Recon Suite Administrator's Guide

Version 8.7

JAMF software

JAMF Software, LLC
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Overview of Technologies

Applications and Utilities

This section describes the applications and utilities that make up the Recon Suite.

JSS Installers

JSS Installers provide a quick, easy way to install and upgrade the JAMF Software Server (JSS). JSS Installers are available for the following platforms:

- Mac
- Linux
- Windows

JSS Installer for Mac

The JSS Installer for Mac is an installation package that allows you to install and upgrade the JSS on Mac OS X Server. It also allows you to create your initial distribution point during a fresh installation.

> ***Note:*** The JSS Installer for Mac included in the product DMG (`JSS Installer.mpkg`) is unsigned. To obtain a signed version of the JSS Installer for Mac (`JSS Installer.pkg`), contact JAMF Software Support. The signed version allows you to install or upgrade the JSS when Apple's Gatekeeper feature is set to only allow applications downloaded from the Mac App Store and identified developers.

JSS Installers for Linux and Windows

The JSS Installers for Linux and Windows allow you to install and upgrade the JSS on supported Linux and Windows operating systems.

To obtain these installers and their documentation, see the introductory email that you received from JAMF Software or contact your JAMF Software Representative.

Mac OS X Applications

JAMF Software Server

The JSS is a web application that serves as the administrative core of the Recon Suite. All other JAMF Software administrative applications communicate with the JSS.

The JSS allows you to collect and view inventory for computers and mobile devices.

Recon

The Recon application allows you to acquire Mac OS X computers to create your inventory and collect data, such as hardware, applications, fonts, and plug-ins.

Windows Applications

Recon.exe

Recon.exe allows you to acquire Windows computers to create your inventory and collect data, such as hardware, applications, fonts, and plug-ins.

Utilities

JSS Database Utility

The JSS Database Utility allows you to back up and restore the jamfsoftware database. It also allows you to restart Apache Tomcat and MySQL and modify their settings.

/usr/sbin/jamf (jamf binary)

Most tasks in the Recon Suite are executed using the "jamf" command-line application (also known as the jamf binary). Although you are free to use this application at will, it is automatically installed, updated, and run by the Recon Suite.

Security

This section explains the primary security measures in the Recon Suite:

- Passwords
- Communication protocols
- Signed applications

Passwords

The Recon Suite allows you to store individual accounts for client computers and reset the passwords if necessary.

Passwords stored in the database are encrypted using a standard 128-bit RSA encryption with a 1024-bit key.

Communication Protocols

The Recon Suite has security built into its design. Connections between the JAMF Software Server (JSS) and the other applications in the Recon Suite take place over Secure Sockets Layer (SSL).

Secure Shell (SSH)

SSH is a network security protocol built into Mac OS X. For more information, go to:

http://openssh.org/

Secure Sockets Layer (SSL)

SSL is a security protocol for Internet communication. For more information, go to:

https://www.openssl.org/

Signed Applications

The following applications are signed by JAMF Software:

- JSS Installer for Windows (`JSS Installer.msi`)
- Recon
- Recon.exe
- /usr/sbin/jamf (jamf binary)

A signed version of the JSS Installer for Mac (`JSS Installer.pkg`) is also available. You can obtain it by contacting JAMF Software Support.

Ports

The following table describes the main ports used to host communication among client computers, distribution points, and the JAMF Software Server (JSS):

Port	Used for
22	The standard port for SSH (known as remote login in Mac OS X).
80	The standard port for HTTP. If you use HTTP to deploy packages or scripts, they are downloaded on this port.
443	The standard port for HTTPS. If you use HTTPS to deploy packages or scripts, they are downloaded on this port.
548	The standard port for Apple File Protocol (AFP). If you use an AFP share to deploy packages or scripts, clients mount the AFP share on this port.
3306	The default port for MySQL.
8443	The SSL port for the JSS. Default port used by applications and enrolled computers and mobile devices to connect to the JSS.

The following table describes other commonly used ports:

Port	Used for
25	The standard port for SMTP. The JSS connects to an SMTP server to send email notifications to administrators.
139	If you use an SMB share to deploy packages or scripts, clients mount the SMB share on this port.
389	The standard port for LDAP. Any LDAP connections—even those coming from other applications—go through the JSS. This means that only the JSS connects to your LDAP server.
445	If you have an SMB client, such as "DAVE", installed on your client computers, they may mount the SMB share on this port.
514	The default port for Syslog servers.
2195	The port used to send messages from the JSS to Apple Push Notification service (APNs).
2196	The port used for feedback from APNs.
5223	The port used to send messages from APNs to the mobile devices and computers in your network.
8080	The HTTP port for the JSS on Linux and Windows platforms. Although it is available, applications do not connect to this port unless the defaults are overridden.
9006	The HTTP port for the JSS on the Mac platform. Although it is available, applications do not connect to this port unless the defaults are overridden.

On the Mac platform, the JSS runs on ports 8443 and 9006 by default. On Linux and Windows platforms, the JSS runs on 8443 and 8080 by default. If you decide to change these ports, you must change the port information in Tomcat's `server.xml` file and in the Preferences window for each Casper Suite application.

You cannot change the default ports for SSH or SMB with the Casper Suite.

Requirements

This section lists the requirements for the following components and functions of the Recon Suite:

- JAMF Software Server
- JSS Installers
- JSS Database Utility
- Inventory

JAMF Software Server

You can host the JAMF Software Server (JSS) on any server that meets the following minimum requirements:

- Java 1.6
- MySQL 5.1 or later
- Apache Tomcat 6.0 or later

Tested operating systems include:

- OS X Server v10.6
- OS X Server v10.7
- OS X Server v10.8
- Ubuntu 10.04 LTS Server
- Ubuntu 12.04 LTS Server
- Red Hat Enterprise Linux (RHEL) 6
- Windows Server 2008 R2

Although you can install the JSS on any server that meets the minimum requirements, the JSS Installers for Mac, Linux, and Windows have additional requirements. (See the "JSS Installers" section for detailed information.)

JSS Installers

JSS Installer for Mac

The JSS Installer for Mac requires a Mac computer with:

- A 64-bit capable Intel processor
- 2 GB of RAM
- 400 MB of disk space available
- OS X Server v10.6 or later
- Java 1.6

- MySQL Enterprise Edition 5.5 or later (recommended) *or* MySQL Community Server 5.5 or later, available at:

  https://www.mysql.com/downloads/
- Ports 8443 and 9006 available

JSS Installers for Linux and Windows

Requirements for the JSS Installers for Linux and Windows are available in the JAMF Software Server installation guides for Linux and Windows. To obtain the JSS Installer for Linux or Windows along with its installation guide, contact your JAMF Software Representative, or visit the following website and log in with a valid JAMF Nation account:

https://jamfnation.jamfsoftware.com/myAssets.html

JSS Database Utility

The JSS Database Utility requires a server with MySQL Server 5.1 or later.

Inventory

Recon can run locally on the following operating systems:

- OS X v10.5.x
- OS X v10.6.x
- OS X v10.7.x
- OS X v10.8.x
- Windows 2000
- Windows XP
- Windows Server 2003
- Windows Vista
- Windows Server 2008
- Windows 7

Recon can remotely acquire computers with the following operating systems:

- OS X v10.5.x
- OS X v10.6.x
- OS X v10.7.x
- OS X v10.8.x

Older versions of Recon (available by contacting JAMF Software Support) can remotely acquire computers with the following operating systems:

- Mac OS v8.6
- Mac OS v9.x
- OS X v10.1.x
- OS X v10.2.x
- OS X v10.3.x
- OS X v10.4.x
- Windows NT4
- Windows ME

Recon can acquire synced mobile devices with iOS 4 or later.

Installing and Managing the JSS

Required Components

This section describes the components that run the JSS.

Java

Java 1.6 is required to start the Tomcat web application server that runs the JSS.

MySQL

The JSS stores information in a MySQL database. For more information about MySQL, go to:

https://www.mysql.com/

Apache Tomcat

The JSS runs on Tomcat, a web application server similar to Microsoft's Internet Information Server (IIS). For more information about Tomcat, go to:

https://tomcat.apache.org/

Installing the JSS on Mac OS X Server

Installing the JAMF Software Server (JSS) involves the following steps:

1. Install the required software (if you haven't already).
2. Create the jamfsoftware database.
3. Run the JSS Installer.

This section includes details for each step.

Before you begin, review the "Requirements" section and make sure that your server meets the JSS Installer requirements.

> ***Note:*** The instructions in this guide are for the Mac platform only. To obtain the JSS Installer for Windows or Linux along with its installation guide, contact your JAMF Software Representative, or visit the following website and log in with a valid JAMF Nation account:
>
> https://jamfnation.jamfsoftware.com/myAssets.html
>
> For instructions on how to manually install the JSS on Linux and Windows, download the "Manually Installing the JAMF Software Server" technical paper from:
>
> http://jamfsoftware.com/libraries/pdf/white_papers/Manually_Installing_the_JAMF_Software_Server.pdf

Step 1: Install the Required Software

Java and MySQL must be installed on the server before you can create the jamfsoftware database and run the JSS Installer. For instructions on how to install and configure Java and MySQL, see the following Knowledge Base article:

https://jamfnation.jamfsoftware.com/article.html?id=28

Step 2: Create the jamfsoftware Database

Create a MySQL database in which the JSS can store its data, and a MySQL user that can access it. Name the database "jamfsoftware" and give the MySQL user the following credentials:

- Username: jamfsoftware
- Password: jamfsw03

> ***Note:*** If you customize the database name, username, or password, you will be prompted to enter the custom settings when you run the JSS Installer.

To create the jamfsoftware database:

1. Open Terminal and access the MySQL command line as "root" by typing:

```
mysql -u root -p
```

If MySQL is not in the path or it is installed in a custom location, access the MySQL command line by updating the path or by typing:

```
/path/to/mysql -u root -p
```

> ***Note:*** On OS X v10.7 or later, the default path for MySQL is `/usr/local/mysql/bin/`.

2. When prompted, enter the password for the MySQL "root" user.

   If you did not create a root password, press the Return key.

3. Create a database named "jamfsoftware" by executing:

```
CREATE DATABASE jamfsoftware;
```

4. Grant permissions to a MySQL user named "jamfsoftware" so that it can access the new database:

```
GRANT ALL ON jamfsoftware.* TO 'jamfsoftware'@localhost IDENTIFIED BY
   'jamfsw03';
```

> ***Note:*** If you choose to enter a username other than "jamfsoftware", it is recommended that you do not use "root".

Step 3: Run the JSS Installer

Run the JSS Installer to install Apache Tomcat and the JSS web application.

To run the JSS Installer:

1. Copy the JSS Installer for Mac to the server.

> ***Note:*** The JSS Installer for Mac included in the product DMG (`JSS Installer.mpkg`) is unsigned. To obtain a signed version of the JSS Installer for Mac (`JSS Installer.pkg`), contact JAMF Software Support. The signed version allows you to install or upgrade the JSS when Apple's Gatekeeper feature is set to only allow applications downloaded from the Mac App Store and identified developers.

2. Double-click the installer and click **Continue** to proceed.
3. When the Introduction pane appears, click **Continue**.
4. Read the information on the Read Me pane, and then click **Continue**.
5. Select a drive on which to install the software, and then click **Continue**.

6. Modify the information on the Database pane to reflect any custom settings if needed, and then click **Continue**.
7. Click **Install**.
8. Enter your administrator password when prompted, and then click **OK** or **Install Software**.
9. When the installation is complete, follow the instructions on the Summary pane to access the JSS. Then, click **Close**.

Allocating Additional Memory to Tomcat

This section explains how to:

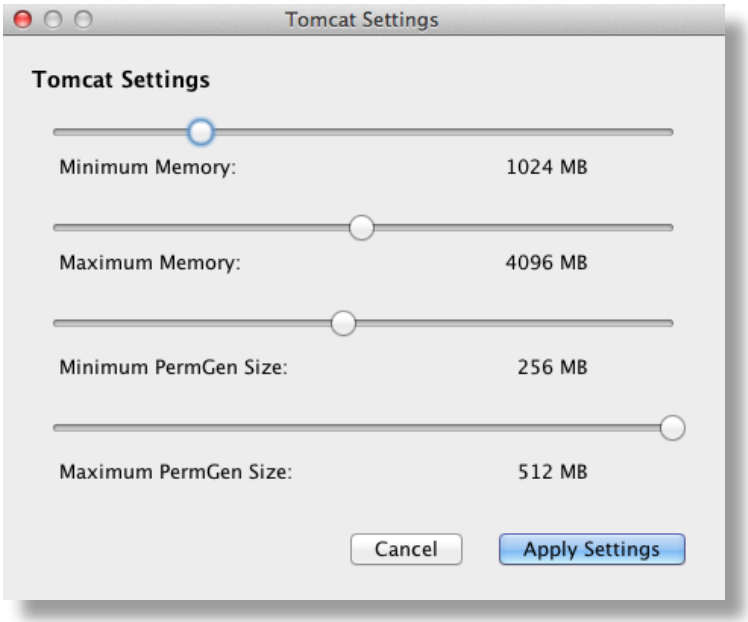
- View the amount of memory being used by the web application
- Allocate additional memory to Tomcat

To view web application memory usage:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Database/Web Application Health** link.
4. Click the **Web App Memory** link.

To allocate additional memory to Tomcat using the JSS Database Utility:

1. Open the JSS Database Utility on the server running the JSS.
   The JSS Database Utility is located in:
   `/Library/JSS/bin/JSSDatabaseUtil.jar`
2. Enter the username and password for an administrator account to the server, and then click **OK**.
3. If the JSS Database Utility is unable to locate the MySQL binary, you are prompted to enter the path. Click **Continue** and enter the location of the binary.
4. From the menu bar, choose **Utilities** > **Change Tomcat settings**.
5. Modify the minimum and maximum memory and PermGen sizes as needed.



6. Click **Apply Settings**.

7. When prompted to restart Tomcat, click **Yes**.

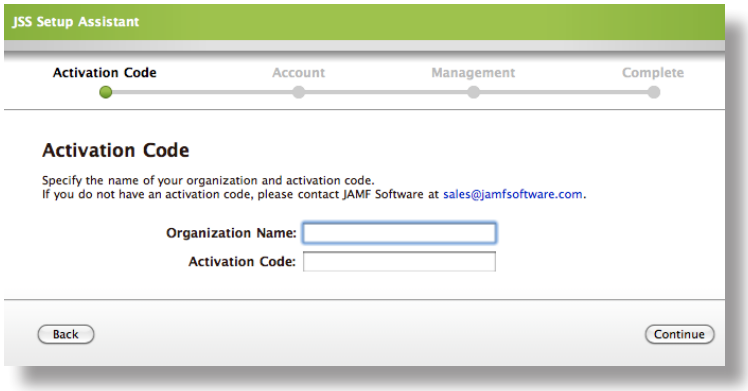
Setting Up the JSS

The first time you connect to the JAMF Software Server (JSS), the JSS Setup Assistant guides you through creating your first account and configuring the basic computer management framework.

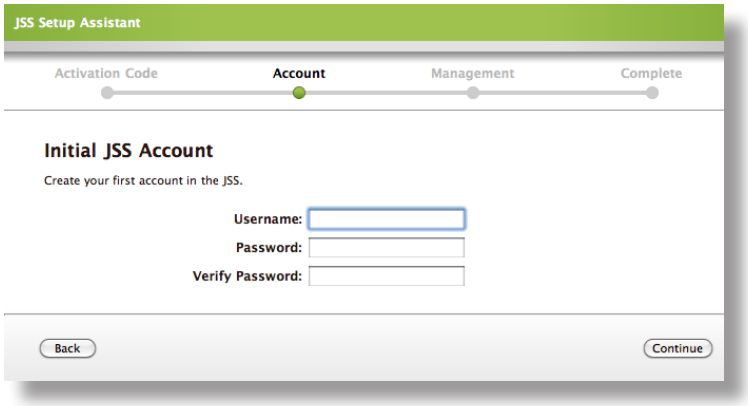
To set up the JSS:

1. Connect to the JSS with a web browser.
2. Read the License Agreement and click **Agree**.
3. Enter the name of your organization and the activation code you received from your JAMF Software Representative, and then click **Continue**.

   If you did not receive an activation code, send an email to sales@jamfsoftware.com.



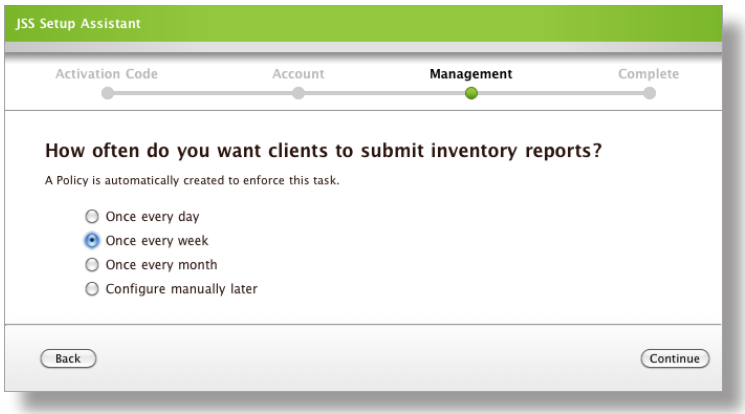
4. Enter a username and password for your first administrator account in the JSS.



5. Enter the password again to verify it, and then click the **Continue** button.

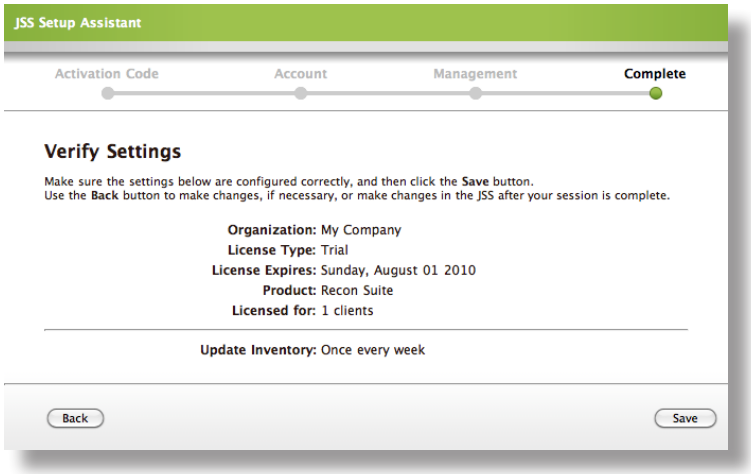
6. Choose how often you want computers to submit inventory reports to the JSS, and then click **Continue**.

   This automatically creates a policy to enforce the inventory schedule. For more information on how policies work, see the "Policies" section.

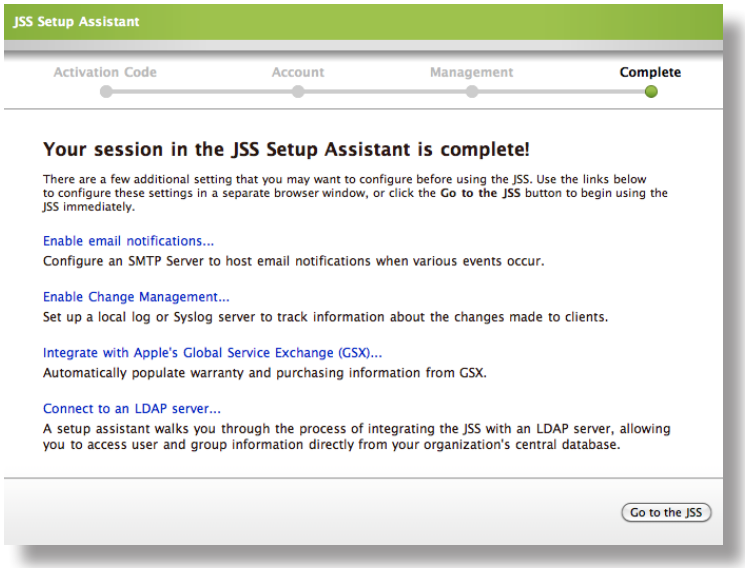


7. Verify that the settings are configured correctly and click the **Save** button.

   If you need to make changes, click the **Back** button or make changes in the JSS after you're finished using the JSS Setup Assistant.



8. Click the **Go to the JSS** button to start using the JSS immediately, or use the links to configure additional settings in a separate browser window.



Upgrading the JSS

This section explains how to upgrade the JAMF Software Server (JSS) on Mac OS X Server.

To upgrade the JSS:

1. Back up the current database using the JSS Database Utility. (See "Backing Up the Database" for complete instructions.)
2. Back up custom reports.

   If you used the JSS Installer to install the JSS on Mac OS X Server, custom reports are located in `/Library/JSS/Tomcat/webapps/ROOT/WEB-INF/reporting/`.

   If you did not use the JSS Installer to install the JSS on Mac OS X Server, custom reports are located in `/Library/Tomcat/webapps/ROOT/WEB-INF/reporting/`.
3. Copy the most current version of the JSS Installer for Mac to the server.

   > ***Note:*** The JSS Installer for Mac included in the product DMG (`JSS Installer.mpkg`) is unsigned. To obtain a signed version of the JSS Installer for Mac (`JSS Installer.pkg`), contact JAMF Software Support. The signed version allows you to install or upgrade the JSS when Apple's Gatekeeper feature is set to only allow applications downloaded from the Mac App Store and identified developers.
4. Double-click the installer and click **Continue**.
5. When the Introduction pane appears, click **Continue**.
6. Read the information on the Read Me pane, and then click **Continue**.
7. Select a drive on which to install the software, and then click **Continue**.
8. If the Database pane appears, enter information about your MySQL database. Then, click **Continue**.

   The JSS Installer uses this information to connect to the existing database.

   > ***Note:*** This pane is only displayed if the `database.xml` file is in a custom location or contains invalid information.
9. Click **Install**.
10. Enter your administrator password when prompted, and then click **OK**.
11. When the upgrade is complete, follow the instructions on the Summary pane to access the JSS. Then, click **Close**.

Changing the Activation Code

Every time you receive a new activation code, it must be updated in the JAMF Software Server (JSS).

When you update the activation code, you can also update your company name and view the following licensing information:

- **Product**—Product you are licensed for
- **Licenses**—Current number of licenses
- **License Renewal Date**—Date the maintenance contract expires
- **License Type**—Commercial, education, trial, etc.

To change the activation code:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Enter the new activation code in the **Activation Code** field and click **Save**.

Backing Up the Database

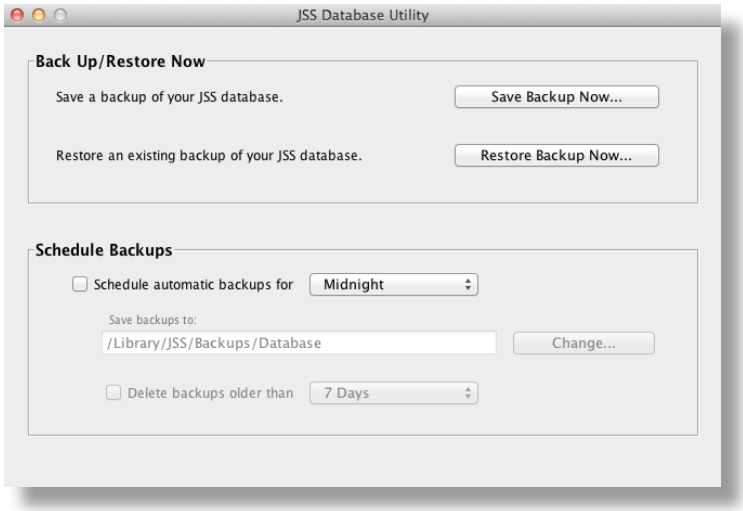
The JSS Database Utility allows you to create backups of the jamfsoftware database, schedule database backups, and stop scheduled database backups.

Creating Database Backups

Use the JSS Database Utility to create a backup of the jamfsoftware database. The time it takes to create the backup depends on the size of the database.

To create a database backup:

1. Open the JSS Database Utility, located in:
   `/Library/JSS/bin/JSSDatabaseUtil.jar`
2. Enter the username and password for an administrator account to the server, and then click **OK**.
3. If the JSS Database Utility is unable to locate the MySQL binary, you are prompted to enter the path. Click **Continue** and enter the location of the binary.
4. If the Database Connection Setup pane appears, edit the settings to match your database configuration and click **Apply Settings**.
5. Click **Save Backup Now**.



6. Select the location where you want to save the backup, and then click **Choose**.

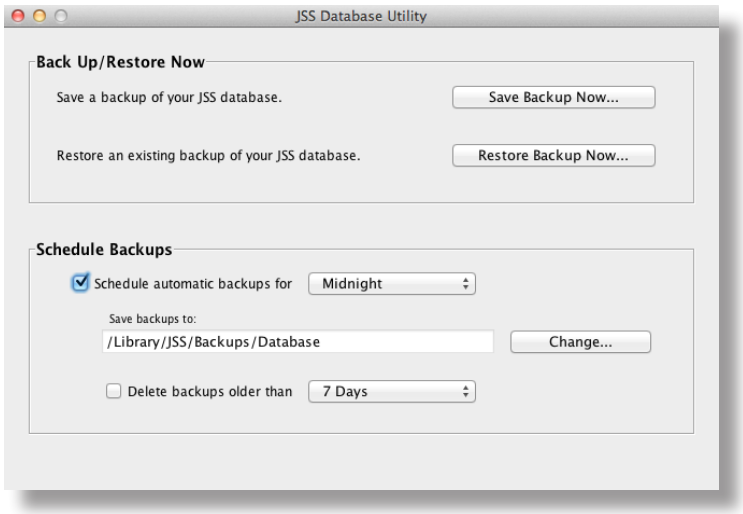
   The JSS Database Utility creates the backup and saves it as a .sql.gz file.

Scheduling Database Backups

Use the JSS Database Utility to schedule daily backups of the jamfsoftware database. You can also automate the deletion of scheduled backups that are older than a certain number of days.

To schedule database backups:

1. Open the JSS Database Utility, located in:
   `/Library/JSS/bin/JSSDatabaseUtil.jar`
2. Enter the username and password for an administrator account to the server, and then click **OK**.
3. If the JSS Database Utility is unable to locate the MySQL binary, you are prompted to specify the path. Click **Continue** and specify the location of the binary.
4. If the Database Connection Setup pane appears, edit the settings to match your database configuration and click **Apply Settings**.
5. Select the **Schedule automatic backups for** checkbox and choose the hour of the day that you want backups to occur.
6. To change the location where backups are saved, click the **Change** button and select a new location.



7. To automate the deletion of scheduled backups, select the **Delete backups older than** checkbox. Then, choose the number of days after which backups should be deleted.

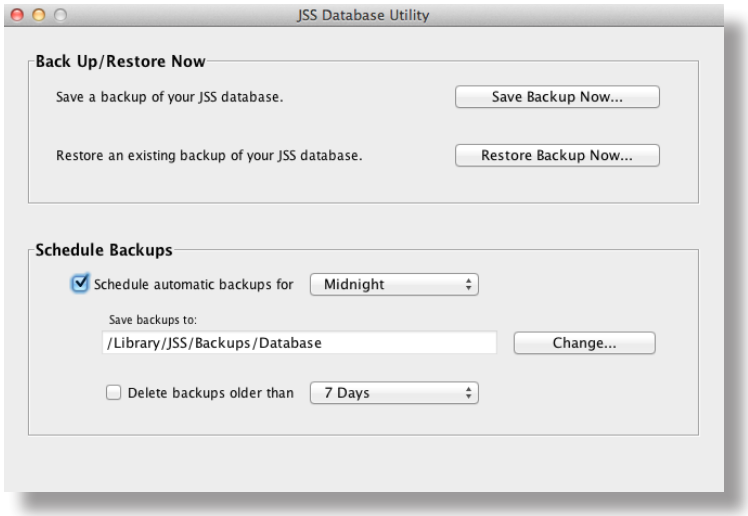
   The JSS Database Utility saves daily backups at the hour that you specified. It also deletes scheduled backups older than the number of days that you specified.

Stopping Scheduled Database Backups

Use the JSS Database Utility to stop scheduled backups of the jamfsoftware database.

To stop scheduled database backups:

1. Open the JSS Database Utility, located in:
   `/Library/JSS/bin/JSSDatabaseUtil.jar`
2. Enter the username and password for an administrator account to the server, and then click **OK**.
3. If the JSS Database Utility is unable to locate the MySQL binary, you are prompted to enter the path. Click **Continue** and enter the location of the binary.
4. If the Database Connection Setup pane appears, edit the settings to match your database configuration and click **Apply Settings**.
5. Deselect the **Schedule automatic backups for** checkbox.



The JSS Database Utility stops scheduled backups immediately.

Restoring Database Backups

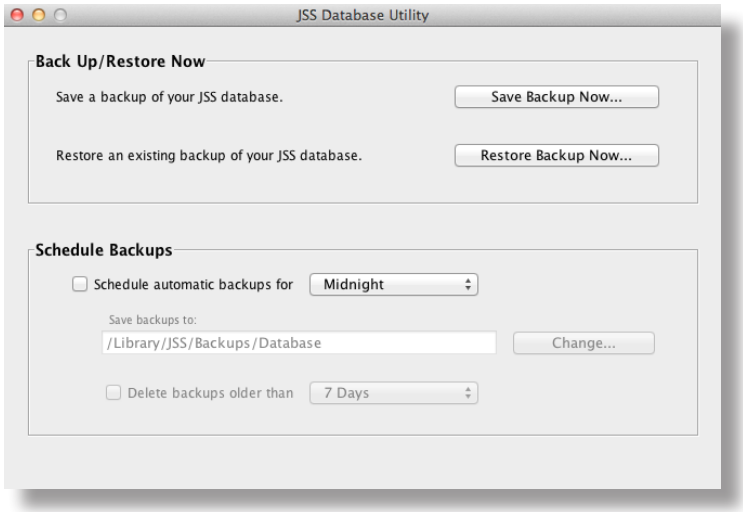
If you need to revert to an earlier version of your database, you can use the JSS Database Utility to restore a database backup.

To restore a database backup:

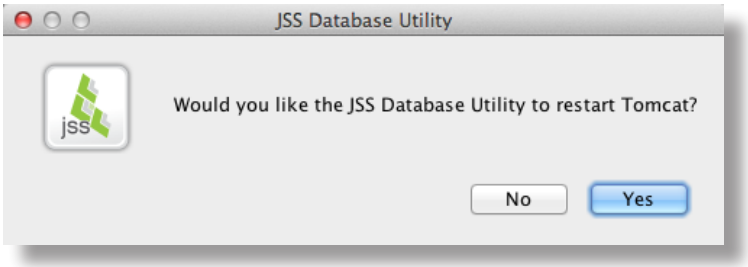
1. Open the JSS Database Utility, located in:

   `/Library/JSS/bin/JSSDatabaseUtil.jar`

2. Enter the username and password for an administrator account to the server, and then click **OK**.
3. If the JSS Database Utility is unable to locate the MySQL binary, you are prompted to enter the path. Click **Continue** and enter the location of the binary.
4. If the Database Connection Setup pane appears, edit the settings to match your database configuration and click **Apply Settings**.
5. Click **Restore Backup Now**.



6. Select the backup that you want to restore (.sql or .sql.gz), and then click **Choose**.
7. When prompted to restart Tomcat, click **Yes**.



The JSS Database Utility restarts Tomcat and replaces the current database with the one that you restored.

Deleting Logs from the Database

Over time, the JAMF Software Server (JSS) accumulates a large number of logs. Deleting these logs can reduce the size of the database and can speed up searches.

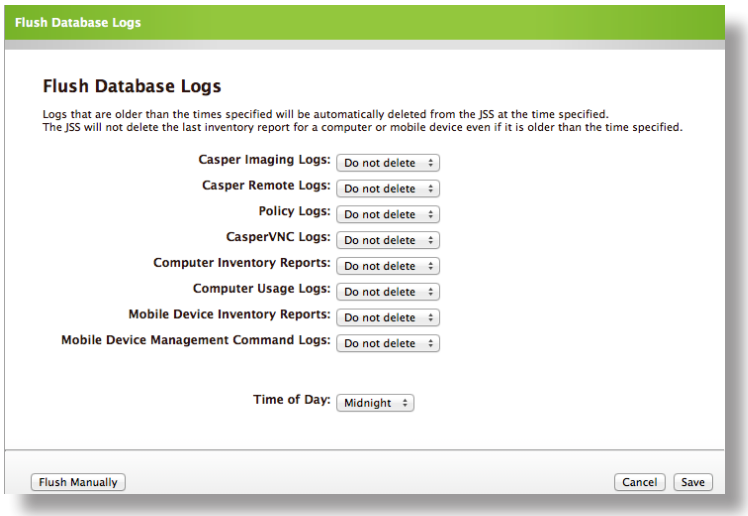
You can schedule log deletion to take place automatically or manually delete logs as needed.

To schedule automatic log deletion:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Flush Database Logs** link.
4. Use the pop-up menus to specify the period of time after which logs will be deleted.

   For example, to delete Policy logs that are six months old or older, choose "Six Months" from the pop-up menu next to **Policy Logs**.

   To stop deleting a type of log, choose "Do not delete" from the pop-up menu next to it.



