

# VMware AirWatch Product Provisioning for Windows 7 Guide

Using Product Provisioning for managing Windows 7 devices.

AirWatch v9.3

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# Chapter 1:

## Overview

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## Introduction to Product Provisioning for Windows 7

Product provisioning allows you to create, through AirWatch, products containing profiles, applications, and files/actions (depending on the platform you use). These products follow a set of rules, schedules, and dependencies as guidelines for ensuring your devices remain up to date with the content they need.

Product provisioning also encompasses the use of relay servers. These servers are FTP(S) servers designed to work as a go-between for devices and the AirWatch Console. Create these servers for each store or warehouse to store product content for distribution to your devices.

As this guide focuses on the functionality provided by product provisioning, it does not contain all the features and functionality that AirWatch offers for managing Windows 7 devices. For more information on general MDM functionality for Windows 7 devices, see the **Windows 7 Platform Guide** available on [AirWatch Resources](#).

## Supported Devices, OS, and Agents

The product provisioning functionality supports different devices and operating systems. The functionality available changes based on the supported rugged device.

AirWatch supports product provisioning for devices with the following operating systems:

- Windows 7 (32 and 64 bit).
- Windows 8.1 and Windows 10 devices with AirWatch Protection Agent installed.

# Chapter 2:

## Relay Server Configuration

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## Relay Servers Overview

Relay servers act as a content distribution node that provides help in bandwidth and data utilization control. Relay servers act as a proxy between the AirWatch server and the rugged device for product provisioning.

### Relay Server Basics

This proxy basically serves as an FTP/Explicit FTPS/SFTP server that distributes products to the device for download and installation. Using relay servers allows the product to distribute to all devices without consuming all of the bandwidth to the main/central MDM server.

Relay servers are optional, but recommended, for pushing products to downloaded apps and content – as opposed to downloading directly from the AirWatch server. Relay servers also add redundancy through the fallback feature. If a device's relay server is down, the device falls back to the next relay server in the hierarchy system until it finds a working server or connects to the AirWatch server. If you are not using a relay server, the device downloads apps and content directly from the AirWatch server.

**Note:** Relay servers, both push and pull configurations, fall back to the next available relay server in its hierarchy and continue to fall back until the device finds a suitable server or reaches AirWatch. This ensures devices with products provisioned to them have access to their content.

### Source Server vs Relay Server

A source server is the original location of the data, usually a database or content repository. Once the data is downloaded from the source server to the AirWatch Console, it is then transferred to the relay server. The data is then downloaded from the relay server to devices.

### Configure a Relay Server

Configure an FTP, Explicit FTPS, or SFTP file server to integrate with AirWatch as a relay server. AirWatch does not support Implicit FTPS relay servers. For more information, see [Configure a Relay Server on page 8](#).

### Pull Relay Server Configuration

Relay servers either push or pull content based on the configuration. A pull relay server pulls content from AirWatch based on certain variables established in the server configuration. A push server pushes content from AirWatch to devices whenever it is published. For more information on installing a pull server, see [Pull Service Based Relay Server Configuration on page 11](#).

### Bulk Importing

The Relay Server Import feature loads relay servers into the system in bulk. This feature simplifies the configuration of multiple relay servers. For more information, see [Batch Import Relay Servers on page 10](#).

### Remote Viewing of Files on a Relay Server

After configuring a relay server and assigning products to use the relay server, you can view the files hosted on the server. For more information, see [Remote Viewing Files on Relay Server on page 14](#).

## Relay Server Management

Maintaining Relay Servers keeps your products running smoothly so your devices remain up to date. AirWatch offers several tools to ensure your relay servers work as intended. For more information, see [Relay Server Management on page 14](#).

## Configure a Relay Server

Configure a relay server by configuring an FTP, Explicit FTPS, or SFTP file server and integrating it with AirWatch. AirWatch does not support Implicit FTPS relay servers.

**Important:** If you use the pull service to create a pull-based relay server, you must give SYSTEM full access to the home directory. This allows the pull service to store and remove files from the directory.

## Requirements

- An FTP, Explicit FTPS, or SFTP server.
- You must create an FTP user with a home directory. This user must have read/write/delete permissions for both the directory and the files used in the relay server. This FTP user must have a username and password for authentication.
- While SFTP servers are supported by AirWatch, the supported staging clients, Stage Now (Android) and Rapid Deployment, do not support SFTP servers for use with barcode staging.

## Procedure

1. Navigate to **Devices > Staging & Provisioning > Relay Servers > List View** and select **Add**, followed by **Add Relay Server**.

2. Complete all applicable settings in the tabs that are displayed.

Setting	Description
<b>General</b>	
<b>Name</b>	Enter a name for the relay server.
<b>Description</b>	Enter a description for the relay server.
<b>Relay Server Type</b>	<p>Select either Push or Pull as the relay server method.</p> <p><b>Push</b> – This method is typically used in on-premises deployments. The AirWatch Console pushes content and applications contained in the product or staging to the relay server.</p> <p><b>Pull</b> – This method is typically used in SaaS deployments. A web-based application stored in the relay server pulls content and applications contained in the product or staging from the AirWatch Console through an outbound connection.</p> <p>For more information on installing a pull server, see <a href="#">Pull Service Based Relay Server Configuration on page 11</a>.</p>
<b>Restrict Content Delivery Window</b>	<p>Enable to limit content delivery to a specific time window.</p> <p>Provide a <b>Start Time</b> and <b>End Time</b> based on the relay server time.</p>
<b>Assignment</b>	
<b>Managed By</b>	Select the organization group that manages the relay server.
<b>Staging Server</b>	<p>Assign the organization groups that use the relay server as a staging server.</p> <p>A staging server only works for the staging process involving the supported staging clients, Stage Now (Android) and Rapid Deployment.</p>
<b>Production Server</b>	<p>Assign the organization groups that use the relay server as a production server.</p> <p>A production server works with any device with the proper agent installed on it.</p>
<b>Device Connection</b>	
<b>Protocol</b>	<p>This is the information the device uses to authenticate with the FTP(s) server when downloading apps and content.</p> <p><b>FTP, Explicit FTPS, or SFTP</b> as the Protocol for the relay server.</p> <p>If using Explicit FTPS, your Explicit FTPS server must have a valid SSL certificate. Configure the SSL certificate on the Explicit FTPS server.</p>
<b>Hostname</b>	Enter the name of the server that hosts the device connection.
<b>Port</b>	<p>Select the port established for your server.</p> <div style="border: 1px solid gray; padding: 10px; margin-top: 10px;"> <p><b>Important:</b> The ports you configure when you create your FTP, Explicit FTPS, or SFTP server must be the same ports you enter when creating a relay server in the AirWatch Console. AirWatch does not support Implicit FTPS relay servers.</p> </div>

Setting	Description
<b>User</b>	Enter the server username.
<b>Password</b>	Enter the server password.
<b>Path</b>	Enter the path for the server. This path must match the home directory path of the ftp user. For example, if the ftp user's home directory is C:\ftp\home\jdoe, the path entered into this field must be C:\ftp\home\jdoe.
<b>Passive Mode</b>	Enable to force the client to establish both the data and command channels.
<b>Verify Server</b>	This setting is only visible when <b>Protocol</b> is set to FTPS. Enable to ensure the connection is trusted and there are no SSL errors. If left unchecked, then the certificate used to encrypt the data can be untrusted and data can still be sent.

- For a push server, select the **Console Connection** tab and complete the settings. This is the information that the AirWatch Console uses to authenticate with the FTP(S) server when pushing apps and content. The settings are typically identical to the **Device Connection** tab.

For a pull server, select the **Pull Connection** tab and complete the settings.

Settings	Descriptions
<b>Pull Local Directory</b>	Enter the local directory path for the server.
<b>Pull Discovery Text</b>	Enter the IP addresses or the MAC addresses of the server. Separate each address with commas. IP addresses use periods as normal but MAC addresses do not use any punctuation in this form.
<b>Pull Frequency</b>	Enter the frequency in minutes that the pull server should check with the AirWatch Console for changes in the product.

- Press the **Test Connection** button to test your Console Connection to the server. Each step of the connection is tested and the results are displayed to help with troubleshooting connection issues.

Press the **Export** button on the Test Connection page to export the data from the test as a CSV file.

- Select **Save**.

## Batch Import Relay Servers

The Relay Server Import feature loads relay servers into the system in bulk. Make sure to associate the relay server users with an organization group.

Save all files in .csv format before importing.

To bulk import relay servers, take the following steps.

- Navigate to **Devices > Staging & Provisioning > Relay Servers > List View** and select **Batch Import**.
- Enter a **Batch Name**.

3. Enter a **Batch Description**.
4. Select **Choose File** to upload the **Batch File**. Batch files must be in CSV format. Select the **Information** icon (  ) to download a template.
5. Select **Save** to upload the batch import.

## Pull Service Based Relay Server Configuration

Pull service based relay servers periodically contacts the AirWatch Console to check for new products, profiles, files, and actions, and applications assigned to devices under the pull relay servers purview. Configure a pull server to deliver content to devices without excessive bandwidth use.

If you make changes or additions, the server will create an outbound connection to the AirWatch Console to download the new content to the server before pushing it to its devices. Pull service is best used when traversing any NAT firewall or SaaS to on-premises hybrid environments because SaaS customers typically do not want the service to tie-up bandwidth when content is delivered from AirWatch to the store server.

To create a pull relay server, you must first have an FTP, Explicit FTPS, or SFTP server to function as the relay server. FTP (S) servers must be compliant with RFC 959 and RFC 2228 set by the Internet Engineering Task Force. The instructions below detail how to create a pull relay server from an Explicit FTP(S) server.

**Important:** The ports you configure when you create your FTP, Explicit FTPS, or SFTP server must be the same ports you enter when creating a relay server in the AirWatch Console. AirWatch does not support Implicit FTPS relay servers.

This process covers the installation of one server at a time. For bulk installation, you must use a third-party application. AirWatch supports importing servers in bulk through the Bulk Import option. See [Batch Import Relay Servers on page 10](#) for more information.

## Create a Windows-Based Pull Service Relay Server

Configure a pull service relay server using a Windows FTP, Explicit FTPS, or SFTP server for use with product provisioning and staging. The pull service must be installed before you integrate the server with the AirWatch Console.

