Building a BYOD Program Using the Casper Suite

Technical Paper
Casper Suite v9.4 or Later
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JAMF Software, LLC

JAMF Software has made all efforts to ensure that this guide is accurate.

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Contents

Introduction

Target Audience

This guide is designed for IT administrators who want to allow users to enroll their personally owned iOS and Android devices with the JAMF Software Server (JSS) so that the devices can be managed by the Casper Suite.

What's in This Guide

This guide provides step-by-step instructions on how to use the Casper Suite to build a Bring Your Own Device (BYOD) program in your organization. It also provides information on the management capabilities available with the Casper Suite for personally owned mobile devices.

Important Concepts

Before you can use the Casper Suite to build a BYOD program, you should be familiar with the following concepts:

- Sites
- Push certificates
- JAMF Push Proxy
- User-initiated enrollment for mobile devices
- Managed apps
- Advanced mobile device searches
- Remote commands for mobile devices

Additional Resources

For more information on related topics, see the *Casper Suite Administrator's Guide*, available at:

http://jamfsoftware.com/product-documentation/administrators-guides

Overview

As organizations adopt Bring Your Own Device (BYOD) programs to secure and manage personal devices in their environments, IT departments are increasingly faced with challenges due to BYOD program complexities and dismal user acceptance.

The Casper Suite solution for personal device management is specifically designed to mitigate these challenges, with a simplified management toolset and user-focused features that help to accelerate BYOD program adoption. This allows organizations to balance the enterprise security needs of IT with the personal needs of the user.

A user-focused BYOD program implemented using the Casper Suite includes the following key benefits:

- Users can review the IT management capabilities for a personally owned device, with transparency regarding everything IT has access to.
- Users can securely and easily access institutional resources such as email, contacts, calendars, Wi-Fi, and VPN, while enjoying a native experience on their preferred device.
- IT can only remove institutional data from the device, ensuring protection of the user's personal data, such as photos and documents.

There are several steps involved in building and maintaining a BYOD program using the Casper Suite:

1. Customize the user experience and enable personal device enrollment. You can customize the user-initiated enrollment messaging to provide distinct messages for each device ownership type—institutional ownership and personal ownership. You can also enable device enrollment for the iOS and Android platforms, and configure enrollment access for specific LDAP groups.

2. Define site-specific settings and apps for personal devices. Personal device profiles in the JSS provide a single location for defining all settings and apps for personal devices. You can define settings for passcode policies, Wi-Fi, VPN, email, contacts, calendars, certificates, and security. You can also select managed apps to distribute to personal iOS devices.

3. Direct users to the enrollment portal to enroll personal devices. This allows you to provide the enrollment URL to users in the way that best fits their environment. Optionally, you can integrate the JSS with a network access management service that automatically prompts users to enroll when their device is detected on the network.

4. View and report on personal devices in inventory. You can perform an advanced mobile device search to identify personal devices enrolled in your environment and view a subset of basic inventory information for a device. You can also identify whether a personal device has the most up-to-date personal device profile installed.

5. Remotely perform management commands on a personal device. You can remotely update inventory for a personal device, and remotely lock a device. In addition, you can wipe only institutional data and settings from a personal device. This protects the user's personal data, such as photos and documents.

Management Capabilities for Personally Owned Devices

The following table provides an overview of the management capabilities available with the Casper Suite for personally owned mobile devices by device platform:

Device Platform	iOS	Android
Enrollment		
Via user-initiated enrollment	✓[1]	✓[1]
Via an enrollment profile and Apple Configurator		
Via an enrollment profile and Apple's iPCU		
Via Apple's Device Enrollment Program		
Via Apple Configurator enrollment		
Inventory		
Submit inventory to the JSS	✓[2]	✓[2]
Extension attributes		
Simple searches	✓	✓
Advanced searches	✓	✓
Mobile device reports	✓	✓
Mass actions	✓	✓[3]
Mobile Device Groups		
Static groups		
Smart groups		
Configuration		
iOS configuration profiles		
Personal device profiles	✓	✓
Remote Commands		
Update inventory	✓	✓
Lock device	✓	✓
Clear passcode		
Clear restrictions		
Wipe device		
Unmanage device		

Device Platform	iOS	Android
Remote Commands (continued)		
Wipe institutional data	✓	✓
Send blank push	✓	✓
Enable/disable voice or data roaming		
Self Service for iOS		
Self Service Mobile app		
iBeacon region monitoring[4]		
Self Service web clip		
App Distribution		
Managed apps	✓	
VPP-managed distribution	✓	
In-house apps	✓[5]	
App Store apps	✓[5]	
eBook Distribution		
Managed eBooks		
VPP-managed distribution		
Install ePub file		
Install iBooks file		
Install PDF		
Casper Focus[6]		
Focus on app		
Focus on website		
Clear passcodes		
Mirror device on Apple TV		

Notes:

1. Enrolling a personal device using user-initiated enrollment requires an enabled personal device profile for the site that the user belongs to, or an enabled personal device profile for the full JSS.
2. A limited subset of inventory information is collected for personal devices.
3. The Clear Passcode mass action does not apply to personally owned devices.
4. iBeacon region monitoring requires mobile devices with Self Service Mobile for iOS installed.
5. Only managed apps can be distributed to personal devices.
6. Management capabilities available for Casper Focus apply only to student mobile devices, not teacher devices.

Requirements

To enroll and manage personally owned iOS devices with the JSS using the instructions in this guide, you need:

- The JSS v9.4 or later
- A push certificate in the JSS
- Mobile devices with iOS 4 or later (iOS 7 or later is recommended)
- An LDAP server set up in the JSS

In addition, to distribute managed apps to personal iOS devices, the devices must have iOS 5 or later and an MDM profile that supports managed apps.

To enroll and manage personally owned Android devices with the JSS using the instructions in this guide, you need:

- The JSS v9.4 or later
- A proxy server token in the JSS
- Mobile devices with Android 4.0.3 or later
- An LDAP server set up in the JSS

In addition, as part of user-initiated enrollment for personal Android devices, users need to install the Self Service Mobile app from Google Play. After enrollment, Self Service Mobile must remain installed on an enrolled Android device to keep the device managed by the JSS.

