macOS Device Management

VMware Workspace ONE UEM 2001

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Introduction to Workspace ONE UEM for macOS

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Workspace ONE UEM powered by AirWatch provides complete management solutions for macOS devices. With Workspace ONE UEM's Mobile Device Management (MDM) solution, enterprises can manage Corporate-Dedicated, Corporate-Shared or Employee Owned (BYOD) macOS devices throughout the entire device lifecycle.

Workspace ONE UEM supports devices running macOS versions 10.9 and all Apple devices running those operating system versions.

This guide shows administrators how to:

- Enroll macOS devices or allow end users to enroll the devices by themselves.
- Configure the Workspace ONE Intelligent Hub.
- Create profiles for macOS devices to manage compliance.
- Manage devices through the Workspace ONE UEM console and on the Self-Service Portal (SSP).
- Integrate with macOS tools such as File Vault 2.
- Enable Product Provisioning.

This chapter includes the following topics:

Workspace ONE UEM macOS Management Prerequisites

To manage macOS devices, make sure you have the all the prerequisites mentioned in this section.

You must have the following prerequisites ready:

UEM

- **Active Environment** – Your active Workspace ONE UEM environment and access to the UEM console.
- **Appropriate Admin Permissions** – Type of permission that allows you to create profiles, policies, and manage devices within the UEM console.
- **Group ID** – A unique identifier for the organization group where the device is enrolled that defines all configurations the device receives.

- **Credentials** – User name and password combination used to identify and authenticate the user account to which the device belongs. These credentials can be AD/LDAP user credentials.

Apple Platform

- **Apple Push Notification service (APNs) Certificate** – A certificate issued to your organization to authorize the use of Apple's cloud messaging services. For information about generating an APNs certificate, see *Generate a New APNs Certificate* in the *Console Basics* documentation.
- **Apple ID for Apple Business Manager** – An Apple ID is required to purchase the managed distribution or the user-based licenses when using the Volume Purchase Program (VPP) with a macOS deployment. It is also used to enroll the macOS devices through Device Enrollment Program (DEP). Apple Business Manager is a web-portal which you can use with the Mobile Device Management (MDM) solution for easily deploying and managing your Apple devices. For more information about Apple Business Manager, see the *VMware Workspace ONE UEM Integration with Apple Business Manager* documentation.

  Note Apple ID that is used for VPP or DEP must not be entered in the settings or preferences on the device. For example, do not use for iTunes or iCloud.

Optional

- **Enrollment URL** – The web address entered into Safari to begin the enrollment procedure. This location is specific to your company's enrollment environment. For example, this enrollment URL follows the format of https://<companyspecificdeviceservicesurl>/enroll.
- Apple Business Manager/Apple School Manager account or DEP/VPP accounts.

Supported Devices

Workspace ONE UEM currently supports devices running macOS 10.9 and later, including:

- MacBook
- MacBook Pro
- MacBook Air
- iMac Pro
- iMac
- Mac Mini
- Mac Pro

macOS Device Enrollment

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Each device in your organization's deployment must be enrolled in your organization's environment before it can communicate with Workspace ONE UEM and access internal content and features. macOS devices enroll using MDM functionality built into the native OS in conjunction with Workspace ONE UEM functionality.

Enrollment Methods

There are three ways to initiate enrollment for macOS devices:

- Enroll a device using the Workspace ONE Intelligent Hub
- Sideload devices with an MDM profile
- Utilize Apple Business Manager's Device Enrollment Program

End user Enrollment Using the Workspace ONE Intelligent Hub

The Hub-based enrollment process secures a connection between macOS devices and your Workspace ONE UEM environment through the Workspace ONE Intelligent Hub app. The Workspace ONE Intelligent Hub application facilitates User-Approved Device Enrollment, and then allows for real-time management and access to device information.

For more information, see:

- Chapter 7 Apps for macOS Devices
- Enrollment with macOS Intelligent Hub

Admin Enrollment Using a Sideloaded Staging Profile

Device Staging on the Workspace ONE UEM console allows a single admin to outfit devices for other users on their behalf, which can be particularly useful for IT admins provisioning a fleet of devices. Admins can sideload a staging profile for a single user devices and multi-user devices.

Single-User Staging

Single-user staging allows an admin to stage devices for a single user, such as a company-issued laptop. LDAP binding or pre-registration is required when staging devices for single users.

For more information, see Stage macOS Devices for Single User Enrollment.