### Prerequisites

- An FTP, Explicit FTPS, or SFTP server. AirWatch recommends using FTP or Explicit FTPS servers, as SFTP is not a standardized format. AirWatch does not support Implicit FTPS relay servers.
- .NET must be installed on Windows-based servers.
- The relay server requires network access between the server (in-store, distribution center, etc.) and to the AirWatch SaaS environment.
- Each server requires disk storage of 2 MB for the pull server installer as well as storage space for all the content pulled to the server.

## Process

To create a windows-based pull relay server, take the following steps.

1. Configure an FTP, Explicit FTPS, or SFTP server. You must create an FTP user with read/write/delete permissions for both the directory and the files used in the relay server. This FTP user must have a username and password for authentication. Note the home directory of the user for use in configuring the pull service.
2. Navigate to **Groups & Settings > All Settings > System > Enterprise Integration > Pull Service Installers**.
3. Download the Windows Pull Service Installer and the Configuration file onto the server using your preferred server management system.
4. Open the XML config file and update the IP Address with your console server FQDN, for example, cn274.awmdm.com.

```
<PullConfiguration>
  <libraryPath>C:\AirWatch\PullService\</libraryPath>
  <endPointAddress>https://[endpoint URL]/contentpull/</endPointAddress>
</PullConfiguration>
```

5. Run the WindowsPullServiceInstaller.exe.  
.NET will be installed before the MSI is extracted.
6. Follow the instructions prompted by the installer.
7. Navigate to **Devices > Staging & Provisioning > Relay Servers > Undiscovered Pull Relay Servers**. If you have configured the FTP, Explicit FTPS, or SFTP server correctly, it will display on this screen. If you do not see your server, check your configuration settings.
8. Configure the relay server as a pull relay server in the AirWatch Console. See [Configure a Relay Server on page 8](#) for more details.

If you are using the silent install from the command prompt, use the following commands:

- WindowsPullServiceInstaller.exe /s /v"/qn/"
- To include log: WindowsPullServiceInstaller.exe /s /v"/qn" /l WindowsPullServiceInstaller.txt"

The installer looks for the PullserviceInstaller.config file in the installer execution directory. If the file is missing, the installer prompts you to let you know the file is missing.

## Create a Linux-Based Pull Service Relay Server

Configure a pull service relay server using a Linux FTP, Explicit FTPS, or SFTP server for use with product provisioning and staging. The pull service must be installed before you integrate the server with the AirWatch Console.

## Prerequisites

- An FTP, Explicit FTPS, Implicit FTPS, or SFTP server. AirWatch recommends using FTP or Explicit FTPS servers, as SFTP is not a standardized format. AirWatch does not support Implicit FTPS relay servers.
- Linux-based servers must run either CentOS or SLES 11 SP3.
- Java 8+ must be installed on Linux-based servers.
- The relay server requires network access between the server (in-store, distribution center, etc.) and to the AirWatch SaaS environment.
- Each server requires disk storage of 2 MB for the pull server installer as well as storage space for all the content pulled to the server.

## Process

To create a Linux-based pull relay server, take the following steps.

1. Configure an FTP, Explicit FTPS, or SFTP server. You must create an FTP user with read/write/delete permissions for both the directory and the files used in the relay server. This FTP user must have a username and password for authentication. Note the home directory of the user for use in configuring the pull service.
2. Navigate to **Groups & Settings > All Settings > System > Enterprise Integration > Pull Service Installers**.
3. Download the Linux Pull Service Installer and the Configuration file onto the server using your preferred server management system.
4. Open the XML config file and update the IP Address with your console server FQDN, for example, cn274.awmdm.com.

```
<PullConfiguration>
  <libraryPath>C:\AirWatch\PullService\</libraryPath>
  <endPointAddress>https://[endpoint URL]/contentpull/</endPointAddress>
</PullConfiguration>
```

5. In the command prompt, enter:

```
sudo ./LinuxPullServerInstaller.bin
```

- a. Alternatively, enter the following command to silently install:

```
sudo ./LinuxPullServerInstaller.bin -I silent
```

- Navigate to **Devices > Staging & Provisioning > Relay Servers > Undiscovered Pull Relay Servers**. If you have configured the FTP, Explicit FTPS, or SFTP server correctly, it will display on this screen. If you do not see your server, check your configuration settings.
- Configure the relay server as a pull relay server in the AirWatch Console. See [Configure a Relay Server on page 8](#) for more details.

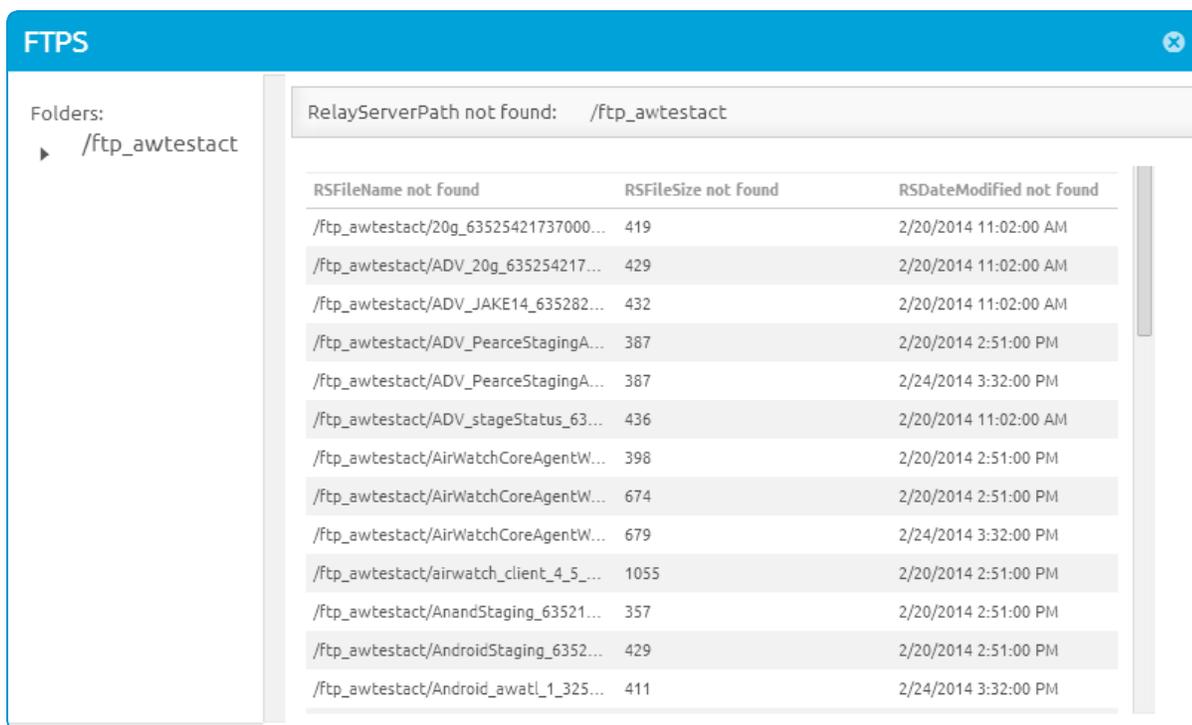
The installer looks for the PullserviceInstaller.config file in the installer execution directory. If the file is missing, the installer prompts you to let you know the file is missing.

## Remote Viewing Files on Relay Server

View files sent to a relay server for distribution to devices through the Remote File Viewer.

To access the Remote File Viewer, take the following steps.

- Navigate to **Devices > Staging & Provisioning > Relay Servers > List View**.
- On the far right of a server listing, select the **More** option.
- Select **Remote File List** to open the Remote File List for your viewing. You can see the files are on a relay server.



The screenshot shows a window titled "FTPS" with a close button in the top right corner. On the left, there is a "Folders:" section with a tree view showing "/ftp\_awtestact". The main area displays a message "RelayServerPath not found: /ftp\_awtestact" and a table of files. The table has three columns: "RSFileName not found", "RSFileSize not found", and "RSDateModified not found". The table lists 15 files with their respective sizes and modification dates.

RSFileName not found	RSFileSize not found	RSDateModified not found
/ftp_awtestact/20g_63525421737000...	419	2/20/2014 11:02:00 AM
/ftp_awtestact/ADV_20g_635254217...	429	2/20/2014 11:02:00 AM
/ftp_awtestact/ADV_JAKE14_635282...	432	2/20/2014 11:02:00 AM
/ftp_awtestact/ADV_PearceStagingA...	387	2/20/2014 2:51:00 PM
/ftp_awtestact/ADV_PearceStagingA...	387	2/24/2014 3:32:00 PM
/ftp_awtestact/ADV_stageStatus_63...	436	2/20/2014 11:02:00 AM
/ftp_awtestact/AirWatchCoreAgentW...	398	2/20/2014 2:51:00 PM
/ftp_awtestact/AirWatchCoreAgentW...	674	2/20/2014 2:51:00 PM
/ftp_awtestact/AirWatchCoreAgentW...	679	2/24/2014 3:32:00 PM
/ftp_awtestact/airwatch_client_4_5_...	1055	2/20/2014 2:51:00 PM
/ftp_awtestact/AnandStaging_63521...	357	2/20/2014 2:51:00 PM
/ftp_awtestact/AndroidStaging_6352...	429	2/20/2014 2:51:00 PM
/ftp_awtestact/Android_awatl_1_325...	411	2/24/2014 3:32:00 PM

## Relay Server Management

Maintaining Relay Servers keeps your products running smoothly so your devices remain up to date.

### Relay Server Status

After creating a relay server, refresh the relay server detail page to get the real-time status of the connection.

		Primary Relay Server	Pull	FTP://11.111.1.111/Example	Akron		
		Warehouse 1	Push	FTP://11.111.1.111/Example	rickdr4		
		Warehouse 2	Push	FTP://11.111.1.111/Example	aaron		
		Warehouse 3	Push	FTP://11.111.1.111/Example	aaron		

The **Source Server** and **Relay Server** statuses are as follow:

Settings	Descriptions	
	Source Server	Relay Server
	Last retrieval from server succeeded.	Last file sync with server succeeded.
	Retrieval from server in progress.	File sync with server in progress
	Last retrieval failed.	Last file sync failed.

Once the check mark displays for both source server and relay server, the product components are available for distribution to the end user device.