Note: Although not required, it is recommended that you configure the Mobile Device Inventory Collection settings to collect user and location information from LDAP. This is recommended because the mobile device name displayed in inventory for an Android device is often cryptic, making it difficult to identify a specific device. By collecting user and location information, you can search for and identify a specific Android device based on the Username field in the mobile device's inventory information.

Customizing the User Experience and Enabling Personal Device Enrollment

Enrollment is the process of adding mobile devices to the JSS to establish a connection between the devices and the JSS. User-initiated enrollment allows users to initiate this process by logging in to an enrollment portal and following the onscreen instructions to enroll a device.

Personally owned devices can only be enrolled via user-initiated enrollment.

When configuring personal device enrollment using the User-Initiated Enrollment settings in the JSS, you can do the following:

- Customize messaging displayed for each step in the enrollment process, including adding different languages.

  Note: You can use Markdown, a text-to-HTML conversion tool, to specify formatting for the text displayed to users during enrollment. For more information about Markdown, see http://daringfireball.net/projects/markdown/.
- Enable user-initiated enrollment of personal devices for the iOS and Android platforms.
- Configure enrollment access for specific LDAP groups.

Note: Enrolling a personal device using user-initiated enrollment requires an enabled personal device profile for the site that the user belongs to, or an enabled personal device profile for the full JSS. Instructions for creating a personal device profile are included in the "Defining Site-Specific Settings and Apps for Personal Devices" section in this guide.

Configuring the User-Initiated Enrollment Settings

1. Log in to the JSS with a web browser.
2. In the top-right corner of the page, click **Settings** .
3. Click **Global Management**.

   On a smartphone or iPod touch, this option is in the pop-up menu.
4. Click **User-Initiated Enrollment** .
5. Click **Edit**.
6. Use the General pane to restrict re-enrollment and to skip certificate installation.

7. On the Messaging pane, do the following to customize the text displayed during the enrollment experience and add languages:

   a. Do one of the following:

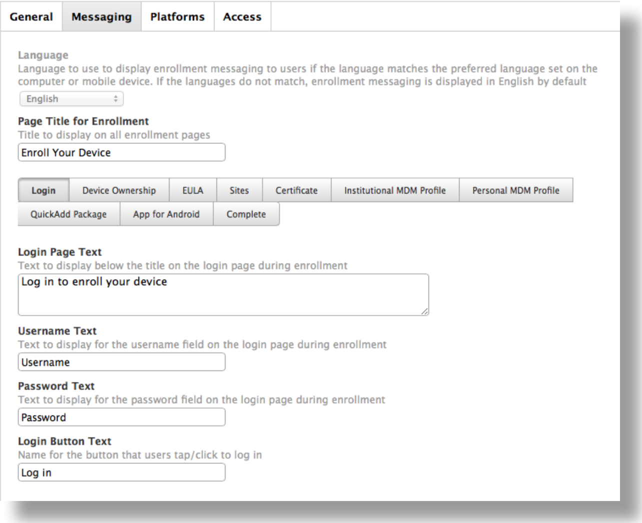
      - To add a language, click **Add** + and then choose the language from the **Language** pop-up menu.

        <span>**Note:**</span> English is the default language if the mobile device does not have a preferred language set on it.

      - To customize the text for a language already listed, click **Edit** next to the language.

   b. In the **Page Title for Enrollment** field, enter a page title to display at the top of all enrollment pages.

   c. On the **Login** tab, use the fields provided to customize how you want the Login page to be displayed to users.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

Login Page Text
Text to display below the title on the login page during enrollment
Log in to enroll your device

Username Text
Text to display for the username field on the login page during enrollment
Username

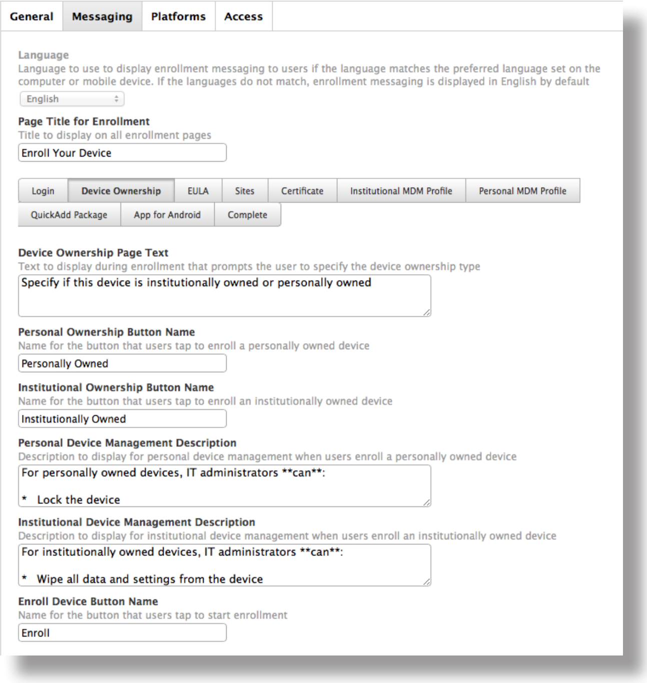
Password Text
Text to display for the password field on the login page during enrollment
Password

Login Button Text
Name for the button that users tap/click to log in
Log in

d. Click the **Device Ownership** tab and use the fields provided to customize the text that is displayed to users based on their device ownership type. The text displayed and the enrollment page that the text displays on depends on the enrollment options that you enable:

- **If you enable user-initiated enrollment for both institutionally owned and personally owned iOS devices—**Customize the text that prompts users to choose the appropriate device ownership type, and customize the device management description that explains the IT management capabilities for each device ownership type. When users select the personal or institutional device ownership type, the respective device management description is displayed.
- **If you enable user-initiated enrollment for personally owned devices only—**Customize the device management description that explains the IT management capabilities for personal device ownership. This description is accessible to users by tapping the **Information** ⓘ icon displayed on the Personal MDM Profile page during enrollment.

(For instructions on enabling user-initiated enrollment for the iOS and Android platforms, see step 8 later in this procedure.)