5. Use the **Time of Day** pop-up menu to schedule a time for the deletion.

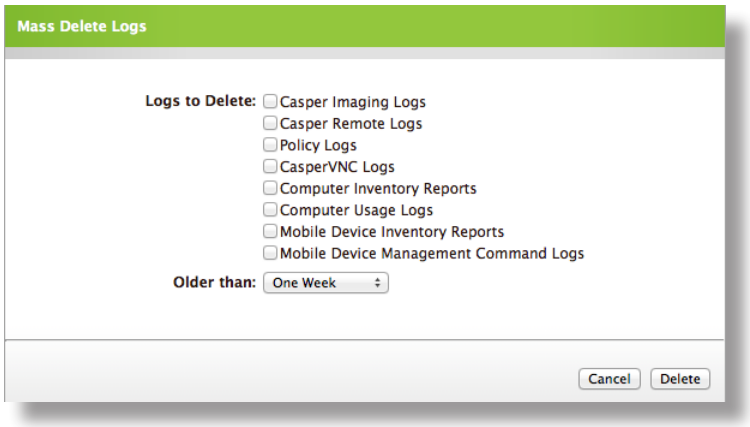
   For example, to delete logs every morning at 2 a.m., choose "2 AM" from the pop-up menu.
6. Click **Save**.
7. Click **Continue** to confirm the schedule.

To delete logs manually:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Flush Database Logs** link.

4. Click the **Flush Manually** button.

5. Select the types of logs you want to delete.



6. Use the **Older than** pop-up menu to specify the period of time after which logs will be deleted.
   For example, to delete logs that are six months old or older, choose "Six Months" from the pop-up menu.

7. Click **Delete**.

8. Click **Continue** to confirm the results.

Migrating to Another Server

The instructions in this section explain how to migrate the JAMF Software Server (JSS) to another server.

To migrate the JSS:

1. Back up the existing jamfsoftware database using the JSS Database Utility. (See "Backing Up the Database" for detailed instructions.)
2. Ensure that the new server meets the requirements for the JSS Installer. Then, follow the instructions in "Installing the JSS" to install the required software (if needed) and create the jamfsoftware database.
3. Copy the JSS Installer to the new server.
4. Install the JSS by launching the installer and following the onscreen instructions. (See "Installing the JSS" for detailed instructions.)
5. Copy the database backup to the new server, and then use the JSS Database Utility to restore the backup. (See "Restoring a Database Backup" for detailed instructions.)
6. Regenerate the web server certificate. (See "Generating a Web Server Certificate" for detailed instructions.)
7. Update the DNS entry to point to the new server's IP address.

Note: If you can't change the DNS entry, you must change the JSS URL and re-enroll all mobile devices and computers.

Enabling Email Notifications

In order for the JAMF Software Server (JSS) to send email notifications, you must specify the SMTP server from which the notifications will be sent.

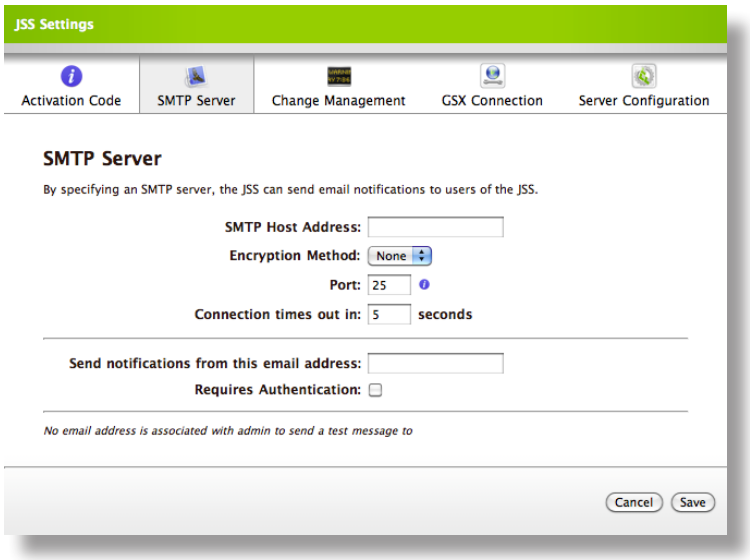
Email notifications can be sent when the following events occur:

- There is a JSS service restart.
- A database is backed up successfully.
- A database backup fails.

This section explains how to set up and modify an SMTP server.

To set up or modify an SMTP Server:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **SMTP Server** tab.
5. Enter the DNS name or IP address for the SMTP server in the **SMTP Host Address** field.

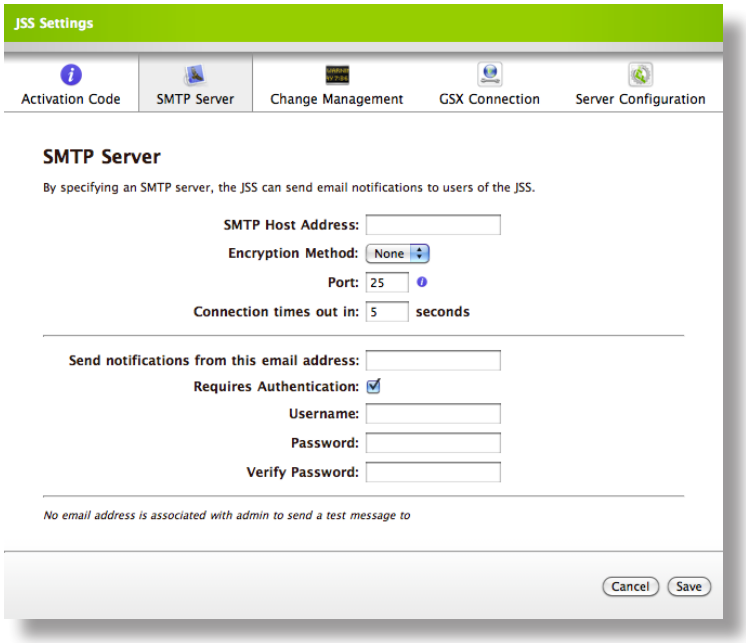


6. Use the **Encryption Method** pop-up menu to specify the protocol used for data encryption.
7. In the **Port** field, enter the port over which the connection is made.
   The default port is 25.

8. Enter the number of seconds you want to wait before the connection times out.
   By default, this is 5 seconds.

9. Enter the email address from which notifications will be sent.

10. If the SMTP server requires authentication, select the **Requires Authentication** checkbox and enter credentials for a valid account to the server.



11. If you want to send a test message, click the **Send Test message to <email address>** link.
    The JSS sends this message to the email address for the account currently logged in to the JSS.

12. Click **Save**.

Enabling Change Management

Change management logs allow you to track the following information:

- Changes made to the client computers on your network
- Computers from which the changes were made
- Accounts that initiated the changes

You can choose to write these logs to a local log on the server running the JAMF Software Server (JSS) or a Syslog server.

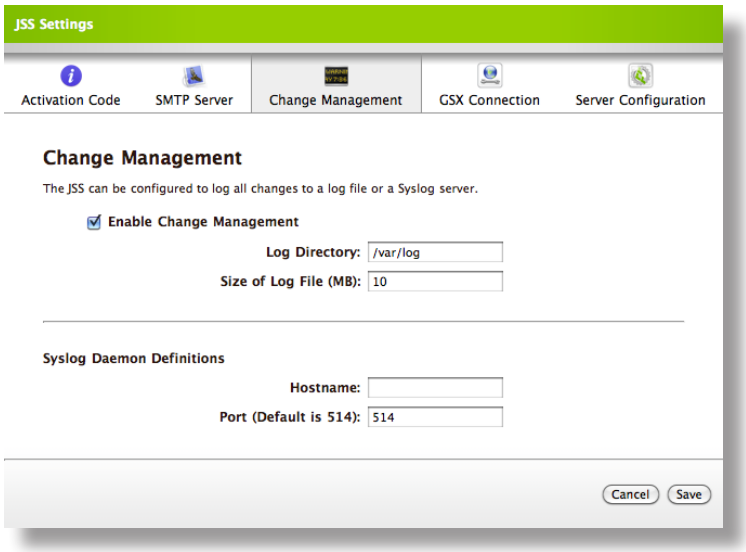
The header for each logged event includes the following information:

- Timestamp (when the event took place)
- Username of the account that initiated the change
- IP address of the client computer that triggered the event
- JSS identifier (`com.jamfsoftware.jss`)

This section explains how to set up and modify change management to a log file and a Syslog server.

To set up or modify change management to a log file:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **Change Management** tab.
5. Select the **Enable Change Management** checkbox if it is not already selected, and enter a directory location for the log file.

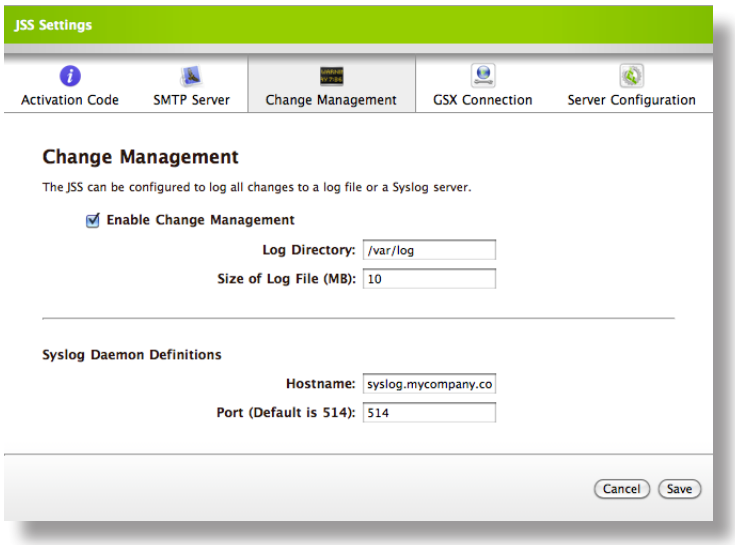


6. Click **Save**.

   Change Management logs are written to the file specified in the **Log Directory** field. They have the filename `jamfChangeManagement.log` and can be viewed using the Console application.

To set up or modify change management to a Syslog server:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **Change Management** tab.
5. Select the **Enable Change Management** checkbox.
6. In the **Hostname** field, enter the DNS name or IP address for the Syslog server.
7. Enter the UDP port that the Syslog server is using.
   The port is entered as 514 by default.



8. Click **Save**.

Integrating with GSX

The JAMF Software Server (JSS) can access the following purchasing information from Apple's Global Service Exchange (GSX) for computers in the JSS:

- Purchase date
- Warranty expiration date
- Apple Care ID (Warranty reference number)

To set up a GSX connection, you must have a GSX account and be signed up for Apple's Self-Servicing Account (SSA) Program. Information on this program is currently available at:

https://www.apple.com/support/programs/ssa/

For information on setting up a GSX account for integration with the JSS, see the following Knowledge Base article:

https://jamfnation.jamfsoftware.com/article.html?id=26

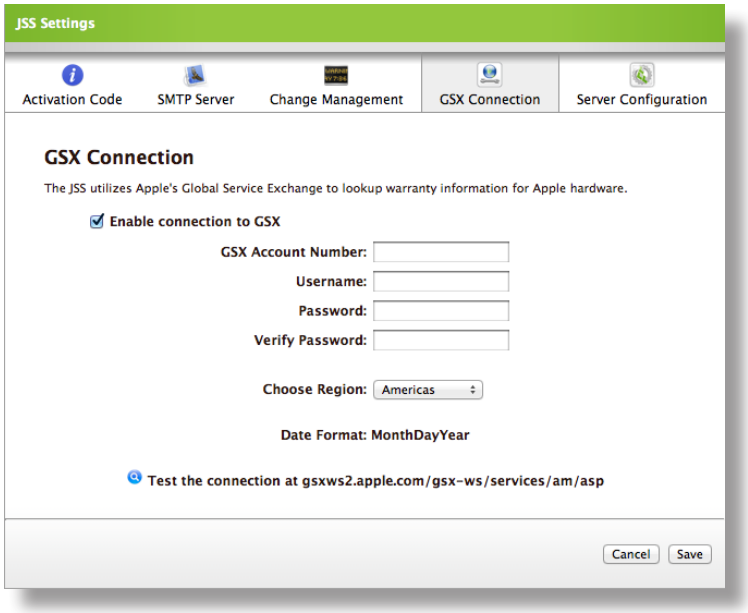
Note: GSX may not always return complete purchasing information for a computer. The JSS displays any information that is returned.

This section explains how to set up and modify the GSX connection.

To set up or modify the GSX connection:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **GSX Connection** tab.
5. Select the **Enable connection to GSX** checkbox.

6. Enter your GSX account number in the **GSX Account Number** field.



7. Enter the username and password for your GSX account, and then enter the password again to verify it.

8. Choose your region from the **Choose Region** pop-up menu.

   The date format automatically updates to reflect the region you choose.

9. To test the GSX connection, click the **Search** icon.

   The JSS attempts to connect to GSX with the account number and credentials that you provided. A message displays confirming the success or failure of the connection.

10. Click **Save**.

Generating a Web Server Certificate

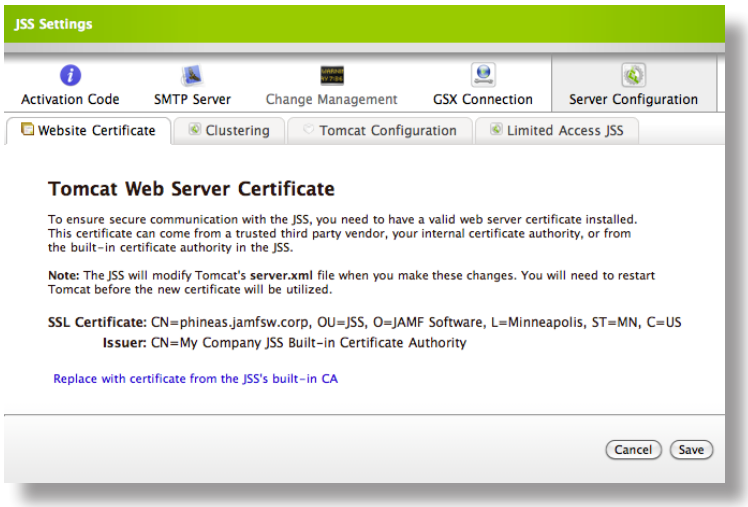
The JAMF Software Server (JSS) requires a valid web server certificate to ensure that computers communicate with the JSS and not an imposter server.

If you already have a web server certificate from an internal certificate authority (CA) or a trusted third-party vendor, follow the vendor's instructions for using the certificate with Tomcat.

If you do not have a valid web server certificate, you can generate one from the CA that is built into the JSS. To do this, the JSS must be installed as the "ROOT" web application and the user running the Tomcat process must have read/write access to Tomcat's `server.xml` file.

To generate a web server certificate from the built-in CA:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **Server Configuration** tab.
5. Click the **Replace with certificate from the JSS's built-in CA** link.



6. Click **Save**.
7. Restart Tomcat to begin utilizing the certificate.

   For instructions on how to restart Tomcat, see the Knowledge Base article at:

   https://jamfnation.jamfsoftware.com/article.html?id=117

Enabling Clustering

Clustering allows you to point multiple instances of the JAMF Software Server (JSS) web application to the same database. This requires a load balancer with the address of the JSS. For example:

https://jss.mycompany.com:8443/

The load balancer should route traffic to the servers running the web application.

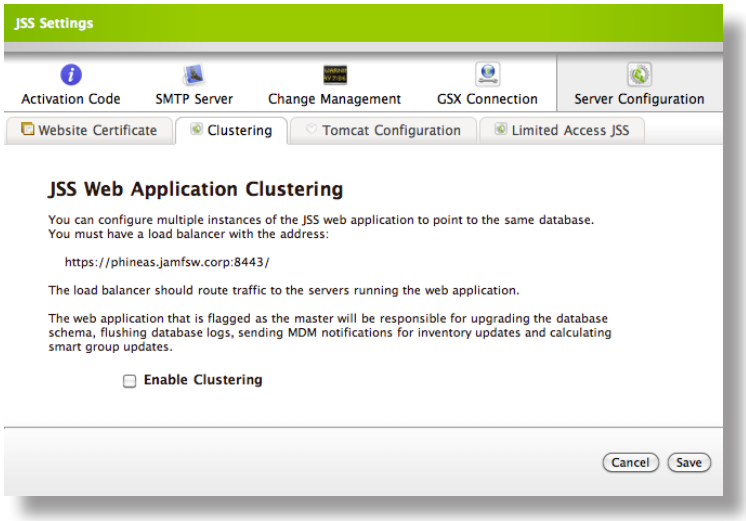
The web application that functions as the master handles the following tasks:

- Upgrading the database schema
- Flushing database logs

For more information on setting up a clustered environment, contact your JAMF Software Representative.

To enable clustering:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Generals Settings** link.
4. Click the **Server Configuration** tab.
5. Click the **Clustering** tab.
6. Select the **Enable Clustering** checkbox.



7. To add web applications to the cluster, click the **Add To Cluster** links.
8. To make a web application the master, click the **Master** link.
9. Click **Save**.

10. Restart Tomcat for the changes to take effect.
    For instructions on how to restart Tomcat, see the Knowledge Base article at:
    https://jamfnation.jamfsoftware.com/article.html?id=117

Configuring Tomcat to Work with a Load Balancer

When working with a load balancer, you may need to enable a few attributes in Tomcat's `server.xml` file to ensure that Tomcat and the load balancer communicate properly.

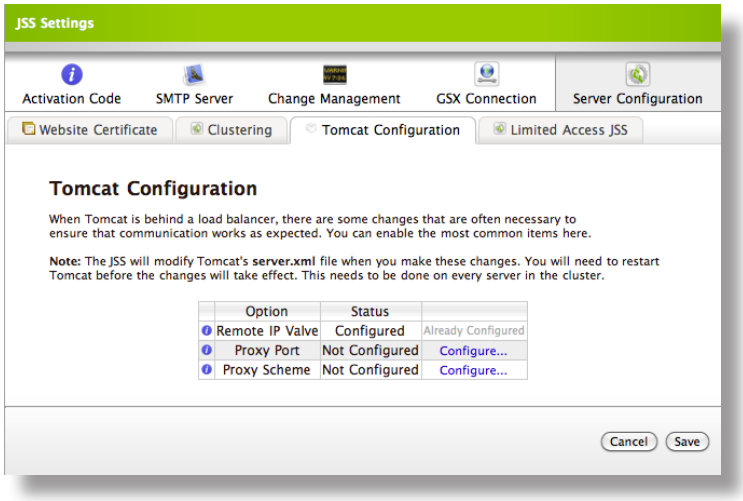
The JAMF Software Server (JSS) allows you to enable the following attributes without requiring you to access the `server.xml` file manually:

- Remote IP valve
- Proxy port
- Proxy scheme

To enable these attributes, the JSS must be installed as the "ROOT" web application and the user running the Tomcat process must have read/write access to Tomcat's `server.xml` file.

To configure Tomcat to work with a load balancer:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **Server Configuration** tab.
5. Click the **Tomcat Configuration** tab.
6. Click the **Configure** link across from an attribute to enable it.



7. Click **Save**.
8. Restart Tomcat for the changes to take effect.

   For instructions on how to restart Tomcat, see the Knowledge Base article at:

   https://jamfnation.jamfsoftware.com/article.html?id=117

Changing the Limited Access Setting

When working in a clustered environment, you may have a JAMF Software Server (JSS) that computers can access from outside of the network. If you have a second JSS web application that resides in your DMZ, you can make the administrative interface unavailable by changing the Limited Access setting.

The Limited Access setting has four options:

- **Full JSS**—This is the default option for every JSS. It makes the JSS interface available from anywhere.
- **Computer and Mobile Device Management**—This option is not applicable to the Recon Suite.
- **Computer Management Only**—This option disables the JSS interface.
- **Mobile Device Management Only**—This option is not applicable to the Recon Suite.

Warning: Do not change the Limited Access setting while connecting through a load balancer. Connect directly to the instance of Tomcat that is inside of your DMZ.

After you change the Limited Access setting, the JSS interface is inaccessible. To make additional changes, you need to manually modify the `web.xml` file. If you need to revert the JSS to the default setting (Full JSS), delete the `web.xml` file in `/Library/JSS/Tomcat/webapps/ROOT/WEB-INF/` and rename the `web.xml.original` file to `web.xml`.

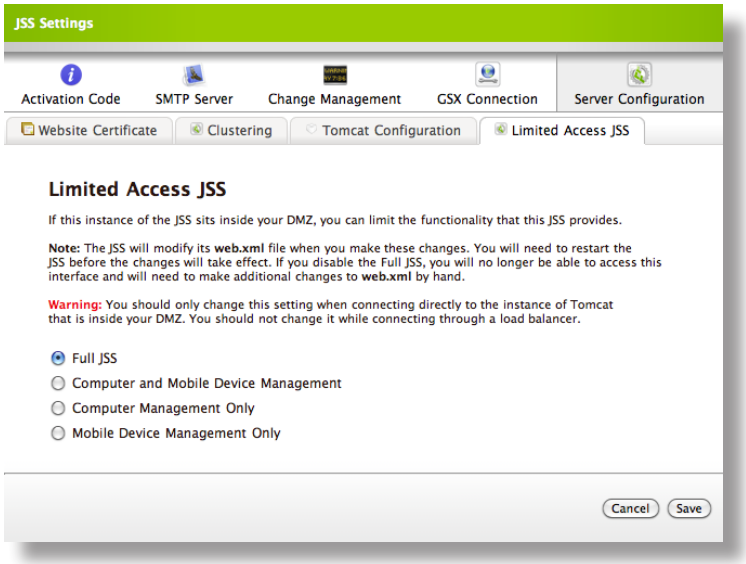
Note: If you upgraded from v8.1 or earlier, the `web.xml` and `web.xml.original` files are located in `/Library/Tomcat/webapps/ROOT/WEB-INF/`.

Upgrading the JSS automatically resets the Limited Access setting to Full JSS. You will need to change this setting every time you upgrade.

To change the Limited Access setting:

1. Use a web browser to log in to the desired instance of the JSS.
2. Click the **Settings** tab.
3. Click the **General Settings** link.
4. Click the **Server Configuration** tab.
5. Click the **Limited Access JSS** tab.

6. Select a limited access option.



7. Click **Save**.

8. Restart the JSS for any changes to take effect.

Frequently Asked Questions

Q. What is installed on Mac OS X Server when I install the JSS?

A. The following files and folders are installed on Mac OS X Server:

Apache Tomcat
Tomcat is the web application server that runs the JSS web application. A directory named `Tomcat` is installed in:

`/Library/JSS/Tomcat/`

com.jamfsoftware.tomcat.plist
This is the launchd item that controls Tomcat. It is installed and loaded in the following location:

`/Library/LaunchDaemons/com.jamfsoftware.tomcat.plist`

Database backup location
The JSS Database Utility stores database backups in the following location by default:

`/Library/JSS/Backups/Database/`

JSS Database Utility
The JSS Database Utility is installed in the following location:

`/Library/JSS/bin/JSSDatabaseUtil.jar`

JSS web application
The JSS is a web application that runs on Tomcat. A directory named `ROOT` is installed in:

`/Library/JSS/Tomcat/webapps/ROOT/`

keystore
Tomcat requires a .keystore file to provide connections over SSL. The JSS Installer creates a default .keystore file and stores it in the following location:

`/Library/JSS/Tomcat/.keystore`

Logs
Logs for the installation and for the JSS are stored in the following directory:

`/Library/JSS/Logs/`

server.xml
The JSS Installer installs a modified copy of Tomcat's `server.xml` file. This file enables SSL, ensures that the JSS appears in the `root` context, and enables database connection pooling. It is installed in the following location:

`/Library/JSS/Tomcat/conf/server.xml`

Note: The locations of these files and folders are different if you upgraded from v8.1 or earlier and your JSS is installed on OS X Server v10.6. Apache Tomcat and its related files are stored in `/Library/Tomcat/` and the JSS web application (previously known as the jamf web application) is stored in `/Library/Tomcat/webapps/ROOT/`.

Q. Can I install the JSS on other platforms?

A. Yes. You can install the JSS on any platform that supports the following software:

- Java 1.6
- MySQL 5.1 or later
- Apache Tomcat 6.0 or later

Tested operating systems include:

- OS X Server v10.8
- OS X Server v10.7
- OS X Server v10.6
- Ubuntu 10.04 LTS Server
- Red Hat Enterprise Linux (RHEL) 6
- Windows Server 2008

Although you can install the JSS on any server that meets the minimum requirements, JSS Installers are only available for Mac, Linux, and Windows.

To obtain the JSS Installers for Linux and Windows and their documentation, see the introductory email that you received from JAMF Software or contact your JAMF Software Representative.

Troubleshooting the JSS

Most issues with the JSS have to do with the configuration of Apache Tomcat or MySQL. The JSS Database Utility allows you to troubleshoot most of the issues that you encounter.

This section explains how to troubleshoot the following issues:

- Connection issues
- Memory issues
- Database issues

Connection Issues

If applications are not connecting to the JAMF Software Server (JSS), you can use a web browser to troubleshoot the issue. If you are able to connect to the JSS, the applications should be able to connect as well.

To troubleshoot connection issues:

1. Open a web browser and try connecting to the JSS on port 8443.

   For example, if the DNS name of the JSS is "jss.mycompany.com", try connecting to:

   https://jss.mycompany.com:8443/

2. If you are prompted to verify a certificate, accept the certificate.

3. If you are able to connect to the JSS, make sure that the application is pointing at the correct IP address.
   a. Quit the application.
   b. Hold down the Option key and re-open the application to bring up the Preferences pane.
   c. On the Preferences pane, enter the DNS name or IP address for the JSS and then click **Save**.
   d. Enter the username and password for an administrator account to the server, and then click **OK**.

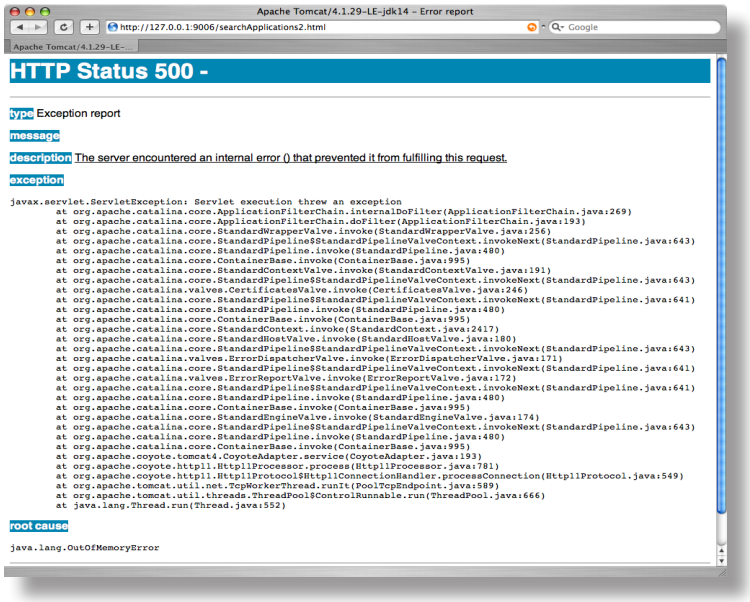
4. If the application still fails to connect, restart Tomcat.

   For instructions on how to restart Tomcat, see the Knowledge Base article at:

   https://jamfnation.jamfsoftware.com/article.html?id=117

Memory Issues

If there is a large amount of data in the JSS, you may need to allocate additional memory to Tomcat. Tomcat displays the following error page if more memory is required:



For instructions on viewing the amount of memory being used by the web application and allocating additional memory to Tomcat, see "Allocating Additional Memory to Tomcat".

Database Issues

MySQL database tables can become corrupt if the JSS is running on a very slow computer to which many clients are connected, or if the server running the JSS crashed and the database was not shut down properly.

When errors occur in the MySQL database, the JSS displays an alert similar to the following:

```
Got error 127 from table handler
```

This section explains how to:

- View the status of database tables
- Repair database tables
- Optimize database tables

Viewing the Status of Database Tables

To view the status of database tables:

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

2. Click the **Settings** tab.
3. Click the **Database/Web Application Health** link.
4. Click the **Database Table Status** link.

Repairing Database Tables

If you have a large database, it may take longer to verify the status of your database tables. Once the status of each table is returned, you may want to repair the tables that do not return an "OK" status.

To repair database tables:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Database/Web Application Health** link.
4. Click the **Repair Database Tables** link.

Optimizing Database Tables

Optimizing database tables allows you to ensure that each table's index is up to date so that you can perform database lookups as quickly as possible.

To optimize database tables:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Database/Web Application Health** link.
4. Click the **Optimize Database Tables** link.

Building Your Framework

Integrating with LDAP Servers

If you utilize one or more directory services to store information about the users in your organization, you can integrate the JAMF Software Server (JSS) with the directory service(s) to:

- Look up and populate user information for inventory purposes
- Authenticate users to the Recon Suite

> ***Note:*** Integrating with Open Directory allows the JSS to access both user and computer list information. For details on accessing computer list information from Open Directory, see the "Adding LDAP Server Connections Manually" section.

This section explains how to:

- Add LDAP server connections using the LDAP Server Connection Assistant or manually
- Test LDAP server connections
- Edit and delete LDAP server connections
- Troubleshoot LDAP server connections

Using the LDAP Server Connection Assistant

The LDAP Server Connection Assistant walks you through the process of adding an LDAP server connection to the JSS.

The assistant allows you to integrate with the following directory services:

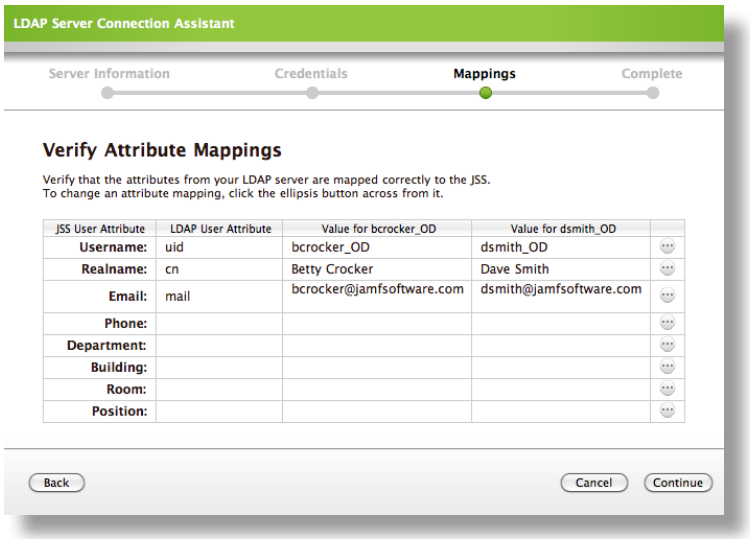
- Apple's Open Directory
- Microsoft's Active Directory
- Novell's eDirectory

> ***Note:*** To integrate with other directory services or access computer list information from Open Directory, you must configure the connection manually.

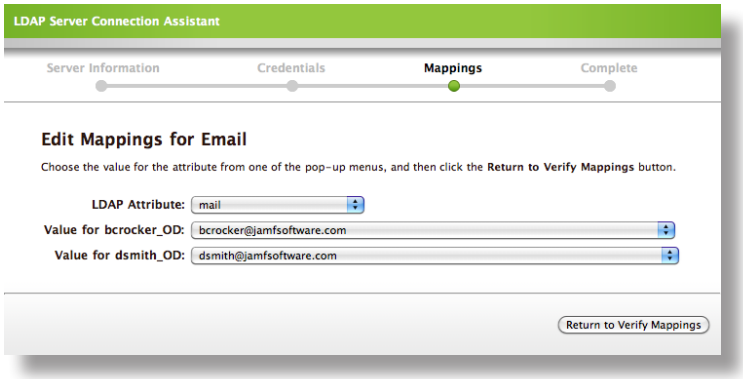
To use the LDAP Server Connection Assistant:

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

2. Click the **Settings** tab.
3. Click the **LDAP Server Connection** link.
4. Click the **Add LDAP Server Connection** button.
5. Choose the LDAP server you want to integrate with and click the **Continue** button.
6. Enter the host name (DNS name or IP address) for the LDAP server and click **Continue**.
7. Enter credentials for the LDAP service account and click **Continue**.
8. For testing purposes, enter the usernames for two different accounts in the LDAP server and click **Continue**.
9. Verify the returned attribute mappings are correct. If the attribute mappings are correct, click **Continue** and skip to step 11.

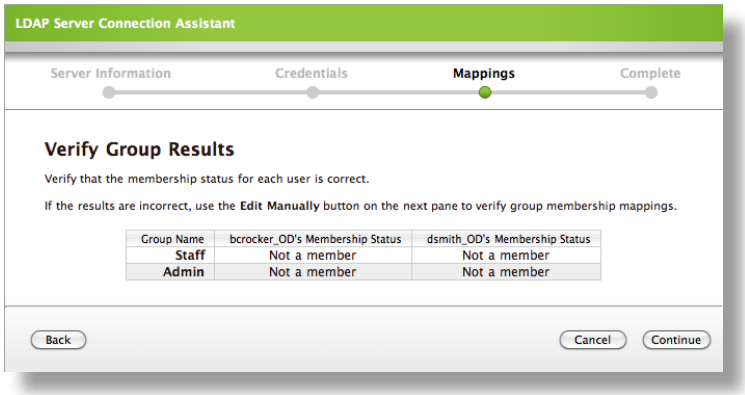


10. If an attribute mapping is incorrect, change the mapping appropriately.
    a. Click the **Ellipsis** button across from the mapping.
    b. Choose the correct value for the attribute from one of the pop-up menus.



    c. Click the **Return to Attribute Mappings** button.
    d. Verify the changes are correct and click the **Continue** button.
11. For testing purposes, enter the names of two different user groups in the LDAP server and click **Continue**.