## Advanced Info

Along with the Relay Server Status, you can access the **Advanced Info** action for more detailed information pertaining to the server. This action can be found in the **More Actions** options drop-down available after selecting a relay server.. The Advanced Info action displays the **Queued Count** of files, the **Last Error Code** displayed, and the **Last Error Description**.

**Relay Server Advanced Information** ✕

**CONTENT DELIVERY INFO**

Queued Count **1690**

Last Error Code **0**

Last Error Description **Success**

# Chapter 3:

## Products

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## Product Provisioning Overview

The main feature of the Product Provisioning system is creating an ordered installation of profiles, applications, and files/actions (depending on the platform used) into one product to be pushed to devices based on the conditions you create.

### Product Provisioning Basics

Once products are created and activated, they are pushed to the device based on the conditions set. Conditions are an optional tool that determine when a product is downloaded as well as when it is installed. Content provisioning by products can be pushed to devices through optional relay servers.

Products are pushed to devices that are chosen by smart group assignments. These groups control which devices get which product based on how the group is created. You can also use Assignment Rules to further target your products to devices.

**Important:** You must upload the content of the product before a product can be created.

### Profiles for Product Provisioning

The product provisioning system allows you to create profiles for your rugged devices. The profiles created for rugged devices are installed or uninstalled as part of a product. Profiles created under Products are different than those created through AirWatch MDM. For more information, see [Product Provisioning Profiles on page 17](#).

### Files/Actions

You can install, configure, and upgrade devices by assigning files/actions to a product. The files/actions component also contains ways to manage the file system of a device. For more information, see [Files/Actions for Products on page 19](#).

### Product Conditions

A condition determines when the product or OS upgrade package should be downloaded and installed. Conditions are checked when a product is pushed to a device. For more information, see [Product Conditions on page 21](#).

### Create a Product

After creating the content you want to push to devices, create a product that controls when the content is pushed as well as the order of installation of the product. For more information, see [Create a Product on page 30](#).

## Product Provisioning Profiles

The product provisioning system allows you to create profiles for your rugged devices. The profiles created for rugged devices are installed or uninstalled as part of a product.

Profiles created under Products are different than those created through AirWatch MDM. This section lists the differences between profiles created for normal device use and those created for use in product provisioning.

## Auto-Renewal of Certificates Not Supported

If you include a certificate profile in your product, the certificate does not auto-renew.

You can get around this limitation by pushing a product with a full manifest (minus the wifi cert profile) then assigning a separate MDM wifi cert profile by navigating to **Devices > Profiles & Resources > Profiles > ADD**.

## Profile Creation and General Settings

Profiles for use with product provisioning must be created by navigating to **Devices > Staging & Provisioning > Components > Profiles** and select **Add**.

While creating these product provisioning profiles, the general tab will be different than the normal general tab for profiles.

**Note:** Assignment of profiles happens at the product level and not at the profile level as it is in smartphone profiles.

## Saving Product Provisioning Profiles

After configuring your product provisioning profile, select **Save** instead of **Save & Publish**.

Profiles names cannot be longer than 255 characters.

## Edit Product Provisioning Profiles

Unlike profiles created for typical MDM deployments, profiles for product provisioning have different rules governing editing or deleting.

## Update Profiles

When you edit an existing profile, the version number automatically increases. After saving the edits, AirWatch runs a check on all active products to find any that contain the newly edited profile.

If any active products contain the profile, a warning prompt displays listing all active products affected by the edited profile. You can then choose to **Activate** or **Deactivate** a product using the profile.

## Delete Profiles

AirWatch checks any attempt to delete a profile against the list of active products.

In order to delete a profile, you must detach it from all products.

1. Select the **Profile** listed in the Warning prompt.
2. Select **Edit**.
3. Remove the profile from the product.
4. Select **Save**.
5. Repeat the steps above for all products containing the profile.
6. Once the profile detaches from all products, you may delete the profile.

If a profile is part of an active product, a warning prompt displays listing any product that uses the profile.

## Files/Actions for Products

You can install, configure, and upgrade devices by assigning files/actions to a product. The files/actions component also contains ways to manage the file system of a device.

A file/action is the combination of the files you want on a device and the actions you want performed on the device with the file. You cannot assign files/actions directly to a device. Instead, you assign a file/action to a product. The product is then assigned to the device using Smart Group assignment.

View the files/actions in the Files/Actions List View.

## Create a Files/Actions Component

Create Files/Actions to install and configure files and upgrades onto your devices using product provisioning.

To add files and actions to a Files/Actions component, take the following steps.

1. Navigate to **Devices > Staging & Provisioning > Components > Files/Actions** and select **Add Files/Actions**.
2. Select the device Platform for which you want to make the files/actions.
3. Complete the **General** fields.

Settings	Descriptions
<b>Name</b>	Enter a name for the files/actions. The name cannot be longer than 255 characters.
<b>Description</b>	Enter a short description for the files/actions.
<b>Version</b>	This setting is automated by the AirWatch Console.
<b>Platform</b>	Read-only setting displays the chosen platform.
<b>Managed By</b>	Select the organization group that can edit the files/actions.

4. Select the **Files** tab.
5. Select **Add Files**. The **Add Files** window displays.
6. Select **Choose Files** to browse for a file or multiple files to upload.
7. Select **Save** to upload the files. Once the files upload, the file grouping screen opens. File groups allow you to assign different download paths and settings to different groups of files you have uploaded to a single file/action.
8. Select an uploaded file(s) and select **Add** to move the files into a new file group.
9. Define the **Download Path** the device uses to store the file group in a specific device folder. If the download path entered does not exist, the folder structure is created as part of installation.
10. Select **Save**. You may repeat the previous steps for as many files as you want.
11. Select the **Manifest** tab. Actions are not required as long as you have at least one file uploaded.
12. Add actions to the **Install Manifest** or the **Uninstall Manifest** if needed.

The uninstall manifest only runs when the Uninstall action is added to the product. Also, if nothing is added to the Uninstall Manifest,

uninstalling the file/action results in no effect.

Settings	Descriptions
<b>Copy Files</b>	Copy files from one location to another on the device.
<b>Create Folder</b>	Create a new folder on the device.
<b>Delete Files</b>	Delete folders from the device.
<b>Install</b>	Install files on the device. You must use the Run manifest action to install files or applications. This is accomplished using command lines. Supports the following file types. <ul style="list-style-type: none"> <li>Windows 7: REG, CAB, MSI, and XML.</li> </ul>
<b>Move Files</b>	Move files from one location to another on the device.
<b>Remove Folder</b>	Remove a folder from the device.
<b>Rename File</b>	Rename a file located on the device.
<b>Rename Folder</b>	Rename a folder located in the device.
<b>Run</b>	The manifest should be used to execute an application. This is accomplished using command lines. The Run command must use the syntax of "[full file path]". For example, \program files\program.exe. You must select the context of the command. Select whether the command runs at the system level, the user level, or the admin account level.
<b>Terminate</b>	End a process or application running on the device.
<b>Uninstall</b>	Uninstall a program or application on the device. You must enter the application name. The application name must match the name that appears in the Uninstall menu in the Control Panel. <div style="border: 1px solid gray; padding: 10px; margin-top: 10px;"> <p><b>Note:</b> The Uninstall Manifest is for deleting files when a product is removed. If you remove a product from a device, any files installed remain on the device until uninstalled using an Uninstall Manifest.</p> </div>

- When finished adding actions to the **Manifest**, select **Save**.

## Manage Files/Actions

Manage your created files/actions to keep products and devices up to date.

## Edit Files/Actions

When you edit any existing files/actions, the version number automatically increases. After saving the edits, AirWatch runs a check against all active products to find any that contain the newly edited files/actions.

If any active products contain the files/actions, a warning prompt displays listing all active products affected by the edited files/actions. You can then choose to **Activate** or **Deactivate** a product using the files/actions.

## Delete Files/Actions

AirWatch checks any attempt to delete files/actions against the list of active products.

In order to delete files/actions, it must be detached from all products.

1. Select the **Files/Actions** listed in the Warning prompt.
2. Select **Edit**.
3. Remove the files/actions from the product.
4. Select **Save**.
5. Repeat for all products containing the files/actions.
6. Once the files/actions detaches from all products, you may delete the files/actions.

If the files/actions is part of an active product, a warning prompt displays listing any product that uses the files/actions.

## Product Conditions

A condition determines when the product or OS upgrade package should be downloaded and installed. Conditions are checked when a product is pushed to a device.

Your device fleet is not always readily available for maintenance. You could have devices in different time zones or countries. Since you cannot always ensure that a device is not in use when you push a product, you can use conditions to delay the download and installation.

These conditions defer the product download or installation until the device meets the criteria of the assigned condition. You can set the products to only download based on battery life, power adapters, user confirmation, and other criteria. The available conditions for your products vary based on the device platform.

## Conditions List View

You can view conditions from the list view by navigating to **Devices > Staging & Provisioning > Components > Conditions**. You can also edit and delete conditions from the list view.

Select the pencil icon (  ) to the left of the name of the condition to open the **Edit Condition** screen.

Select the radio button to the far left of the condition to display the **Copy** and **Delete** buttons, offering more actions. Before you can delete a condition, you may have to detach it from one or more products.

## Create a Condition

Conditions enable you to set products to download and install on your device only when preset conditions are met. Create a condition to determine when a product downloads and installs onto your devices.

To create a condition, take the following steps.

1. Navigate to **Devices > Staging & Provisioning > Components > Conditions** and select **Add Condition**.
2. Select the Platform you want to create a condition for.
3. Complete the **Create Condition** Type settings.

Settings	Description
<b>Name</b>	Enter a name for the condition. The name cannot be longer than 255 characters.
<b>Description</b>	Enter a description for the condition.
<b>Condition</b>	<p>The type of condition affects the parameters on the <b>Condition Details</b> tab. The following types are supported by this platform.</p> <ul style="list-style-type: none"> <li>• <b>Adapter Time</b></li> <li>• <b>Power</b></li> <li>• <b>Schedule</b></li> <li>• <b>SD Card Encryption</b></li> </ul>
<b>Managed By</b>	Select the organization group that manages the condition.

4. Select **Next**.
5. Complete the **Create Condition** Details settings based on the condition type chosen.

- **Adapter Time** – This condition type tests for various combinations of constraints related to **Network Adapters** including local date, time, and frequency on the device.

