthcare Listener on the Infrastructure Manager instance.

When you configure the Healthcare Listener, you must do the following:

- Specify IP addresses or a range of IP addresses to accept incoming ADT messages from
  Note: The Healthcare Listener is compatible with IPv4 and IPv6 connection methods.
- Specify a port number
  Note: The default port value is 8080. This should be changed to the port number that the Healthcare Listener uses to receive healthcare management system communications.
- Add rules by configuring settings that enable the JSS to send commands to devices (For more information, see Healthcare Listener Rules.)
  You can also enable email notifications in the event that a command is not sent.

Healthcare Listener Rules

Configuring a rule enables the JSS to send remote commands to devices when the Healthcare Listener receives an ADT message. If you want to send more than one type of command or use more than one type of ADT message, you must configure a separate rule for each. You can configure as many rules as your organization requires.

The following table provides an overview of the settings you can configure for each rule:

Setting	Description

Remote Command	This setting allows you to specify which command you want sent from the JSS when the Healthcare Listener receives an ADT message. You can choose from the following commands:
	
	 • Wipe Device
	   Note: If a mobile device has Activation Lock enabled, the Activation Lock is cleared when the device is wiped.
	 • Lock Device
	 • Clear Passcode
	 • Enable Lost Mode
	   Choosing Enable Lost Mode requires you to configure custom messaging.
	 • Disable Lost Mode
	
	 For more information, see Remote Commands for Mobile Devices in the *Casper Suite Administrator's Guide*.

Setting	Description
ADT Message	For the JSS to send commands to devices, the Healthcare Listener must receive an ADT message. You can choose from the following ADT message types: • Admit/Visit Notification (ADT-A01) • Patient Transfer (ADT-A02) • Patient Discharge (ADT-A03) • Cancel Admit/Visit Notification (ADT-A11) • Cancel Transfer (ADT-A12) • Cancel Discharge/End Visit (ADT-A13)
Mapping Fields	ADT messages contain multiple fields of information that the Healthcare Listener can extract. You can choose which ADT message field to extract, and then map that field to an attribute from user and location information in device inventory. For example, you can choose the field that returns "bed number" and map that field to the "Room" attribute in a device's inventory information. The command you specify is then sent to devices that match the inventory attribute you select. You can choose from the following ADT message fields: • Patient Visit - Person Location - Bed (PV1-3-3) • Patient Visit - Prior Person Location - Bed (PV1-3-6) In addition, you can create an extension attribute for a specific inventory attribute that fits your environment. After you create the extension attribute, it is available as an option. (For more information about creating an extension attribute for a mobile device, see Mobile Device Extension Attributes in the *Casper Suite Administrator's Guide*.)
Email Notifications	Email notifications can be sent from the JSS to specified users for the following events: • A command fails to send. • A command is in a pending state after a specified amount of time. To enable email notifications, you need an SMTP server set up in the JSS. (For more information, see Integrating with an SMTP Server in the *Casper Suite Administrator's Guide*.)

Requirements

To configure the Healthcare Listener and take full advantage of its latest features and enhancements, you must install and configure the latest version of the Jamf Infrastructure Manager. (For more information, see Install a Jamf Infrastructure Manager Instance that Hosts a Healthcare Listener.)

Setting up the Healthcare Listener

1. Log in to the JSS with a web browser.

2. In the top-right corner of the page, click **Settings**.

3. Click **Server Infrastructure**.

4. Click **Infrastructure Manager Instances**.

5. Click the Infrastructure Manager instance with the Healthcare Listener that you want to configure.

6. Click **Edit**.

7. Select the **Enable Healthcare Listener** checkbox.

8. Enter a display name for the Healthcare Listener.
   This is the name that is displayed for the Healthcare Listener on the Infrastructure Manager. (For more information about viewing the services that are installed on an Infrastructure Manager instance, see Jamf Infrastructure Manager Instances in the *Casper Suite Administrator's Guide*.)

9. To specify the IP addresses to accept incoming ADT messages from, do one of the following:

   ▪ Select **All IP Addresses** to accept incoming ADT messages from any IP address.

   ▪ Select **Single IP Address or Range of IP Addresses** to specify the IP addresses to accept incoming ADT messages from, and do the following:

      a. To specify a single IP address, click the **(+) Add** button for Single, and enter the IP address.

      b. To specify a range of IP addresses, click the **(+) Add** button for Range, and enter the starting and ending IP addresses.

10. Enter the port number of your healthcare management system.

11. Click **Save**.

   After the Healthcare Listener is set up, you can add rules. Adding a rule enables the JSS to send remote commands to devices.

Adding a Healthcare Listener Rule

1. Log in to the JSS with a web browser.

2. In the top-right corner of the page, click **Settings**.

3. Click **Server Infrastructure**.

4. Click **Infrastructure Manager Instances**.

5. Click the Infrastructure Manager instance with the Healthcare Listener that you want to add a rule to.

6. Click **Edit**, and then click the **Add (+)** button.

7. Enter a display name for the rule.

8. Choose the remote command you want the JSS to send to devices when the Healthcare Listener receives an ADT message.

9. Choose which ADT message the Healthcare Listener can receive.

10. Use the **Field Mapping** options to map a field from the ADT message to an attribute of inventory information.

11. (Optional) To enable email notifications, click the **Notifications** tab, and do the following:

   a. Select the **Enable Email Notifications** checkbox.

    b. Enter an email address or multiple email addresses separated by a line break or a comma.

    c. Use the **Email Delay** pop-up menu to choose how many minutes to wait when a command is pending before sending an email to specified email addresses.

12. Click **Save**.

When the Healthcare Listener receives an ADT message, the JSS automatically sends the specified command to devices that are mapped to the field in the ADT message.

You can view the date/time of when the remote command was sent to a specific mobile device in the device's inventory information. (For more information, see <u>View when a Mobile Device Receives a Remote Command</u>.)

View when a Mobile Device Receives a Remote Command

The audit logs in the JSS allow you to view the date and time that a remote command was automatically sent to a mobile device. "Healthcare Listener" is displayed as the value in the Username column for the remote command. For more information about other events that can be viewed in the audit logs, see "Viewing Audit Logs for a Mobile Device" on the [Viewing the History for a Mobile Device](#) page of the *Casper Suite Administrator's Guide*.

1. Log in to the JSS with a web browser.

2. Click **Mobile Devices** at the top of the page.

3. Perform a simple or advanced mobile device search.
   For more information, see [Simple Mobile Device Searches](#) or [Advanced Mobile Device Searches](#) in the *Casper Suite Administrator's Guide*.

4. Click the mobile device you want to view audit logs for.

   If you performed a simple search for an item other than mobile devices, you must click **Expand** ⊕ next to an item to view the mobile devices related to that item.

5. Click the **History** tab, and then click the **Audit Logs** category.
   Audit logs for the mobile device are displayed.