12. Verify the group membership status of each test user is correct and click **Continue**.



13. Click **Save** to save the LDAP server connection and continue using the JSS.

    If you want to make changes before you save the connection, click the **Edit Manually** button, make the necessary changes, and then click the **Save** button.

Adding LDAP Server Connections Manually

Before adding an LDAP server connection manually, it is important that you are familiar with search bases, object classes, and attributes. If you are not familiar with these concepts, use the LDAP Server Connection Assistant to ensure attributes are mapped correctly.

Adding the connection manually allows you to:

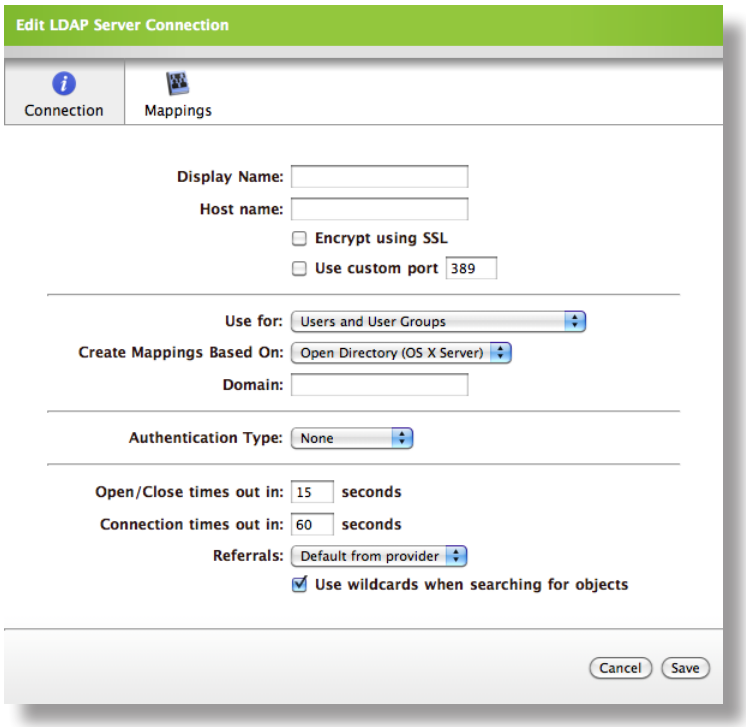
- Integrate with directory services other than Open Directory, Active Directory, and Novell eDirectory
- Access computer list information from Open Directory

After adding the connection, test it to make sure it's working properly. See the "Testing LDAP Server Connections" section for testing instructions.

This section provides an overview of the Connection and Mappings panes you'll use to add the connection and step-by-step instructions on how to do so.

Connection Pane

This pane allows you to configure how the JSS connects to an LDAP server.



Display name

This field allows you to enter a display name for the LDAP server.

Host name

This field allows you to enter the DNS name or IP address for the LDAP server.

Encrypt Using SSL

You must select this checkbox if you want to connect to the LDAP server over SSL.

Note: For this to work, the LDAP server must have SSL enabled.

Use custom port

If the LDAP server is not running on the standard port, you must select this checkbox and enter the port on which it is running.

Use for

This pop-up menu allows you to specify the type of information you want to access from the LDAP server.

Create Mappings Based On

This pop-up menu allows you to select the LDAP server you want to connect to.

Domain

This field allows you to enter the domain for the LDAP server.

Authentication Type
If the LDAP server requires authentication, specify the authentication type using this pop-up menu. After choosing an authentication type, two additional fields appear in which you can enter credentials for the LDAP service account.

Most LDAP servers require simple authentication.

Open/Close times out in ____ seconds
This field allows you to enter the maximum number of seconds you want to wait for the server to open or close a connection before it times out.

Connection times out in ____ seconds
This field allows you to enter the maximum number of seconds you want to wait for the server to return results before the connection times out.

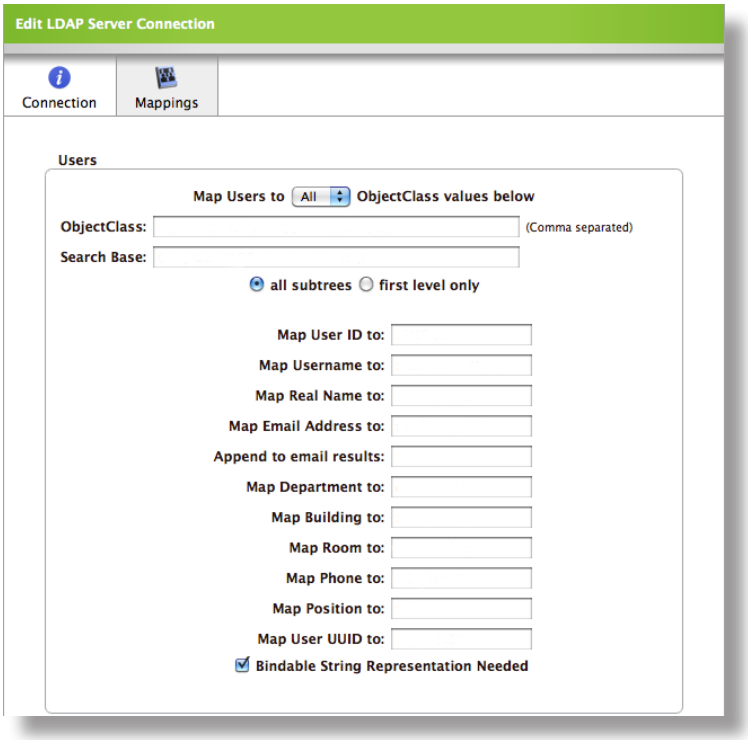
Referrals
This pop-up menu allows you to choose whether to ignore, follow, or utilize default LDAP referrals to locate information.

Use wildcards when searching for objects
Select this checkbox if you want the JSS to return partial matches when searching the LDAP server for information.

Mappings Pane

This pane allows you to map attributes and specify object class and search base data.

If you're not familiar with these concepts, use the LDAP Server Connection Assistant to add the connection.



To configure an LDAP server connection manually:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **LDAP Server Connection** link.
4. Click the **Add LDAP Server Connection** button.
5. Select the **Configure manually** option and click the **Continue** button.
6. Configure the connection using the information on the Connection and Mappings panes.
7. Click the **Save** button.

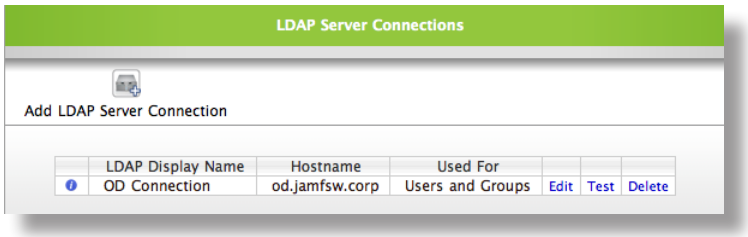
Testing LDAP Server Connections

Before using an LDAP server connection as part of your framework, test the connection by looking up user (or computer list) information. If the results are returned correctly, the connection is working.

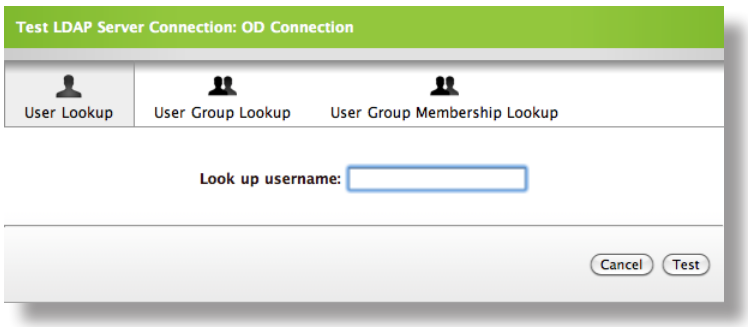
This section explains how to look up user and computer list information.

To look up user information from an LDAP server:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **LDAP Server Connection** link.
4. Click the **Test Connection** link across from the connection you want to test.



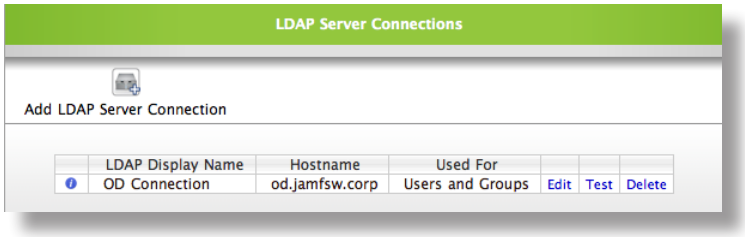
5. Click the **User Lookup**, **User Group Lookup**, or **User Group Membership Lookup** tab.
6. Enter information in the field(s) provided.



7. Click the **Test** button.

To look up computer list information from Open Directory:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **LDAP Servers Connection** link.
4. Click the **Test** link across from the Open Directory connection you want to test.



5. Click the **Computer Lookup**, **Computer Group Lookup**, or **Computer Group Membership Lookup** tab.
6. Enter information in the field(s) provided.
7. Click the **Test** button.

Editing LDAP Server Connections

To edit an LDAP server connection:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **LDAP Servers Connection** link.
4. Click the **Edit** link across from the connection you want to edit and make changes manually. For more information about the Connection and Mappings panes, see the "Adding LDAP Server Connections Manually" section.
5. Click the **Save** button.

Deleting LDAP Server Connections

To delete an LDAP server connection from the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **LDAP Servers Connection** link.

4. Click the **Delete** link across from the connection you want to delete.
5. Click the **Delete** button to confirm.

Tools for Troubleshooting LDAP Server Connections

This section describes two tools you can use to troubleshoot the connection between the JSS and an LDAP server.

Apache Directory LDAP Studio

The Apache Directory LDAP Studio allows you to connect to an LDAP server to pinpoint initial connections and find search bases and mappings. You can download Apache Directory LDAP Studio at:

https://directory.apache.org/studio/

Workgroup Manager

Apple's Workgroup Manager allows you to view detailed information for individual LDAP server accounts.

To view LDAP information using Workgroup Manager:

1. Open Workgroup Manager.
2. Connect to your server.
3. From the menu bar, choose **Workgroup Manager** > **Preferences**.
4. Select the **Show "All Records" tab and inspector** checkbox, and then click **OK**.
5. Click the **All Records** tab (target icon) displayed in the sidebar to view the records.

Managing JSS User Accounts

The JAMF Software Server (JSS) is a multi-user application. You can grant different levels of access to each user by setting up JSS user accounts and assigning different privileges to each one.

Individual JSS user accounts can be created manually or—if you have an LDAP server connection set up—added from a directory service. You can also grant access to groups from an LDAP server.

This section explains how to:

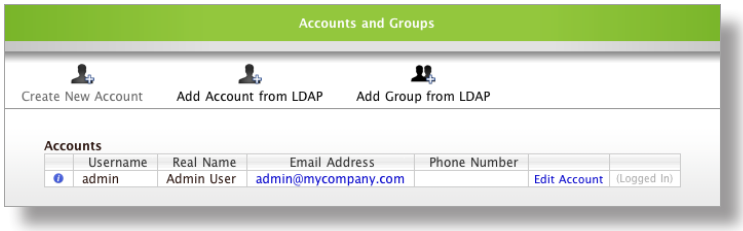
- Create a new user account in the JSS
- Add a user account from an LDAP server
- Upgrade the Distinguished Name (DN) from an LDAP account
- Grant access to a group from an LDAP server

Note: JSS users added from an LDAP server receive the privileges assigned to their individual user accounts. LDAP members that don't have individual accounts in the JSS, but are members of one or more groups with access, receive the privileges assigned to each group.

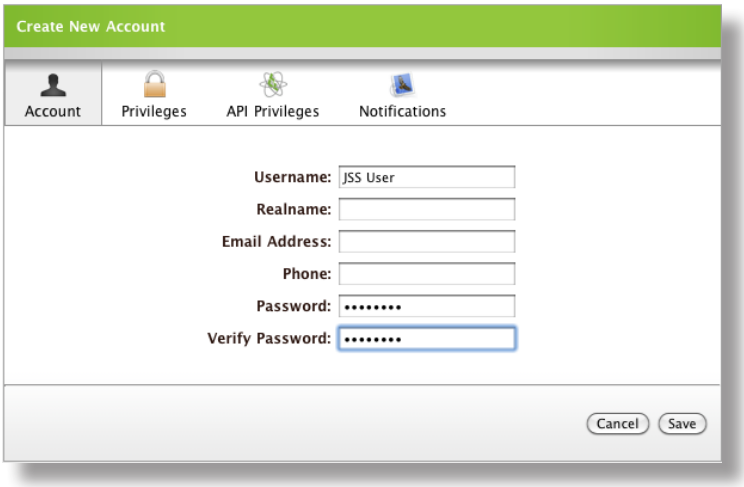
Important: It is recommended that you have at least one JSS user account that is not from an LDAP server in case the connection between the JSS and the LDAP server is interrupted.

To create a new user account in the JSS:

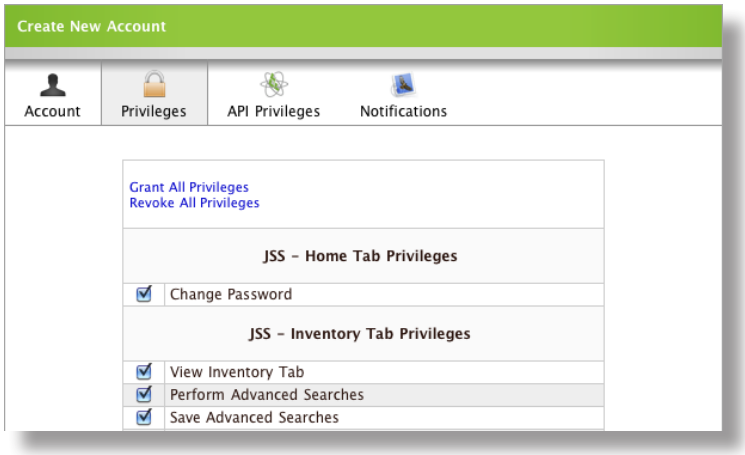
1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Accounts** link.
4. Click the **Create New Account** button.



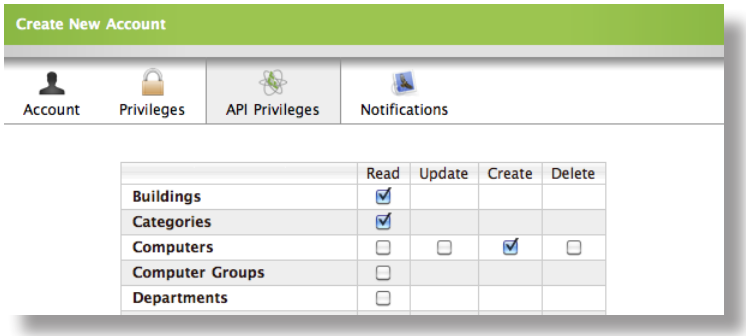
5. Enter user information on the Account pane.



6. Click the **Privileges** tab and select the checkbox next to each privilege you want to grant the user.

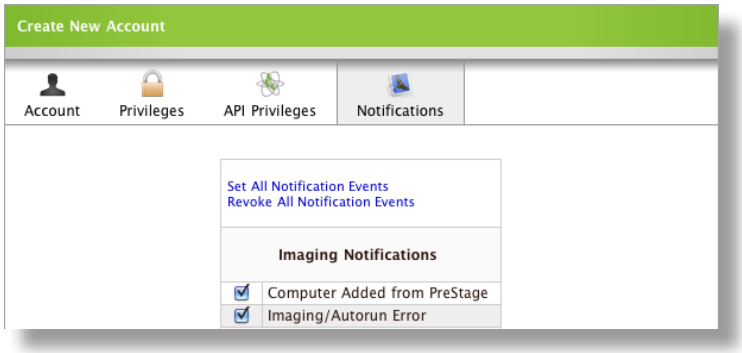


7. Click the **API Privileges** tab and select the API privileges you want to grant the user.



8. Click the **Notifications** tab and select the checkbox next to each event you want the user to receive a notification about.

> ***Note:*** A valid email address must be entered on the Account pane for notifications to be sent.

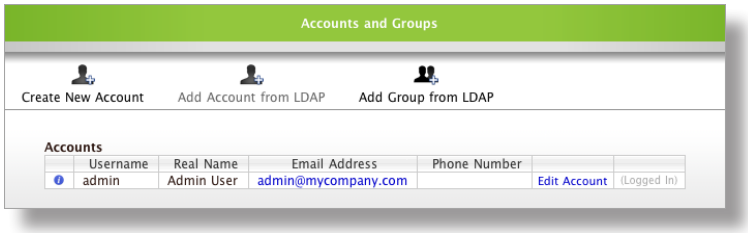


9. Click **Save**.

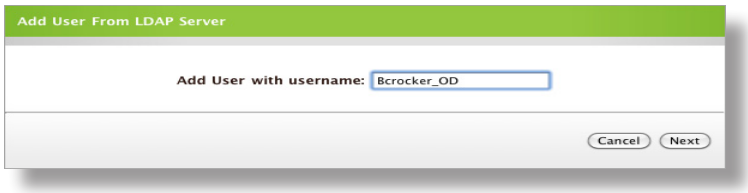
To add a user account from an LDAP server:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Accounts** link.
4. Click the **Add Account from LDAP** button.

   If you don't see this button, you need to set up an LDAP server connection before completing these steps. (For more information, see the "Integrating with LDAP Servers" section.)



5. Enter the username for the account you want to add and click **Next**.

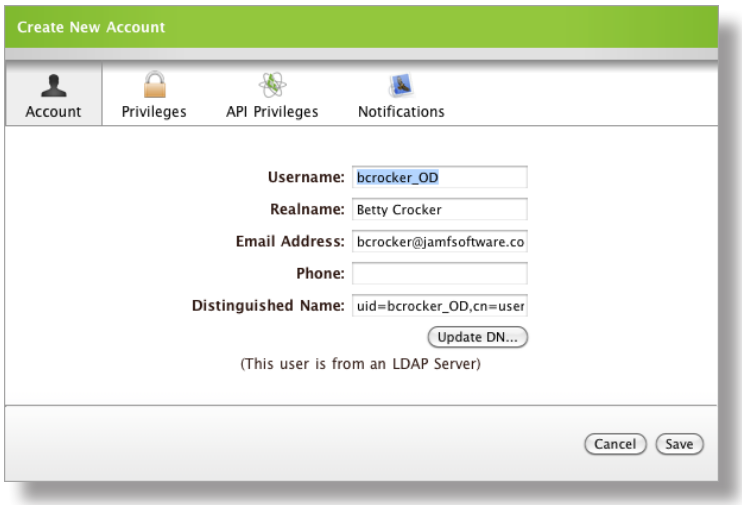


6. When the JSS returns the results, click the **Add <username>** link next to the user you want to add.

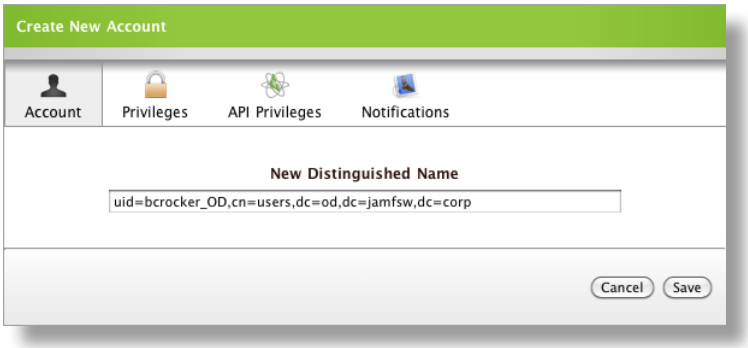
7. Configure accounts settings on the Privileges, API Privileges, and Notifications panes.
8. Click **Save**.

To update the Distinguished Name (DN) for an LDAP account:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Accounts** link.
4. Click the **Edit Account** link next to the account you want to modify.
5. Click the **Update DN** button.



6. Enter the new Distinguished Name and click **Save**.

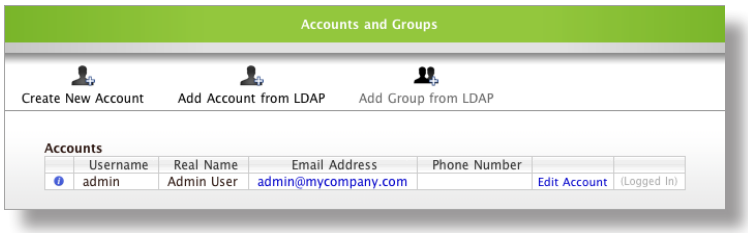


To grant access to an LDAP group:

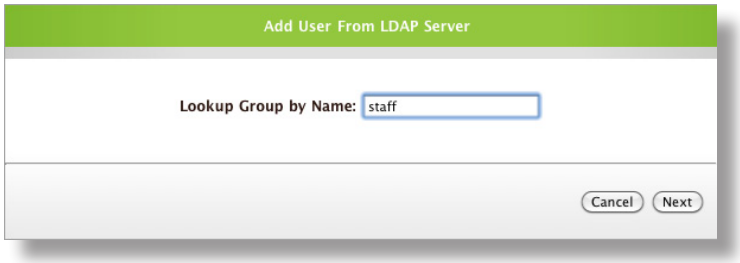
1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Accounts** link.

4. Click the **Add Group from LDAP** button in the toolbar.

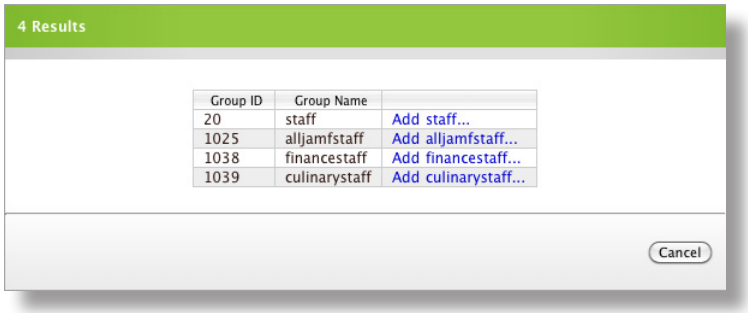
   If you don't see this button, you need to set up an LDAP server connection before completing these steps. (For more information, see the "Integrating with LDAP Servers" section.)



5. Enter the name of the group you want to add and click **Next**.



6. When the JSS returns the results, click the **Add <group name>** link next to the group you want to add.



7. Set privileges for the group on the Privileges pane and click **Save**.

Managing Buildings and Departments

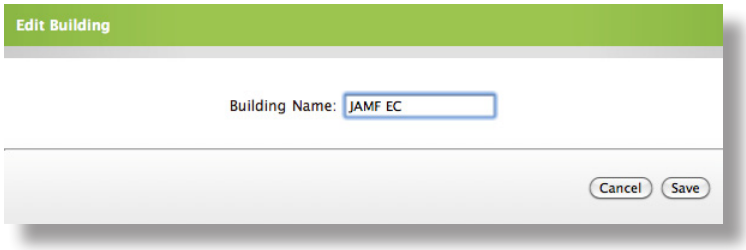
Buildings and departments are organizational components that give you an easy way to perform inventory searches.

Buildings

This section explains how to create, edit, and delete a building in the JAMF Software Server (JSS).

To create a building:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Buildings** link.
4. Click the **Create New Building** button.
5. Enter a name for the building and click the **Save** button.



To edit a building:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Buildings** link.
4. Click the **Edit Building** link across from the building that you want to edit.
5. Change the name of the building.
6. Click **Save**.

To delete a building:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Buildings** link.

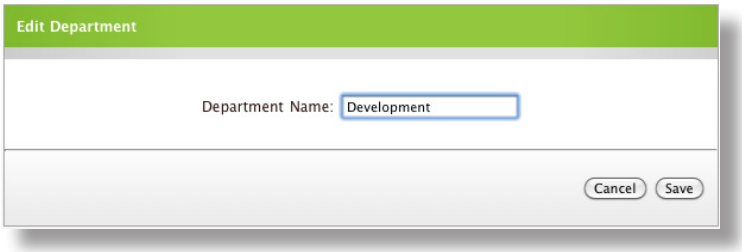
4. Click the **Delete Building** link across from the building that you want to delete.
5. Click **Delete** to confirm.

Departments

This section explains how to create, edit, and delete a department in the JSS.

To create a department:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Departments** link.
4. Click the **Create New Department** button.
5. Enter a name for the department and click the **Save** button.



To edit a department:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Departments** link.
4. Click the **Edit Department** link across from the department that you want to edit.
5. Change the name of the department.
6. Click **Save**.

To delete a department:

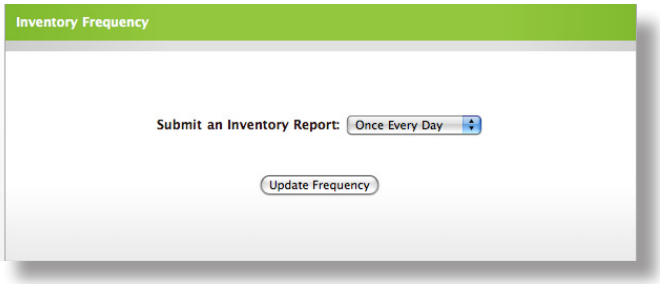
1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Departments** link.
4. Click the **Delete Department** link across from the department that you want to delete.
5. Click **Delete** to confirm.

Changing the Frequency of Inventory Reports

Client computers that were added to the JSS using the network scanner or a QuickAdd package can be configured to generate and submit inventory reports to the JSS on a daily, weekly, or monthly basis.

To change the frequency of inventory reports:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Frequency** link.
5. Choose how frequently you want computers to submit inventory reports to the JSS.



6. Click the **Update Frequency** button.

Managing Inventory Preferences

Inventory preferences are divided into two sections:

- **Inventory Collection preferences**—These preferences allow you to collect additional inventory items and specify how you want to collect them.
- **Inventory Display preferences**—These preferences allow you to change how inventory data is displayed in the JAMF Software Server (JSS).

This section explains both types of inventory preferences and how to set them.

Inventory Collection Preferences

Inventory Collection preferences allows you to:

- Collect additional inventory items
- Create extension attributes to collect custom data
- Specify additional locations in which to search for software

Collecting Additional Inventory Items

If the items you want to collect are not included in your inventory by default, you can choose to add any of the following items:

- Application details
- Fonts
- Plug-ins
- UNIX executables
- Package receipts
- Software updates
- Accounts
- Home directory sizes
- Hidden accounts
- Printers
- Running services
- Scheduled tasks
- Command-line tools
- Mobile devices
- Mobile device app purchasing information
- Composer location information

Collecting some of these items may add reporting time and network traffic to the inventory process. The following table provides an estimate of how much time and traffic each item adds.

Note: These numbers are based on a MacBook Pro with approximately 100 applications, 2000 UNIX executable files, 300 fonts, 900 plug-ins, and 300 GB of user home directories.

Additional Inventory Items	Time (Seconds)	Traffic (KB)
Default (No Additional Items)	9	102
Application Details (Size, Copyright Info, Date Modified, Bundle ID, and Permissions)	30	133
Fonts	10	128
Plug-ins	13	248
UNIX Executable Files	28	200
Available Software Updates	110	104
Sizes of Home Directories	25	104
All Additional Options	180	726

To collect additional inventory items:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the tabs to see a list of additional items in each category and select the checkbox next to each item you want to add.

> ***Note:*** If you choose to collect application details, the .app bundles on Mac OS X computers are searched for additional applications. If you choose to collect application details and UNIX executables, the executable files in any .app bundle are also searched.

6. Click **Save**.

Creating Extension Attributes

Extension attributes are custom fields that allow you to collect almost any data from a computer. You can create an extension attribute manually or from a template stored in the JSS. You can also upload an extension attribute obtained from an outside source, such as JAMF Nation.

Creating an extension attribute manually allows you to populate data by displaying a text field or pop-up menu, or by running a custom script. Extension attributes created from a template or obtained from an outside source are populated by script.

When an extension attribute is populated by a script, the text between the `<result></result>` tag is stored in the JSS. For Mac OS X computers, scripts can be written in any language that has an interpreter installed. All scripts must start with a shebang (#!) followed by the absolute path to the interpreter. The most common interpreters are:

```
/bin/bash
/bin/sh
/usr/bin/perl
/usr/bin/python
```

For example, the script for an extension attribute that collects the host name from Mac OS X computers looks like this:

```
#!/bin/sh
echo "<result>`hostname 2>&1`</result>"
```

For Windows computers, scripts can be written in VBScript, Batch file, and PowerShell.

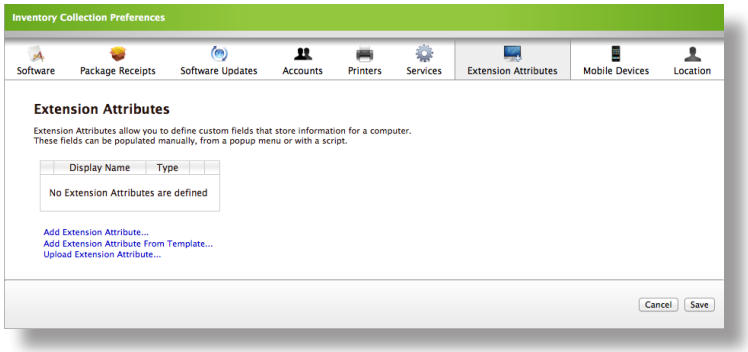
Note: PowerShell scripts only run on computers that have components installed to run the script.

Extension attributes can add time and network traffic to the inventory process depending on the type of data you choose to collect and how you choose to collect it.

Like other inventory data, extension attributes can be used as criteria for advanced computer searches.

To create an extension attribute manually:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the **Extension Attributes** tab.
6. Click the **Add Extension Attribute** link.



7. Enter a display name for the attribute.

8. (Optional) Enter a description.

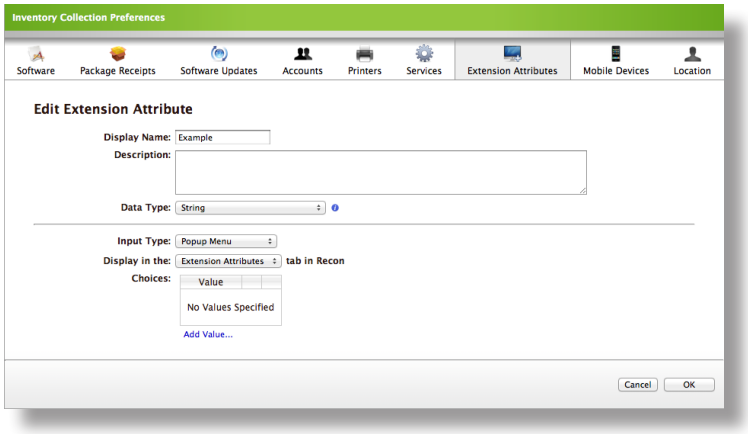
   This description is displayed when you hover over the **Info** icon in the list of extension attributes on the Extension Attributes pane.

9. Choose "String, Integer/Real" or "Date" from the **Data Type** pop-up menu.

   This is how the field is evaluated when performing advanced computer searches.

10. Choose whether to populate the information using a text field, pop-up menu, or script.
    - If you choose a text field or pop-up menu, choose the pane on which you want to display the attribute in the Recon interface.
    - If you choose to run a script, enter or paste the script into the field that appears.

11. If you chose to populate the information using a pop-up menu, click the **Add Value** link and enter menu options for the pop-up menu.

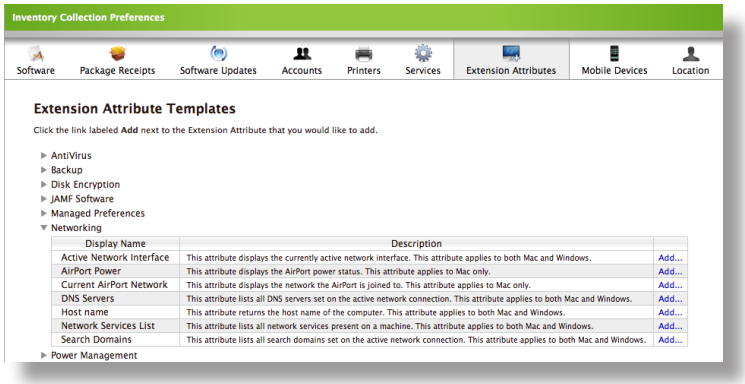


12. Click the **OK** button, and then click **Save**.

To create an extension attribute using a template:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the **Extension Attributes** tab.
6. Click the **Add Extension Attribute From Template** link.

7. Click the disclosure triangles to see a list of the templates in each category and click the **Add** link across from the template you want to add.

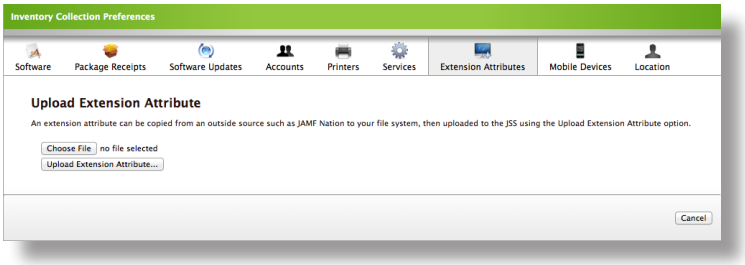


8. Click **Save**.

Computers run the script and populate the attribute field each time they submit inventory to the JSS.