Settings	Description
<b>Specify scenario #1?</b>	<p>Set to <b>Specify this scenario</b> to begin configuring the condition scenario.</p> <p>Up to 5 scenarios may be entered, each with their own constrain choices.</p> <p>Each Scenario is an OR statement and each option inside a Scenario is an AND statement. For example, a device will check to see if Scenario #1 OR Scenario #2 is true. If Scenario #1 is true, it will check if all the constraints listed are true because they are AND statements.</p>
<b>Scenario description</b>	Enter a description for the adapter time scenario.
<b>Constrain Network Adapters?</b>	<p>Set to <b>Constrain based on the Best Connected Network Adapter</b> and configure the following.</p> <ul style="list-style-type: none"> <li>◦ Specify any <b>Included or Excluded Network Adapters</b>. <ul style="list-style-type: none"> <li>◦ Choose to either <b>Select Network Adapter Class from a drop-down list</b> or <b>Type in a Network Adapter Name</b>.</li> </ul> </li> <li>◦ Up to five network adapters may be selected in the <b>Adapter selection method?</b> setting.</li> <li>◦ For each adapter you want to include/exclude, choose between <b>Select a Network Adapter Class</b> drop-down list and entering a specific <b>Adapter name</b>.</li> </ul> <p>If you want to skip this kind of constraint, then select <b>Don't constrain based on the Best Connected Network Adapter</b>. Then you can proceed with defining another kind of constraint.</p>
<b>Constrain days of week?</b>	For each day of the week, choose whether it will be included or excluded.
<b>Constrain months?</b>	For each month, choose whether it will be included or excluded.
<b>Constrain days of month?</b>	Enter a <b>Start day of month?</b> and an <b>End day of month?</b> .
<b>Constrain years?</b>	Enter a <b>Start year?</b> and an <b>Last year?</b> .
<b>Constrain time of day?</b>	Enter the <b>Start hour?</b> , <b>Start minute?</b> , <b>End hour?</b> , and <b>End minute?</b> .
<b>Set frequency limit?</b>	Ranges from <b>Every 15 Minutes</b> to <b>Every 1 Week</b> .

- **Power** – This condition type tests how a device is being powered, including whether the device is plugged in or

has a suitably high battery level. Use a **Power** condition type to prompt users to place the device into the cradle or to insert a charged replacement battery.

Settings	Description
<b>Message to be displayed</b>	
<b>First line prompt</b>	Enter a header for the prompt.
<b>Second line prompt</b>	Enter the body of the prompt.
<b>Third line prompt</b>	If you enable a countdown, you can enter a countdown phrase into the <b>Third line prompt</b> field. For example, "You have %count% seconds to comply" where %count% will be the countdown clock.
<b>Condition</b>	
<b>Required power level</b>	Enter the required power level for the condition to test true. <ul style="list-style-type: none"> <li>○ <b>A/C</b></li> <li>○ <b>A/C or Full Battery</b></li> </ul>
<b>Delay</b>	
<b>Delay (seconds)</b>	Use this to delay for a specified time or until the end user makes a selection. If you enter a non-zero value, the prompt will wait for that value worth of seconds. If the end user does not make a selection in the time allowed, the condition is automatically considered not met. If a value of zero is entered, then the prompt will display indefinitely until the end user makes a selection.
<b>Enable countdown?</b>	This allows delay time to be "counted" down on the device so the end user knows how much time is remaining for the user to make a selection.

- **Schedule** – This condition type tests the device date and time against a specific date/time entered. When the date/time is met, the condition passes and allows the download.

Settings	Description
<b>Date</b>	Select the specific date from the drop-down calendar.
<b>Time</b>	Select the specific hour and minute from the drop-down menu.

- **SD Encryption** – This condition type tests whether the device's SD card is encrypted or not encrypted. This can be relevant if you need to wait for the SD card to be encrypted before downloading a file.

Settings	Description
<b>SD card is</b>	Select <b>Encrypted</b> or <b>Unencrypted</b> to limit the product based on the state of the SD card encryption.

6. Select **Finish**.

## Delete a Condition

Remove unwanted conditions from your product. AirWatch checks any attempt to delete a condition against the list of active products.

To delete a condition, it must be detached from all products as detailed below.

1. Select the **Product** listed in the Warning prompt.
2. Select **Edit**.
3. Remove the condition from the product.
4. Select **Save**.
5. Repeat the steps above for all products containing the condition.
6. Once the condition detaches from all products, you may delete the condition.

If a condition is part of an active product, a warning prompt appears listing any product that uses the condition.

## Custom Attributes Overview

Custom attributes enable administrators to extract specific values from a managed device and return it to the AirWatch Console. You can also assign the attribute value to devices for use in product provisioning or device lookup values.

These attributes allow you to take advantage of the rules generator when creating products using Product Provisioning.

**Note:** Custom attributes (and the rules generator) are only configurable and useable at Customer-level organization groups.

## Custom Attributes Database

Custom attributes are stored either as XML files on the device or in the custom attribute database on the AirWatch Console server. When using the database, custom attributes are sent as samples to AirWatch periodically for asset tracking of key/value pairs. If a record in the device database is configured with 'Create Attribute' = TRUE, then the Name and Value will automatically be retrieved by the AirWatch Agent and sent with the custom attributes sample. The key/value pair will show in the Device Details page for the device in the Custom Attributes tab.

## Create Custom Attributes

Create a custom attribute and values to push to devices. You create the attributes and values associated with them. For more information, see [Create Custom Attributes on page 26](#).

## Importing Custom Attributes

The custom attribute batch import feature allows you to load custom attributes and corresponding values into the system in bulk. In the templates provided, each column corresponds to one custom attribute and each row corresponds to different parameters of custom attribute. For more information, see [Custom Attributes Importing on page 26](#).

## Platform-Specific Custom Attributes Provisioning

You can push custom attributes to a device using XML provisioning for use with advanced product provisioning functionality. The method for pushing the XML varies based on the device platform.

## Create Custom Attributes

Create a custom attribute and values to push to devices. These attributes and values control how product rules work and function as lookup values for certain devices.

1. Navigate to **Devices > Staging & Provisioning > Custom Attributes > List View**.
2. Select **Add** and then select **Add Attribute**.
3. Under the **Settings** tab, enter an **Attribute Name**.
4. Enter the optional **Description** of what the attribute identifies.
5. Enter the name of the **Application** that will gather the attribute.
6. Select **Collect Value for Rule Generator** to make the values of the attribute available in the drop-down menu of the rule generator.
7. Select **Use in Rule Generator** if you want to use the attribute in the rule generator.
8. Select **Persist** to prevent the removal of the custom attribute from the AirWatch Console unless an Admin or an API call explicitly removes it. Otherwise, the attribute is removed as normal.  
If you delete a custom attribute that reported from a device to the AirWatch Console, a persisted custom attribute still remains in the AirWatch Console.  
Custom attribute persistence is only available to Android and Windows Rugged devices.
9. Select **Use as Lookup Value** to use the custom attribute as a lookup value anywhere in the AirWatch Console.  
For example, you could use custom attributes as part of a device friendly name to simplify device naming.
10. Select the **Values** tab.
11. Select **Add Value** to add values to the custom attribute and then select **Save**.

## Custom Attributes Importing

The custom attribute batch import feature allows you to load custom attributes and corresponding values into the system in bulk. In the templates provided, each column corresponds to one custom attribute and each row corresponds to different parameters of custom attribute.

With the templates, you can import custom attributes in different ways and with different information.

**Caution:** The syntax of the first column of each template must be replicated exactly. Failure to use proper syntax can cause database issues and result in loss of data.

## Template Types

- Custom Attributes Template – Allows you to define a custom attribute and its settings.

A	B	C	D	E	F	G	
1	CustomAttributeName	Description	ApplicationName	UsedInRuleGenerator	CollectValuesForRuleGenerator	Persist	ShowOnDevicesGrid
2	AgentVersion1	Airwatch Agent Description	Services1.exe	1	0	1	0
3	AgentVersion2	Airwatch Agent Description	Services1.exe	1	0	1	0
4	AgentVersion3	Airwatch Agent Description	Services1.exe	1	0	1	0
5	AgentVersion4	Airwatch Agent Description	Services1.exe	1	0	1	0

- Custom Attribute Values Template – Allows you to define the values of predefined custom attributes.

A	B	C	D	E	F	G	H	I	J	K	L	M
1	SSID Bangalore	SSID Palo Alto	PreSharedKey AdminOffc	Custom Attributes								
2	Enterprise	PLTO_1	ADMIN\$									
3	BNG_Test	PLTO_Guest	ADM1N	Values								
4	AWT		#Dm1N									

- Device Custom Attribute Values – Allows you to define the values of predefined custom attributes for individual devices based on the cross reference (Xref) value. The Xref values determine the individual devices receiving the value for each custom attribute.

A	B	C	D	E	F	G	H	I
1	XRefType XRefValue	SSID Cust1	USERNAME Cust3	PASSWORD Cust3	SSID CXXX	Services1.exe	AgentVersion1	
2	1	5263 AW_BNG	DEV1	XXXXXXXXXX	SS	5.3.56.147		
3								
4								
5								

- 1 – DeviceID (AirWatch assigned DeviceID when the device enrolls)
- 2 – Serial Number
- 3 – UDID
- 4 – MAC Address
- 5 – IMEI Number

Save the file as a .csv before you import it.

## Assign Organization Groups Using Custom Attributes

Configure rules that control how devices are assigned to organization groups following enrollment. You can only create one custom attribute assignment rule for each organization group you run.

To create assignment rules, follow the directions below.

1. Ensure you are currently in a customer type organization group.
2. Navigate to **Groups & Settings > All Settings > Devices & Users > General > Advanced**.
3. Set **Device Assignment Rules** to **Enabled**.
4. Set the **Type** to **Organization Group by Custom Attribute**.

5. Select **Save**.
6. Navigate to **Devices > Staging & Provisioning > Custom Attributes > List View > Add > Add Attribute** and create a custom attribute if you have not already done so. See [Create Custom Attributes on page 26](#) for more information.
7. Navigate to **Devices > Staging & Provisioning > Custom Attributes > Custom Attributes Assignment Rules > Add Rule**.
8. Select the **Organization Group** to which the rule assigns devices.
9. Select **Add Rule** to configure the logic of the rule.