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

Device Ownership Page Text
Text to display during enrollment that prompts the user to specify the device ownership type
Specify if this device is institutionally owned or personally owned

Personal Ownership Button Name
Name for the button that users tap to enroll a personally owned device
Personally Owned

Institutional Ownership Button Name
Name for the button that users tap to enroll an institutionally owned device
Institutionally Owned

Personal Device Management Description
Description to display for personal device management when users enroll a personally owned device
For personally owned devices, IT administrators **can**:

*   Lock the device

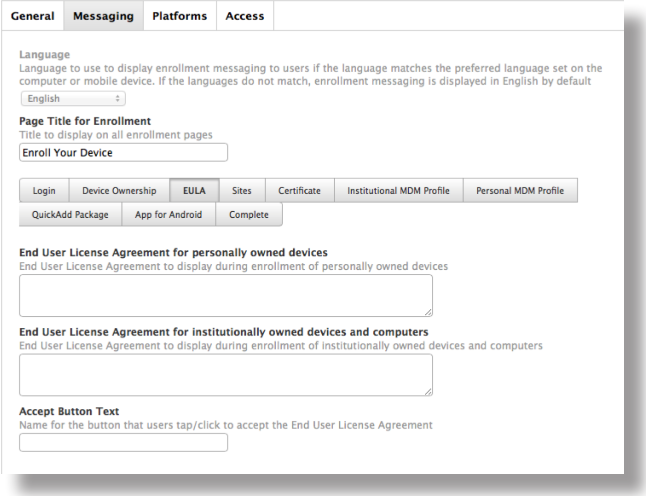
Institutional Device Management Description
Description to display for institutional device management when users enroll an institutionally owned device
For institutionally owned devices, IT administrators **can**:

*   Wipe all data and settings from the device

Enroll Device Button Name
Name for the button that users tap to start enrollment
Enroll

e. Click the **EULA** tab and use the fields provided to specify an End User License Agreement (EULA) for personally owned devices. If the EULA fields are left blank, a EULA page is not displayed to users during enrollment.

Note: The EULA page is not displayed for users logging in with a JSS user account.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

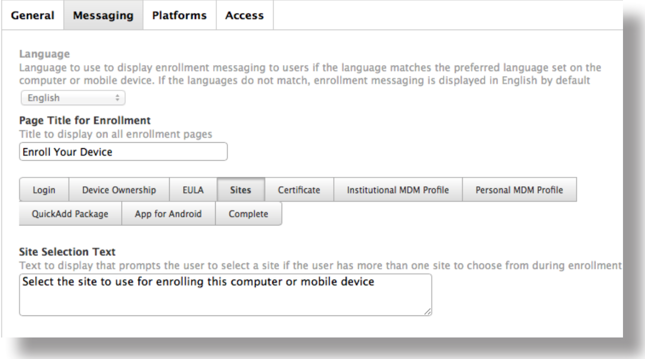
Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

End User License Agreement for personally owned devices
End User License Agreement to display during enrollment of personally owned devices

End User License Agreement for institutionally owned devices and computers
End User License Agreement to display during enrollment of institutionally owned devices and computers

Accept Button Text
Name for the button that users tap/click to accept the End User License Agreement

f. Click the **Sites** tab and customize the message that prompts users to choose a site.

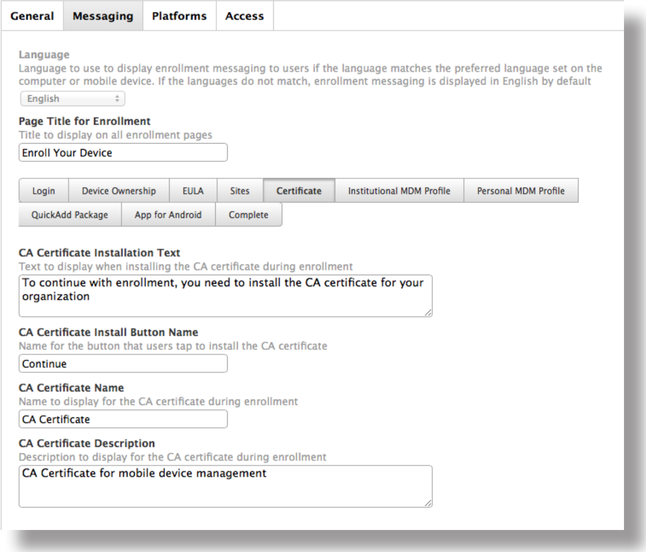


Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

Site Selection Text
Text to display that prompts the user to select a site if the user has more than one site to choose from during enrollment
Select the site to use for enrolling this computer or mobile device

g. (iOS only) Click the **Certificate** tab and use the fields provided to customize the message that prompts users to install the CA certificate for mobile devices to trust at enrollment.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

CA Certificate Installation Text
Text to display when installing the CA certificate during enrollment
To continue with enrollment, you need to install the CA certificate for your organization

CA Certificate Install Button Name
Name for the button that users tap to install the CA certificate
Continue

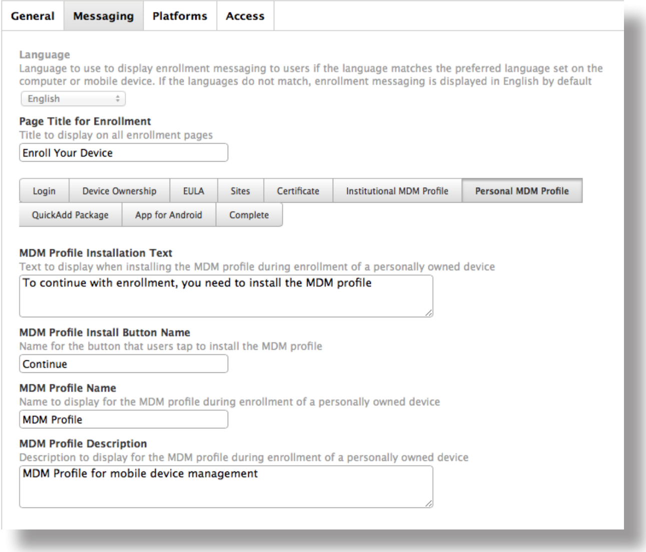
CA Certificate Name
Name to display for the CA certificate during enrollment
CA Certificate

CA Certificate Description
Description to display for the CA certificate during enrollment
CA Certificate for mobile device management

h. Click the **Personal MDM Profile** tab and use the fields provided to customize the message that prompts users to install the MDM profile for personally owned devices.