To upload an extension attribute to the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the **Extension Attributes** tab.
6. Click the **Upload Extension Attribute** link.
7. Click **Choose File** and select the extension attribute (.xml) that you want to upload. Then, click **Upload Extension Attribute**.



8. Click **Save**.

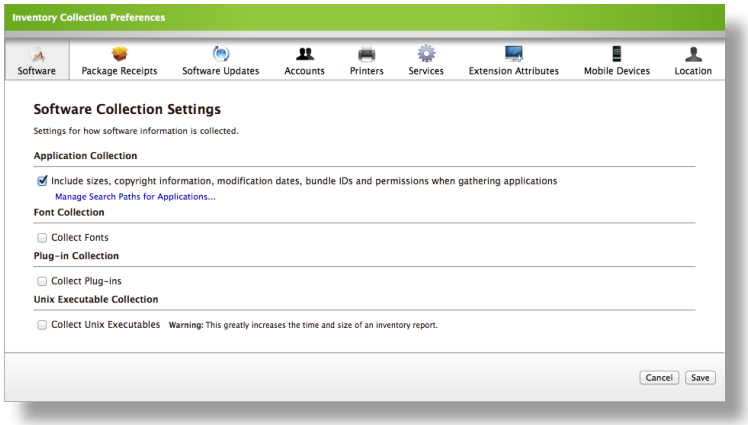
Computers run the script and populate the attribute field each time they submit inventory to the JSS.

Adding Custom Search Paths

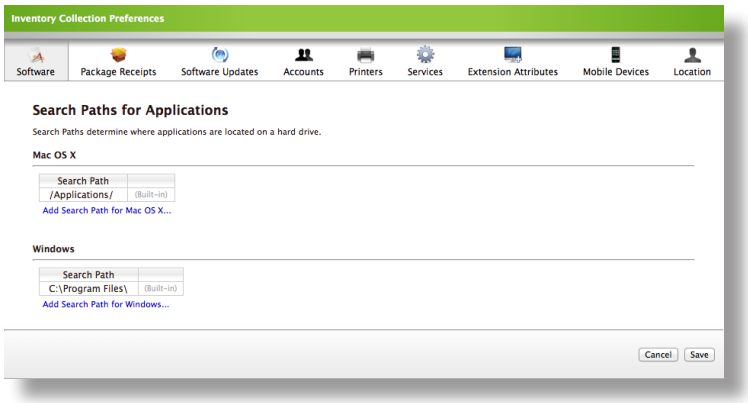
By default, Recon searches for software items (application details, fonts, plug-ins, and UNIX executables) in common locations on Mac OS X and Windows computers. You can define additional locations in which you want Recon to search by adding one or more search paths.

To add custom search paths:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. On the Software pane, click the **Manage Search Paths for <item>** link below the software item.



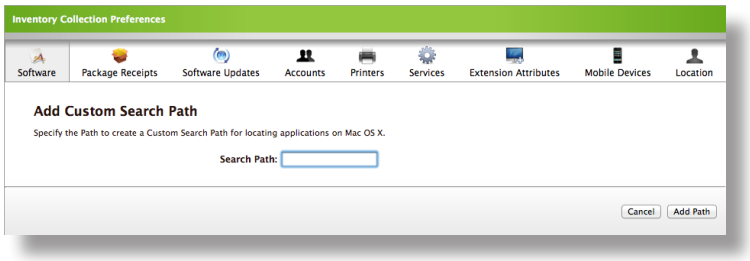
6. Click the **Add Search Path for <platform>** link that indicates the correct platform.



7. Enter the search path you want to add, and then click **Add Path**.

   To add every user's home directory to the search path, enter a tilde (~) at the beginning of the search path.

   To add all users on the computer to the search path, enter `$USERNAME` in the search path.



8. Click **Save**.

Inventory Display Preferences

Inventory Display preferences allow you to modify how inventory data is displayed throughout the JSS.

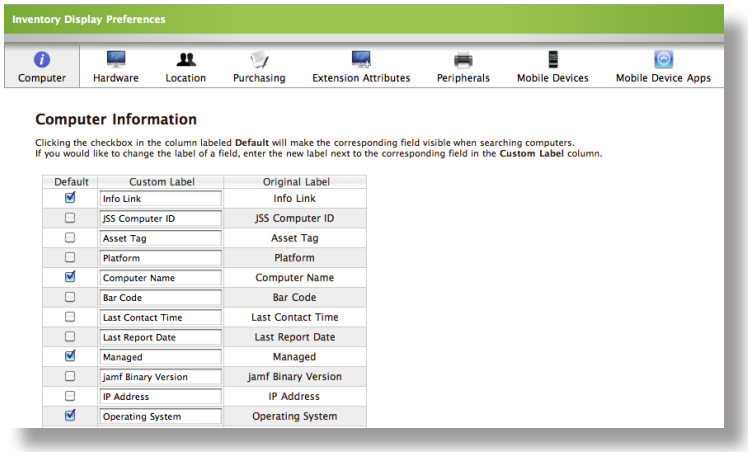
This section explains how to:

- Add or remove attribute fields from the default inventory search results (Standard Webpage report)
- Create custom field labels
- Group extension attributes on the Computer Details page and the Criteria pane for advanced inventory searches
- Display app icons on the Mobile Device Details page

To change the attribute fields displayed in inventory search results:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Display Preferences** link.
5. Click the tabs to locate the attribute fields you want to display or remove.

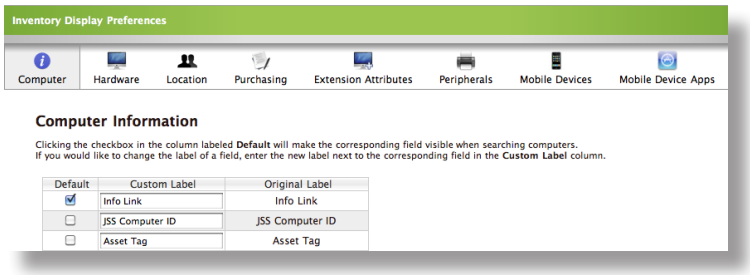
6. Select the **Default** checkbox to display the attribute or deselect it to remove the attribute.



7. Click **Save**.

To change the name of an attribute field:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Display Preferences** link.
5. Click the tabs to locate the attribute field you want renamed.
6. Enter a new name in the **Custom Label** field next to it.
   If you are renaming an extension attribute, enter a new name in the **Display Name** field.



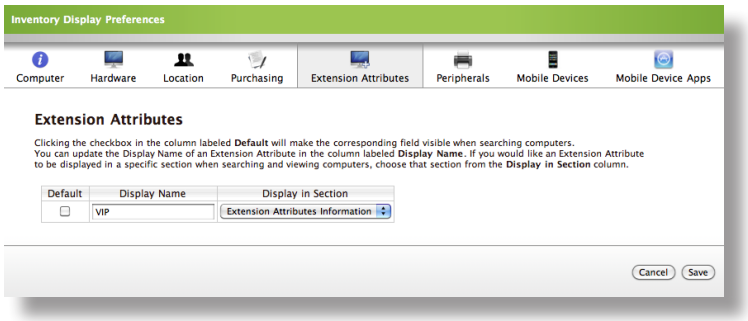
7. Click **Save**.

To group extension attributes:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Display Preferences** link.

5. Click the **Extension Attributes** tab and use the **Display in Section** pop-up menus to choose a category in which to display the attribute.

   This determines where the attributes are displayed on the Computer Details page and the Criteria pane when you are configuring advanced inventory searches.

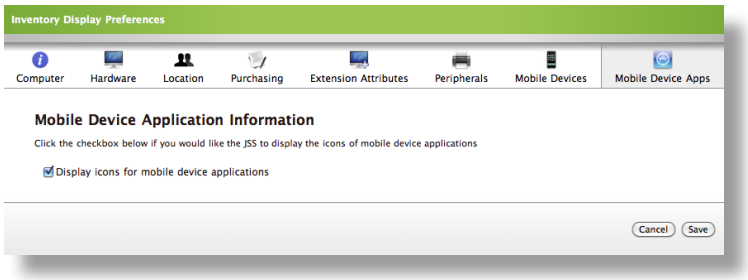


6. Click **Save**.

To display app icons in the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Display Preferences** link.
5. Click the **Mobile Device Apps** tab and select the **Display icons for mobile device applications** checkbox.

   This displays the icons in the **Installed Applications** section on the Mobile Device Details page.



6. Click **Save**.

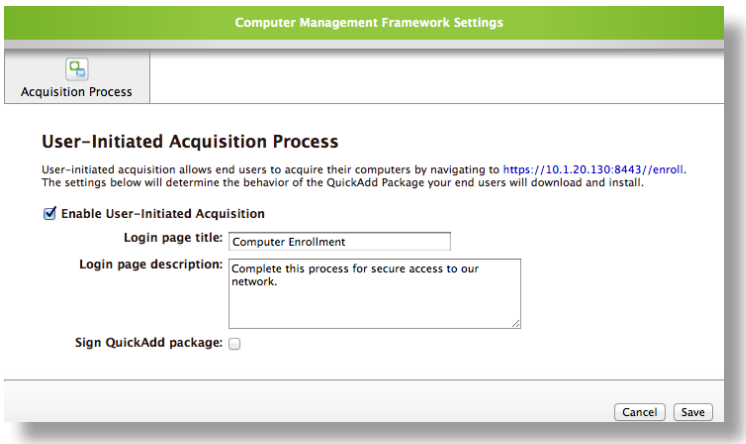
Configuring the User-Initiated Acquisition Process

User-initiated acquisition allows users to acquire their computers using a QuickAdd package. For more information on user-initiated acquisition, see the "Providing an Acquisition URL" and "Sending OTA Invitations" sections in "Acquiring Mac OS X Computers".

Use the Acquisition Process pane in Computer Management Framework settings to enable or disable user-initiated acquisition. When user-initiated acquisition is enabled, you can use this pane to customize the text that is displayed to users on the Login page for user-initiated acquisition.

To set up or modify User-Initiated Acquisition preferences:

1. Log in to the JSS in a web browser.
2. Click the **Settings** tab.
3. Click the **Computer Framework Settings** link.
4. Click the **Acquisition Process** tab.
5. Customize text for the Login page as needed.



6. To sign the QuickAdd package, select the **Sign QuickAdd package** checkbox and upload an installer certificate (.p12) obtained from Apple's Developer Certificate Utility.

   Signing the QuickAdd package ensures that it appears as verified to users. It also allows users to install the QuickAdd package on computers that have Apple's Gatekeeper feature set to only allow applications downloaded from the Mac App Store and identified developers.

   To obtain an installer certificate from Apple's Developer Certificate Utility, you must be a registered Apple Developer in the Mac Developer Program. To enroll in the Mac Developer Program, visit the following website:

   https://developer.apple.com/programs/mac/

7. Click **Save**.

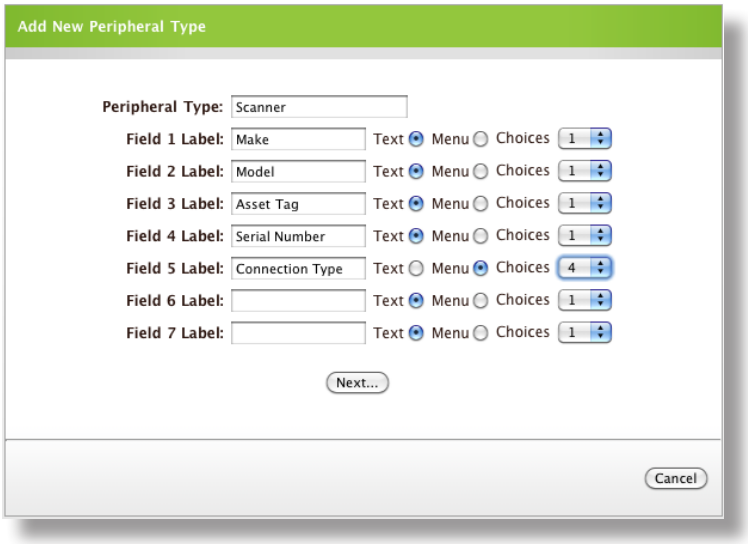
Managing Peripheral Types

You can track an unlimited number peripherals as part of your inventory. Purchasing and location information are included for each peripheral by default.

This section explains how to add, edit, and delete a peripheral type in the JAMF Software Server (JSS).

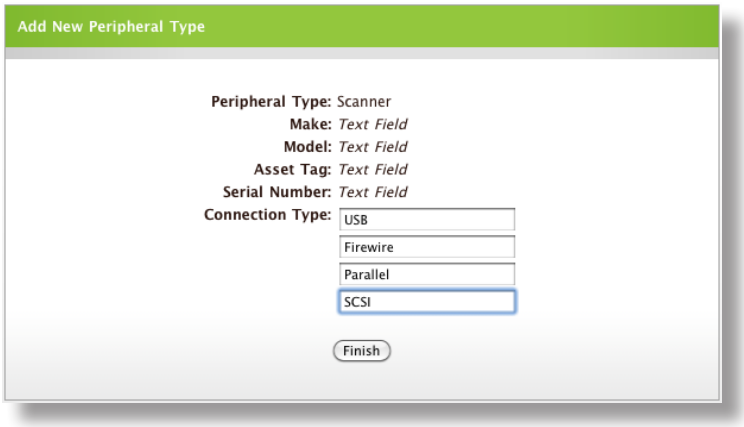
To add a peripheral type:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Peripheral Types** link.
5. Click the **Create Peripheral Type** button in the toolbar.
6. Enter a name for the peripheral type, such as "Scanner" or "Printer".
7. In the **Field 1–7 Label** fields, enter the name of the attribute that you want to track, such as "Make", "Model", "Serial Number", or "Connection Type".
8. If you entered an attribute that has a finite number of choices, such as "Connection Type":
   a. Select the **Menu** option.
   b. Use the **Choices** pop-up menu to specify the number of menu options you want to include in the menu. For instance, if your connection possibilities are USB, FireWire, and Parallel, and SCSI select "4" from the **Choices** pop-up menu.



9. Click the **Next** button.

10. If you chose to display an attribute field as a menu, enter the menu options in the fields provided.



11. Click the **Finish** button.

To edit a peripheral type:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Peripheral Types** link.
5. Click the **Edit Peripheral Type** link across from the peripheral you want to edit.
6. If you want to change the order in which the fields are listed, use the **Reorder** pop-up menus to do so, and then click the **Change Order** button.
7. Make the necessary changes and click the **Confirm Changes** button.
8. Verify the changes and click the **Save Changes** button.

To delete a peripheral type:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Peripheral Types** link.
5. Click the **Delete Peripheral Type** link across from the peripheral you want to delete.
6. Click **Delete** to confirm.

Inventory

Acquiring Mac OS X Computers

Acquisition is the process of adding computers to the JSS as part of your inventory. There are several ways to acquire Mac OS X computers:

- Provide an acquisition URL.
- Send an OTA invitation.
- Use a QuickAdd package created with Recon.
- Scan the network.
- Run Recon remotely.
- Run Recon locally.
- Manually add computers to the JSS.

Providing an Acquisition URL

You can allow users to acquire their own computers by providing them with an acquisition URL. The Acquisition URL is the full URL for the JSS followed by /enroll/. For example:

https://jss.mycompany.com/8443/enroll/

Users go to the URL, log in with an LDAP directory account or JSS user account, and then follow the onscreen instructions to download and install a QuickAdd package that acquires their computer.

If location information collection is enabled in the JSS and users log in with an LDAP directory account, location information for the computer is collected during enrollment.

Providing an acquisition URL requires:

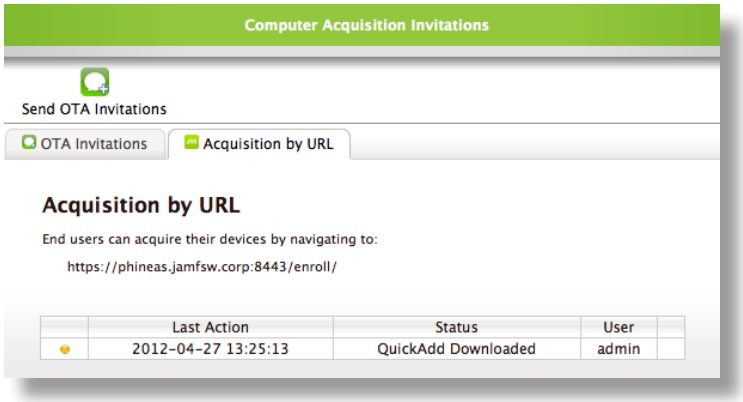
- An LDAP server connection set up in the JSS or a JSS user account with privileges to enroll Mac OS X computers (See "Integrating with LDAP Servers" or "Managing JSS User Accounts" for instructions on how to set up one of these requirements.)
- User-initiated computer acquisition enabled in the JSS (See "Configuring the User-Initiated Acquisition Process" for more information.)

In addition, if the QuickAdd package is signed, client computers must have Apple's Developer ID Certification Authority intermediate certificate in the system keychain in Keychain Access. For instructions on how to obtain this certificate and import it to the system keychain on client computers, see the following Knowledge Base article:

https://jamfnation.jamfsoftware.com/article.html?id=294

To view the status of URL acquisitions:

1. Log in to the JSS with a web browser.
2. Click the **Management** tab.
3. Click the **Computer Acquisition** link, and then click the **Acquisition by URL** tab.



Sending OTA Invitations

You can allow users to acquire their own computers by sending them an OTA invitation via email. Users click the URL in the invitation and follow the onscreen instructions to download and install a QuickAdd package that acquires their computers.

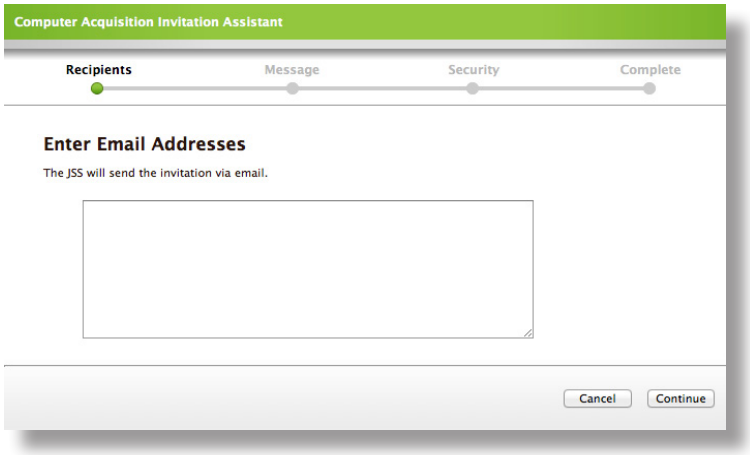
Acquiring computers by sending an OTA invitation requires:

- An SMTP server set up in the JSS (See "Enabling Email Notifications" for detailed instructions.)
- A JSS user account with privileges to enroll Mac OS X computers
- User-initiated computer enrollment enabled in the JSS (See "Configuring the User-Initiated Acquisition Process" for more information.)

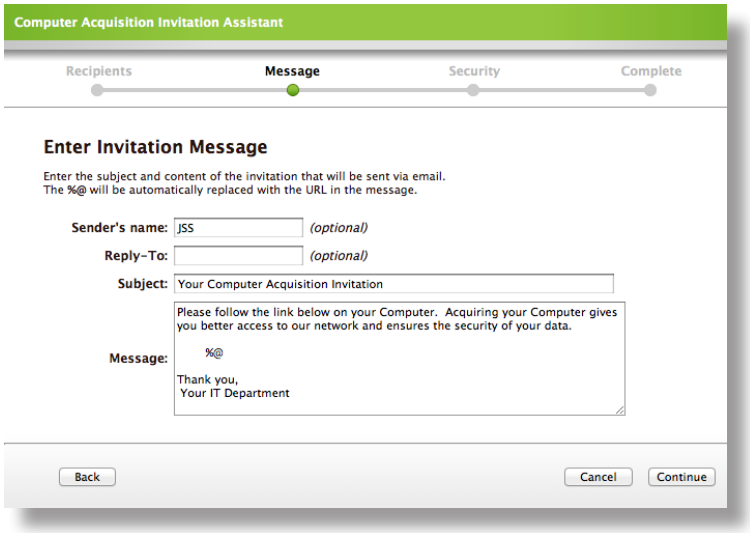
To acquire computers by sending an OTA invitation:

1. Log in to the JSS with a web browser.
2. Click the **Management** tab.
3. Click the **Computer Acquisition** link.
4. Click the **Send OTA Invitations** button.

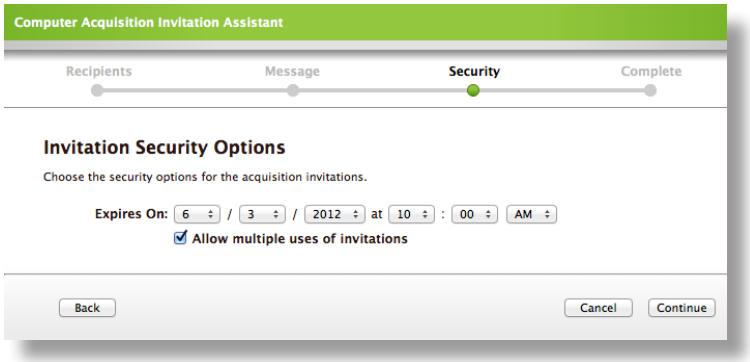
5. Enter the email addresses that you want to send the invitation to, and then click **Continue**.
   Each entry must be separated with a line break or comma.



6. Customize the invitation message as needed, and then click **Continue**.

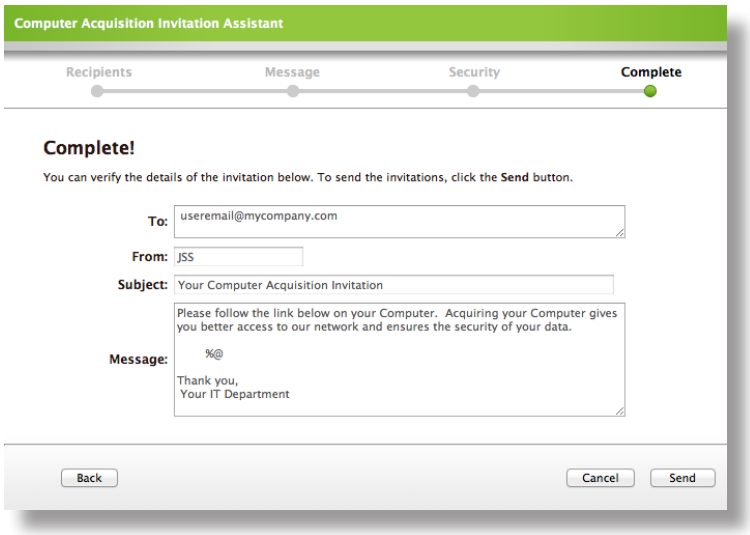


7. Specify an expiration date for the invitation.



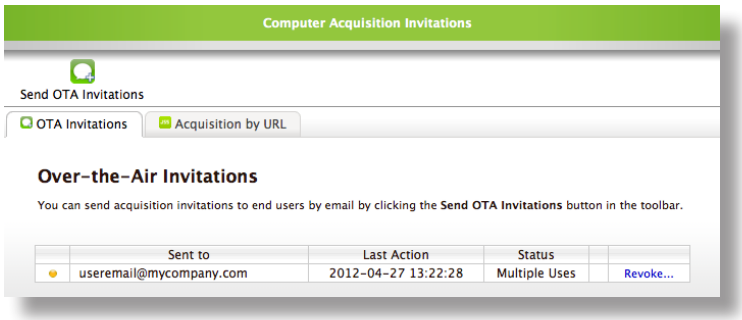
8. If you want to allow multiple uses of the invitation, leave **Allow multiple uses of invitations** selected, and then click **Continue**.

9. Verify that the information on the Complete pane is correct, and then click **Send**.



To view the status of OTA acquisitions:

1. Log in to the JSS with a web browser.
2. Click the **Management** tab.
3. Click the **Mobile Device Acquisition** link, and then click the **OTA Invitations** tab.



Using QuickAdd Packages Created with Recon

Recon allows you to create QuickAdd packages that you can install on computers to acquire them. You can deploy QuickAdd packages using a remote deployment tool, such as Apple Remote Desktop, or you can give them to users to install.

You can also sign the QuickAdd package with an installer certificate (.p12) obtained from Apple's Developer Certificate Utility. Signing the QuickAdd package ensures that it appears as verified to users. It also allows users to install the QuickAdd package on computers that have Apple's Gatekeeper feature set to only allow applications downloaded from the Mac App Store and identified developers.

To sign a QuickAdd package, Recon must be running on OS X v10.7 or later.

To obtain an installer certificate from Apple's Developer Certificate Utility, you must be a registered Apple Developer in the Mac Developer Program. To enroll in the Mac Developer Program, visit the following website:

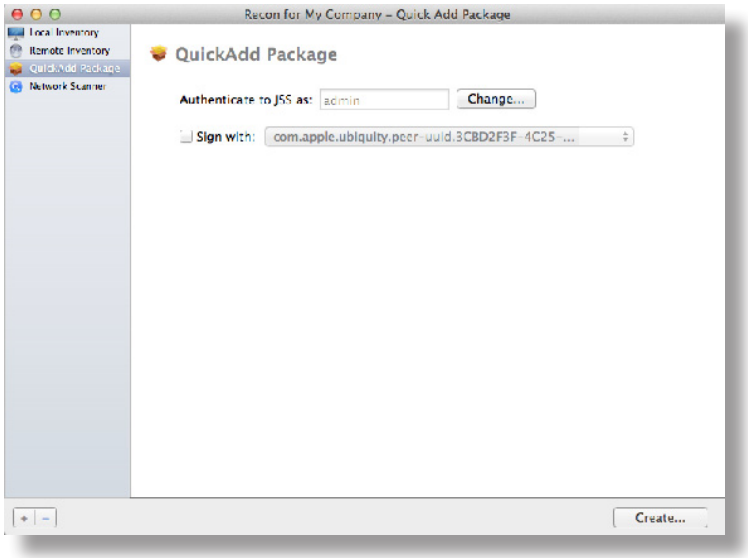
https://developer.apple.com/programs/mac/

To install a signed QuickAdd package, the system keychain in Keychain Access must contain Apple's Developer ID Certification Authority intermediate certificate. For instructions on how to obtain this certificate and import it to the system keychain on client computers, see the following Knowledge Base article:

https://jamfnation.jamfsoftware.com/article.html?id=294

To acquire computers using a QuickAdd package created with Recon:

1. Open Recon.
2. Authenticate to the JSS and click **Connect**.
3. Select **QuickAdd Package** in the sidebar.
4. To change the account that the QuickAdd package uses to authenticate to the JSS, click the **Change** button. Enter credentials for the account, and then click **Connect**.



5. If you want to sign the QuickAdd package, select the **Sign with** checkbox and choose an installer certificate from the pop-up menu.

   Installer certificates that are located in the login keychain in Keychain Access are displayed in the pop-up menu.

   > ***Note:*** The pop-up menu also displays application certificates that are located in the login keychain in Keychain Access. It is important that you use an installer certificate, not an application certificate, to sign QuickAdd packages.

6. Click the **Create** button.
7. Save the package to the desired location.

8. Deploy the package using a remote deployment tool or give the package to end users to install.

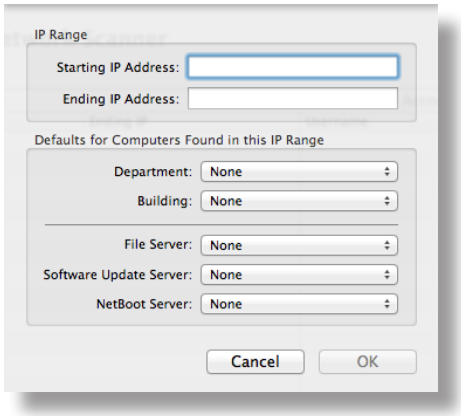
   When users install the QuickAdd package, the computers are added to the JSS.

Scanning the Network

The network scanner in Recon allows you to acquire computers that have SSH (remote login) enabled. This requires you to specify a range of IP addresses and one or more administrator accounts that have SSH access to the computers. Recon then scans the specified IP range and acquires any computers that it can connect to over SSH.

To acquire computers by scanning the network:

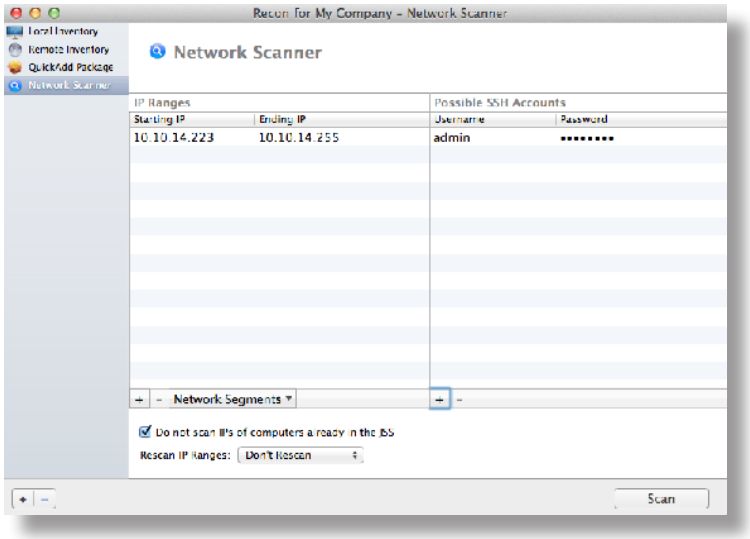
1. Open Recon.
2. Authenticate to the JSS and click **Connect**.
3. Select **Network Scanner** in the sidebar.
4. Click the **Add** (+) button below the IP Ranges list.
5. Specify the IP ranges you want to scan by entering the beginning and ending IP address. Then, use the pop-up menus to set default locations and servers for the computers, and click **OK**.



6. Specify one or more administrator accounts that have SSH access to the computers by clicking the **Add** (+) button below the Possible SSH Accounts list.

   If more than one administrator account exists on the network, enter credentials for each account. Recon tries each set of credentials until it finds a valid account for the computer.

7. If you want to ignore computers that are already in the JSS, select the **Do not scan IPs of computers already in the JSS** checkbox.



8. To continuously scan the network for new computers, use the **Rescan IP Ranges** pop-up menu to specify how often Recon should rescan.

9. Click **Save As** to save the settings.

   This creates a .recon file that can be opened with Recon.

10. Click the **Scan** button.

    Once you complete these steps, Recon attempts to connect and authenticate to each IP address that has SSH enabled. The results of the scan are displayed on the Inventoried, Not Found, and Problems panes.

Running Recon Remotely

If you know the DNS name or IP address for the computer that you want to acquire and SSH (remote login) is enabled on the computer, you can use Recon to acquire it remotely. This allows you to enter detailed information for the computer before you acquire it.

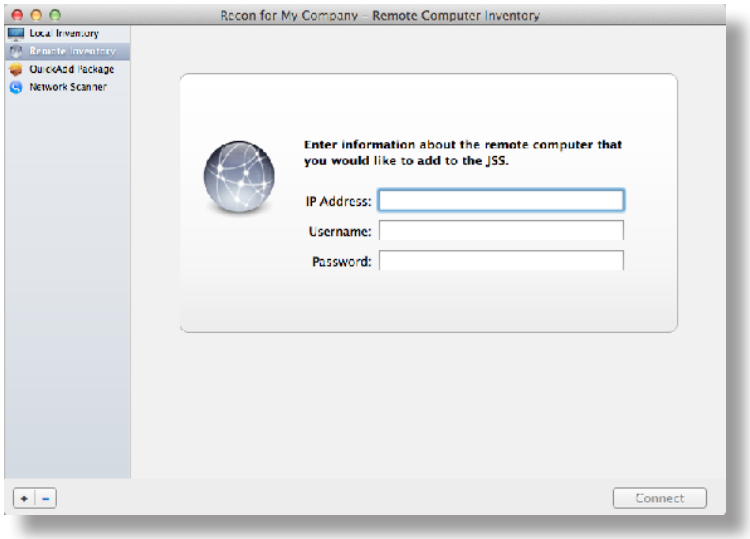
To acquire a computer by running Recon remotely:

1. Open Recon.

2. Authenticate to the JSS and click **Connect**.

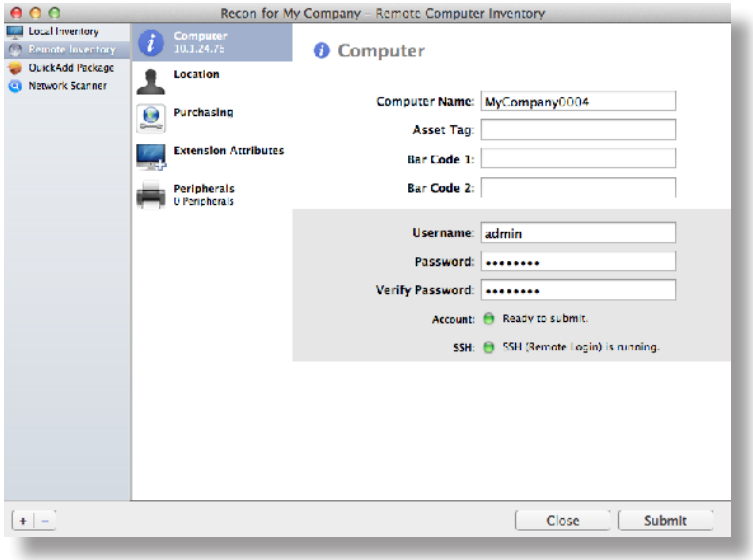
3. Select **Remote Inventory** in the sidebar.