Setting	Description
<b>Attribute/Application</b>	This is the custom attribute with corresponding values for determining device assignment.
<b>Operator</b>	<p>This operator compares the <b>Attribute</b> to the <b>Value</b> to determine if the device qualifies for the product.</p> <p>When using more than one Operator in a rule, you must include a <b>Logical Operator</b> between each <b>Operator</b>.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p><b>Note:</b> There is a limitation on the less than (&lt;) and greater than (&gt;) operators. This includes "less than or equal to" and "greater than or equal to" variants. These operators are mathematical in nature, which means they are effective at comparing numbers including integers. They cannot be used to compare non-numeric text strings. And while it is common for software versions to be represented with numbers intended to portray a graded versioning system (for example, 6.14.2), such representations are not numbers because they have more than one decimal point. These representations are actually text strings. Therefore, any assignment rule that compares software version numbers with multiple decimal points using greater than or less than operators (and their variants) may result in an error message.</p> </div>
<b>Value</b>	This is the value of the custom attribute. All values from all applicable devices are listed here for the <b>Attribute</b> selected for the rule.
<b>Add Logical Operator</b>	Select to display a drop-down menu of logical operators such as AND, OR, NOT, and parentheses. Allows for more complex rules.

10. Select **Save** after configuring the logic of the rule.

When a device with an assigned attribute enrolls, the rule assigns the device to the configured organization group.

## Windows 7 Custom Attributes

Use XML provisioning to collect custom attributes based on device details. Custom attributes enable you to use advanced product provisioning functionality.

### Implementation

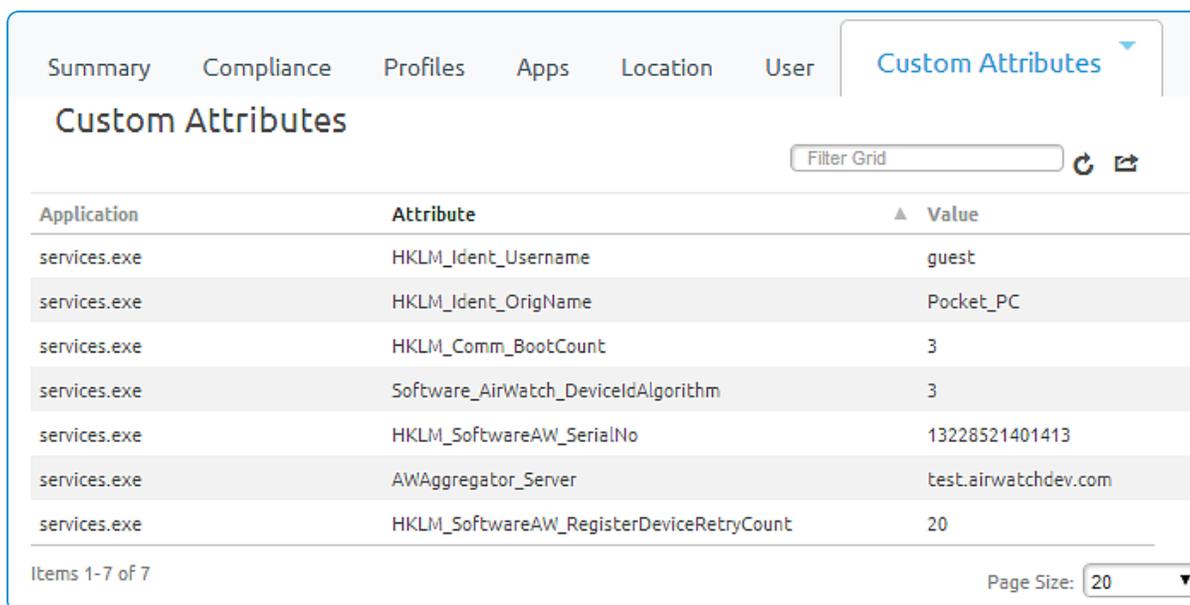
To begin collecting custom attributes, follow the steps detailed below:

1. Navigate to **Devices > Staging & Provisioning > Components > Files/Actions > Add** and select **Windows 7** as your platform.
2. Create an XML product. For more information, see [Create an XML Provisioning File on page 44](#). The manifest must include an action to download the XML file to `{installation path}\AirWatch\AgentUI\Cache\Profiles`.

Upon receiving the XML file, the AirWatch Agent for Windows 7 creates a custom attributes output file. During the next check-in with AirWatch, the agent sends the output file to the AirWatch Console.

Once the XML file installs, the custom attributes requested in the file exported to the AirWatch Console. These values display in the console in the Device Details page under Custom Attributes. The Device Details page enables you to view the name of the attribute and the values returned from each device. These values can be used to create product assignment rules using the Custom Rules system.

Upon enrollment, the AirWatch Agent for PC automatically generates the Device Model and Serial Number attributes.



Application	Attribute	Value
services.exe	HKLM_Ident_Username	guest
services.exe	HKLM_Ident_OrigName	Pocket_PC
services.exe	HKLM_Comm_BootCount	3
services.exe	Software_AirWatch_DeviceIdAlgorithm	3
services.exe	HKLM_SoftwareAW_SerialNo	13228521401413
services.exe	AWAggregator_Server	test.airwatchdev.com
services.exe	HKLM_SoftwareAW_RegisterDeviceRetryCount	20

You may also view existing custom attributes for all devices at a particular organization group as well as manually create custom attributes directly in the console. Navigate to **Devices > Staging & Provisioning > Custom Attributes > List View** to see these custom attributes listed. Any custom attribute created in this manner automatically associates with a device and its respective custom attribute value that is successfully transmitted to the console.

## Syncing Registry Settings

In order to synchronize the registry settings on a Windows 7 device with the console, which is likely the most common use of custom attributes for Windows 7 devices, you need to create a custom XML file. Below is an example of the format of an XML file that can pull information from the registry on a device:

```
<xml version="1.0">
<wap-provisioningdoc name="desiredDocName /v_1">
  <characteristic type="com.windowspc.getregistryinfo.managed">
    <reg_value value_name="KeyName (i.e. CommonFilesDir) "
      key_name="RegistryPath (i.e. Software\Wow6432Node\Microsoft\Windows\
```

```

        CurrentVersion) "custom_attribute_name="AttributeName"/>
        <reg_value value_name="Keyname ..." key_name="Path\..."
        custom_attribute_name="AttributeName2"/>
    </characteristic>
</wap-provisioningdoc>

```

It must be in the previous format for the XML file to get correctly parsed and the registry settings to be outputted to a key value pair that can be exported back to the AirWatch Console. In this example, the registry key path is “HKEY\_LOCAL\_MACHINE\Ident” for two of the values and within that key path it is reading the values of “Username” and “OrigName”. The ‘custom\_attribute\_name’ parameter is simply the name of the custom attribute that displays in the console and corresponds to the value read from the device.

## Create a Product

After creating the content you want to push to devices, create a product that controls when the content is pushed. Creation of the product also defines the order in which the product is installed.

In order to edit a product, the product must be deactivated in the list view first.

To create and configure a product.

1. Navigate to **Devices > Staging & Provisioning > Product List View > Add Product**.
2. Select the Platform you want to create a staging configuration for.
3. Complete the General fields.

Setting	Description
<b>Name</b>	Enter a name for the product. The name cannot be longer than 255 characters.
<b>Description</b>	Enter a short description for the product.
<b>Managed By</b>	Select the organization group that can edit the product.
<b>Assigned Smart Groups</b>	Enter the smart groups the product provisions.

4. Select **Add Rules** to use **Assignment Rules** to control which devices receive the product.

Application rules can be applied to unmanaged applications installed on the device. This allows you to use system apps as well as third party apps that are not managed by AirWatch.

Setting	Description
<b>Add Rule</b>	Select to create a rule for product provisioning. Displays the <b>Attribute/Application, Operator, and Value</b> drop-down menus.
<b>Add Logical Operator</b>	Select to display a drop-down menu of logical operators such as AND, OR, NOT, and parentheses. Allows for more complex rules.

Setting	Description
<b>Attribute/Application</b>	This is the custom attribute used to designate which devices receive the product. Custom attributes are created separately. For more information see <a href="#">Custom Attributes Overview on page 25</a> .
<b>Operator</b>	This operator compares the <b>Attribute</b> to the <b>Value</b> to determine if the device qualifies for the product.  <div style="border: 1px solid gray; padding: 10px; margin: 10px 0;"> <p><b>Note:</b> There is a limitation on the less than (&lt;) and greater than (&gt;) operators. This includes "less than or equal to" and "greater than or equal to" variants. These operators are mathematical in nature, which means they are effective at comparing numbers including integers. They cannot be used to compare non-numeric text strings. And while it is common for software versions to be represented with numbers intended to portray a graded versioning system (for example, 6.14.2), such representations are not numbers because they have more than one decimal point. These representations are actually text strings. Therefore, any assignment rule that compares software version numbers with multiple decimal points using greater than or less than operators (and their variants) may result in an error message.</p> </div>
<b>Value</b>	This is the value of the custom attribute. All values from all applicable devices are listed here for the <b>Attribute</b> selected for the rule.

5. Select **Save** to add the **Assignment Rule** to the product.
6. Select the **Manifest** tab.
7. Select **Add** to add actions to the **Manifest**. At least one manifest action is required.

Setting	Description
<b>Action Types</b>	Select the Manifest action to add to the profile: <ul style="list-style-type: none"> <li>• <b>Install Profile.</b></li> <li>• <b>Uninstall Profile.</b></li> <li>• <b>Install Files/Actions</b> – This option runs the Install Manifest.</li> <li>• <b>Uninstall Files/Actions</b> – This option runs the Uninstall Manifest.</li> </ul>
<b>Profile</b>	Displays when the <b>Action Type</b> is set to Install Profile or Uninstall Profile. Enter the profile name.
<b>Files/Actions</b>	Displays when the <b>Action Type</b> is set to Install Files/Actions or Uninstall Files/Actions. Enter the application name.

8. Add additional **Manifest** items if desired.
9. You can adjust the order of manifest steps using the up and down arrows in the Manifest list view. You may also edit or delete a manifest step.

10. Select the **Conditions** tab if you want to use conditions with your product. These conditions are optional and are not required to create and use a product.
11. Select **Add** to add either **Download Conditions**, **Install Conditions**, or both.
  - A **Download Condition** determines when a product should be downloaded but not installed on a device.
  - An **Install Condition** determines when a product should be installed on a device.
12. Select the **Deployment** tab if you want to control the time and date that products are activated and deactivated. This tab is optional and is not required to create and use a product.