Single Staging with Pre-Registration and Local User

Workspace ONE UEM also supports a new single staging enrollment flow for a local user with pre-registration to help macOS admins who are moving towards a deployment model without domain join. For more information, see Single Staging with Pre-Registration and Non-Domain Joined Local User.

Multi-User Staging

Multi-user device staging allows an admin to provision devices intended to be used by more than one user, such as a customer service kiosk computer. Multi-user staging allows the device to dynamically change its assigned user as the different network users log into that device.

For more information, see Configure Multi-User Staging for macOS Devices.

Bulk Device Enrollment

Depending on your deployment type and device ownership model, you may want to enroll devices in bulk. Workspace ONE UEM provides bulk enrollment capabilities for macOS devices using the Apple Business Manager and Automated Enrollment.

Bulk Enrollment with Apple Business Manager

Deploying a bulk enrollment through the Apple Business Manager's DEP allows you to install a non-removable MDM profile on a device, which prevents end users from being able to remove the profile from their devices. You can also provision devices in Supervised mode to access additional security and configuration settings.

For more information about Apple Business Manager, see *Integration with Apple Business Manager*.

This chapter includes the following topics:

Enrollment with macOS Intelligent Hub

The Hub-based enrollment process secures a connection between macOS devices and your Workspace ONE UEM environment. Install the Workspace ONE Intelligent Hub application to facilitate the enrollment and enable the real-time management and access to the relevant device information.

Download the Workspace ONE Intelligent Hub installer from **https://getwsone.com**. When the Workspace ONE Intelligent Hub is installed, the device begins prompting the user for the enrollment authentication. For different methods that are available to download Intelligent Hub, see macOS Workspace ONE Intelligent Hub Download.

Procedure

1. Navigate to **https://getwsone.com** and download the Workspace ONE Intelligent Hub installer on the device.
2. Open the pkg file and install the Intelligent Hub by following the prompts. After installation completes, the Intelligent Hub enrollment screen appears shortly.
3. Enter the enrollment URL and Group ID, or enter your email address.

   If the email autodiscovery is set up, select the email address option for authentication, instead of entering the enrollment URL and Group ID. For information about configuring autodiscovery, see the *Autodiscovery Enrollment* topic of the *Managing Devices* documentation.

   If your user account is not allowed or blocked because your account is blacklisted and not approved for enrollment, you may now get a notification .
4. Follow the prompts in the Workspace ONE Intelligent Hub. For devices running macOS 10.13.1 and below, proceed to step 7. For devices running macOS 10.13.2 and above, proceed to step 5.
5. Enter the admin user name and password to install the MDM profile.
6. Once the process is complete, the Workspace ONE Intelligent Hub displays an Enrollment Complete screen and the device immediately begins receiving the configurations assigned by the administrator.
7. Click Continue to transition to the Hub's default Account screen.

   For more information on Workspace ONE Intelligent Hub for macOS and its deployment, see Deploying VMware Workspace ONE Intelligent Hub.

macOS Workspace ONE Intelligent Hub Download

The quickest and the easiest option available for downloading the Workspace ONE Intelligent Hub is from **getwsone.com**. The most recent version of the Workspace ONE Intelligent Hub is present and requires no authentication. However, you can also download the Workspace ONE Intelligent Hub for macOS devices at any time by logging into either UEM console or Self-Service Portal (SSP).

Download options:

- **Workspace ONE UEM console** – Navigate to **Groups & Settings > All Settings > Devices & Users > Apple > Apple macOS > Hub Application** and select **Download Hub**.

- **Self-Service Portal** – Log into the SSP with an enrollment user who has an enrolled macOS device and select **Download Hub** from the top action menu.

  If the hub is installed after the device enrollment, then the Hub icon  appears at the top of the display indicating it is active and no additional end-user interaction is necessary.

  If the hub is installed before the device enrollment, then after the installation the device begins prompting the user for the enrollment authentication.

Enable the Workspace ONE Intelligent Hub for Web-based Enrollment on macOS Devices

If you are utilizing web-based enrollment, enable the Workspace ONE Intelligent Hub to be installed on devices after enrollment through the Web.

Prerequisites

For web enrollment using the UEM console v7.3 and higher, make sure that the **Require Intelligent Hub Enrollment for macOS** option is enabled (Navigate to **Groups & Settings > All Settings > Devices & Users > General > Enrollment** and enable the option).