4. Enter the IP address of the computer you want to add.



5. Enter credentials for an administrator account that has SSH access to the computer, and click the **Connect** button.

6. (Optional) Select **Location**, **Purchasing**, **Extension Attributes**, and/or **Peripherals** in the categories list and enter information as needed.



7. Click the **Submit** button.

When Recon finishes acquiring the computer, the JSS ID for the computer is displayed at the top of the pane.

Running Recon Locally

Running Recon locally allows you to collect detailed location information for a specific computer, but it requires your time at the workstation.

To acquire a computer by running Recon locally:

1. Copy Recon to the local drive.

> ***Note:*** Recon is a self-contained application on every platform and does not require an installer.

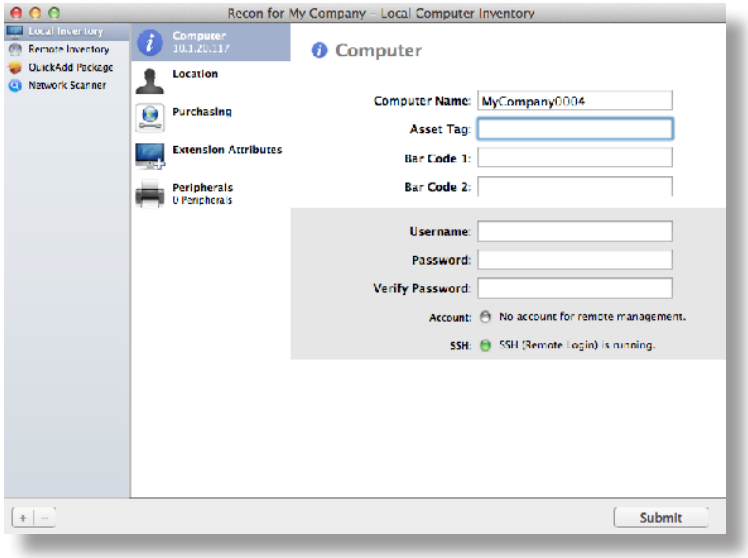
2. Open Recon.

   If prompted, enter the DNS name or IP address for the JSS.

3. Select **Local Inventory** in the sidebar.

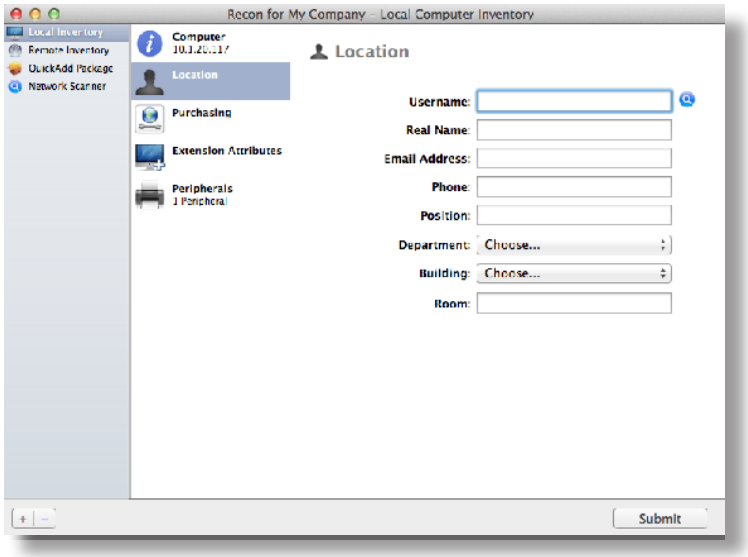
   The computer name appears by default.

4. Enter the asset tag in the field provided and/or utilize a barcode scanner to enter a bar code.



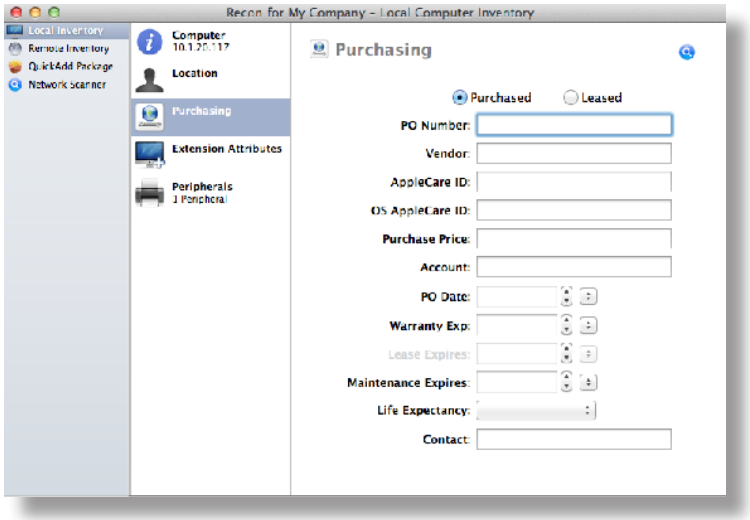
5. (Optional) Select **Location** in the categories list and enter location information for the computer.

   If an LDAP connection is set up in the JSS, click the **Search** icon to populate information from the LDAP server.



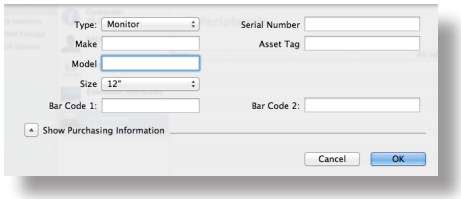
6. (Optional) Select **Purchasing** in the categories list and enter purchasing information for the computer.

   If a GSX connection is set up in the JSS, click the **Search** icon to populate information from Apple's Global Service Exchange (GSX).

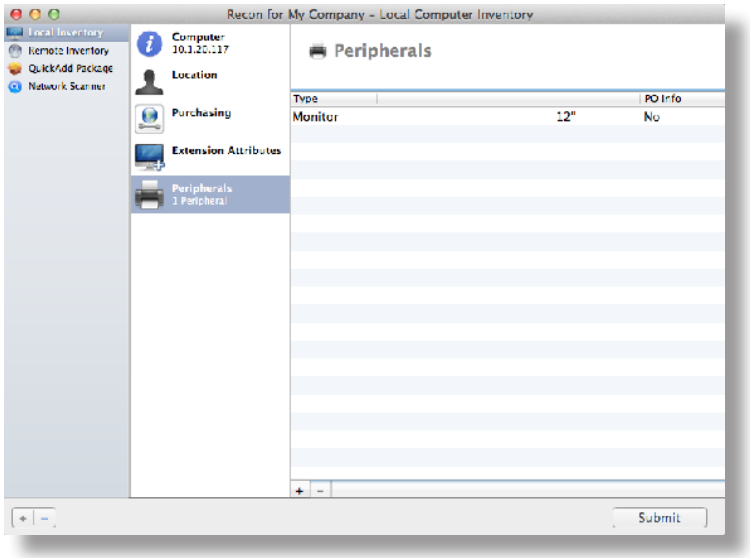


7. (Optional) Select **Extension Attributes** in the categories list and enter information as needed.

8. (Optional) Select **Peripherals** in the categories list. Click the **Add** (+) button to enter information for a new peripheral, and then click **OK** when you are done.



9. Click the **Submit** button.



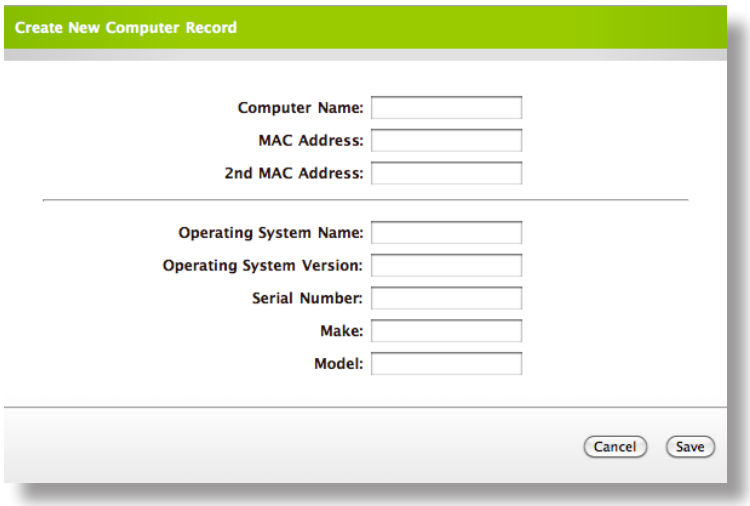
When Recon finishes acquiring the computer, the JSS ID for the computer is displayed at the top of the pane.

Manually Adding Computers to the JSS

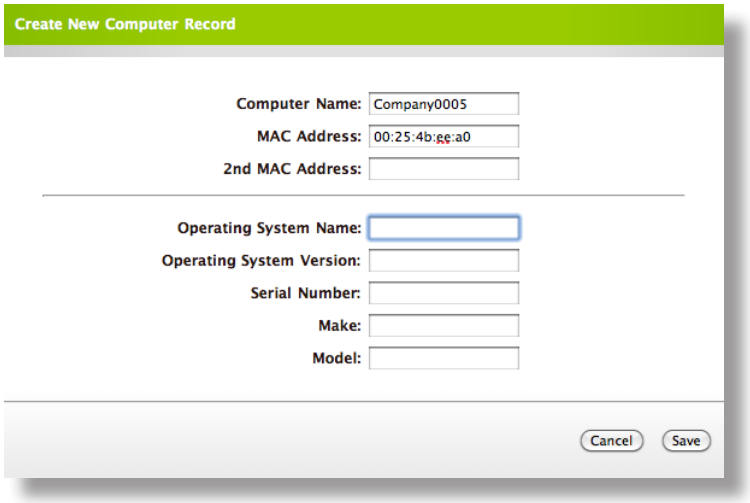
You can acquire a computer manually by entering information about the computer into the JSS.

To add a computer manually:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Add Computer Manually** link.
4. Enter the name of the computer.



5. Enter one or more MAC addresses for the computer.
6. (Optional) Enter the name and version of the operating system of the computer.



7. (Optional) Enter the serial number, make, and model of the computer.
8. Click the **Save** button.
9. Use the Details report pane to enter additional information as needed. (See "Viewing Computer Details" for more information.)

Acquiring Windows Computers

Acquisition is the process of adding computers to the JSS. There are three ways to acquire Windows computers as part of your inventory:

- Use a QuickAdd package.
- Run Recon locally.
- Manually add computers to the JSS.

Using QuickAdd Packages

Recon.exe allows you to create QuickAdd packages (.mist) that you can install on Windows computers to acquire them. You can deploy QuickAdd packages using a remote deployment tool, such as Apple Remote Desktop, or you can give them to users to install.

To acquire computers using a QuickAdd package:

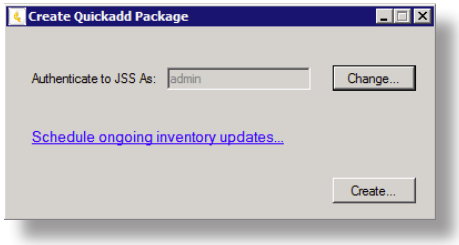
1. Open Recon.exe.

   If prompted, enter the DNS name or IP address for the JSS.

2. Authenticate to the JSS and click **OK**.

3. Click the **QuickAdd Package** button.

4. To change the account that the QuickAdd package uses to authenticate to the JSS, click the **Change** button. Enter credentials for the account, and then click **OK**.



5. If you want to create an inventory schedule, click the **Schedule ongoing inventory updates** link. Configure the schedule and click **Save**.

6. Click the **Create** button.

7. Save the package to the desired location.

8. Deploy the package using a remote deployment tool or give the package to users to install.

   When users install the QuickAdd package, the computers are added to inventory.

Running Recon Locally

Running Recon locally allows you to collect detailed location information for a specific computer, but it requires your time at the workstation.

To acquire a computer by running Recon locally:

1. Copy Recon.exe to the local drive.

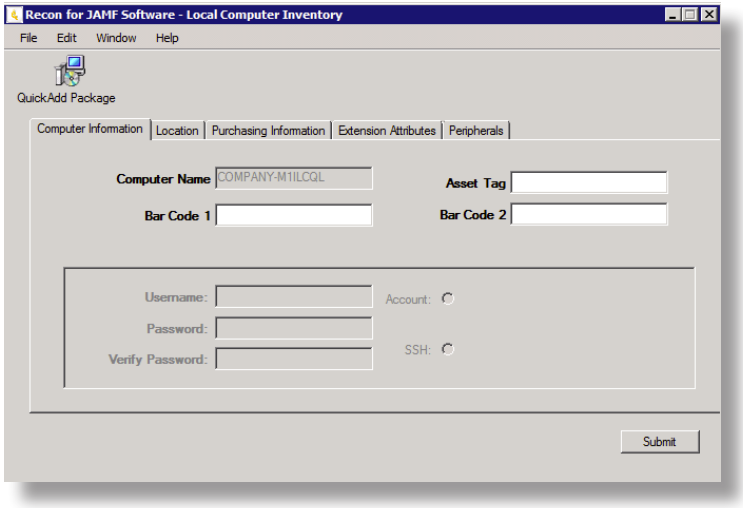
> ***Note:*** Recon.exe is a self-contained application and does not require an installer.

2. Open Recon.exe.

   If prompted, enter the DNS name or IP address for the JSS.

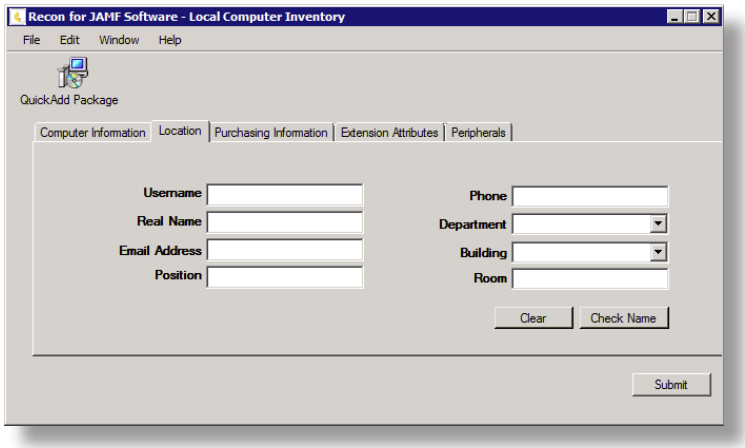
   When Recon.exe opens, the computer name appears by default.

3. Enter the asset tag in the field provided and/or utilize a barcode scanner to enter a bar code.

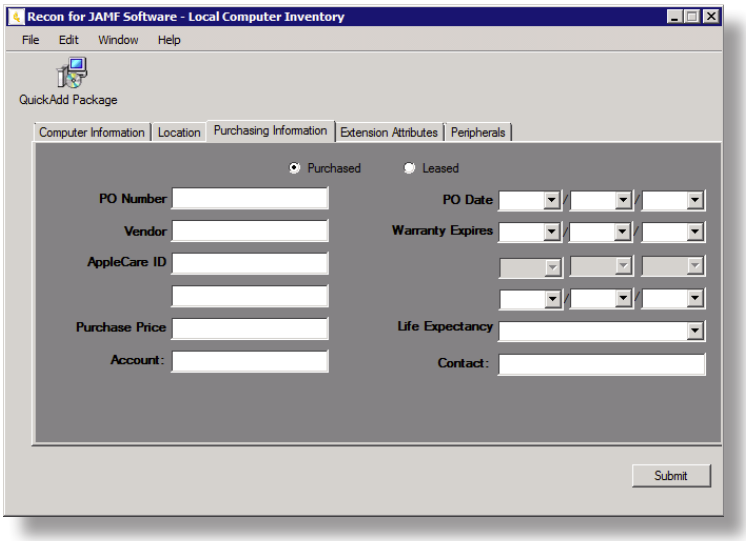


4. (Optional) Click the **Location** tab and enter location information for the computer.

   If an LDAP connection is set up in the JSS, click the **Check Name** button to populate information from the LDAP server.

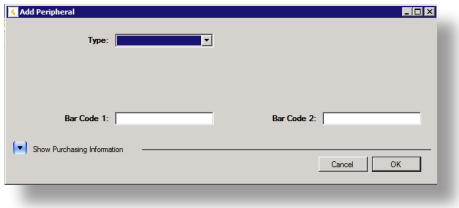


5. (Optional) Click the **Purchasing Information** tab and enter purchasing information for the computer.

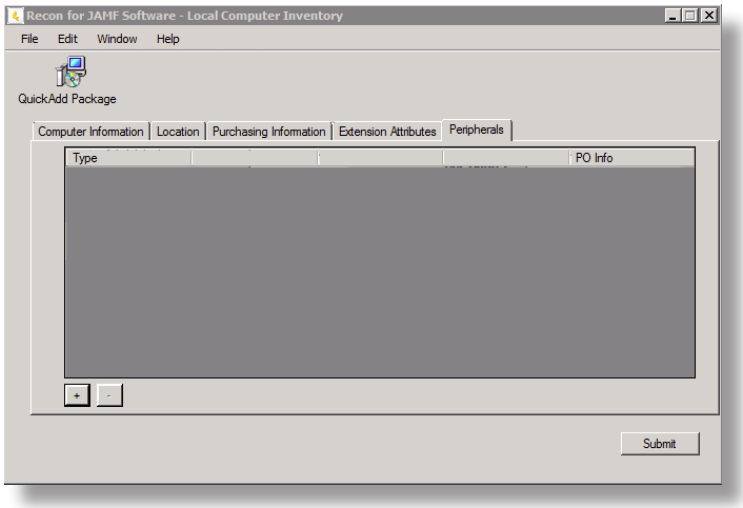


6. (Optional) Click the **Extension Attributes** tab and enter information as needed.

7. (Optional) Click the **Peripherals** tab. Click the **Add** (+) button to enter information for a new peripheral, and then click **OK**.



8. Click the **Submit** button.



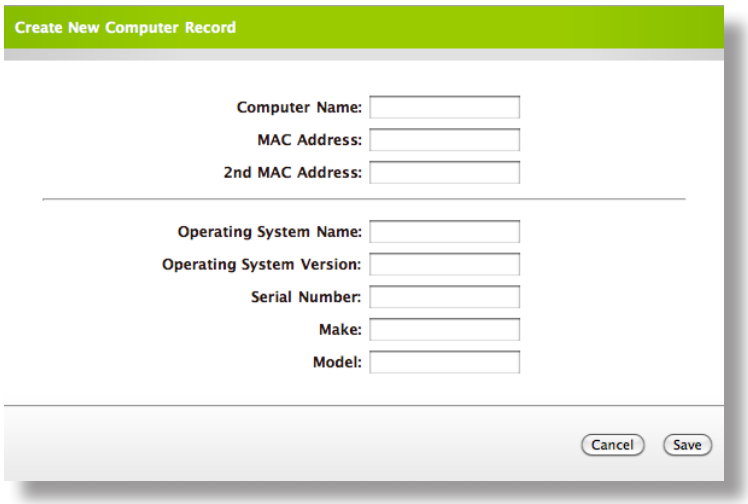
When Recon.exe finishes acquiring the computer, the JSS ID for the computer is displayed at the top of the pane.

Acquiring Computers Manually

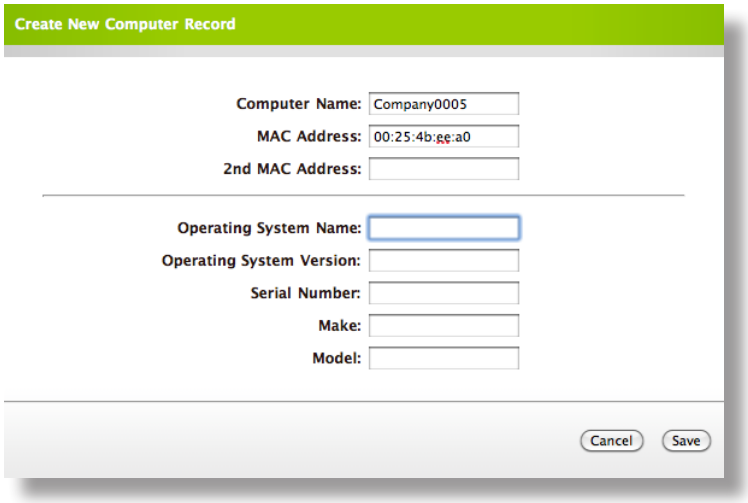
You can acquire a computer manually by entering information about the computer into the JSS.

To add a computer manually:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Add Computer Manually** link.
4. Enter the name of the computer.



5. Enter one or more MAC addresses for the computer.
6. (Optional) Enter the name and version of the operating system of the computer.



7. (Optional) Enter the serial number, make, and model of the computer.
8. Click the **Save** button.
9. Use the Details report pane to enter additional information as needed. (See the "Viewing Computer Details" section for more information.)

Acquiring Mobile Devices

You can acquire mobile devices by syncing them with the iTunes library on a Mac OS X or Windows computer. This allows Recon to collect information about the device from the iTunes library and send it back to the JAMF Software Server (JSS) each time the computer submits an inventory report.

Recon collects the following information from the iTunes library:

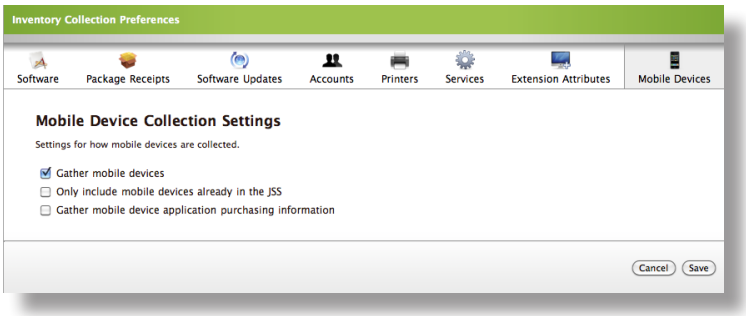
- General information
- Location information
- Purchasing information
- Apps
- App purchasing information (Optional)

To ensure that the JSS reflects updated inventory for the device, make sure the device is synced regularly.

This section explains how to acquire synced devices.

To acquire mobile devices:

1. Log in to the JSS using a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Inventory Collection Preferences** link.
5. Click the **Mobile Devices** tab.
6. Select the **Gather mobile devices** checkbox.
7. To only collect devices that already exist in the JSS (from previous inventory reports), select the **Only include mobile devices already in the JSS** checkbox.



8. To track purchasing information for apps from the App Store, select the **Gather mobile device application purchasing information** checkbox.
9. Click **Save**.

Searching Computers

Once you acquire computers, they can be viewed for inventory or reporting purposes. Since the JAMF Software Server (JSS) is web-based, you can view your inventory from virtually any web browser on any platform.

This section explains how to:

- Perform simple and advanced computer searches
- View computer search results
- View computer details

Performing Simple Computer Searches

A simple computer search functions like a search engine, allowing you to locate a general range of results quickly and easily.

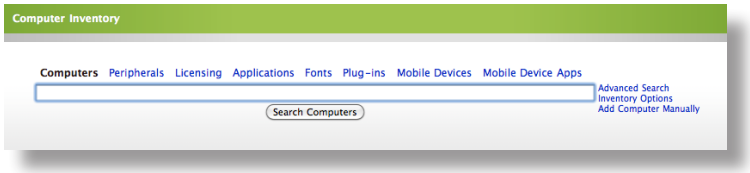
Simple searches can be performed based on the following attributes of a computer:

- Computer name
- MAC address
- Bar code
- IP address
- Asset tag
- Serial number
- Username
- Real name
- Email address
- Phone number
- Position
- Department
- Building
- Room

Note: Performing an empty search (with no criteria in the search field) returns all computers in your database.

To perform a simple computer search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
   The **Computers** link above the search field is selected by default.



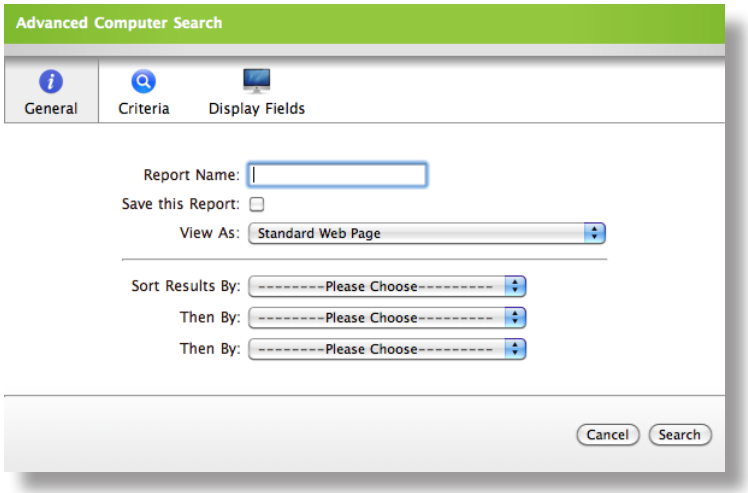
3. Enter one or more search terms into the search field.
4. Click the **Search Computers** button, or type the **Enter** key.

Performing Advanced Computer Searches

When used to search for computers and create reports, advanced searches offer a variety of powerful options. The advanced computer search interface consists of three panes: General, Criteria, and Display Fields.

A detailed description of the information on each pane follows:

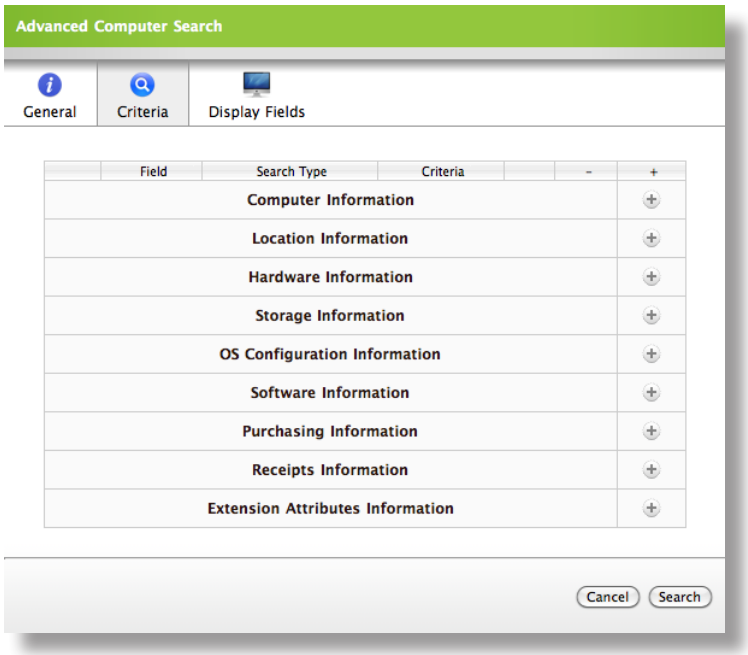
General Pane



This pane allows you to choose a reporting format and save the report so you can access it in the future. If you choose to save a report, you can perform the same search at a later date.

Saved computer searches can be accessed on the Computer Inventory pane. You can edit or delete a saved computer search by clicking the disclosure triangle next to the search and then clicking the **Edit** or **Delete** link.

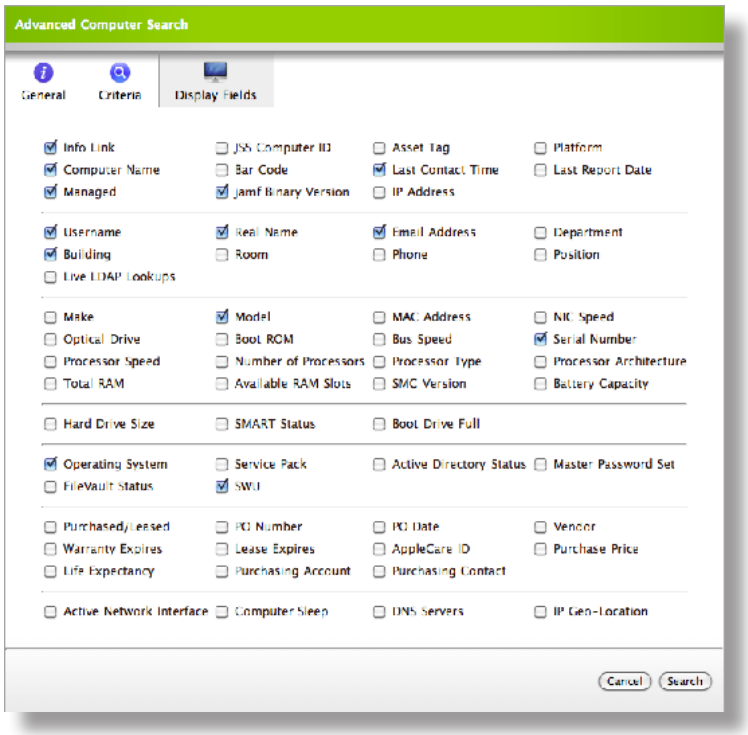
Criteria Pane



This pane allows you to specify the attributes on which to base your search. These options are broken down into the following categories:

- Computer Information
- Location Information
- Hardware Information
- Storage Information
- OS Configuration Information
- Software Information
- Purchasing Information
- Receipts Information
- Extension Attributes Information (This category is only displayed if extension attributes are configured in your Inventory Collection preferences.)

Display Fields Pane



This pane allows you to choose the attributes displayed in your search results when you view your search in one of the following reporting formats:

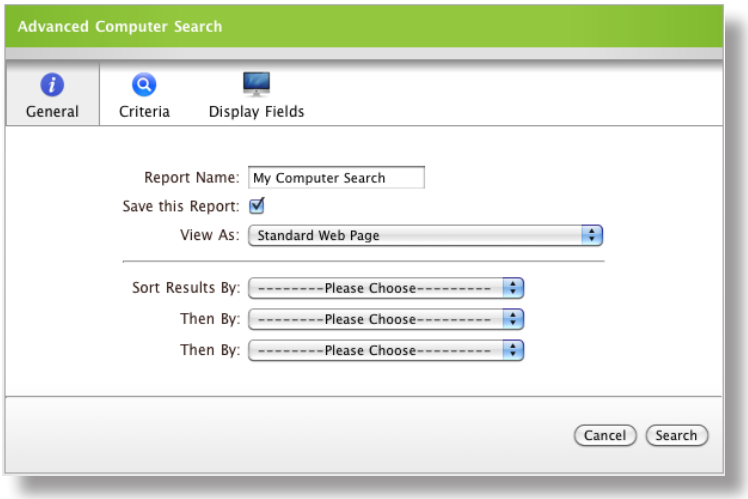
- Standard Webpage
- CSV
- Tab
- XML

You can change the default selections by changing your Inventory Display preferences. For more information on changing Inventory Display preferences, see the "Inventory Display Preferences" section.

To perform an advanced computer search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
   The **Computers** link is selected by default.
3. Click the **Advanced Search** link.

4. If you want to save your search, enter a name for the report and select **Save this Report**.



5. Using the **View As** pop-up menu, choose the format in which you want to view the report.

6. If you want the results to be sorted, choose how you want them sorted using the **Sort Results By** pop-up menus.

7. Click the **Criteria** tab, and narrow your search by clicking the **Add** (+) button next to each search type that corresponds to the information that you want to use.

   A list of searchable items is displayed.

8. Click the items that you want to use in your search, and further specify the search criteria using the fields provided.

9. If you are viewing the report in a supported format, click the Display Fields pane and select the checkbox next to each attribute that you want displayed in your search results.

10. Click the **Search** button.

Viewing Computer Search Results

By default, computer search results are displayed in Standard Webpage format. You can view the search results in any of the following alternate formats:

- Standard Webpage
- Computer Details (PDF)
- Computer Details Multipage (PDF)
- Computer Overview (PDF)
- Network Overview (PDF)
- Hardware Change Report (PDF)
- Software Change Report (PDF)
- Application Difference Report (PDF)
- Application Distribution Report (PDF)
- OS Distribution Report (PDF)
- System Security Report (PDF)
- CSV
- Tab
- XML

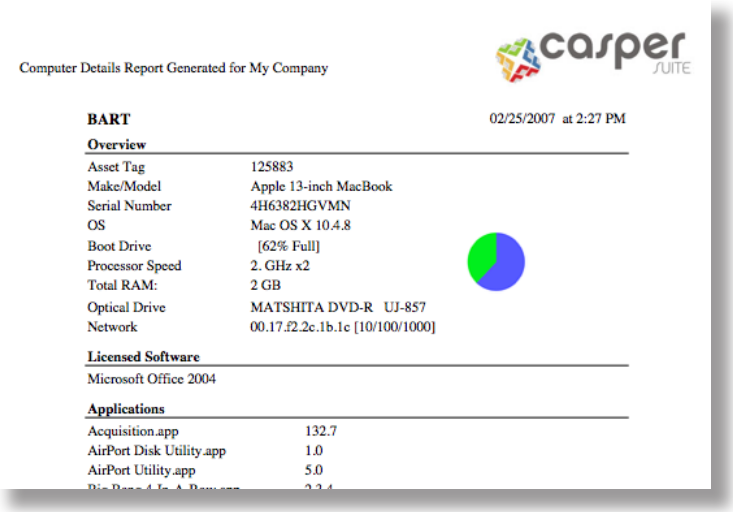
For simple computer searches, choose one of these options from the **View Results As** pop-up menu at the bottom of the results list. For advanced computer searches, choose one of these options from the **View As** pop-up menu on the General pane of the advanced search interface.