Setting	Description
<b>Activation Date</b>	Enter the time when a product automatically activates for device job processing.  If the activation date is defined and the product is saved, the product stays inactive until the activation date is met according to the AirWatch server time. The policy engine wakes up and automatically activates the product. You can manually activate products with activation dates beforehand. Manually activating a product overrides the activation date.
<b>Deactivation Date</b>	Enter the time when a product automatically deactivates from current and new device job processing.  If the deactivation date is defined and the product is saved and currently active, it stays active until the deactivation date is met according to the AirWatch server time. The policy engine wakes up and automatically deactivates the product. You can manually deactivate products with deactivation dates beforehand. Manually deactivating a product overrides the deactivation date.  A deactivation date cannot be set earlier than the activation date.
<b>Pause/Resume</b>	Enable to ensure that an interrupted product provisioning due to Wi-Fi connectivity issues will be retried.  Enabling this feature sets the product to retry for up to fifty attempts before marking the product as failed and alerting you. If this is not enabled, the product will keep retrying indefinitely and will not alert you that there is an error.
<b>Device Policy Type</b>	Determine if a product is <b>Required</b> or <b>Elective</b> .  A required product provisions to assigned devices when deployment settings are met. An elective product is only provisioned when it is manually activated on the Device Details View of a provisioned device.

13. Select the **Dependencies** tab if you want to set the product to only provision devices that have other products provisioned as well.
  - Select **Add** to add a dependent product. You may add as many dependent products as you want.
14. Choose to deploy the product immediately by selecting **Activate** or wait to deploy later and select **Save**.

## Product Verification

You can ensure the product you provision from the console or from an API call is the exact same product that gets received by the device. This product verification is built into the provisioning process. Verification happens on the device agent side but both the device end user and the administrator on the console side is made aware of the product's status

# Chapter 4:

## Product Management

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## Products Dashboard

View and manage products from the Products Dashboard. Navigate to **Devices > Staging & Provisioning > Products Dashboard**.

The dashboard provides an easy method of viewing the status of your products and the devices they provision. The charts of information allow you to drill down to specific products or devices so you can remain informed about your device fleet.

### Recent Product Status

This chart displays the ten most recently created products and the status for each product. You can select any section of the bar graph to view the devices to which that product status applies.

- **Compliant** – The product installed on the device and the inventory data of the product reported by the device matches the requirements of the product.
- **In Progress** – The product has been sent to the device and is pending a compliance check based on inventory.
- **Must Push** – The product deployment type is set to elective. The admin on the console side must initiate product installation.
- **Dependent** – The product is dependent on another product(s) installation before installing onto devices.
- **Failed** – The product reached maximum attempts to install on the device and is no longer attempting to install.

#### Filters

You can filter the Recent Product Status chart to refer to specific device platforms that support product provisioning. To filter your results, select the **Menu** icon (☰) in the top right corner. Select the platforms you want to filter by.

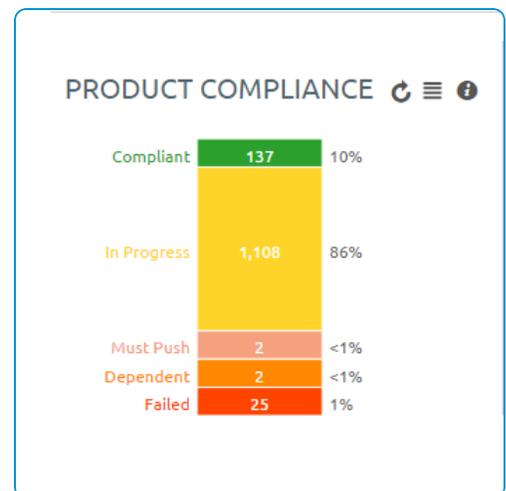
### Product Compliance

The Product Compliance chart shows the total percentage of each compliance status. The number displayed in each status is the total number of product statuses reported from each device. This information allows you to drill down to the Products List View that is filtered by the compliance status you select.

#### Filters

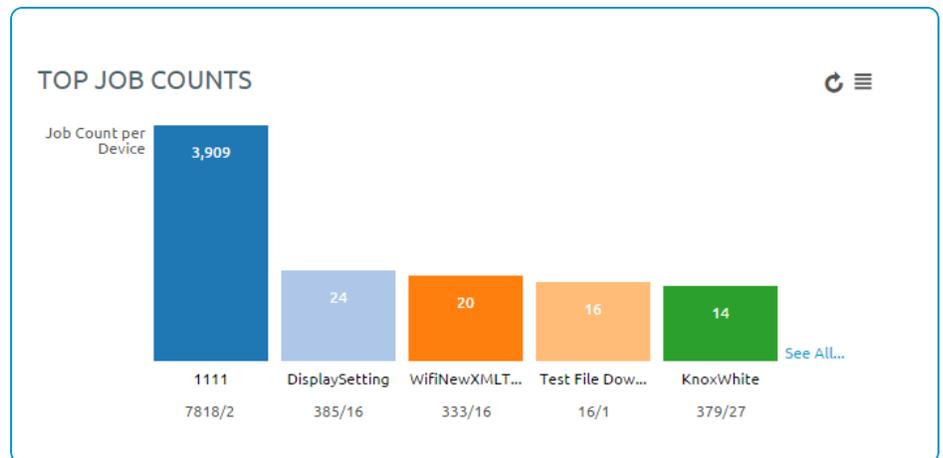
You can filter the Product Compliance chart to display specific device platforms that support product provisioning as well as the total percentage of each compliance status for a specific product(s).

To filter your results, select the **Menu** icon (☰) in the top right corner. Select the platforms you want to filter by or enter the products you want to filter by.



## Top Job Compliance

This chart displays a ratio of total job count to number of devices the product is provisioned to. This ratio gives you information on what products are having issues executing. For example, if the number shown is a 3, then you know that an average of 3 jobs per device happen for this product. If you select the bar for each product, the View Devices screen displays with all devices currently assigned the product. You can then drill down further to find which jobs are failing and the reason for those failures.



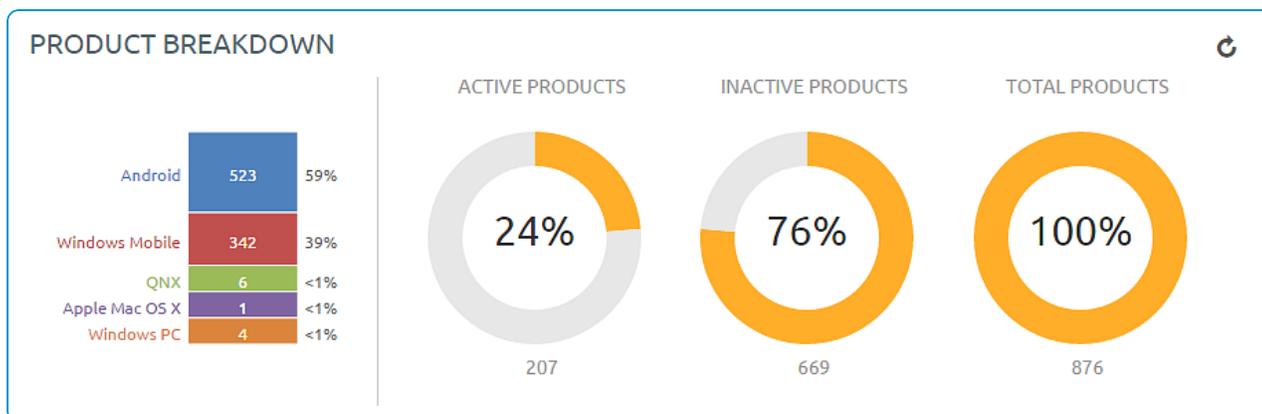
### Filters

You can filter the Total Job Compliance chart to refer to specific device platforms that support product provisioning. To filter your results, select the menu icon (☰) in the top right corner. Select the platforms you want to filter by.

## Product Breakdown

This section shows you the breakdown of your products. The first chart shows the breakdown of products by platform. Selecting a platform displays the Products List View filtered by that product. This allows you to quickly see the products available for each platform.

The second chart displays the percentage of your products that are active vs. inactive as well as a total number of products. Selecting a chart displays the Products List View page filtered by the status of the product.



## Products List View

The Product List view allows you to view, edit, copy, and delete products as well as view the devices a product is provisioning.

Navigate to **Devices > Staging & Provisioning > Product List View**. This is the Products List View. Listed here are all the available products for the current organization group. The products can be sorted using the columns.

- **Platform** sorts by the device platform.
- **Managed By** sorts by the organization group the product is assigned to.
- **A/D** sorts by if the product uses activation/deactivation dates or manual.
- **Compliant, In Progress, Failed, and Total Assigned** sort by the status of the product on devices.

## Actions

By selecting the **Edit** icon, you can edit a product. You can only edit products after they are deactivated. **Edit** brings up the Product Wizard allowing you to change any part of a product.

You can attempt to fix non-compliant products and push the product to the device again by selecting the **Reprocess** button.

The **Force Reprocess** action resends Products to all assigned devices regardless of compliance status. The devices fully download and install every component of the Product manifest, even if it already exists on the device. You can perform this action on multiple products simultaneously.

Select the **Relay Server Status** button (located under the **More** button) to see the status of the relay server associated with the product. Only active products have the **Relay Server Status** button

You can also view history from the View Devices page to see the past and future products pushed to the device based on Product sync.

## View Product

Select a product to view the details and settings of the product. The View Product screen displays the general settings, manifest items, conditions, deployment settings, and product dependencies for the product.

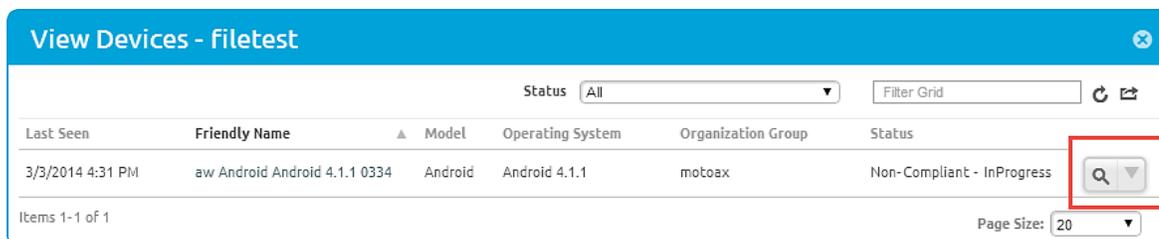
Select the **Edit** button to change any of the product settings.