You can also specify the MDM profile name and description to display during enrollment.

Note: The MDM profile installation text and MDM profile name are not displayed during enrollment of an Android device.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

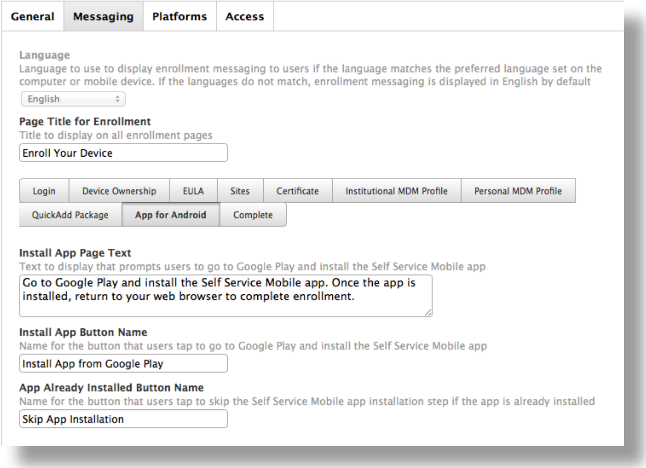
MDM Profile Installation Text
Text to display when installing the MDM profile during enrollment of a personally owned device
To continue with enrollment, you need to install the MDM profile

MDM Profile Install Button Name
Name for the button that users tap to install the MDM profile
Continue

MDM Profile Name
Name to display for the MDM profile during enrollment of a personally owned device
MDM Profile

MDM Profile Description
Description to display for the MDM profile during enrollment of a personally owned device
MDM Profile for mobile device management

i. (Android only) Click the **App for Android** tab and use the fields provided to customize the message that prompts users to install Self Service Mobile for Android from Google Play.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

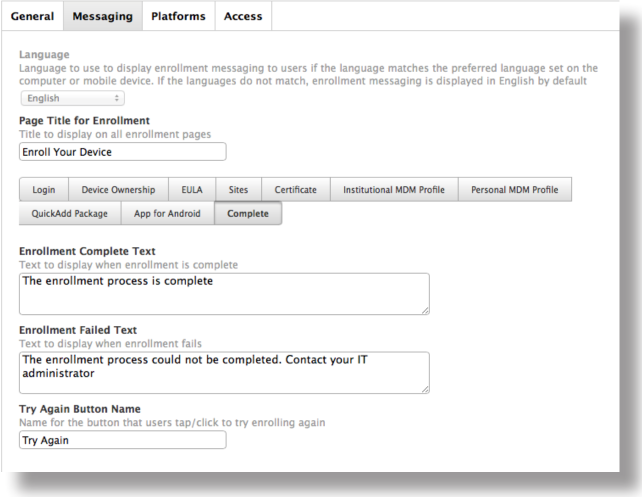
Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

Install App Page Text
Text to display that prompts users to go to Google Play and install the Self Service Mobile app
Go to Google Play and install the Self Service Mobile app. Once the app is installed, return to your web browser to complete enrollment.

Install App Button Name
Name for the button that users tap to go to Google Play and install the Self Service Mobile app
Install App from Google Play

App Already Installed Button Name
Name for the button that users tap to skip the Self Service Mobile app installation step if the app is already installed
Skip App Installation

    j. (iOS only) Click the **Complete** tab and use the fields provided to customize the messages that are displayed to users if enrollment is successful or if it fails.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the computer or mobile device. If the languages do not match, enrollment messaging is displayed in English by default
English

Page Title for Enrollment
Title to display on all enrollment pages
Enroll Your Device

Enrollment Complete Text
Text to display when enrollment is complete
The enrollment process is complete

Enrollment Failed Text
Text to display when enrollment fails
The enrollment process could not be completed. Contact your IT administrator

Try Again Button Name
Name for the button that users tap/click to try enrolling again
Try Again

    k. Click **Done**.

8. On the Platforms pane, do the following to enable user-initiated enrollment for each mobile device platform as needed:

    a. To enable enrollment for personally owned iOS devices, click the **iOS** tab and then select the **Enable user-initiated enrollment for personally owned iOS devices** checkbox.

    b. To enable enrollment for personally owned Android devices, click the **Android** tab and then select the **Enable user-initiated enrollment for personally owned Android devices** checkbox.

9. On the Access pane, do the following to configure enrollment access for all LDAP users and/or specific LDAP groups:

    a. Do one of the following:

        - To configure enrollment access for a specific LDAP user group, click **Add** + and then search for the group.
        - To configure enrollment access for a group already listed, click **Edit** next to the group.

    b. To allow the group to enroll personally owned devices, select the **Allow group to enroll personally owned devices** checkbox.

    c. (Optional) If there are one or more sites in the JSS, choose the site you want to allow the LDAP user group to select during enrollment.

    If an LDAP user belongs to more than one LDAP user group in the JSS, the user will have the option to choose a site from a pop-up menu of sites assigned to each of those groups.

    d. Click **Done**.

10. Click **Save**.

Defining Site-Specific Settings and Apps for Personal Devices

Personal device profiles are used to enroll personally owned iOS and Android devices with the JSS via user-initiated enrollment. Personal device profiles are also used to perform management tasks on personally owned devices, including defining settings and distributing managed apps to personal iOS devices.

You can create one personal device profile for each site in the JSS, and one profile for the full JSS. A personal device profile is only used to enroll and manage devices if the profile is enabled in the General payload.

The personal device profile used to enroll and manage a device is based on the site that the mobile device user has access to. Site access is determined by the LDAP directory account or JSS user account credentials entered during user-initiated enrollment.

If a profile has been enabled for the site, that profile is used to enroll the device and add the device to the site. If a profile has not been enabled for the site, or if sites have not been added to the JSS, the profile for the full JSS is used if it is enabled.