> ***Note:*** The attributes displayed in simple computer search results are determined by your Inventory Display preferences. See the "Managing Inventory Attributes" section for more information. The attributes displayed in advanced computer search results are determined by the settings on the Display Fields pane of the advanced search interface. For more information, see "Performing Advanced Computer Searches".

Computer Details (PDF)

The Computer Details report displays an overview of each search result, one record per page. The Overview section contains information pertaining to physical location, hardware, and storage. The pie chart on the right side shows the percentage of the boot volume that is full. Matches for any licensed software are displayed in the licensed software section.

The rest of the report shows a list of non-suppressed applications. Since each computer record is limited to one page, the number of applications that are not displayed is noted at the bottom of the page.



Computer Details Report Generated for My Company

casper SUITE

BART 02/25/2007 at 2:27 PM

Overview

Asset Tag	125883
Make/Model	Apple 13-inch MacBook
Serial Number	4H6382HGVMN
OS	Mac OS X 10.4.8
Boot Drive	[62% Full]
Processor Speed	2. GHz x2
Total RAM:	2 GB
Optical Drive	MATSHITA DVD-R UJ-857
Network	00.17.f2.2c.1b.1c [10/100/1000]

Licensed Software

Microsoft Office 2004

Applications

Acquisition.app	132.7
AirPort Disk Utility.app	1.0
AirPort Utility.app	5.0

Computer Details Multipage (PDF)

This report contains the same information as the Computer Details report, but it includes a complete list of applications as well.

Computer Overview (PDF)

The Computer Overview report provides a simple report that details a limited number of attributes. This report displays the following fields are displayed for each computer:

- Computer Name
- Operating System
- User Information (including real name, username, and email address)
- Computer Model
- Computer Serial Number
- Processor Information
- RAM
- Hard Drive Size

Computer Overview Report Generated for My Company

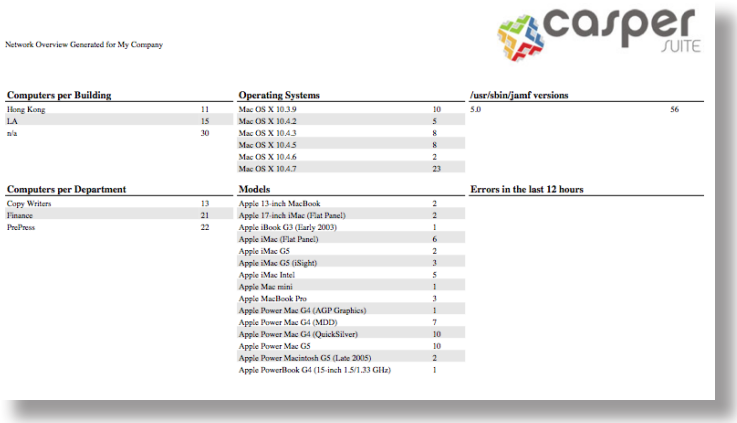
Computer	OS	User	Model	Serial #	Processor	RAM	HD
JAMF-196	Mac OS X 10.3.9	Ahmad Jamal (ajamal) - ajamal@jamfsoftware.com	Power Mac G4 (QuickSilver)	XB240014MRN	867 MHz x1	512 MB	38.18 GB
JAMF-212	Mac OS X 10.4.5	Andre Previn (aprevin) - aprevin@jamfsoftware.com	iMac (Flat Panel)	QT306ZPBN3U	800 MHz x1	512 MB	55.9 GB
JAMF-258	Mac OS X 10.3.5	Antonio Jobim (ajobim) - ajobim@jamfsoftware.com	iMac (Flat Panel)	W8306ZEBN3U	800 MHz x1	512 MB	55.9 GB
JAMF-522	Mac OS X 10.4.5	Art Blakey (ablakey) - ablakey@jamfsoftware.com	iMac Intel	QP606123U2S	2. GHz x2	1 GB	233.76 GB
JAMF-1864	Mac OS X 10.4.3	Art Pepper (apepper) - apepper@jamfsoftware.com	iMac G5	W844634XPNY	1.8 GHz x1	512 MB	74.53 GB
JAMF-524	Mac OS X 10.3.9	Art Taylor (ataylor) - ataylor@jamfsoftware.com	PowerBook G4 (15-inch 1.5/1.33 GHz)	W84340AFQHY	1.5 GHz x1	512 MB	74.53 GB
JAMF-254	Mac OS X 10.4.7	Bill Evans (bevans) - bevans@jamfsoftware.com	iMac (Flat Panel)	W8306ZDSN3U	800 MHz x1	512 MB	55.9 GB
JAMF-526	Mac OS X 10.4.7	Billy Martin (bmartin) - bmartin@jamfsoftware.com	MacBook Pro	W860914AVJ3	2. GHz x2	1 GB	93.16 GB
JAMF-246	Mac OS X 10.4.5	Billy Strayhorn (bstrayhorn) - bstrayhorn@jamfsoftware.com	iMac (Flat Panel)	W8306Z98N3U	800 MHz x1	512 MB	55.9 GB
JAMF-245	Mac OS X 10.3.5	Billy Taylor (btaylor) - btaylor@jamfsoftware.com	Power Mac G4 (QuickSilver)	XB302004MRN	867 MHz x1	512 MB	38.18 GB
JAMF-240	Mac OS X 10.3.9	Blossom Dearie (bdearie) - bdearie@jamfsoftware.com	17-inch iMac (Flat Panel)	QT2393M3N0S	800 MHz x1	256 MB	74.53 GB
JAMF-233	Mac OS X 10.2.8	Brad Mehldau (bmehldau) - bmehldau@jamfsoftware.com	iMac (version = 2.1)	W8306ZB3-N3U-ff11	800 MHz x1	512 MB	
JAMF-2182	Mac OS X 10.4.6	Cannonball Adderley (cadderley) - cadderley@jamfsoftware.com	MacBook Pro	W86342A0VWY	2. GHz x2	1 GB	93.16 GB
JAMF-456	Mac OS X 10.4.6	Carl Allen (callen) - callen@jamfsoftware.com	Mac mini	YM524140RHS	1.42 GHz x1	1 GB	74.53 GB
JAMF-248	Mac OS X 10.3.4	Cedar Walton (cwalton) - cwalton@jamfsoftware.com	eMac	G8252521N8M	700 MHz x1	512 MB	38.16 GB
JAMF-344	Mac OS X 10.3.5	Charlie Haden (chaden) - chaden@jamfsoftware.com	iMac (Flat Panel)	W8306ZC4N3U	800 MHz x1	512 MB	55.9 GB

Network Overview (PDF)

The Network Overview report breaks down your search results into six sections that address the following information:

- Computers per building
- Computers per department
- Total count of each unique operating system
- Total count of each unique computer model

- Total count of each version of `/usr/sbin/jamf`
- Count of errors that took place in the 12 hours before the report was printed



Network Overview Generated for My Company

Computers per Building	
Hong Kong	11
LA	15
n/a	30

Operating Systems	
Mac OS X 10.3.9	10
Mac OS X 10.4.2	5
Mac OS X 10.4.3	8
Mac OS X 10.4.5	8
Mac OS X 10.4.6	2
Mac OS X 10.4.7	23

/usr/sbin/jamf versions	
5.0	56

Computers per Department	
Copy Writers	13
Finance	21
PrePress	22

Models	
Apple 13-inch MacBook	2
Apple 17-inch iMac (Flat Panel)	2
Apple iBook G3 (Early 2003)	1
Apple iMac (Flat Panel)	6
Apple iMac G5	2
Apple iMac G5 (iSight)	3
Apple iMac Intel	5
Apple Mac mini	1
Apple MacBook Pro	3
Apple Power Mac G4 (AGP Graphics)	1
Apple Power Mac G4 (MDD)	7
Apple Power Mac G4 (QuickSilver)	10
Apple Power Mac G5	10
Apple Power Macintosh G5 (Late 2005)	2
Apple PowerBook G4 (15-inch 1.5/1.33 GHz)	1

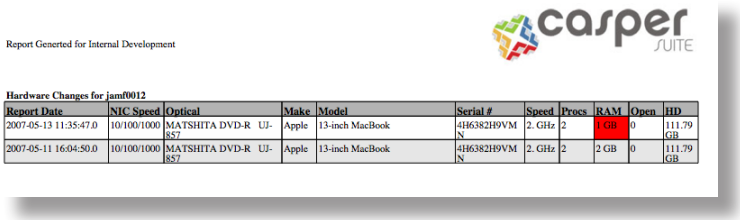
Errors in the last 12 hours

Hardware Change Report (PDF)

The Hardware Change report displays the changes that have taken place to the hardware configurations on your network over time. This information is especially useful when tracking down unauthorized changes.

The following hardware attributes are detailed in this report:

- NIC Speed
- Optical Drive
- Make
- Model
- Serial Number
- Processor Speed
- Number of Processors
- Total RAM
- Open RAM Slots
- Hard Drive Percentage Full



Report Generted for Internal Development

Hardware Changes for jamf0012

Report Date	NIC Speed	Optical	Make	Model	Serial #	Speed	Procs	RAM	Open	HD
2007-05-13 11:35:47.0	10/100/1000	MATSHITA DVD-R UJ-857	Apple	13-inch MacBook	4H6382H9VMN	2. GHz	2	1 GB	0	111.79 GB
2007-05-11 16:04:50.0	10/100/1000	MATSHITA DVD-R UJ-857	Apple	13-inch MacBook	4H6382H9VMN	2. GHz	2	2 GB	0	111.79 GB

Any changes to the hardware configurations that took place between reports will be highlighted in red. By comparing this data with the report dates in the first column, you will be able to determine the approximate date of the change.

Software Change Report (PDF)

The Software Change report displays the changes that have taken place to the software installed on your computers over time. Anytime an application, font, or plug-in is added or removed from a computer, a record is logged. Changes to the operating system will also be displayed.

Software Change Report Generated for Internal Development

Software Changes for jamf0012

Changes on 2007-05-13 16:04:57.0			
App Added	Microsoft Word	11.3.3	/Applications/Microsoft Office 2004/Microsoft Word
App Added	Microsoft PowerPoint	11.3.2	/Applications/Microsoft Office 2004/Microsoft PowerPoint
App Added	Microsoft Messenger.app	5.1.1	/Applications/Microsoft Office 2004/Microsoft Messenger.app
App Added	Microsoft Entourage	11.3.3	/Applications/Microsoft Office 2004/Microsoft Entourage
App Added	Microsoft Excel	11.3.3	/Applications/Microsoft Office 2004/Microsoft Excel
App Removed	QuarkXPress	QuarkXPress version	/Applications/QuarkXPress 6.0/QuarkXPress

Application Distribution Report (PDF)

The Application Distribution report displays a count of applications on your network, broken down by version.

For example, the data in the following screen shot reflects 19 copies of Adobe Photoshop from Creative Suite 1 and 215 copies of Adobe Photoshop from Creative Suite 2. We can see that only one person has updated to version 9.0.2, with 192 people using version 9.0.1 and 22 people using 9.0.

Application Distribution Report Generated for My Company

Application Name	Copies	Total
Adobe Photoshop CS.app		
8.0 (8.0x119)	19	
	Total Copies:	**19**
Adobe Photoshop CS2.app		
9.0 (9.0x196)	22	
9.0.1 (9.0.1x294)	192	
9.0.2 (9.0.2x312 [20	1	
	Total Copies:	**215**
Adobe Reader 6.0.app		
6.0	14	
6.0.2	1	
6.0.3	1	
6.0.4	1	
	Total Copies:	**17**

Operating System Distribution Report (PDF)

The Operating System Distribution report displays a total count of each unique operating system on your network. It also breaks down the results for each department and building.

OS Distribution Report Generated for My Company

Operating System Name	Copies
Mac OS 9.1	1
Mac OS 9.2	9
Mac OS X 10.2.4	2
Mac OS X 10.2.6	3
Mac OS X 10.2.8	4
Mac OS X 10.3.2	4
Mac OS X 10.3.3	1
Mac OS X 10.3.4	2
Mac OS X 10.3.5	12
Mac OS X 10.3.6	1
Mac OS X 10.3.7	7
Mac OS X 10.3.8	3
Mac OS X 10.3.9	17
Mac OS X 10.4.2	18
Mac OS X 10.4.3	25
Mac OS X 10.4.4	1
Mac OS X 10.4.5	15
Mac OS X 10.4.6	4
Mac OS X 10.4.7	312
Mac OS X 10.4.8	2
Mac OS X Server 10.3.9	1
Mac OS X Server 10.4.3	1
Mac OS X Server 10.4.7	2
Mac OS X Server 10.4.9	1
Microsoft Windows XP Professional 5.1.2600	63
Total Count:	511

System Security Report (PDF)

The System Security report displays security-related information for each computer. This report is broken down into four sections that detail the following information:

- Overview of the computer (including Active Directory status)
- List of available software updates
- Existence of a master password on the computer
- FileVault status for each account on the computer

The report for a computer that meets the criteria in each section will display blue checkmarks beneath the sections:

Security Report Generated for Internal Development

Security Report For BART — Data From 02/25/2007 at 2:27 PM

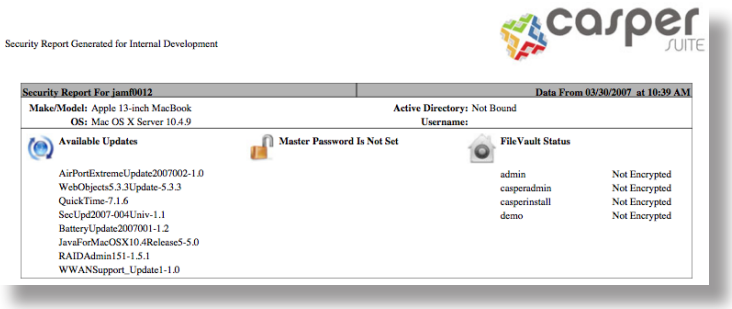
Make/Model: Apple 13-inch MacBook
OS: Mac OS X 10.4.8
Active Directory: jamfsoftware.com
Username:

Available Updates
All updates are applied

Master Password Is Set.

FileVault Status
wudijm — Encrypted
All Accounts Encrypted

The report for a computer that does not meet the criteria will display the items that do not meet the criteria in the relevant section:


Security Report Generated for Internal Development

Security Report For jamf0012 — **Data From 03/30/2007 at 10:39 AM**

Make/Model: Apple 13-inch MacBook
OS: Mac OS X Server 10.4.9
Active Directory: Not Bound
Username:

Available Updates

AirPortExtremeUpdate2007002-1.0
WebObjects5.3.3Update-5.3.3
QuickTime-7.1.6
SecUpd2007-004Univ-1.1
BatteryUpdate2007001-1.2
JavaForMacOSX10.4Release5-5.0
RAIDAdmin151-1.5.1
WWANSupport_Update1-1.0

Master Password Is Not Set

FileVault Status

admin	Not Encrypted
casperadmin	Not Encrypted
casperinstall	Not Encrypted
demo	Not Encrypted

CSV

This format exports your search results into a CSV file that you can open in Microsoft Excel and other spreadsheet applications.

Tab

This format exports your search results into a tab-delimited text file that you can open in Microsoft Excel and other spreadsheet applications.

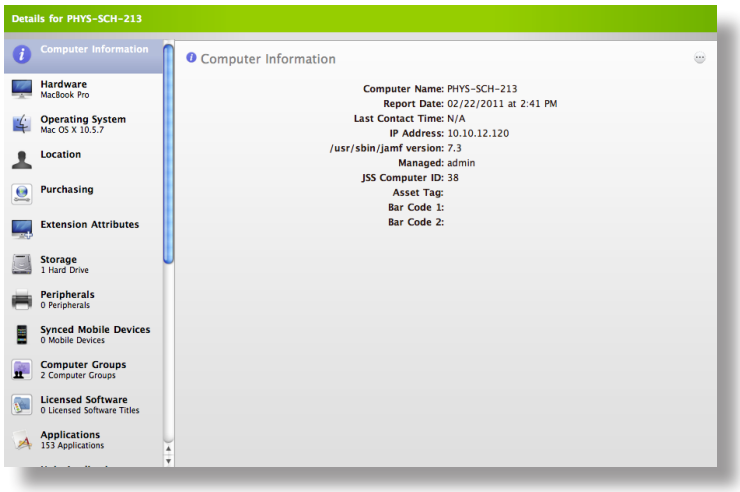
XML

This format exports your search results into an XML file. XML files are commonly used to move data between applications.

Viewing Computer Details

After performing a computer search, you can view a Details report for any search result by clicking the **Details** link across from it.

Details reports are broken down by category. Clicking a category in the sidebar displays related information in the category pane. Some panes allow you to perform actions, such as editing information, viewing history, and adding components.



The following table describes each category pane and the actions that you can perform from it:

Category	Description	Actions that you can perform
Computer Information	General information about the computer, including computer name, IP address, asset tag, and date/time of last inventory report	Edit computer information
Hardware	Hardware information, including make, model, and MAC address(es)	Edit hardware information View hardware/software history
Operating System	Information about the operating system, including system and version number	--
Location	Information about the computer's physical location on the network	Edit location information Perform LDAP lookup View location history
Purchasing	Purchasing information for the computer, including PO details, warranty information, and purchasing contact	Edit purchasing information Perform GSX lookup
Extension Attributes	Extension attributes collected from the computer	Edit values for non-script extension attributes
Storage	Storage information for each drive	--
Peripherals	A list of peripherals associated with the computer	Add peripheral Delete peripheral View peripheral details
Synced Mobile Devices	Information about mobile devices synced with the computer	View mobile device details

Category	Description	Actions that you can perform
Computer Groups	A list of groups that the computer is a member of	--
Licensed Software	A list of licensed software titles installed on the computer	--
Applications	A list of applications installed on the computer	View application details
UNIX Applications	A list of UNIX applications installed on the computer	View UNIX application details
Fonts	A list of fonts installed on the computer	--
Plug-ins	A list of plug-ins installed on the computer	--
Package Receipts	A list of packages installed or cached by the Casper Suite A list of packages installed by Installer.app or Software Update	--
Software Updates	A list of available software updates	--
Local User Accounts	A list of local user accounts and information about them, including username, real name, UID, and Home directory	--
Printers	A list of printers mapped to the computer	--
Services	A list of active services	--
UNIX Reports	Results for the following UNIX commands executed by Recon: `uptime` - Length of time since last reboot `w` - List of user that are logged in `top` - Snapshot of processes that are running	--
Attachments	A list of files attached to the inventory record	Upload attachments

Note: For instructions on how to suppress applications, fonts, plug-ins, UNIX executables, or accounts from inventory reports, see the "Suppressing Software from Reports" section.

Searching Peripherals

Once peripherals are added to the JAMF Software Server (JSS), they can be viewed for inventory or reporting purposes.

This section explains how to:

- Perform simple and advanced peripheral searches
- View peripheral search results
- View peripheral details

Performing Simple Peripheral Searches

A simple peripheral search functions like a search engine, allowing you to locate a general range of results quickly and easily.

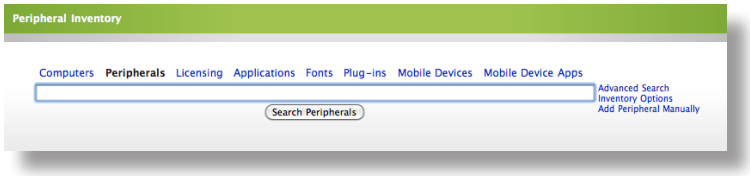
Simple searches can be performed based on the following attributes of a peripheral:

- Peripheral type
- Customizable peripheral fields
- Bar code
- Username
- Real name
- Email address
- Phone number
- Position
- Department
- Building
- Room
- Name of the computer the peripheral is attached to

Note: Performing an empty search (with no criteria in the search field) returns all of the peripherals in your database.

To perform a simple peripheral search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Peripherals** link.



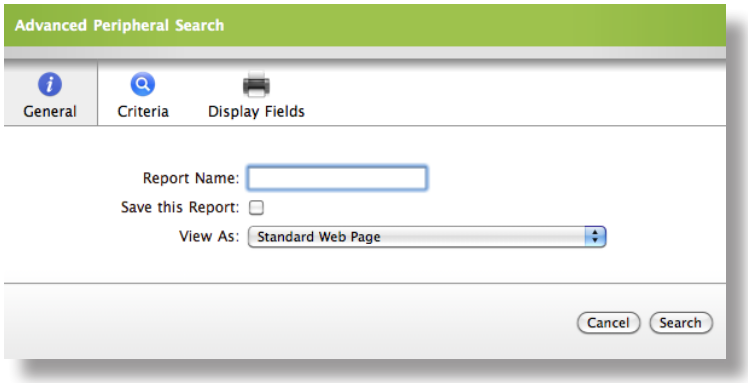
4. Enter one or more search terms into the search field.
5. Click the **Search Peripherals** button, or press the Enter key.

Performing Advanced Peripheral Searches

When used to search for peripherals and create reports, advanced searches offer a variety of powerful options. The advanced peripheral search interface consists of three navigation panes: General, Criteria, and Display Fields.

A detailed description of the information on each pane follows:

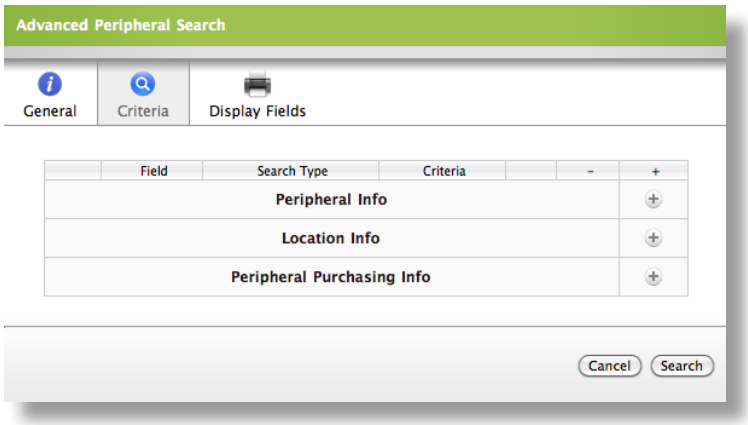
General Pane



This pane allows you to choose a reporting format and save the report so you can access it in the future. If you choose to save a report, you can perform the same search at a later date.

Saved peripheral searches can be accessed on the Peripheral Inventory pane. You can edit or delete a saved peripheral search by clicking the disclosure triangle next to the search and then clicking the **Edit** or **Delete** link.

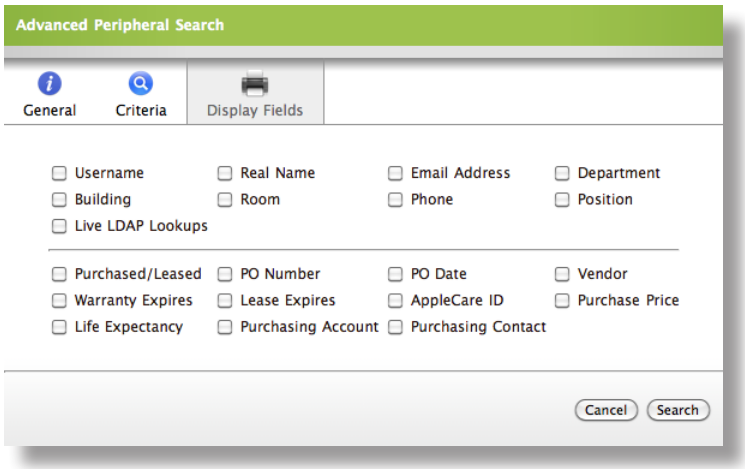
Criteria Pane



This pane allows you to specify the attributes on which to base your search. These options are broken down into the following categories:

- Peripheral Info
- Location Info
- Purchasing Info

Display Fields Pane

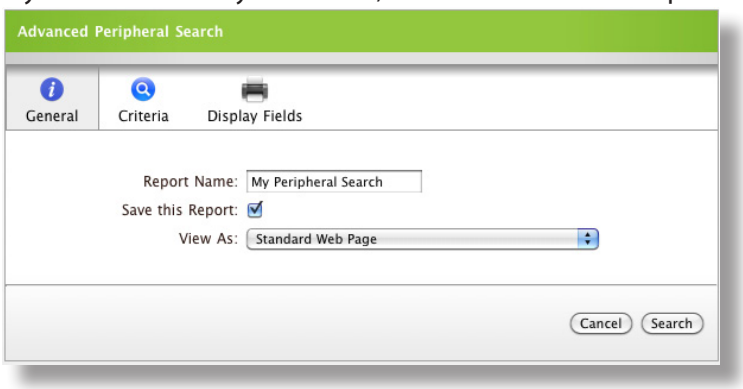


This pane allows you to specify the attributes displayed in your search results.

You can change the default selections by changing your Inventory Display preferences. For more information on changing Inventory Display preferences, see the "Inventory Display Preferences" section.

To perform an advanced peripheral search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Peripherals** link.
4. Click the **Advanced Search** link.
5. If you want to save your search, enter a name for the report and select the **Save this Report** checkbox.



6. Using the **View As** pop-up menu, choose the format in which you want to view the report.
7. Click the **Criteria** tab, and narrow your search by clicking the **Add** (+) button next to each search type that corresponds to the information that you want to use.

   A list of searchable items is displayed.
8. Click the items that you want to use in your search, and further specify the search criteria using the fields provided.

9. Click the **Display Fields** tab and select the checkbox next to each attribute that you want displayed in your search results.
10. Click the **Search** button.

Viewing Peripheral Search Results

By default, peripheral search results are displayed in Standard Webpage format. You can view the search results in any of the following alternate formats:

- CSV
- Tab
- XML

For simple peripheral searches, choose one of these options from the **View Results As** pop-up menu at the bottom of the results list. For advanced peripheral searches, choose one of these options from the **View As** pop-up menu on the General pane of the advanced search interface.

> ***Note:*** The attributes displayed in simple peripheral search results are determined by your Inventory Display preferences. See the "Managing Inventory Attributes" section for more information. The attributes displayed in advanced peripheral search results are determined by the settings on the Display Fields pane of the advanced search interface. For more information, see "Performing Advanced Peripheral Searches".

CSV

This format exports your search results into a CSV file that you can open in Microsoft Excel and other spreadsheet applications.

Tab

This format exports your search results into a tab-delimited text file that you can open in Microsoft Excel and other spreadsheet applications.

XML

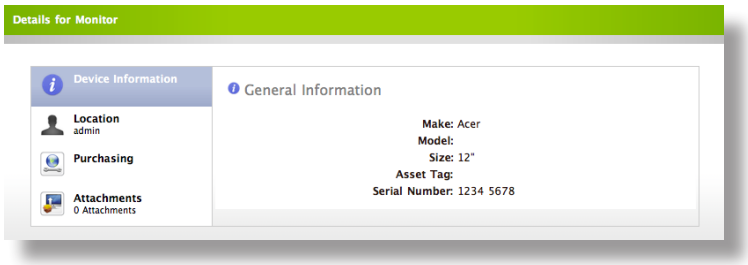
This format exports your search results into an XML file. XML files are commonly used to move data between applications.

Viewing Peripheral Details

After performing a peripheral search, you can view details for any peripheral returned in the search by clicking the **Details** link across from it.

Peripheral reports are broken down into four sections:

- Device Information
- Location
- Purchasing
- Attachments



Searching Mobile Devices

Once mobile devices are added to the JAMF Software Server (JSS), they can be viewed for inventory and reporting purposes.

This section explains how to:

- Perform simple and advanced mobile device searches
- View mobile device details

Performing Simple Mobile Device Searches

A simple mobile device search functions like a search engine, allowing you to locate a general range of results quickly and easily.

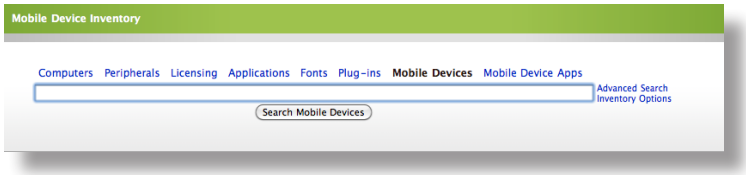
Simple searches can be performed based on the following mobile device attributes:

- UDID
- Display name
- Device name
- GUID
- ICCID
- IMEI
- Phone number
- Serial number
- Username
- Real name
- Email address
- Position
- Department
- Building
- Room

> ***Note:*** Performing an empty search (with no criteria in the search field) returns all mobile devices in your database.

To perform a simple mobile device search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Mobile Devices** link above the search field.



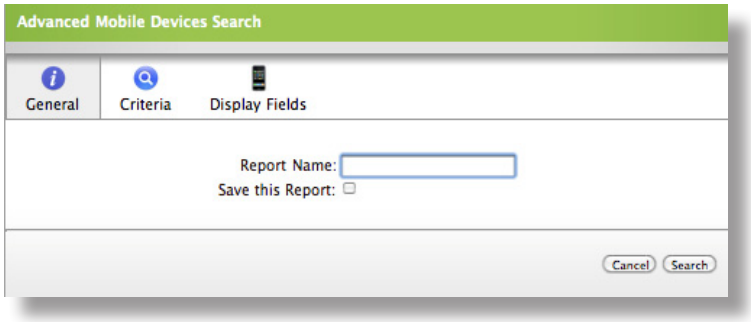
4. Enter one or more terms into the search field.
5. Click **Search Mobile Devices** or press the Enter key.

Performing Advanced Mobile Device Searches

When used to search for devices and create reports, advanced mobile device searches offer you a variety of powerful options. The advanced search interface consists of three navigation panes: General, Criteria, and Display Fields.

A description of the information on each pane follows:

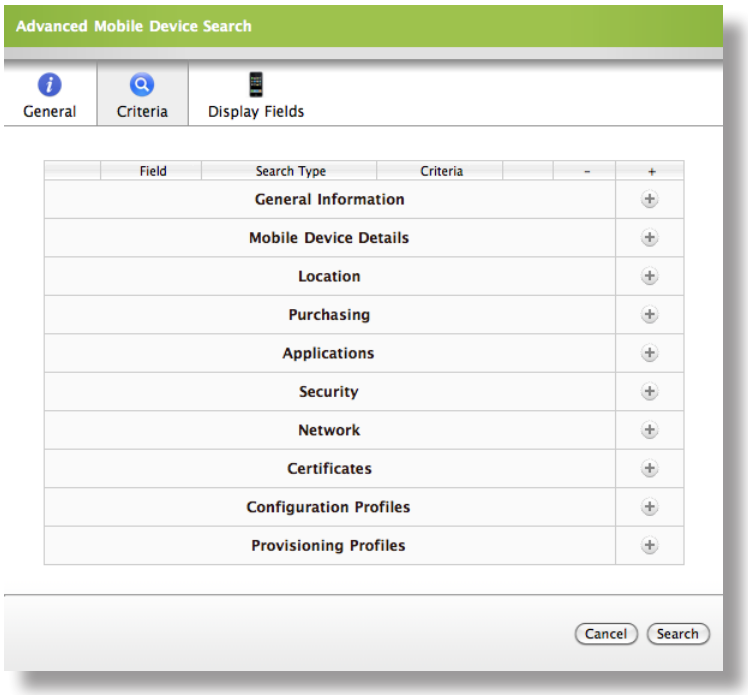
General Pane



This pane allows you to choose a reporting format and save the report so that you can access it at a later date.

Saved mobile device searches can be accessed on the Mobile Devices Inventory pane. You can edit or delete a saved search by clicking the disclosure triangle next to the search, and then clicking the **Edit** or **Delete** link.

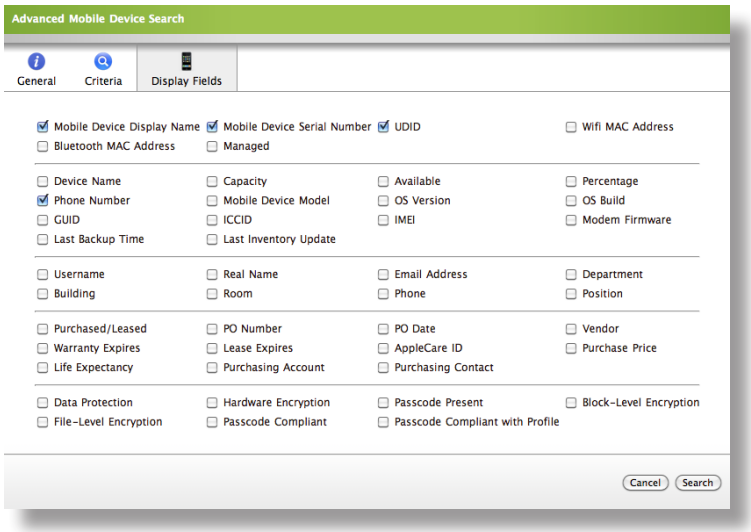
Criteria Pane



This pane allows you to specify the attributes on which to base your search. These options are broken down into the following categories:

- General Information
- Mobile Device Details
- Location
- Purchasing
- Applications
- Security
- Network
- Certificates
- Configuration Profiles
- Provisioning Profiles

Display Fields Pane



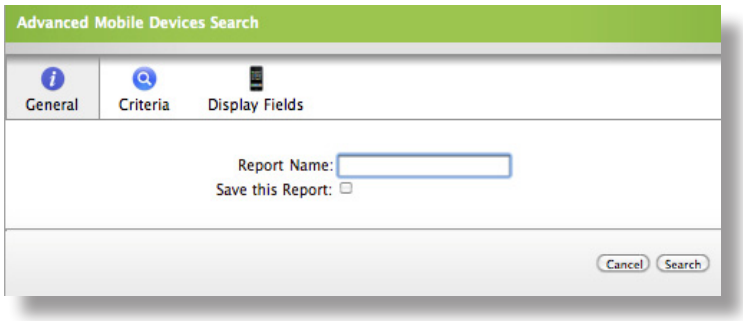
This pane allows you to specify the attributes displayed in your search results when viewing them in one of the following formats:

- Standard Webpage
- CSV
- Tab
- XML

You can change the default selections by changing the Inventory Display preferences. For more information, see the "Inventory Display Preferences" section.