## View Devices

From the Products List View, select the **View Devices** icon (  ) to view all devices the product provisions. A quick summary of information on each device allows you to quickly see which devices are at specific statuses.

Select a device **Friendly Name** to open the Device Details Page for that device.

The **Log** listing shows the actions taken by the AirWatch Console to keep the product and device in sync.



Last Seen	Friendly Name	Model	Operating System	Organization Group	Status
3/3/2014 4:31 PM	aw Android	Android 4.1.1 0334	Android	Android 4.1.1	motoax Non-Compliant - InProgress

## Inherited Products

The Product List View displays all inherited products a child organization group receives from the parent organization groups. As products are provisioned based on smart groups and not organization groups, your devices can receive products from a parent organization group.

## Products in the Device Details View

You can use the Device Details View to see the products, files/actions, apps, and profiles pushed to a device.

### Products

To view the products on a device, navigate to **Devices > List View > Select a device > More > Products**. This displays the products available on a specific device.

Any product that fails to push to devices may be reprocessed by selecting the **Reprocess** button next to the failed product.

### Product Sets

Product Sets display on individual device detail pages to show the status of the products' deployments to the device. The products listed that are part of a product set display the product set they pertain to as well as the deployment status of the products.

The following fields display relevant product set information.

- **Product Set** – Displays the product set that contains the product. Select the product set to view the product set details.
- **Status** – Displays the status of the product. For products in a product set, the appropriate product deployed to the device is labeled as **Compliant**. The other products contained in the product set that are eligible for deployment but are not deployed to the device are labeled as **Outranked**. Any product that is not eligible for deployment to the device is labeled as **Not Applicable**.

### Files/Actions

Navigate to **Devices > List View > Select a device > More > Files/Actions** to access the files/actions on the device.

### Profiles

Navigate to **Devices > Details View > Additional Options > Profiles** to access the Profiles on the device.

## Product Job Statuses

Product provisioning works by handling each item in a product as a different job. As a product is pushed to a device, the AirWatch Console updates the current status of each job to display any errors or issues that are in process.

Each job follows a workflow and the statuses reflect the position in the process.

Job Status	Description
Queued	The job is created but not yet started.
Delivered	Job initially delivered to device database.
Paused	Job was previously started but a failure occurred. Job will resume before other jobs are processed.
Download Pending	The download is pending until download conditions are met.
Downloaded	The job downloaded to the device.

Job Status	Description
Install pending	The install is pending until install conditions are met.
Installed	The job installed on the device.
Deferred	Job download conditions not yet met.
Waiting	Job is processing on the device but the status of the job is not confirmed.
Completed/ Failed	Job processing complete. Complete means the process was a success. Failed means the process failed.
Canceled	Job canceled while deferred or waiting.
Orphaned	Job being process by device uncompleted when jobs reprocessed. Job will automatically restart when able.
Deleted	The job was canceled by the user on the device.

## Product Job Logs

You can view more detail about product jobs by viewing the job logs.

Navigate to **Devices > List View** and select the friendly name of a device that has been provisioned with a product. Next, select the **More** tab, select **Products**, then select the magnifying glass icon to the right of the **Last Job Status** column. This action displays the **Jobs** screen which provides access to the contents of the Job logs.

The Job logs provide a detailed history of events that have elapsed for the device in question as it pertains to the assigned product. This history includes timestamps, progress, error messages, and pause/resume history.

### Configure Targeted Job Log Collection

You can target individual devices for job log collection. To activate this option, take the following steps.

1. Navigate to **Groups & Settings > All Settings > Admin > Diagnostics > Logging**.
2. Select the **Enabled** slider for each **AirWatch Component** and **Scheduled Service** for which you want to collect data.

3. Scroll down to the **Targeted Logging** section, Enable the **Targeted Logging** slider and complete the settings.

Setting	Description
<b>Organization Group(s)</b>	Select the organization group(s) where the device(s) reside(s).
<b>Device ID(s)</b>	Enter the device ID(s) for which you want to enable targeted logging. Use commas to separate multiple device IDs.
<b>File Storage Impersonation Enabled</b>	Enable if you are using a file storage server to store these targeted logs and enter the appropriate authentication credentials.
<b>File Path</b>	Enter the path and filename of the LOG file where you would like the data saved.
<b>File Storage Impersonation User Name</b>	This option appears only when <b>File Storage Impersonation Enabled</b> is checked. Enter the username of the storage server where you targeted logs are saved.
<b>File Storage Impersonation Password</b>	This option appears only when <b>File Storage Impersonation Enabled</b> is checked. Enter the corresponding password of the username of the storage server where you targeted logs are saved.
<b>Test Connection (button)</b>	Select this button to test the connection. It tests various possible scenarios which the logging process uses and makes sure it is working as expected.

4. **Save** to apply Targeted Logging.

#### Define How Much Data to Collect

You can define the length of time job log data is collected. Define this timescale by taking the following steps.

1. Navigate to **Groups & Settings > All Settings > Admin > Data Purging**.
2. Locate the purge module named **DevicePolicyJobPurge** and select the pencil icon (✎) to open the **Data Purging** screen.
3. Complete the **Purge older than (days)** setting with the length of time in days that you want to keep job log data.
4. Select **Save**.

Job logs older than the selected number of days are purged from the AirWatch Console.

# Chapter 5:

## Managing Windows 7 Devices

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## Products Dashboard

View and manage products from the Products Dashboard. Navigate to **Devices > Staging & Provisioning > Products Dashboard**.

The dashboard provides an easy method of viewing the status of your products and the devices they provision. The charts of information allow you to drill down to specific products or devices so you can remain informed about your device fleet.

### Recent Product Status

This chart displays the ten most recently created products and the status for each product. You can select any section of the bar graph to view the devices to which that product status applies.

- **Compliant** – The product installed on the device and the inventory data of the product reported by the device matches the requirements of the product.
- **In Progress** – The product has been sent to the device and is pending a compliance check based on inventory.
- **Must Push** – The product deployment type is set to elective. The admin on the console side must initiate product installation.
- **Dependent** – The product is dependent on another product(s) installation before installing onto devices.
- **Failed** – The product reached maximum attempts to install on the device and is no longer attempting to install.

#### Filters

You can filter the Recent Product Status chart to refer to specific device platforms that support product provisioning. To filter your results, select the **Menu** icon (☰) in the top right corner. Select the platforms you want to filter by.

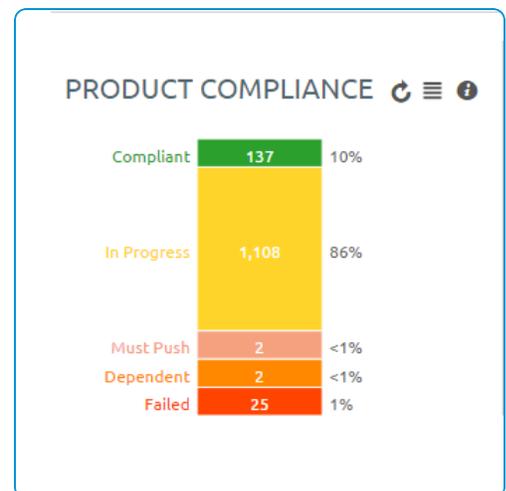
### Product Compliance

The Product Compliance chart shows the total percentage of each compliance status. The number displayed in each status is the total number of product statuses reported from each device. This information allows you to drill down to the Products List View that is filtered by the compliance status you select.

#### Filters

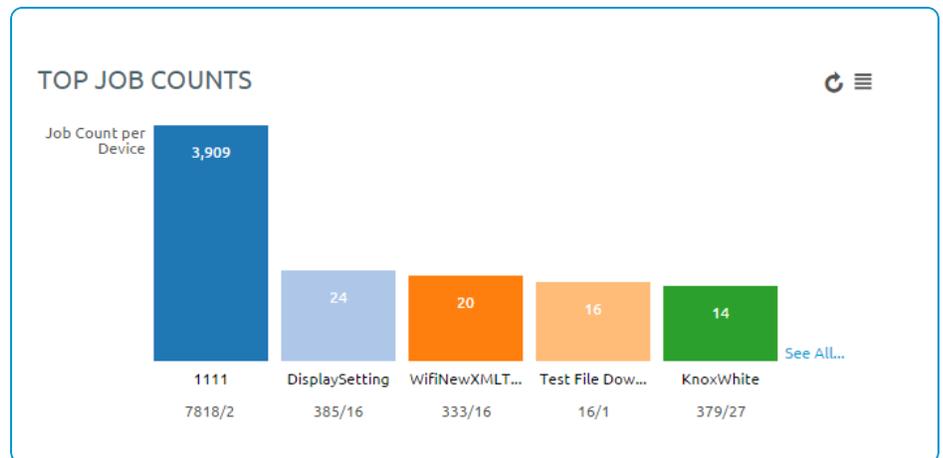
You can filter the Product Compliance chart to display specific device platforms that support product provisioning as well as the total percentage of each compliance status for a specific product(s).

To filter your results, select the **Menu** icon (☰) in the top right corner. Select the platforms you want to filter by or enter the products you want to filter by.



## Top Job Compliance

This chart displays a ratio of total job count to number of devices the product is provisioned to. This ratio gives you information on what products are having issues executing. For example, if the number shown is a 3, then you know that an average of 3 jobs per device happen for this product. If you select the bar for each product, the View Devices screen displays with all devices currently assigned the product. You can then drill down further to find which jobs are failing and the reason for those failures.