Note: Changing the site that a personal device belongs to automatically changes the profile that is used to perform management tasks on the device. If a profile has not been enabled for the new site, the device will continue to be managed by the JSS, but all settings and apps that were previously defined by the old profile are removed.

Personal Device Profile Payloads

The payloads and settings that you can configure using a personal device profile represent a subset of the iOS configuration profile payloads and settings available for institutionally owned mobile devices.

Before creating a personal device profile, you should have basic knowledge of configuration profile payloads and settings, and how they affect mobile devices. For detailed information about each payload and setting, see Apple's Profile Manager documentation at:

https://help.apple.com/profilemanager/mac

Some personal device profile settings are unique to the JSS. For more information on these settings, see the following Knowledge Base article:

Personal Device Profile Settings Reference

Managed App Distribution to Personal iOS Devices

When creating or editing a personal device profile, you can specify managed in-house apps and App Store apps to distribute to personal iOS devices. Available apps include all managed apps that have been added to the site that the profile is assigned to, and all managed apps that have been added to the full JSS.

When a managed app is distributed to personal iOS devices, the personal device profile automatically applies settings to do the following:

- Distribute the app using the Install Automatically/Prompt Users to Install distribution method
- Remove the app when the MDM profile is removed
- Prevent backup of app data
- Prevent opening documents from managed apps in unmanaged apps

When selecting managed apps to distribute, you have the option to clone an unmanaged app and make it managed. This adds a managed version of the app to the JSS and leaves the original app unmanaged.

Note: Not all apps can be managed by the JSS. For information on the factors that determine whether an app can be managed, see "Understanding Managed Apps" in the *Casper Suite Administrator's Guide*.

Creating a Personal Device Profile

To create a personal device profile, the User-Initiated Enrollment settings must be configured to allow user-initiated enrollment for personally owned devices on the iOS or Android platform. In addition, you can only create a personal device profile if there is an available site (or the full JSS) that does not have a profile assigned to it.

1. Log in to the JSS with a web browser.
2. Click **Mobile Devices** at the top of the page.
3. Click **Personal Device Profiles**.

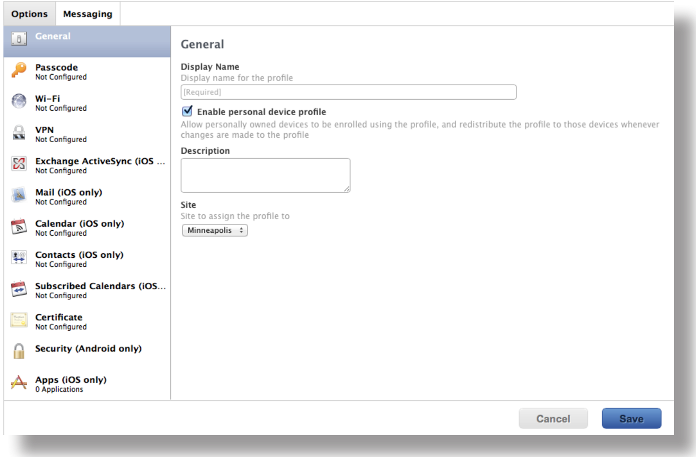
   On a smartphone or iPod touch, this option is in the pop-up menu.
4. Click **New** + .

   Note: Only one personal device profile can be created per site in the JSS. If all sites (or the full JSS) already have an assigned personal device profile, you will not be able to create a new one.

5. Use the General payload to configure basic settings for the profile, including the display name and the site to assign the profile to.

   Note: If you have site access only, the profile is assigned to the applicable site automatically and the **Site** pop-up menu is not displayed.

   To enable this personal device profile, select the **Enable personal device profile** checkbox.



General

Display Name
Display name for the profile
[Required]

☑ Enable personal device profile
Allow personally owned devices to be enrolled using the profile, and redistribute the profile to those devices whenever changes are made to the profile

Description

Site
Site to assign the profile to
Minneapolis

6. (Optional) Use the Passcode payload to configure passcode policies.

   Note: On Android devices, the user is allowed to cancel when prompted to change their passcode to meet the configured settings. If the device passcode does not meet the configured Passcode payload settings, the **Passcode Compliance** status will be reported as Not Compliant in inventory information for the device.

7. (Optional) Use the Wi-Fi payload to configure how devices connect to your wireless network, including the necessary authentication information.

8. (Optional) Use the VPN payload to configure how devices connect to your wireless network via VPN, including the necessary authentication information.

9. (Optional) Use the Exchange ActiveSync (iOS only) payload to define settings for connecting to your Exchange server.

10. (Optional) Use the Mail (iOS only) payload to define settings for connecting to POP or IMAP accounts.

11. (Optional) Use the Calendar (iOS only) payload to define settings for configuration access to CalDAV servers.

12. (Optional) Use the Contacts (iOS only) payload to define settings for configuration access to CardDAV servers.

13. (Optional) Use the Subscribed Calendars (iOS only) payload to define settings for calendar subscriptions.

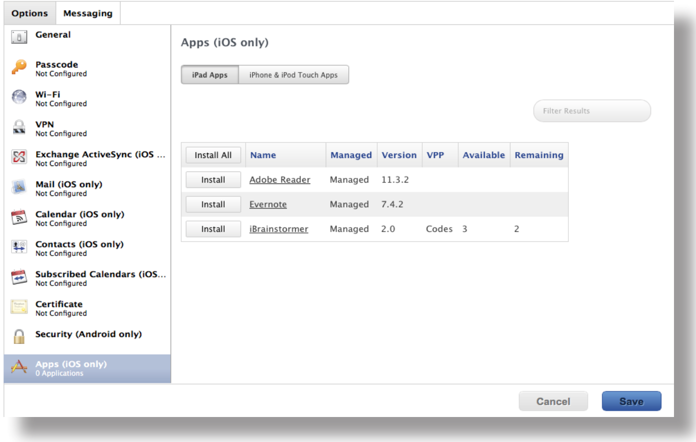
14. (Optional) Use the Certificate payload to specify the X.509 certificates (.cer, .p12, etc.) you want to install on devices to authenticate the device access to your network.

15. (Optional) Use the Security (Android only) payload to require encryption on Android devices.