Procedure

1. From the UEM console Dashboard, navigate to **Devices > Device Settings > Apple > Apple macOS > Hub Application**.
2. Select **Install Hub after Enrollment** to automatically install Hub on devices after enrollment.
3. Select **Save**.

Stage macOS Devices for Single User Enrollment

Single-User Device Staging on the Workspace ONE UEM Console allows a single administrator to outfit devices for other users on their behalf, which can be useful for IT administrators provisioning a fleet of devices.

Device staging through Workspace ONE Direct Enrollment is not supported. If you must stage a device, whether for single or multiple users, you must enroll the device using Workspace ONE Intelligent Hub instead of Workspace ONE Direct Enrollment.

Important LDAP binding is required when staging devices. To create this payload, see Binding a Device to the Directory Service in this guide.

Procedure

1. Navigate to **Accounts > Users > List View** and select **Edit** for the user account for which you want to enable device staging.

2 In the **Add / Edit User** page, select the **Advanced** tab.

   a Scroll down to the **Staging** section.

   b Select **Enable Device Staging**.

   c Select the staging settings that apply to this staging user.

3 **Single User Devices** stages devices for a single user. This user is the next Network User to log into the device. Toggle the type of single user device staging mode to either **Standard** or **Advanced**. Standard staging requires an end user to enter login information after staging, while Advanced means that the staging user can enroll the device on behalf of another user.

4 Ensure that **Multi User Devices** is set to **Disabled**.

5 Enroll the device using one of the two following methods.

   a Enroll using the Workspace ONE Intelligent Hub by entering a server URL and Group ID.

   b Open the device's Internet browser, navigate to the enrollment URL, and enter the proper Group ID.

6 Enter your staging user's credentials during enrollment. If necessary, specify that you are staging for **Single User Devices**. You will only have to do this if multi-user device staging is also enabled for the staging user.

7 Complete enrollment for either Advanced or Standard staging.

   a If you are performing Advanced staging, you are prompted to enter the user name of the end-user device owner who is going to use the device. Proceed with enrollment by installing the Mobile Device Management (MDM) profile and accepting all prompts and messages.

   b If you are performing Standard staging, then when the end user completes the enrollment, they are prompted to enter their own credentials in the login window.

Results

The device is now staged and ready for use by the new user.

Configure a Sideloading Enrollment Profile for macOS Devices

Obtain the MDM profile to prepare to sideload devices.

Do this by using Automated Enrollment functionality to generate an enrollment profile for the desired organization group. Then, enroll devices using the MDM profile for standard or advanced staging. Last, download the Workspace ONE Intelligent Hub to complete enrollment and authenticate devices.

Procedure

1 Configure a **Staging** user account in the UEM console, if you have not already. This can be a **Basic** user account you manually create or a **Directory** user account that is enabled with staging. If configuring Multi-user staging for macOS devices, then choose a **Directory** user account. For more information on creating users, see *Mobile Device Management* .

2 Navigate to **Devices > Device Settings > Devices & Users > Apple > Automated Enrollment**.

3 Select **Enabled** for **Automated Enrollment**. You may need to **Override** the current organization group to do this.

4 Choose **macOS** as the **Platform**.

5 Select the **Staging Mode** drop down menu.

   a **Single user device** – Stage the device for one user.

   b **Multi-user device** – Stage the device for multiple users.

6 Choose the **Default Staging User**.

   a Only staging users are available as Default Enrollment User options. Later, when staging is completed, the user's device details are updated in the UEM console and the device is associated with that end user.

7 Select **Save and Copy URL > OK** to save the .mobileconfig file that includes the name of the organization group.

8 Select **Export** to export the .mobileconfig file. This profile is needed when staging devices.

9 Navigate to **Groups & Settings > All Settings > Devices & Users > Apple > Apple macOS > Hub Application** and select **Download Hub Download** to install the Workspace ONE Intelligent Hub.

10 Enroll using a local account and install the Workspace ONE Intelligent Hub. At this time, all profiles are pushed to the device.

11 Distribute the device to the end user. The end user must log in from the device's Login Window to complete the staging process.

Configure Multi-User Staging for macOS Devices

Multi-user device/shared device staging allows an IT administrator to provision devices intended to be used by more than one user. Multi-User staging allows the device to change its assigned user dynamically as the different network users log into that device.

Device staging through Workspace ONE Direct Enrollment is not supported. If you must stage a device, whether for single or multiple users, you must enroll the device using Workspace ONE Intelligent Hub instead of Workspace ONE Direct Enrollment.