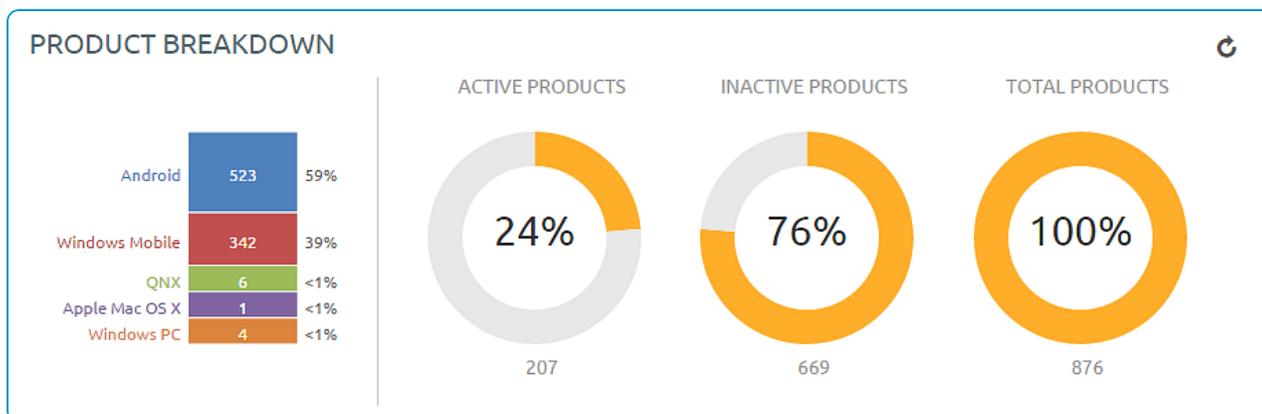
### Filters

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This section shows you the breakdown of your products. The first chart shows the breakdown of products by platform. Selecting a platform displays the Products List View filtered by that product. This allows you to quickly see the products available for each platform.

The second chart displays the percentage of your products that are active vs. inactive as well as a total number of products. Selecting a chart displays the Products List View page filtered by the status of the product.



## Device Dashboard

As devices are enrolled, you can manage them from the AirWatch **Device Dashboard**. The **Device Dashboard** provides a high-level view of your entire fleet and allows you to act on individual devices quickly.

You can view graphical representations of relevant device information for your fleet, such as device ownership type, compliance statistics, and platform and OS breakdowns. You can access each set of devices in the presented categories by selecting any of the available data views from the **Device Dashboard**.

From the **List View**, you can take administrative action: send messages, lock devices, delete devices, and change groups associated with the device.

## Device List View

Select **Devices > List View** to see a full listing of all devices.

The **Last Seen** column displays an indicator showing the number of minutes elapsed since the device has checked-in.

Select a device in the **General Info** column at any time to open the details page for that device.

Sort by columns and configure information filters to review device activity based on specific information. For example, sort by the **Compliance Status** column to view only devices that are currently out-of-compliance and target only those devices. Search all devices for a friendly name or user name to isolate one device or user.

### Customize Device List View Layout

Display the full listing of visible columns in the **Device List** view by selecting the **Layout** button and choose the **Custom** option. This view enables you to display or hide Device List columns per your preferences.

There is also an option to apply your customized column view to all administrators. For instance, you can hide 'Asset Number' from the **Device List**.

Once all your customizations are complete, select the **Accept** button to save your column preferences and apply this new column view. You may return to the **Layout** button settings at any time to tweak your column display preferences.

### Search in Device List View

You can search for a single device for quick access to its information and take remote action on the device.

To run a search, navigate to **Devices > List View**, select the **Search List** bar and enter a user name, device friendly name, or other device-identifying element. This action initiates a search across all devices, using your search parameter.

## Windows 7 Device Details Page

Use the Device Details page to track detailed device information and quickly access user and device management actions.

You can access Device Details by selecting a device Friendly Name from the Device List View, using one of the Dashboards, or with any of the search tools.

From the Device Details page, you can access specific device information broken into different menu tabs. Each menu tab contains related device information depending on your AirWatch deployment.

### Remote Actions

The **More drop-down** on the Device Details page enables you to perform remote actions over the air to the selected device.

The actions vary depending on factors such as the device platform, AirWatch Console settings, and enrollment status:

- **Add Tag** – Assign a customizable Tag to a device, which can be used to identify a special device in your fleet.

- **Change Organization Group** – Change the device's home organization group to another pre-existing OG. Includes an option to select a static or dynamic OG.
- **Delete Device** – Delete and unenroll a device from the Admin Console. This action does not remove any data from the device itself, only its representation in the console.
- **Edit Device** – Edit device information such as **Friendly Name**, **Asset Number**, **Device Ownership**, **Device Group** and **Device Category**.
- **Enterprise Wipe** – Enterprise Wipe a device to unenroll and remove all managed enterprise resources including applications and profiles. This action cannot be undone and re-enrollment will be required for VMware AirWatch to manage this device again. Includes options to prevent future re-enrollment and a **Note Description** field for you to add any noteworthy details about the action.
  - Enterprise Wipe is not supported for cloud domain-joined devices.
- **Lock Device** – Lock the screen of a selected device, rendering it unusable until it is unlocked. Includes optional fields for a custom **Message**, **Phone Number**, and **Note Description**.
- **Query All** – Send a query command to the device to return a list of installed apps (including VMware AirWatch Agent, where applicable), books, certificates, device information, profiles and security measures.
- **Remote Management** – Take control of a supported device remotely using this action, which launches a console application that enables you to perform support and troubleshoot on the device.
- **Send Message** – Send a message to the user of the selected device. Choose between **Email**, **Push Notification** and **SMS**.

## Remote Management

The Remote Management Service allows you to remotely connect to end-user devices so you can assist in troubleshooting and maintenance. The Remote Management Service requires your computer and the end user device to connect to the Remote Management Server to facilitate communication between the AirWatch Console and the end user device.

For more information on installing, configuring, and using the Remote Management Service, please see the **VMware AirWatch Remote Management Guide**, available on [AirWatch Resources](#).

## Create an XML Provisioning File

XML provisioning allows you to download a custom-designed XML file to a device in a provisioning product. After the file is downloaded, it executes an install command to extract the settings from the XML file and install them on the device.

1. Navigate to **Devices > Staging & Provisioning > Components > Files/Actions** and select **Add Files/Actions**.
2. Select your platform.
3. Enter the required settings on the **General** tab, then select the **Files** tab and upload the desired XML file and enter the destination path on the device.
4. Select the **Manifest** tab and **Add** an **Install Action** for the XML file.

5. Select **Save**.
6. Navigate to **Devices > Staging & Provisioning > Products List View**, and select **Add Product**.
7. Select your platform.
8. Enter the **General** information.
9. Select the **Manifest** tab.
10. Select **Install Files/Actions** and choose the files and actions just created.
11. **Save** and **Activate** the product.

The product downloads to all assigned devices and the XML file should successfully install.

```
<?xml version="1.0"?>
<wap-provisioningdoc name="desiredDocName /v_1">
  <characteristic type="com.windowspc.getregistryinfo.managed">
    <reg_value value_name="KeyName (i.e. CommonFilesDir) "
      key_name="RegistryPath
      (i.e. Software\Wow6432Node\Microsoft\Windows\CurrentVersion) "
      custom_attribute_name="AttributeName"/>
    <reg_value value_name="Keyname ..." key_name="Path\..."
      custom_attribute_name="AttributeName2"/>
  </characteristic>
</wap-provisioningdoc>
```

```
<?xml version="1.0"?>
-<wap-provisioningdoc>
  -<characteristic type="com.airwatch.getregistryinfo.winpc">
    <reg_value value_name="KeyName (i.e. CommonFilesDir) " key_
      name="RegistryPath (i.e.
      Software\Wow6432Node\Microsoft\Windows\CurrentVersion) " custom_
      attribute_name="AttributeName"/>
    <reg_value value_name="Keyname ..." key_name="Path\..." custom_
      attribute_name="AttributeName2"/>
  </characteristic>
</wap-provisioningdoc>
```

# Chapter 6:

## Appendix: Batch File Guidelines

While writing and running batch (.bat) files in the course of working with rugged devices, you should follow some best practices.

### Accounting for Path

Windows Unified Agent is a 32-bit application, so when trying to execute scripts in a 64-bit machine, proper redirections must be used to get access to the 64-bit folder or the registry hive.

There are two %windir%\System32 on a Windows x64 system.

- **%windir%\System32** directory is for 64-bit applications. This directory contains a 64-bit cmd.exe.
- **%windir%\SysWOW64** directory is for 32-bit applications. This directory contains a 32-bit cmd.exe.

Since Airwatch Agent is a 32-bit application, it can access %windir%\System32 for running 64-bit applications by using **%windir%\Sysnative** in path.

Admin must use **%windir%\Sysnative** in script to access any 64-bit applications.

For example,

```
%windir%\Sysnative\manage-bde -on c: -skiphardwaretest
```

- **manage-bde** is a 64-bit application and it can be accessed only by providing proper path **%windir%\Sysnative**.
- **Certutil** is part of both folders (32-bit and 64-bit), so no need to give %windir%\Sysnative in the script.

### Writing Scripts for Registry

Since Windows Unified Agent is a 32-bit application, it always creates a record or performs any action on WOW6432 Node.

On 64-bit Windows, HKLM\Software\Wow6432Node contains values used by 32-bit applications running on the 64-bit system.

32-bit applications don't create records in HKLM\Software directly.

To write explicitly to a 64 bit hive, add the `/reg:64` modifier to the end of your REG ADD command in scripts to create a record in the HKLM\Software registry path.

For example, `REG ADD HKLM\Software\MyApp /reg:64`

## General Instructions

- Running scripts in admin context when Standard User is logged in will perform actions for Admin User.

For example,

Running a script in User context installs a certificate for a standard user in the Current user store.

Running a script in Admin context installs a certificate for an Admin in the Current user store.

- Path should be quoted while passing arguments to batch files.

For example,

```
"C:\Passing_Argument.bat" Hello World
```

- The .bat file extension should always be included in the file path. Omitting the extension causes the script to not run. This causes a file not found error.
- It is always recommended to have file action as run while deploying batch files.

# Accessing Other Documents

While reading this documentation you may encounter references to documents that are not included here.

The quickest and easiest way to find a particular document is to navigate to [https://my.air-watch.com/help/9.2/en/Content/Release\\_Notes/Doc\\_List\\_PDFs.htm](https://my.air-watch.com/help/9.2/en/Content/Release_Notes/Doc_List_PDFs.htm) and search for the document you need. Each release-specific document has a link to its PDF copy on AirWatch Resources.

Alternatively, you can navigate to AirWatch Resources on myAirWatch ([resources.air-watch.com](https://resources.air-watch.com)) and search. When searching for documentation on Resources, be sure to select your AirWatch version. You can use the filters to sort by PDF file type and AirWatch v9.3.