    Warning: Android encryption is irreversible on most devices, and a factory reset must be performed to remove encryption from a device. In addition, failure to follow all onscreen instructions during the encryption process could lead to permanent loss of data.

16. (Optional) Select the Apps (iOS only) payload and then do any of the following:

    - To distribute a managed app to personal iOS devices added to the site (or the full JSS) that the profile is assigned to, click **Install** next to the app name. (To distribute all managed apps, click **Install All**.)
    - To remove a previously distributed managed app from devices, click **Remove** next to the app name. (To remove all managed apps previously distributed with this profile, click **Remove All**.)
    - To clone an unmanaged app to add a managed version of the app to the JSS, click the unmanaged app name and then click **Clone App and Make Managed**. A managed version of the app is added to the JSS and is made available for installation.



Apps (iOS only)

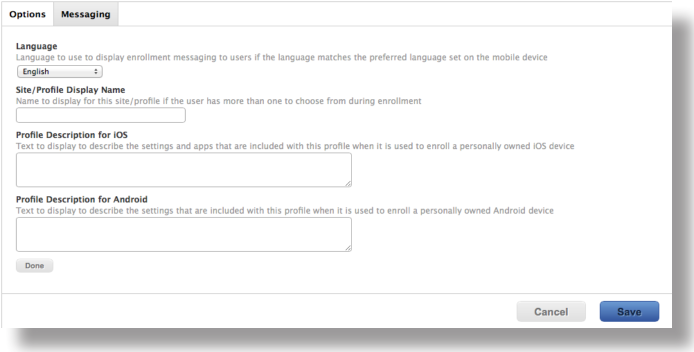
Install All	Name	Managed	Version	VPP	Available	Remaining
Install	Adobe Reader	Managed	11.3.2			
Install	Evernote	Managed	7.4.2			
Install	iBrainstormer	Managed	2.0	Codes	3	2

17. (Optional) To add messaging that displays during user-initiated enrollment if the user belongs to multiple LDAP user groups with access to multiple sites, do the following:

    a. Click the **Messaging** tab, and then click **Add** + .

    b. Choose a language from the **Language** pop-up menu.

    c. Use the settings on the pane to specify the site/profile display name, as well as the text to describe the settings included with the profile. In the description for iOS devices, you can also list any managed apps that will be included with the profile.



Language
Language to use to display enrollment messaging to users if the language matches the preferred language set on the mobile device
English

Site/Profile Display Name
Name to display for this site/profile if the user has more than one to choose from during enrollment

Profile Description for iOS
Text to display to describe the settings and apps that are included with this profile when it is used to enroll a personally owned iOS device

Profile Description for Android
Text to display to describe the settings that are included with this profile when it is used to enroll a personally owned Android device

   d. Click **Done**.

   e. Repeat this process as needed for other languages.

18. Click **Save**.

    If the profile is enabled in the General payload, it will be used to enroll personal devices with the JSS when users enter credentials for an LDAP directory account or a JSS user account that has access to the site (or to the full JSS).

Cloning, Editing, or Deleting a Personal Device Profile

Consider the following when cloning, editing, or deleting a personal device profile:

- **Cloning—**You can only clone a personal device profile if there is an available site (or the full JSS) that does not have a profile assigned to it.
- **Editing—**When a personal device profile is edited and saved, it is automatically redistributed to personal devices belonging to the site (or the full JSS) that the profile is assigned to.

  When editing an enabled profile, if you deselect the **Enable personal device profile** checkbox in the profile's General payload, all personal devices belonging to the site that the profile is assigned to will continue to be managed by the JSS, but all settings and apps that were previously defined by the profile are removed.
- **Deleting—**When a personal device profile is deleted, all personal devices belonging to the site that the profile is assigned to will automatically be changed to use the profile assigned to the full JSS if a profile for the full JSS is enabled. If an enabled profile for the full JSS does not exist, or if you are deleting the profile assigned to the full JSS, then the applicable devices will continue to be managed by the JSS, but all settings and apps that were previously defined by the profile are removed.

  Note: A personal device profile is automatically deleted if the site it is assigned to is deleted from the JSS.

1. Log in to the JSS with a web browser.
2. Click **Mobile Devices** at the top of the page.
3. Click **Personal Device Profiles**.

   On a smartphone or iPod touch, this option is in the pop-up menu.

   - If you have full access to the JSS, a list of personal device profiles for all sites is displayed. Click the profile you want to clone, edit, or delete.
   - If you have site access only, the personal device profile for your site is displayed.
4. Do one of the following:
   - To clone the profile, click **Clone** and make changes as needed. Then click **Save**.
   - To edit the profile, click **Edit** and make changes as needed. Then click **Save**.
   - To delete the profile, click **Delete** and then click **Delete** again to confirm.

The result of the clone, edit, or delete action is applied to personally owned devices belonging to the site (or the full JSS) that the profile is assigned to the next time the devices contact the JSS.

Directing Users to the Enrollment Portal to Enroll Personal Devices

To direct users to the enrollment portal for user-initiated enrollment, you need to provide them with the enrollment URL. The enrollment URL is the full URL for the JSS followed by "/enroll". For example:

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

You can provide the enrollment URL to users in the way that best fits your environment.

Adding a Network Integration Instance

Optionally, you can automatically refer users to the enrollment portal by integrating the JSS with a network access management service, such as Cisco Identity Services Engine. (For more information on integrating the JSS with a network access management service, see "Network Integration" in the *Casper Suite Administrator's Guide*.)

1. Log in to the JSS with a web browser.
2. If you have not already created and saved an advanced mobile device search to be used by the network access management service, do the following to create the search:
   a. Click **Mobile Devices** at the top of the page.
   b. Click **Search Inventory**.
      On a smartphone or iPod touch, this option is in the pop-up menu.
   c. Click **New** + .
   d. On the Search pane, select the **Save this Search** checkbox and enter a display name for the search.
   e. Click the **Criteria** tab.
   f. Click **Add** + .
   g. Click **Choose** for "All Criteria", and then click **Choose** for "Managed".
      When the "Managed" criteria is displayed, make sure the operator is set to "is".
   h. Click **Browse** ⋯, and then click **Choose** for "Managed".
   i. Click the **Display** tab and select the attribute fields you want to display in your search results.
   j. Click **Save**.
      The results of the search are updated each time mobile devices check in with the JSS and meet or fail to meet the specified search criteria.