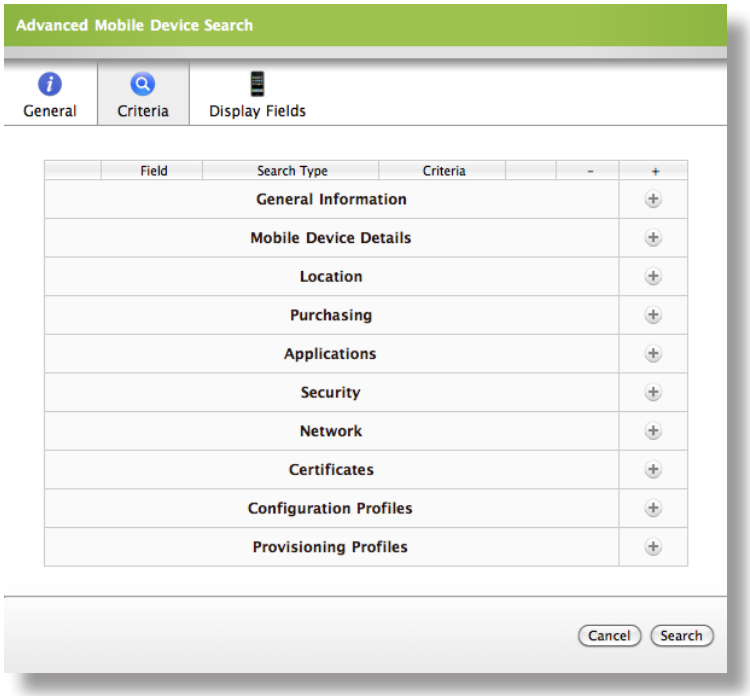
To perform an advanced mobile device search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Mobile Devices** link.
4. Click the **Advanced Search** link.
5. If you want to save your search, enter a name for the report and select **Save this Report**.

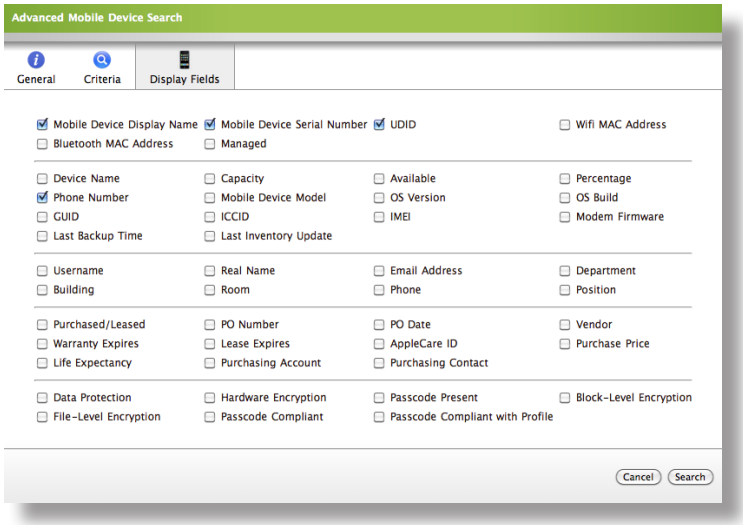


6. Click the **Criteria** tab.

7. Click **Add** (+) next the category you want to use to define your search.
   A list of searchable items is displayed.



8. Click the item that you want to use in your search.
9. Specify search criteria for the item.
10. Click the **Display Fields** tab and select the attributes you want to display in the search results.



11. Click the **Search** button.

Viewing Mobile Device Search Results

By default, mobile device search results are displayed in Standard Webpage format. You can view the search results in any of the following alternate formats:

- CSV
- Tab
- XML

For simple mobile device searches, choose one of these options from the **View Results As** pop-up menu at the bottom of the results list. For advanced mobile device searches, choose one of these options from the **View As** pop-up menu on the General pane of the advanced search interface.

Note: The attributes displayed in simple mobile device search results are determined by your Inventory Display preferences. See the "Managing Inventory Attributes" section for more information. The attributes displayed in advanced mobile device search results are determined by the settings on the Display Fields pane of the advanced search interface. For more information, see "Performing Advanced Mobile Device Searches".

CSV

This format exports your search results into a CSV file that you can open in Microsoft Excel and other spreadsheet applications.

Tab

This format exports your search results into a tab-delimited text file that you can open in Microsoft Excel and other spreadsheet applications.

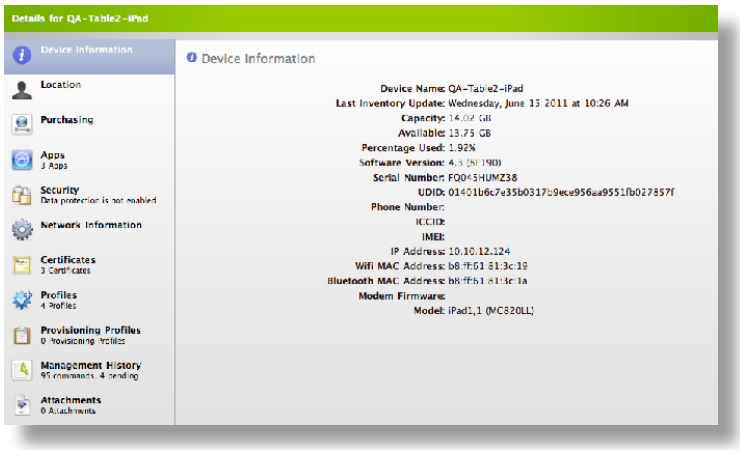
XML

This format exports your search results into an XML file. XML files are commonly used to move data between applications.

Viewing Mobile Device Details

After performing a mobile device search, you can view a Details report for any search result by clicking the **Details** link across from it.

Details reports are broken down by category. Clicking a category in the sidebar displays related information in the category pane. Some panes allow you to perform actions, such as editing information, viewing history, and adding components.



The following table describes each category pane and the actions that you can perform from it:

Category	Description	Actions that you can perform
Device Information	General information about the device, including device name, date/time of last inventory report, UDID, IP address, and management status	Generate an inventory report
Location	Information about the device's physical location on the network	Edit location information Perform LDAP lookup (See "Integrating with LDAP Servers" for information on setting up an LDAP server connection.)
Purchasing	Purchasing information for the device, including PO details, warranty information, and purchasing contact	Edit purchasing information Perform GSX lookup (See "Integrating with GSX" for information on setting up a GSX connection.)
Apps	A list of apps installed on the device	--
Security	Security components enabled on the device, including data protection, hardware encryption, and passcode information	--
Network Information	Information about the network, including carrier, network and country codes, and roaming status	--
Certificates	A list of certificates installed on the device	--
Profiles	A list of profiles installed on the device, including version number and bundle identifier	--

Category	Description	Actions that you can perform
Provisioning Profiles	A list of provisioning profiles installed on the device, including expiration date	--
Attachments	A list of files attached to the device's inventory record	Upload attachments

Searching Software Inventory

Once you acquire computers, you can search and view installed applications, fonts, and plug-ins.

This section explains how to:

- Perform simple and advanced software searches
- View software search results

Performing Simple Software Searches

A simple software search functions like a search engine, allowing you to locate a general range of results quickly and easily.

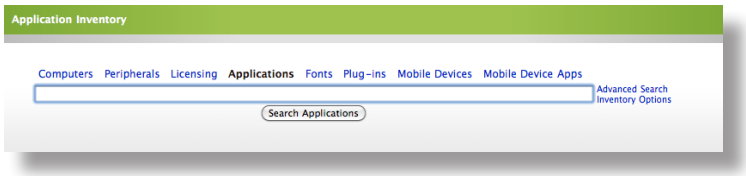
Simple searches can be performed based on the following attributes of a software record:

- Application Title
- Application Version

> ***Note:*** Performing an empty search (with no criteria in the search field) does not return any results. Search criteria are required to search for software.

To perform a simple software search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Applications**, **Fonts**, or **Plug-ins** link.



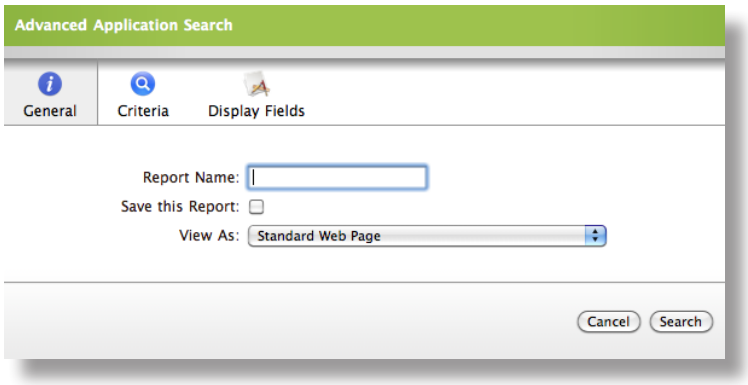
4. Enter one or more search terms into the search field.
5. Click the **Search** button, or press the Enter key.

Performing Advanced Software Searches

Advanced software searches offer you a variety of powerful options. The advanced software search interface consists of three navigation panes: General, Criteria, and Display Fields.

A detailed description of the information on each pane follows:

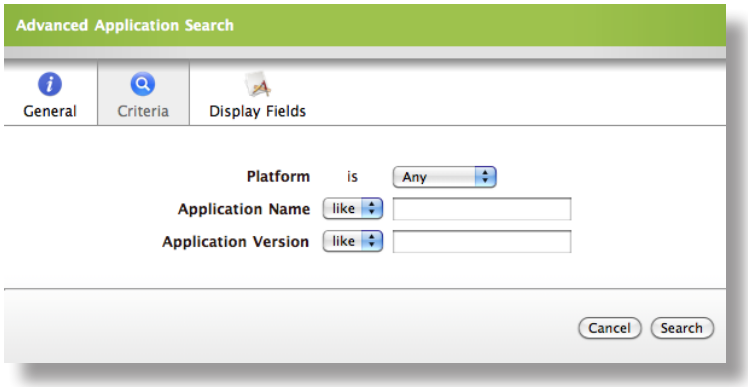
General Pane



This pane allows you to choose a reporting format and save the report so you can access it in the future. If you choose to save a report, you can perform the same search at a later date.

Saved software searches can be accessed on the Computer Inventory pane. You can edit or delete a saved software search by clicking the disclosure triangle next to the search and then clicking the **Edit** or **Delete** link.

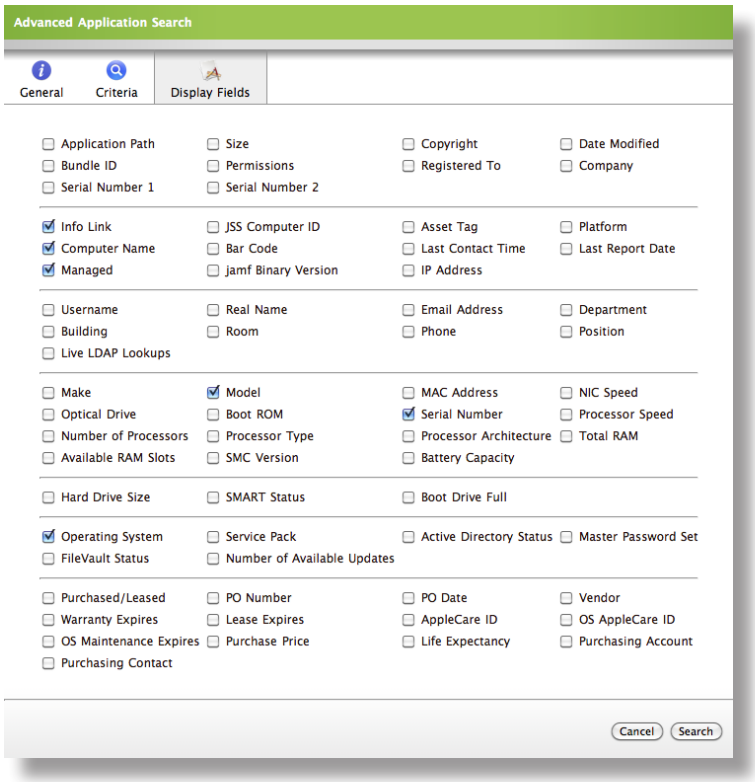
Criteria Pane



This pane allows you to specify the attributes on which to base your search. These options are broken down into the following categories:

- Platform
- Application Title
- Application Version

Display Fields Pane



This pane allows you to specify the attributes displayed in your search results when you view your search in one of the following reporting formats:

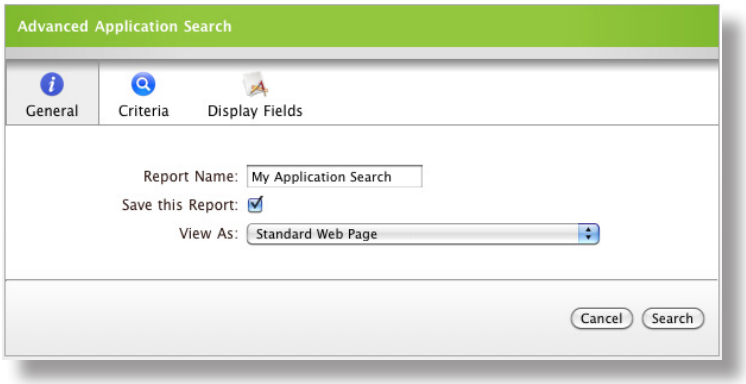
- Standard Webpage
- CSV
- Tab
- XML

You can change the default selections by changing your Inventory Display preferences. For more information on changing Inventory Display preferences, see the "Inventory Display Preferences" section.

To perform an advanced software search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Applications**, **Fonts**, or **Plug-ins** link.
4. Click the **Advanced Search** link.
5. If you want to save your search, enter a name for the report and select the **Save this Report** checkbox.

6. Using the **View As** pop-up menu, choose the format in which you want to view the report.



7. Click the **Criteria** tab, and narrow your search by clicking the **Add** (+) button next to each search type that corresponds to the information that you want to use.

   A list of searchable items is displayed.

8. Select each item that you want to use in your search, and further specify the search criteria using the fields provided.

9. Click the **Display Fields** tab, and select the checkbox next to each attribute that you want displayed in your search results.

10. Click the **Search** button.

Viewing Software Search Results

By default, software search results are displayed in Standard Webpage format. You can view the search results for advanced software searches in any of the following alternate formats by choosing from the **View As** pop-up menu on the General pane of the advanced search interface:

- CSV
- Tab
- XML

> ***Note:*** The attributes displayed in advanced software search results are determined by the settings on the Display Fields pane of the advanced search interface. For more information, see "Performing Advanced Software Searches".

CSV

This format exports your search results into a CSV file that you can open in Microsoft Excel and other spreadsheet applications.

Tab

This format exports your search results into a tab-delimited text file that you can open in Microsoft Excel and other spreadsheet applications.

XML

This format exports your search results into an XML file. XML files are commonly used to move data between applications.

Performing Mass Actions on Computer Search Results

Mass actions are a quick way to perform the following tasks on the results of a computer search:

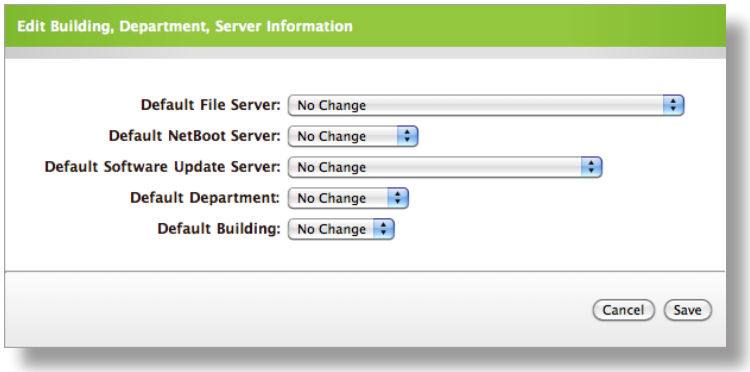
- Edit location information (building and department).
- Look up and populate purchasing information from Apple's Global Service Exchange (GSX).
- Email users.
- Delete from the JAMF Software Server (JSS).

Mass Editing Location Information

This allows you to edit the building and department for all results of a computer search.

To mass edit the building and department:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced computer search.
4. Choose "Edit Building, Department, or Servers" from the **Take Action on Results** pop-up menu. Then, click **Go.**
5. Use the pop-up menus to specify new location information as needed.



6. Click the **Save** button.
7. Click **Continue** to confirm the change.

Mass Look up Purchasing Information from GSX

This allows you to look up and populate purchasing information from Apple's Global Service Exchange (GSX).

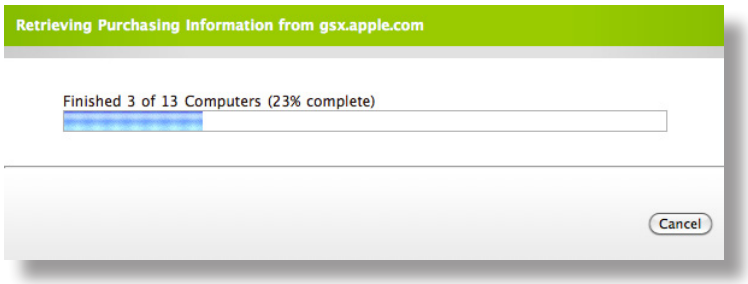
To utilize this feature, a GSX connection must be set up in the JSS. For more information on setting up this connection, see the section entitled "Integrating with GSX".

> ***Note:*** GSX lookups may not always return complete purchasing information. The lookup only returns information available in GSX.

To perform a mass GSX lookup:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced computer search.
4. Choose "Look up Purchasing Info in GSX" from the **Take Action on Results** pop-up menu. Then, click **Go**.

   The progress of the lookup is displayed onscreen.



5. When the results are displayed, click the **Update Records** button to populate the information in the JSS. Then, click **Continue** to confirm.
6. If the results state that the JSS is already up-to-date, click the **Cancel** button.

Mass Emailing Users

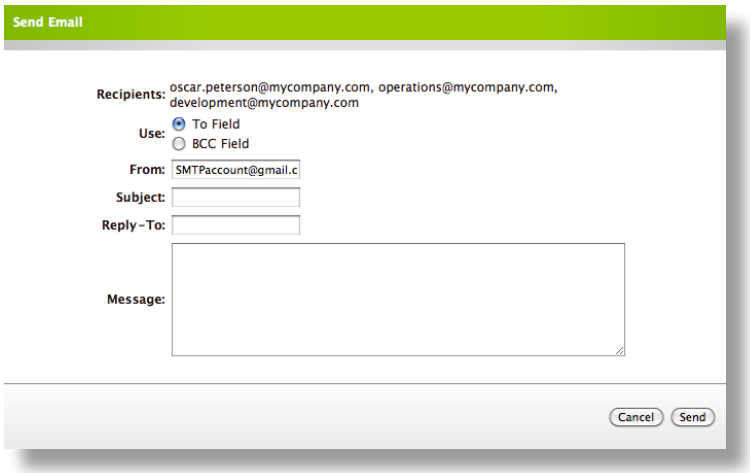
Mass emails are a convenient way to notify users of an upcoming software upgrade, a full drive, or another issue.

Mass emails are sent from the SMTP server that is specified in the JSS. If you have not specified an SMTP server, see the section entitled "Enabling Email Notifications" for instructions on how to do so.

To mass email users:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.

3. Perform a simple or advanced computer search.
4. Choose "Send Email" from the **Take Action on Results** pop-up menu. Then, click **Go**.
5. Use the options and fields provided to compose the email message.
6. The email address you send the message from must be associated with the SMTP server in the JSS. Replies are also sent to this address unless you specify otherwise.



7. Click the **Send** button.
8. Click **Continue** to confirm.

Mass Deleting Computers

You can remove computers from your inventory by deleting them from the JSS.

To mass delete computers from the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced computer search.
4. Choose "Delete all Computers" from the **Take Action on Results** pop-up menu. Then, click **Go**.
5. Click the **Delete Permanently** button; or if peripherals are associated with one or more of the computers, click the **Delete Computers Only** or **Delete Computers and Peripherals** button.
6. Click **Continue** to confirm the deletion.

Performing Mass Actions on Mobile Device Search Results

Mass actions are a quick way to perform the following tasks on the results of a mobile device search:

- Look up purchasing information from Apple's Global Service Exchange (GSX).
- Email users.
- Delete from the JAMF Software Server (JSS).

Mass Look up Purchasing Information from GSX

This allows you to look up and populate purchasing information from Apple's Global Service Exchange (GSX).

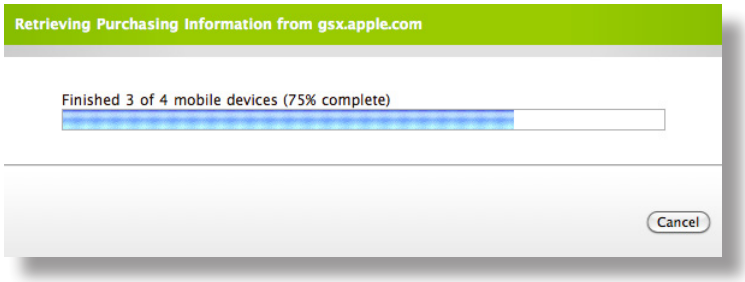
To utilize this feature, a GSX connection must be set up in the JSS. For more information on setting up this connection, see the section entitled "Integrating with GSX."

> ***Note:*** GSX lookups may not always return complete purchasing information. The lookup only returns information available in GSX.

To perform a mass GSX lookup:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.
4. Choose "Look up Purchasing Info in GSX" from the **Take Action on Results** pop-up menu. Then, click **Go**.

   The progress of the lookup is displayed onscreen.



5. When the results are displayed, click the **Update Records** button to populate the information in the JSS. Then, click **Continue** to confirm.

   If the information is already up-to-date, click the **Cancel** button.

Mass Emailing Users

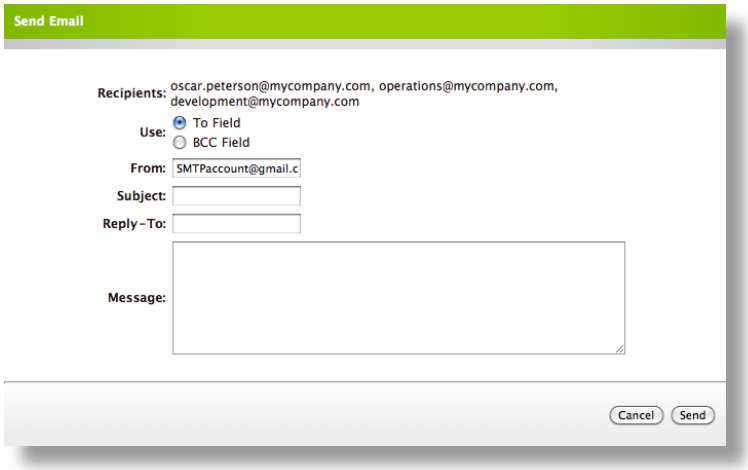
Mass emails are a convenient way to notify users of an upcoming update or another issue.

Mass emails are sent from the SMTP server that is specified in the JSS. If you have not specified an SMTP server, see the section entitled "Enabling Email Notifications" for instructions on how to do so.

To mass email users:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.
4. Choose "Send Email" from the **Take Action on Results** pop-up menu. Then, click **Go**.
5. Use the options and fields provided to compose the email message.

   The email address you send the message from must be associated with the SMTP server in the JSS. Replies are also sent to this address unless you specify otherwise.



6. Click the **Send** button.
7. Click **Continue** to confirm.

Mass Deleting Mobile Devices

You can remove devices from your inventory by deleting them from the JSS.

To mass delete mobile devices from the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.

4. Choose "Delete all Mobile Devices" from the **Take Action on Results** pop-up menu. Then, click **Go**.
5. Click the **Delete Mobile Devices** button.
6. Click **Continue** to confirm the deletion.

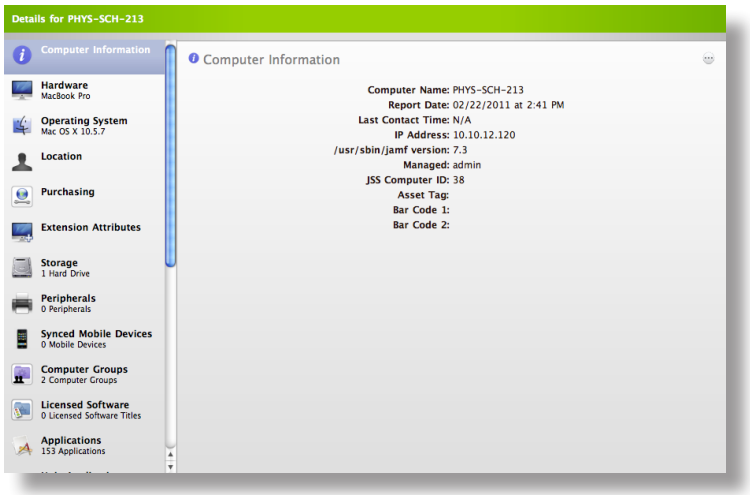
Editing Computer Records

The JAMF Software Server (JSS) allows you to edit the following information:

- General information
- MAC address(es)
- Location information
- Purchasing information
- Non-script extension attributes

To edit a computer record:

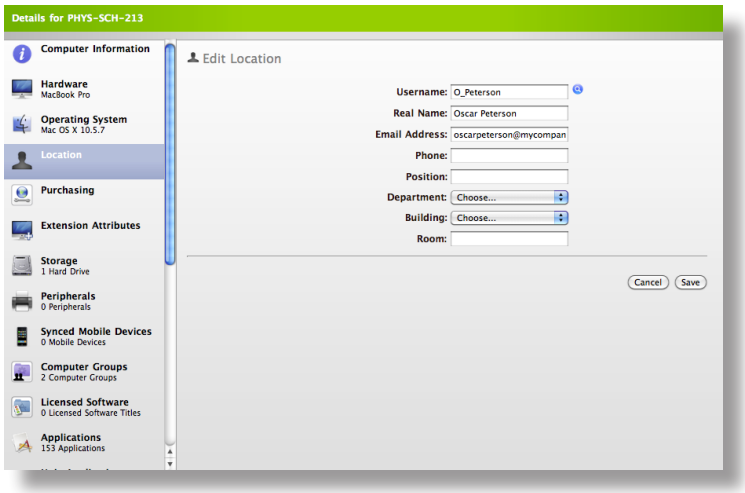
1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced computer search.
4. Click **Details** across from the computer record you want to edit.
5. Click the category you want to edit in the categories list.
   The following categories contain editable information:
   - Computer Information
   - Hardware
   - Location
   - Purchasing
   - Extension Attributes
6. Click the **Ellipsis** button to display the editable fields.



7. Add or modify information as needed.

   If you are editing location or purchasing information, click the **Search** icon to perform an LDAP or GSX lookup. This populates the fields with information from an LDAP server or Apple's Global Service Exchange (GSX).

> ***Note:*** The lookup feature is only available if an LDAP server and/or GSX connection is set up in the JSS. For more information on setting up these connections, see the "Integrating with LDAP Servers" and "Integrating with GSX" sections.



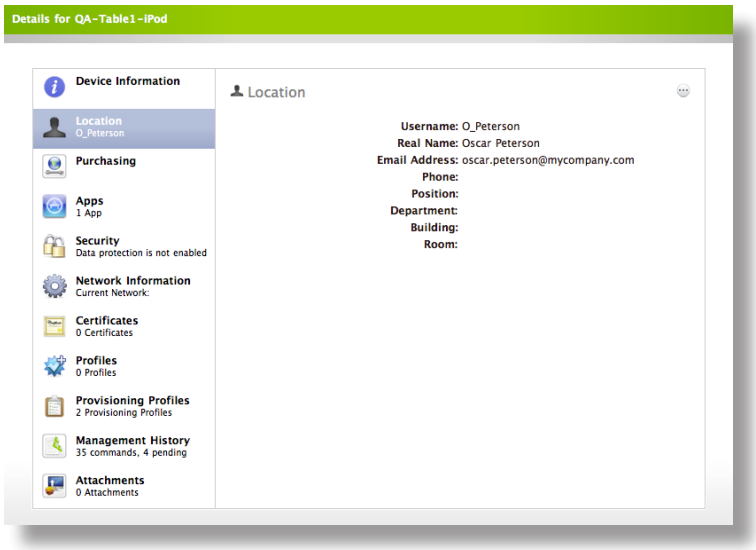
8. Click **Save**.

Editing Mobile Device Records

You use the JAMF Software Server (JSS) to edit location and purchasing information for a mobile device and attach files to the mobile device record.

To edit location or purchasing information for a mobile device record:

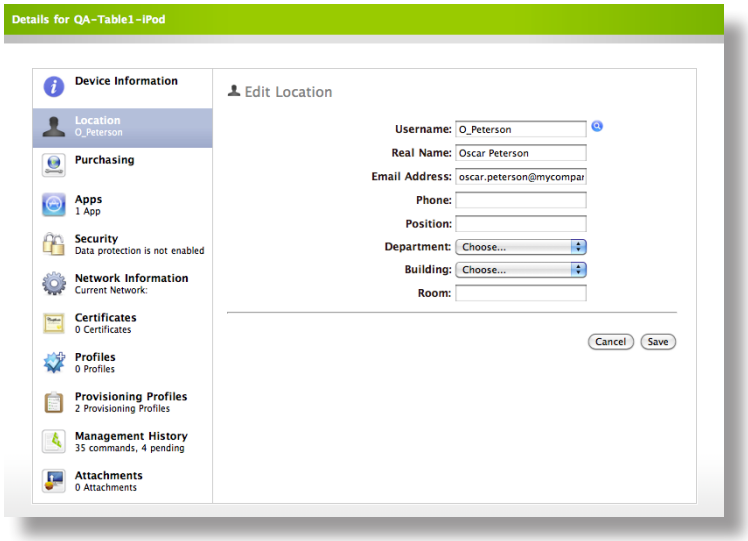
1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.
4. Click **Details** across from the device record you want to edit.
5. Click **Location** or **Purchasing** in the categories list.
6. Click the **Ellipsis** button to display the editable fields.



7. Add or modify information as needed, or click the **Search** icon to perform an LDAP or GSX lookup.

   Performing a lookup populates the fields with information from an LDAP server or Apple's Global Service Exchange (GSX).

> ***Note:*** The lookup feature is only available if an LDAP server and/or GSX connection is set up in the JSS. For more information on setting up these connections, see the "Integrating with LDAP Servers" and "Integrating with GSX" sections.

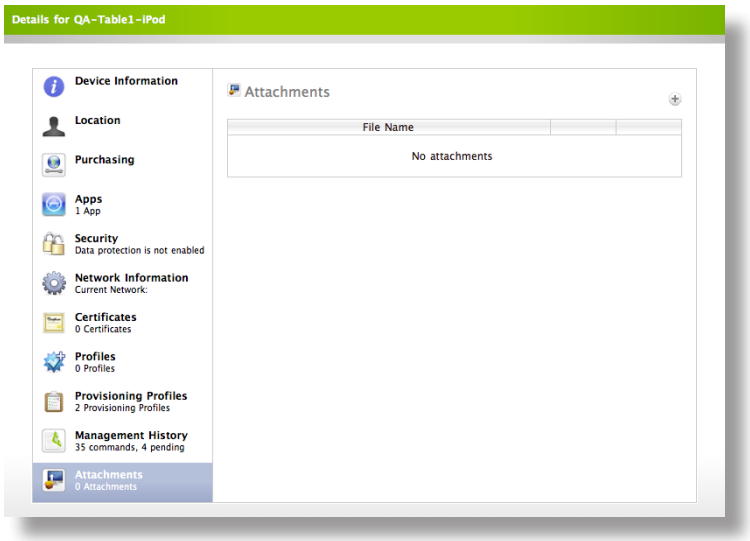


8. Click **Save**.

To attach a file to a mobile device record:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.
4. Click **Details** across from the device record.
5. Click **Attachments** in the categories list.

6. Click the **Add** icon.



7. Click the **Choose File** button and upload a file.

8. Click the **Save Attachment** button.

Deleting Computers from the JSS

You can remove a computer from your inventory by deleting it from the JAMF Software Server (JSS).

To delete a computer from the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced computer search.
4. Click **Delete** across from the computer record.
5. Click the **Delete Permanently** button; or if peripherals are associated with the computer, click the **Delete Computers Only** or **Delete Computers and Peripherals** button.

Deleting Mobile Devices from the JSS

You can remove a mobile device from your inventory by deleting it from the JAMF Software Server (JSS).

To delete a mobile device from the JSS:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Perform a simple or advanced mobile device search.
4. Click **Delete** across from the device record.
5. Click the **Delete Mobile Device** button.