Procedure

1 Navigate to **Accounts > Users > List View** and select **Edit** for the user account for which you want to enable device staging.

2 In the **Add / Edit User** page, select the **Advanced** tab.

   a Scroll down to the **Staging** section.

   b Select **Enable Device Staging**.

   c Select the staging settings that apply to this staging user.

3 **Single User Devices** stages devices for a single user. Toggle the type of single user device staging mode to either **Standard** or **Advanced**. Standard staging requires an end user to enter login information after staging, while Advanced means that the staging user can enroll the device on behalf of another user.

4 Ensure that **Multi User Devices** is set to **Enabled**.

5 Enroll the device using one of the two following methods.

   a Enroll using the Workspace ONE Intelligent Hub by entering a server URL and Group ID.

   b Open the device's Internet browser, navigate to the enrollment URL, and enter the proper Group ID.

6 Enter your staging user's credentials during enrollment. If necessary, specify that you are staging for **Single User Devices**. You only have to do this if multi-user device staging is also enabled for the staging user.

7 Complete enrollment for either Advanced or Standard staging.

   a If you are performing Advanced staging, you are prompted to enter the user name of the end-user device owner who is going to use the device. Proceed with enrollment by installing the Mobile Device Management (MDM) profile and accepting all prompts and messages.

   b If you are performing Standard staging, then when the end user completes the enrollment, they are prompted to enter their own credentials in the login window.

Results

The device is now staged and ready for use by the new users.

Single Staging with Pre-Registration and Non-Domain Joined Local User

Before VMware Workspace ONE UEM version 9.3, Workspace ONE UEM Staging for macOS required a macOS to be domain joined to a directory service (Multi-Staging or Single-Staging). After the staging enrollment, an end user logs into the macOS with Domain credentials. The device then gets checked out to the corresponding directory user within the UEM console.

From VMware Workspace ONE UEM version 9.3, macOS admins are moving towards a deployment model without a domain join. VMware Workspace ONE UEM now supports this deployment model by providing a new single staging enrollment flow for a local user with the pre-registration in the UEM console. Because Workspace ONE UEM MDM can only manage one local user, the new enrollment flow to map the staging user APNs token to the directory user that is pre-registered to the device is created.

Use Cases for Single-Staging with Pre-Registration

- Admin needs the device before the end user, but does not want to domain join and use the existing local account.

- Admin does not want to domain join, but uses Enterprise Connect or NoMAD to keep the password synced.
- Admin wants the device for setup, then integrate the API to an internal device checkout system.
- Admin creates their own custom GUI authentication dialog box which calls a Workspace ONE UEM API to switch the device to the end user.

Create Single-Staging Flow with Pre-Registration

Create a single-staging user in the UEM console before pre-registering the device.

Prerequisites

- Pre-registration is only supported for Single-Staging
- Device must be assigned to a staging user before the pre-registration or API flow to work

Procedure

1. Create Single-Staging User in the UEM console.
2. Pre-Register Device to the Enrollment User (basic or directory user in the UEM console).
3. Enroll the device to the single staging user (DEP staging or Web enrollment or Hub enrollment).

Create Single-Staging User

The first step to pre-register macOS devices to the UEM console is to create a single-staging enrollment user.

Procedure

1. Navigate to **Accounts > Users > List View** and then select **Add > Add User**.
2. Enter the general information such as Username, Password, Full name, email address in the **General** tab for a single staging user in the **Add/Edit User** page.
3. In the **Advanced** tab, under **Staging**, enable **Device Staging** and **Single User Devices**.
4. Select **Save** to save the enrollment user.

What to do next

Once single staging user is created, the next step is to pre-register the macOS device.

Pre-Register Device to the Enrollment User

In the UEM console, pre-register the device through the device identifiers (such as serial, udid, and so on) to the directory or basic enrollment user.

Procedure

1. Navigate to **Devices > Lifecycle > Enrollment Status**. Select **Add** and then select **Register Device**.

2 In the **User** tab, enter a **basic user** or **directory user** in the User's **Search Text** text box and select the user from the search list.

3 Enable **Show Advanced Device Information Options** check box and enter the device identifiers of the device.

4 Select **Save**.

What to do next

After the pre-registration of the device is complete, the next step is to enroll device to the Workspace ONE UEM single-staging user.

Device Enrollment to the Single-Staging User

Log into the macOS device with a local user and enroll through DEP Staging, Hub Enrollment, Web Enrollment, or Apple Configurator with a Workspace ONE UEM single-staging user.