   Note: Additional criteria can be added as needed, depending on your organization's compliance standards.

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

4. Click **Network Organization**.

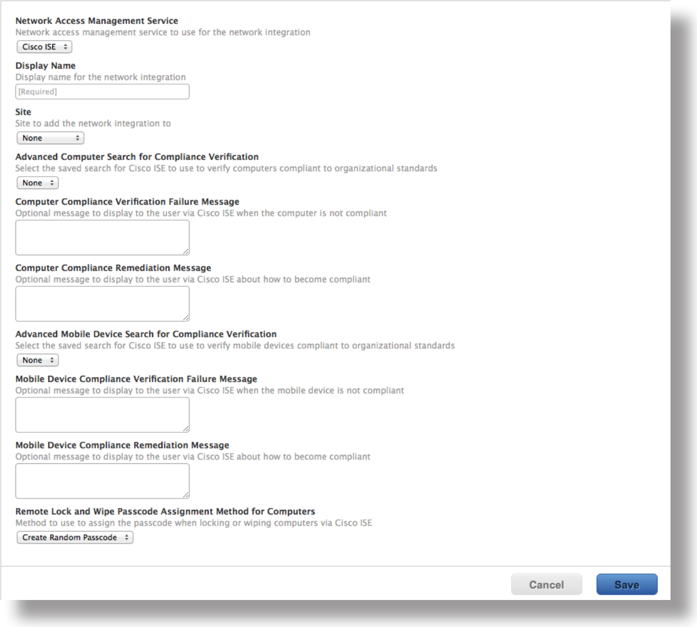
   On a smartphone or iPod touch, this option is in the pop-up menu.

5. Click **Network Integration** 🌐.

6. Click **New** +.

   Note: Only one network integration instance can be added per site in the JSS. If all sites already have a network integration instance, you will not be able to add a new one.

7. Configure the network integration instance using the settings on the pane, including the site, the advanced mobile device search to be used for compliance verification, and compliance messaging to be displayed to users.



Network Access Management Service
Network access management service to use for the network integration
Cisco ISE

Display Name
Display name for the network integration
[Required]

Site
Site to add the network integration to
None

Advanced Computer Search for Compliance Verification
Select the saved search for Cisco ISE to use to verify computers compliant to organizational standards
None

Computer Compliance Verification Failure Message
Optional message to display to the user via Cisco ISE when the computer is not compliant

Computer Compliance Remediation Message
Optional message to display to the user via Cisco ISE about how to become compliant

Advanced Mobile Device Search for Compliance Verification
Select the saved search for Cisco ISE to use to verify mobile devices compliant to organizational standards
None

Mobile Device Compliance Verification Failure Message
Optional message to display to the user via Cisco ISE when the mobile device is not compliant

Mobile Device Compliance Remediation Message
Optional message to display to the user via Cisco ISE about how to become compliant

Remote Lock and Wipe Passcode Assignment Method for Computers
Method to use to assign the passcode when locking or wiping computers via Cisco ISE
Create Random Passcode

8. Click **Save**.

   After saving the network integration instance, a unique network integration URL appears at the bottom of the pane. This URL will be used by the network access management service to communicate with the specific JSS network integration instance.

User Experience for Personal Device Enrollment

When a user accesses the enrollment URL from a mobile device, they are guided through a series of steps to enroll the device. The steps vary depending on the platform of the device being enrolled—iOS or Android.

The text displayed in each step of the enrollment experience reflects the customized text that has been entered on the Messaging pane tabs in the User-Initiated Enrollment settings.

Note: For detailed information on the user experience for enrolling a personal device, including screen shots of each enrollment page displaying the default English text, see "User-Initiated Enrollment Experience for Mobile Devices" in the *Casper Suite Administrator's Guide*.

User-Initiated Enrollment Experience for iOS Devices

The following steps outline the user experience for enrolling a personally owned iOS device:

1. Log in.
When users access the enrollment portal from their device, they must log in by entering credentials for an LDAP directory account or a JSS user account with user-initiated enrollment privileges.

2. Specify the device ownership type (if applicable).
If both institutionally owned device enrollment and personally owned device enrollment are enabled in the JSS, the user must select the personal device ownership option. When this option is selected, the user can view the personal device management description that has been entered on the Messaging pane **Device Ownership** tab in the User-Initiated Enrollment settings. This description represents the IT management capabilities for a personal device.

3. Accept the End User License Agreement (if applicable).
If an End User License Agreement (EULA) has been entered on the Messaging pane **EULA** tab in the User-Initiated Enrollment settings, the user must accept the EULA terms to continue with enrollment.

4. Choose a site (if applicable).
If the user is a member of multiple LDAP user groups and site access has been configured separately for those groups on the Access pane in the User-Initiated Enrollment settings, the user must select the site to use to enroll their personal device. If a profile description was entered on the Messaging pane when creating the personal device profile assigned to the selected site, that profile description is displayed.

5. Install the CA certificate (if applicable).
The user must tap through a series of screens to install the CA certificate.

Note: This step is skipped if the **Skip certificate installation during enrollment** checkbox is selected on the General pane in the User-Initiated Enrollment settings and the user's environment has an SSL certificate that was obtained from an internal CA or a trusted third-party vendor.

6. Install the MDM profile.
The user must tap through a series of screens to install the MDM profile. On the first screen in the series, the user can tap the **Information** ⓘ icon to view the personal device management description that has been entered on the Messaging pane **Device Ownership** tab in the User-Initiated Enrollment settings. This description represents the IT management capabilities for a personal device.

Enrollment is complete.
When notified that enrollment is complete, the device is enrolled with the JSS.

User-Initiated Enrollment Experience for Android Devices

The following steps outline the user experience for enrolling a personally owned Android device:

1. Log in.
When users access the enrollment portal from their device, they must log in by entering credentials for an LDAP directory account or a JSS user account with user-initiated enrollment privileges.