Suppressing Software from Reports

Inventory reports may include a large number of insignificant software titles. You can suppress one or more software titles from the following categories:

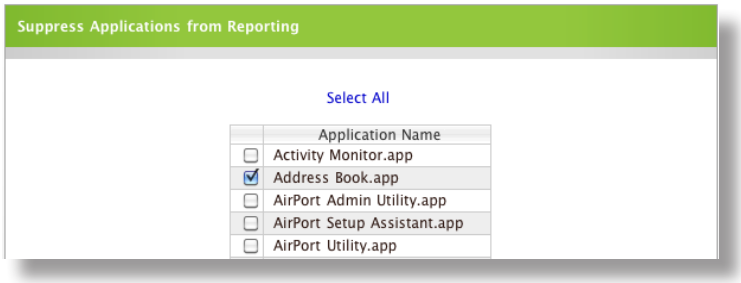
- Applications
- Fonts
- Plug-ins
- UNIX Executables
- Accounts

This section explains how to:

- Suppress software
- Unsuppress software

To suppress software from reports:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. In the **Suppress Inventory Items** category, click the link that indicates the item(s) you want to suppress.
5. Select the checkbox next to each title you want to suppress, or click the **Select All** link to suppress all of the titles.



6. Click the **Suppress Selected** button at the bottom of the page.

To unsuppress software from reports:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. In the **Unsuppress Inventory Items** category, click the link that indicates the item(s) you want to suppress.
5. Select the checkbox next to each title you want to unsuppress, or click the **Select All** link to suppress all of the titles.
6. Click the **Unsuppress Selected** button at the bottom of the page.

Managing Custom Reports

You can add custom reports to the JAMF Software Server (JSS) to extend your inventory reporting capabilities.

These reports are available when using the Inventory pane in the JSS to search or browse computers. A link for each custom report is displayed near the bottom of the page under the Export Options heading.

The Recon Suite comes with several templates that you can use to create custom reports. These templates are simple JSP files. They are located in:

`/Library/JSS/Tomcat/webapps/ROOT/WEB-INF/reporting/`

> ***Note:*** If you upgraded from Recon Suite v8.1 or earlier, the custom report templates are located in:
>
> `/Library/Tomcat/webapps/ROOT/WEB-INF/reporting/`

Before modifying these templates, be sure to read and respect the comments in the files.

This section explains how to create, edit, and delete a custom report.

To create a custom report:

1. Create a JSP file (using one of the templates or otherwise) and place it in the following location on the server:
   `/Library/JSS/Tomcat/webapps/ROOT/WEB-INF/reporting/`

   > ***Note:*** If you upgraded from Recon Suite v8.1 or earlier, place the file in this location:
   >
   > `/Library/Tomcat/webapps/ROOT/WEB-INF/reporting/`

2. Place any image files for the report (.gif, .jpg, etc.) in the follow location:
   `/Library/JSS/Tomcat/webapps/ROOT/reporting_images/`

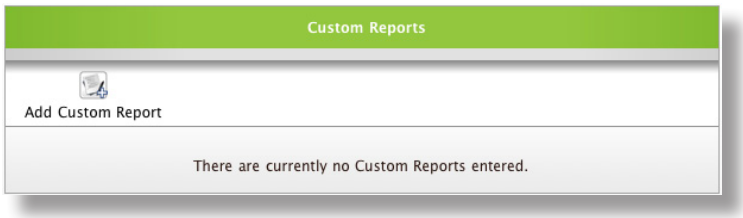
   > ***Note:*** If you upgraded from Recon Suite v8.1 or earlier, place the image files in this location:
   >
   > `/Library/Tomcat/webapps/ROOT/reporting_images/`

3. Place any CSS (Cascading Style Sheet) files for the report in the following location:
   `/Library/JSS/Tomcat/webapps/ROOT/reporting_theme/`

   > ***Note:*** If you upgraded from Recon Suite v8.1 or earlier, place the CSS files in this location:
   >
   > `/Library/Tomcat/webapps/ROOT/reporting_theme/`

4. Log in to the JSS with a web browser.
5. Click the **Settings** tab.

6. Click the **Inventory Options** link.
7. Click the **Custom Reports** link.
8. Click **Add Custom Report** in the toolbar.



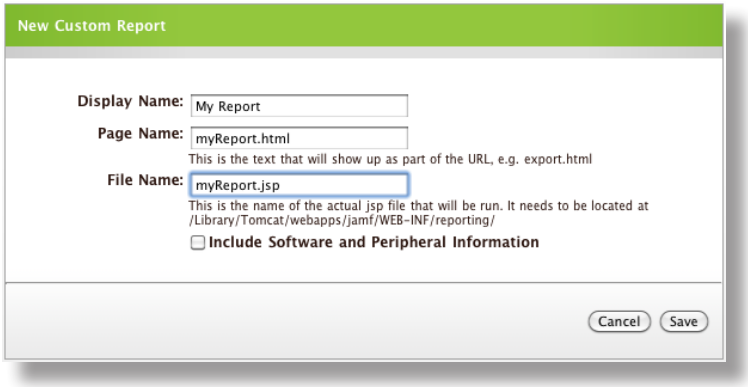
9. Enter a display name for the report. For example, "My Report".
10. In the **Page Name** field, enter a name for the page that will display in your web browser each time you create a report.

    This name does not need to match the name of the JSP file.

> ***Note:*** This name cannot contain spaces.

11. Enter the name of the JSP file in the **File Name** field.

    This must match the name of the JSP file exactly.



12. Select the **Include Software and Peripheral Information** checkbox to include software and peripheral information in the report.

> ***Note:*** Selecting this option may delay the reporting process since it contains more information.

13. Click the **Save** button.

To edit a custom report:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Custom Reports** link.

5. Click the **Edit Report** link across from the report you want to edit.
6. Make changes as needed.
7. Click the **Save** button.

To delete a custom report:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Inventory Options** link.
4. Click the **Custom Reports** link.
5. Click the **Delete Report** link.
6. Click **Delete Custom Report** to confirm.

License Management

Creating Licensed Software Records

Licensed software records allow you to define and store information about the software licenses owned by your organization. You can use this information to create more accurate inventory reports, monitor compliance, and quickly access license and purchasing information.

There are several ways to create a licensed software record:

- Create the record manually.
- Use a licensed software template that is built into the JSS.
- Upload a licensed software template.

  You can download licensed software templates from JAMF Nation at:

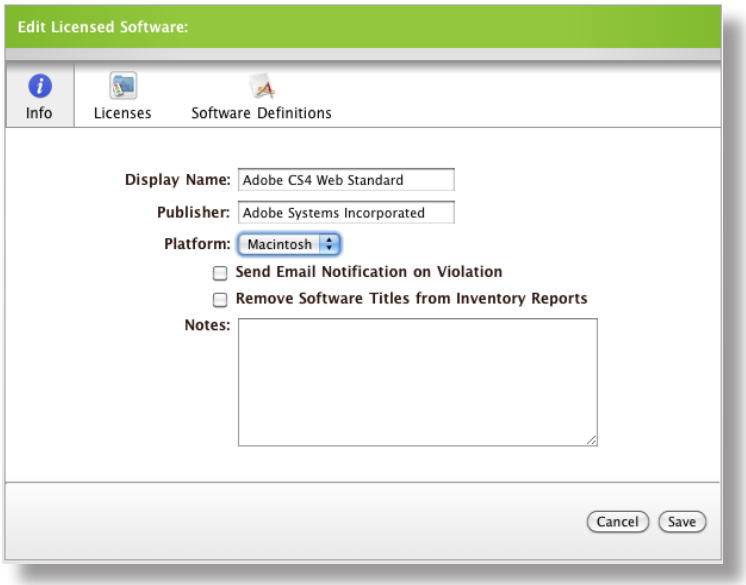
  https://jamfnation.jamfsoftware.com/licensedSoftwareTemplates.html
- Duplicate an existing licensed software record.

To create a licensed software record manually:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Click the **Create Licensed Software** button.
5. Enter a display name for the licensed software record.
6. (Optional) Enter the name of the publisher.
7. Choose the platform that the license was obtained for.
8. To send an email to administrators when a license violation occurs, select the **Send Email Notification on Violation** checkbox.

   An SMTP server must be set up in the JSS to send email notifications. For information on how to set up an SMTP server, see "Enabling Email Notifications".
9. To display only the name of the licensed software record in inventory reports and suppress the name of any individual software titles, select the **Remove Software Titles from Inventory Reports** checkbox.

10. (Optional) Enter additional information in the **Notes** field.



11. To store license and purchasing information in the record, see "To store license and purchasing information in a licensed software record".

12. To specify the software titles that count toward the license, see "To specify software definitions for a licensed software record".

13. Click **Save**.

To create a licensed software record from a template that is built into the JSS:

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

2. Click the **Settings** tab.

3. Click the **Licensed Software Management** link.

4. Click the **Licensed Software from Template** button.

5. Find the software title that you want to create a record for and click the **Create** link across from it.

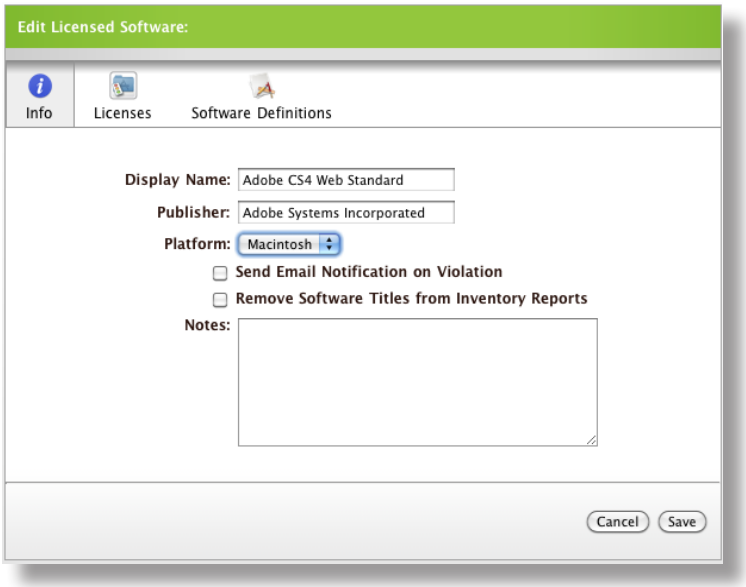
6. Choose the platform that the license was obtained for.

7. To send an email to administrators when a license violation occurs, select the **Send Email Notification on Violation** checkbox.

   An SMTP server must be set up in the JSS to send email notifications. For information on how to set up an SMTP server, see “Enabling Email Notifications”.

8. To display only the name of the licensed software record in inventory reports and suppress the name of any individual software titles, select the **Remove Software Titles from Inventory Reports** checkbox.

9. (Optional) Enter additional information in the **Notes** field.



10. To store license and purchasing information, see "To store license and purchasing information in a licensed software record".

    The software titles that count toward the license are included in the template. To view them, click the **Software Definitions** tab.

11. Click **Save**.

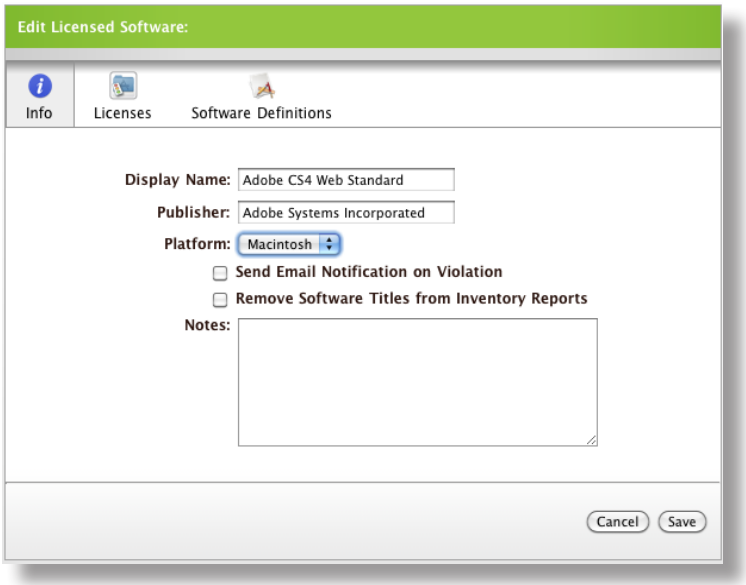
To upload a licensed software template:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Click the **Upload Licensed Software** button.
5. Click **Choose File** and select the licensed software template that you want to upload. Then, click **Upload Selected Template**.

   The licensed software template must be an XML file.
6. Choose the platform that the license was obtained for.
7. To send an email to administrators when a license violation occurs, select the **Send Email Notification on Violation** checkbox.

   An SMTP server must be set up in the JSS to send email notifications. For information on how to set up an SMTP server, see "Enabling Email Notifications".
8. To display only the name of the licensed software record in inventory reports and suppress the name of any individual software titles, select the **Remove Software Titles from Inventory Reports** checkbox.

9. (Optional) Enter additional information in the **Notes** field.



10. To store license and purchasing information, see "To store license and purchasing information in a licensed software record".

    The software titles that count toward the license are included in the template. To view them, click the **Software Definitions** tab.

11. Click **Save**.

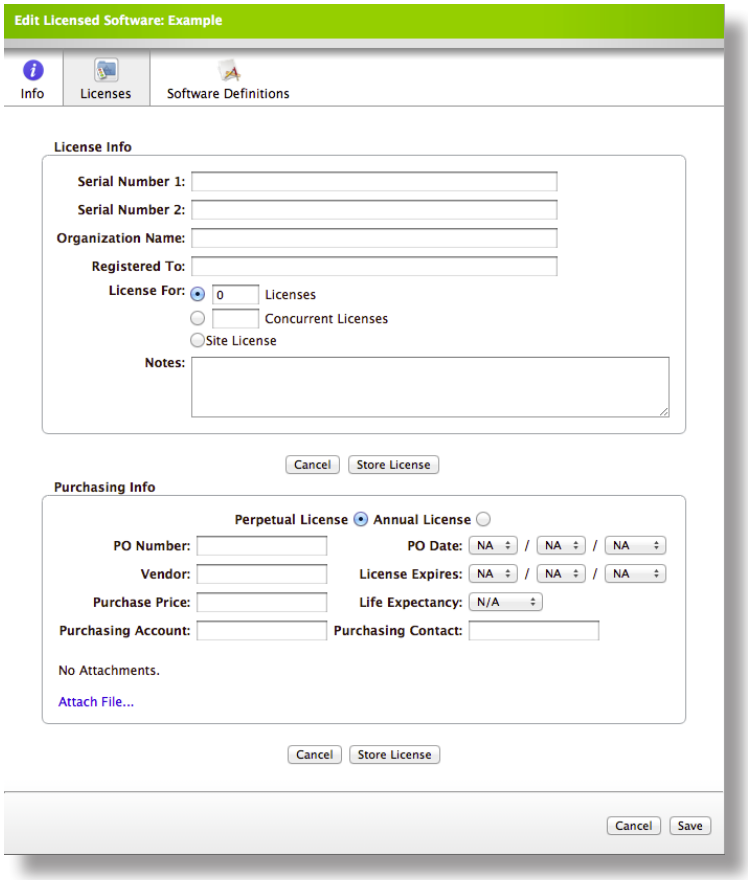
To duplicate an existing licensed software record:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Click the **Duplicate Licensed Software** button.
5. Find the licensed software record that you want to duplicate and click the **Duplicate** link across from it.
6. Enter a new display name for the licensed software record.
7. Add or modify license and purchasing information, and software definitions as needed.
8. Click **Save**.

To store license and purchasing information in a licensed software record:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.

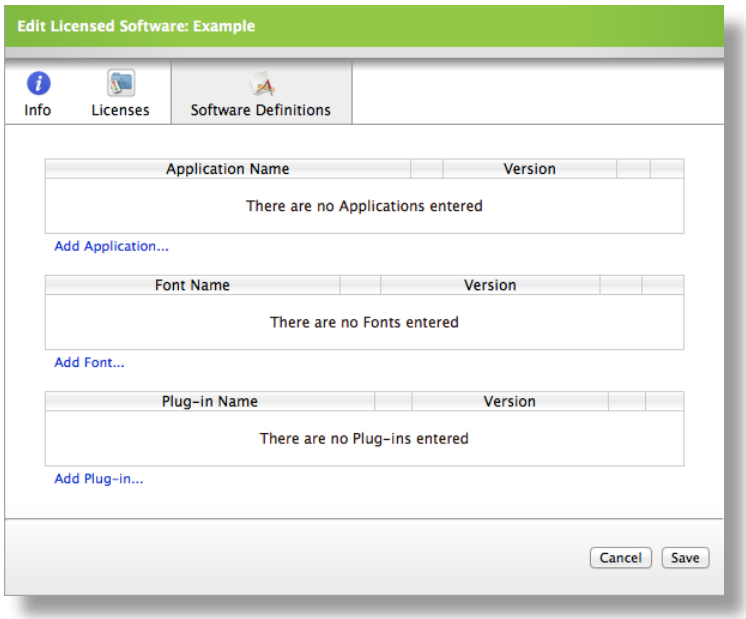
4. Create a licensed software record or edit an existing one.
   - To create a licensed software record, click the **Create New License** button or use one of the other methods explained in this guide.
   - To edit a licensed software record, click the **Edit** link across from it.
5. Click the **Licenses** tab.
6. Click the **Add License** link.
7. Enter the serial number(s) for the license.
8. (Optional) Enter the name of the organization that owns the license.
9. (Optional) Enter the name of the individual that the license is registered to.
10. (Optional) Select the type of license and enter the number of licenses owned.
11. (Optional) Enter additional information in the **Notes** field.
12. (Optional) Specify purchasing information for the license.
13. Click **Store License**.



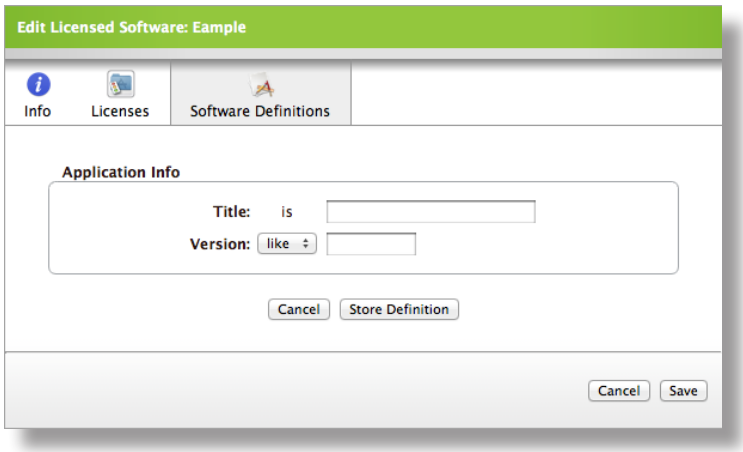
14. Repeat steps 6 through 13 for each additional license.
15. Click **Save**.

To specify software definitions for a licensed software record:

1. Log in to the JSS with a web browser
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Create a licensed software record or edit an existing one.
   - To create a licensed software record, click the **Create New License** button or use one of the other methods explained in this guide.
   - To edit a licensed software record, click the **Edit** link across from it.
5. Click the **Software Definitions** tab.
6. To add an application, font, or plug-in, click the **Add** link for the item that you want to add.



7. Specify the title and version number and click the **Store Definition** button.



8. Repeat steps 6 and 7 for each additional item.
9. Click **Save**.

To edit a licensed software record:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Find the record that you want to edit and click the **Edit** link across from it.
5. Add or modify information as needed.
6. Click **Save**.

To delete a licensed software record:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
4. Find the record that you want to delete and click the **Delete** link across from it.
5. Click the **Delete** button to confirm.

Reporting on Licensed Software

Using reports to track licensed software helps you stay organized by storing all of your purchasing information in one, accessible location. Licensed software reports allow you to monitor the number of licenses your organization has and how many are in use, making compliance with software vendors easy to track and maintain.

Licensed software reporting and inventory reporting work in the same way. First, you perform a simple or advanced search of your records. Then, you choose a reporting template in which to view your results.

This section explains how to:

- Perform simple and advanced licensing searches
- View licensing search results

Performing Simple Licensing Searches

A simple licensing search functions like a search engine, allowing you to locate a general range of results quickly and easily.

Simple searches can be performed based on the following attributes of a licensed software record:

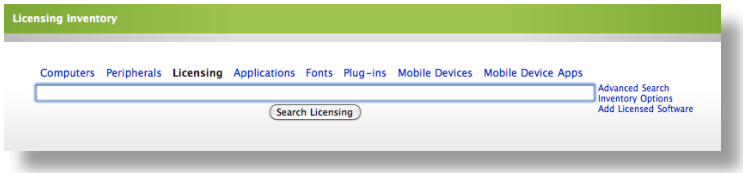
- Display Name
- Publisher
- Notes
- Registration Information for Associated Licenses (organization or individual that a license is registered to)
- Serial Numbers for Associated Licenses
- Purchasing Accounts for Associated Licenses
- Purchasing Contacts for Associated Licenses
- PO Numbers for Associated Licenses
- Notes for Associated Licenses

Note: Performing an empty search (with no criteria in the search field) returns all of the licensed software records in your database.

To perform a simple licensing search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Licensing** link.
4. Enter one or more terms into the search field.

5. Click the **Search Licensing** button, or press the Enter key.

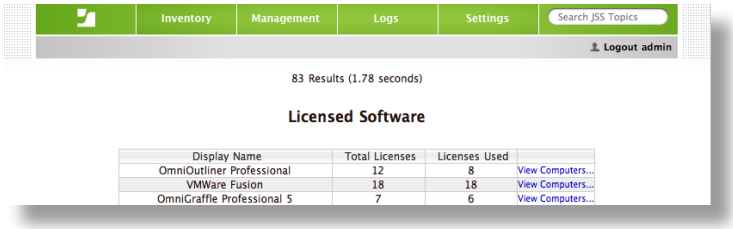


By default, search results are displayed as a Standard Webpage report and include the following information:

- Licensed software records that match your search criteria
- Total number of licenses your organization owns for the software
- Total number of licenses in use for the software

Any licensed software records in violation of the licensing limit are displayed in red text.

To view a list of computers on which the software is installed, click the **View Computers** link across from the record.

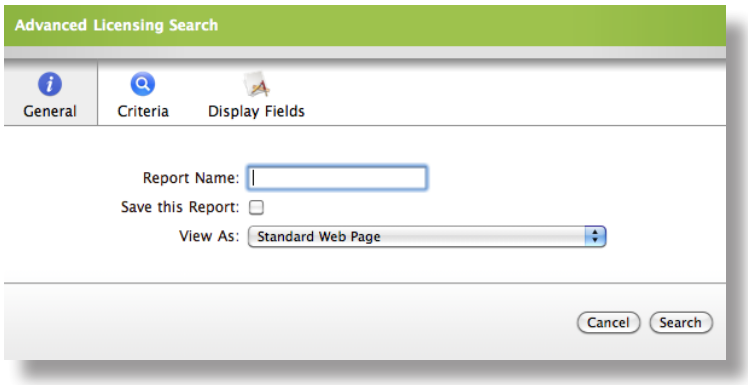


Performing Advanced Licensing Searches

When used to search for licensed software and create reports, advanced searches offer a variety of powerful options. The advanced licensing search interface consists of three panes: General, Criteria, and Display Fields.

A detailed description of the information on each pane follows:

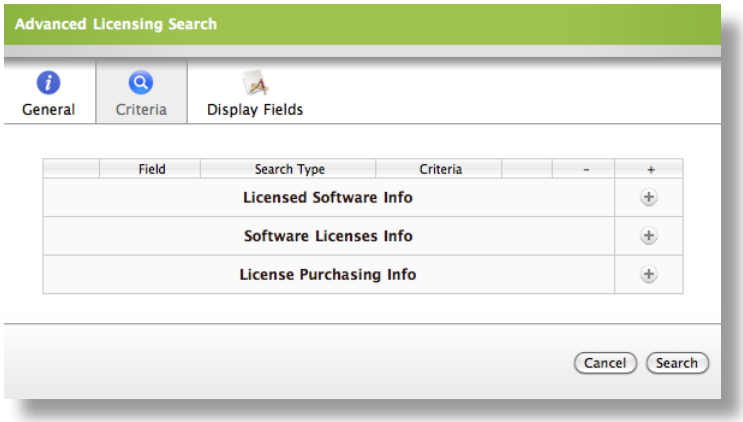
General Pane



This pane allows you to choose a reporting format and save the report so you can access it in the future. If you choose to save a report, you can perform the same search at a later date.

Saved computer searches can be accessed on the Computer Inventory pane. You can edit or delete a saved computer search by clicking the disclosure triangle next to the search and then clicking the **Edit** or **Delete** link.

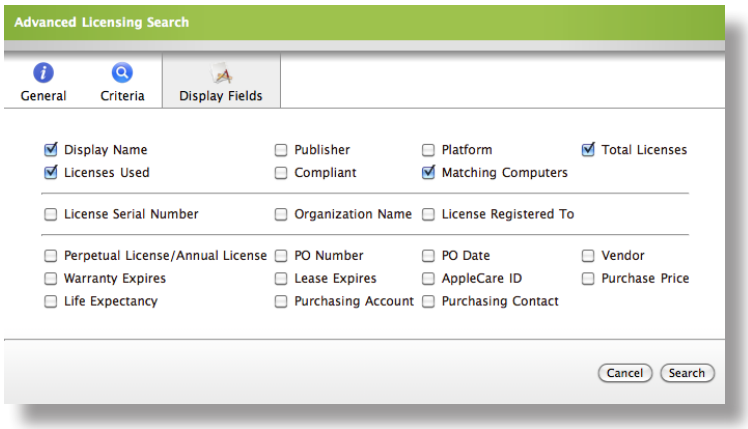
Criteria Pane



This pane allows you to specify the attributes on which to base your search. These options are broken down into three categories:

- Licensed Software Info
- Software License Info
- Software License Purchasing Info

Display Fields Pane

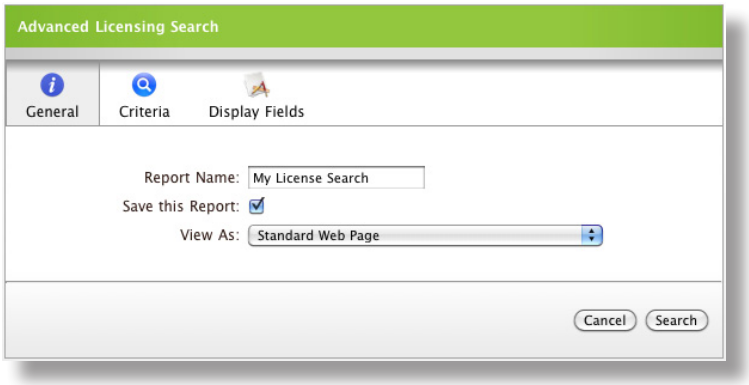


This pane allows you to specify the attributes displayed in your search results.

You can change the default selections by changing your Inventory Display preferences. For more information on changing Inventory Display preferences, see the "Inventory Display Preferences" section.

To perform an advanced licensing search:

1. Log in to the JSS with a web browser.
2. Click the **Inventory** tab.
3. Click the **Licensing** link.
4. Click the **Advanced Search** link at the right of the search field.
5. If you want to save your search, enter a name for the report and select the **Save this Report** checkbox.



6. Choose the format in which you want to view the report from the **View As** pop-up menu.
7. Click the **Criteria** tab, and narrow your search by clicking the **Add** (+) button next to each search type that corresponds to the information that you want to use.

   A list of searchable items is displayed.
8. Click the items that you want to use in your search and further specify the search criteria using the fields provided.

9. Click the **Display Fields** tab select the checkbox next to each attribute that you want displayed in your search results.

10. Click **Search**.

Viewing Licensing Search Results

By default, licensing search results are displayed in Standard Webpage format. You can view the search results for advanced licensing searches in any of the following alternate formats by choosing from the **View As** pop-up menu on the General pane of the advanced search interface:

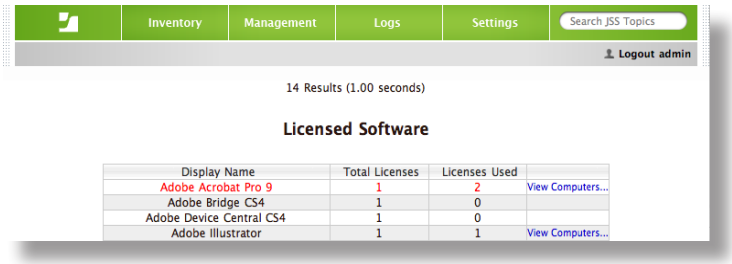
- Licensing Compliance Report (PDF)
- Printable Licensed Software Record (PDF)
- CSV
- Tab
- XML

> ***Note:*** The attributes displayed in advanced licensing search results are determined by the settings on the Display Fields pane of the advanced search interface. For more information, see "Performing Advanced Licensing Searches".

Standard Webpage

The Standard Webpage report displays the licensed software, the number of licenses your organization owns for the software, and the number of licenses currently in use. As you scroll down the page, a list of computers using the licenses is displayed.

Any licensed software records in violation of the licensing limit are displayed in red.



Licensing Compliance Report (PDF)

The Licensing Compliance report provides a high-level overview of your licensed software records and any titles that are in violation of the licensing limit.

One record is displayed per line, along with the number of licenses owned and the total number of licenses in use. Records that have more licenses distributed than your organization owns are marked with a yellow alert to the left of the record.

License Compliance Report Generted for My Company

	Licensed Software Name	Licenses Owned	Licenses Used
⚠	Creative Suite 2 Professional	200	204
	Creative Suite 2 Standard	5	4
	Microsoft Office 2004	160	157

Printable Licensed Software Record (PDF)

The Printable Licensed Software record report allows you to print licensed software information in a format suitable for hardcopy purchasing records. The records print one per page and include general information about the title, along with each corresponding software license on file.

Licensed Software Records for My Company

Microsoft Office 2004

Licensed Software Overview

Publisher	Microsoft Corp		
Platform	mac		
Notes	Purchased directly from Microsoft.		

License #1

Serial Number	XB6JW-2JJCV-DXC8B-88888-7777		
Organization	My Company		
Registered To	My Name		
License Type	5 Licenses	**License Term**	Perpetual License
Vendor	Microsoft		

License #2

Serial Number	XB6JW-2JJCV-DXC8B-66666-55555		
Organization	My Company		
Registered To	My Name		
License Type	155 Licenses	**License Term**	Perpetual License
PO Date	January 07, 2007	**Vendor**	Apple Store
Purchase Price	399	**Life Expectancy**	1 Year

CSV

This format exports your search results into a CSV file that you can open in Microsoft Excel and other spreadsheet applications.

Tab

This format exports your search results into a tab-delimited text file that you can open in Microsoft Excel and other spreadsheet applications.

XML

This format exports your search results into an XML file. XML files are commonly used to move data between applications.

Sending Notifications on Licensed Software Violations

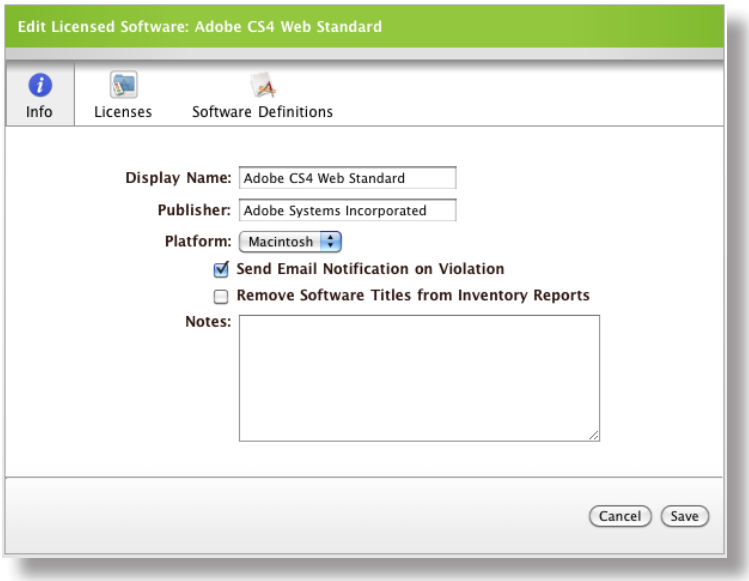
Maintaining up-to-date licensed software records allows you to monitor the number of software licenses in use in your environment.

Each time a computer submits an inventory report to the JAMF Software Server (JSS), the licensed software on the computer is analyzed. If the number of computers that report a licensed software title is greater than the actual number of licenses purchased by your organization, the JSS sends an email notification.

Sending email notifications on licensed software violations requires:

- An SMTP server set up in the JSS (For instructions on how to set up an SMTP server, see "Enabling Email Notifications".)
- The Software License Violation option enabled for each account that you want to receive notifications (For more information, see "Managing JSS User Accounts".)

Note: A user must have an account in the JSS to receive email notifications.

To send an email notification on a licensed software violation:

1. Log in to the JSS with a web browser.
2. Click the **Settings** tab.
3. Click the **Licensed Software Management** link.
   - To create a new record, click the **Create Licensed Software** button in the toolbar.
   - To edit an existing record, click the **Edit** link across from it.
4. Select the **Send Email Notification on Violation** checkbox.
5. Click **Save**.