2. Accept the End User License Agreement (if applicable).
If an End User License Agreement (EULA) has been entered on the Messaging pane **EULA** tab in the User-Initiated Enrollment settings, the user must accept the EULA terms to continue with enrollment.

3. Choose a site (if applicable).
If the user is a member of multiple LDAP user groups and site access has been configured separately for those groups on the Access pane in the User-Initiated Enrollment settings, the user must select the site to use to enroll their personal device. If a profile description was entered on the Messaging pane when creating the personal device profile assigned to the selected site, that profile description is displayed.

4. Install Self Service Mobile for Android.
The user is prompted to go to Google Play to install Self Service Mobile, and then return to the enrollment portal. Self Service Mobile must remain installed on an enrolled Android device to keep the device managed by the JSS.

Note: If the user already has Self Service Mobile installed, they can skip the app installation step.

5. Install the MDM profile.
The user is prompted to continue to the MDM profile installation. On this screen, the user can tap the **Information** ⓘ icon to view the personal device management description that has been entered on the Messaging pane **Device Ownership** tab in the User-Initiated Enrollment settings. This description represents the IT management capabilities for a personal device.

6. Activate Self Service Mobile as a device administrator.
When prompted, the user must activate Self Service Mobile as a device administrator.

Enrollment is complete.
When notified that enrollment is complete, the device is enrolled with the JSS.

(Optional) Install third-party apps.
The user can install the following third-party apps from Google Play to access institutional resources as appropriate for their environment:

- **Divide—**Allows the user to configure email, calendar, and contacts on their device.

  The user can tap a link to view the following guide for Divide installation and setup instructions:

  http://support.divide.com/hc/en-us/articles/201962740-Installation-Guide-Android

- **Cisco AnyConnect—**Allows the user to configure a VPN connection.

  The AnyConnect app must be configured to permit external configuration. This allows the VPN connection in AnyConnect to be configured automatically using the settings in the applicable personal device profile VPN payload.

  When the user taps the link to view setup instructions for AnyConnect, they are instructed to complete the following steps to enable external configuration:

  a. Tap the **AnyConnect** icon to open the app.
  b. Accept the End User License Agreement.
  c. In AnyConnect, tap **Menu** > **Settings** > **Application Preferences**.
  d. Tap **External Control**, and then tap **Enabled**.

Viewing and Reporting on Personal Devices in Inventory

After enrolling personal devices using the instructions in this guide, you can use advanced mobile device searches to identify personal devices enrolled in your environment and view a subset of basic inventory information for a device.

When you create and save an advanced mobile device search, the results of the search are updated each time devices contact the JSS. This allows you to view up-to-date information on the devices in your organization at any time.

Note: For information on the inventory information that you can view and edit for a personal device, see "Viewing and Editing Inventory Information for a Mobile Device" in the *Casper Suite Administrator's Guide*.

Performing an Advanced Mobile Device Search for Personal Devices

You can create and save an advanced mobile device search to view all personal devices managed by the JSS. You can also use the advanced search to identify whether those devices have the most up-to-date personal device profile installed.

1. Log in to the JSS with a web browser.
2. Click **Mobile Devices** at the top of the page.
3. Click **Search Inventory**.
   On a smartphone or iPod touch, this option is in the pop-up menu.
4. Click **New** + .
5. On the Search pane, select the **Save this Search** checkbox and enter a display name for the search.
6. Click the **Criteria** tab.
7. To search for personally owned devices in inventory, do the following:
   a. Click **Add** + .
   b. Click **Choose** for "All Criteria", and then click **Choose** for "Device Ownership Type".
   c. Click **Browse** ⋯, and then click **Choose** for "Personal".

8. To narrow the search to find personal devices that do not have an up-to-date personal device profile installed, do the following:

   a. Click **Add** + .

   b. Click **Choose** for "All Criteria", and then click **Choose** for "Personal Device Profile Status".

   c. Click **Browse** ..., and then click **Choose** for "Out of date".

9. Click the **Display** tab and select the attribute fields you want to display in your search results.

10. Click **Save**.

    The results of the search are updated each time mobile devices check in with the JSS and meet or fail to meet the specified search criteria.

11. Click **View**.

    The list of search results is displayed.

12. Do one of the following:

    - To view inventory information for a mobile device in the list, click the device. The device's inventory information is displayed.
    - To export the search results to a file, click **Export** and follow the onscreen instructions to export the data. The report is downloaded immediately.

Remotely Performing Management Commands on a Personal Device

The remote commands available in the JSS allow you to remotely perform the following tasks on a personal device:

- **Update Inventory—**Prompts the mobile device to contact the JSS and update its inventory.
- **Lock Device**—Locks the mobile device. If the mobile device has a passcode, the user must enter it to unlock the device.
- **Wipe Institutional Data—**Permanently erases institutional data and settings on the device, and makes the device unmanaged. On iOS, managed apps are also removed. On Android, the Self Service Mobile app is also deactivated as a device administrator.
- **Send Blank Push**—Sends a blank push notification. On iOS, the device is prompted to check in with Apple Push Notification service (APNs). On Android, the device checks in with Google Cloud Messaging.

Sending a Remote Command

1. Log in to the JSS with a web browser.
2. Click **Mobile Devices** at the top of the page.
3. Perform a simple or advanced mobile device search.
4. Click the mobile device you want to send the remote command to.
5. Click the **Management** tab, and then click the button for the remote command that you want to send.

   (iOS only) If you are sending a Lock Device command, enter a lock message and phone number if desired, and then click **Lock Mobile Device**.

The remote command runs on the mobile device the next time the device contacts the JSS.

Viewing the Status of Remote Commands

1. Log in to the JSS with a web browser.
2. Click **Mobile Devices** at the top of the page.
3. Perform a simple or advanced mobile device search.
4. Click the mobile device you want to view remote commands for.

5. Click the **History** tab.

6. Use the Management History pane to view completed, pending, or failed commands.

Canceling a Remote Command

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

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

3. Perform a simple or advanced mobile device search.

4. Click the mobile device for which you want to cancel a remote command.

5. Click the **History** tab, and then click **Pending Commands**.

6. Find the command you want to cancel, and click **Cancel** across from it.