If using DEP, the managed local user must be the user created during Setup Assistant process. For more information, refer the enrollment sections. After enrollment completes, the UEM console automatically checks out the user from the staging use to the pre-registered basic user. All assigned user profiles, commands, or applications start installing onto the device.

Single Staging with API

As an alternative to pre-registration, use Single-Staging with API to switch the user from the Workspace ONE UEM staging user to the Workspace ONE UEM directory or basic user.

Before using Single-Staging with API, ensure that the device is enrolled through Hub enrollment, Web enrollment, or Apple Configurator with a Workspace ONE UEM single-staging user.

Use the following (v2) API to switch the device assignment:

```
PATCH /api/mdm/devices/{id}/enrollmentuser/{enrollmentuserid}
```

where,

- id – Workspace ONE UEM device ID
- enrollmentuserid – Workspace ONE UEM user ID

The header request must be:

```
Accept - application/json;version=2
```

Ensure you receive 200 OK as a return response which indicates that the device switching is complete with no errors. All assigned user profiles, commands, or applications start coming down to the device.

Apple Business Manager - DEP

Devices can also be staged through Apple Business Manager's Device Enrollment Program (DEP). DEP is a streamlined staging method that is best for corporate-owned devices.

DEP on macOS enables you to:

- Apply standard staging to devices.
- Configure Setup Assistant panes to skip during installation.
- Enforce enrollment for all end users.
- Customize and streamline the enrollment process to meet your organization's needs.
- Hold a device in the Awaiting Configuration state when it reaches the Setup Assistant screen.
- Create a local Hidden Admin account and allow end users to skip the Account Creation screen.

For additional Apple information, see the Apple Business Manager Guide or contact your Apple Representative.

Custom Bootstrap Packages for Device Enrollment

In a typical device enrollment, the Workspace ONE Intelligent Hub must be installed on a device before any other installer packages can be executed. The Bootstrap Package allows installer packages to deploy to a device immediately after the device is enrolled.

Bootstrap Packages

Workspace ONE UEM uses the latest Apple MDM commands for deploying Bootstrap Packages. For enrolled devices on macOS 10.13.6 and higher, the `InstallEnterpriseApplication` command is used. For macOS 10.13.5 and lower devices the legacy `InstallApplication` command is used.

Historically, the Workspace ONE Intelligent Hub handles the download and installation of application files. Bootstrap Packages allow .pkg files to install immediately after enrollment whether or not the Workspace ONE Intelligent Hub is installed.

You may want to use alternative tools for device and application management. Bootstrap package enrollment comprises an enrollment flow paired with a bootstrap package that installs the alternative tooling and configures the device before the end user begins using the device.

Bootstrap Package Use Cases

Bootstrap Packages may be useful in certain deployment scenarios. This list is not exhaustive.

- You want to create a custom-branded end user experience, such as launching a window as soon as enrollment completes, to inform the user about the installation process and instruct them to wait to use the device until provisioning and installation complete.
- Your deployment does not include the Workspace ONE Intelligent Hub, but you still have critical software to deploy to devices.
- You want to use Munki for Application Management, and need the Munki client to install immediately after enrollment so the user can begin installing apps, rather than going through the Workspace ONE Intelligent Hub and AirWatch Catalog.

- Your deployment only uses MDM for certificate management and software management, and uses Chef or Puppet for configuration management. In this configuration, Chef or Puppet must be installed as soon as enrollment completes to finish configuring the device.

Bootstrap Package Creation

Bootstrap packages are deployed to the device as soon as enrollment completes. Bootstrap packages deployed from the Console will not deploy to existing enrolled devices unless the devices are specifically queued using the Assigned Devices list for the package.

You must create packages before you deploy them. There are several tools available that can create a package for use in the Bootstrap Package functionality. Created packages must meet two criteria:

- The package must be signed with an Apple Developer ID Installer Certificate. Only the package needs to be signed, not the app, since the Apple Gatekeeper does not check apps installed through MDM.
- The package must be a distribution package (product archive), not a flat component package.

When you have created a bootstrap package, you must deploy the package to your devices. For more information, see Deploy a Bootstrap Package.

Deploy a Bootstrap Package

Bootstrap packages allow you to make your end users' devices usable sooner after the device enrolls than a traditional enrollment. Once you have created a bootstrap package, you must deploy the package to your devices.

Prerequisites

You must create bootstrap packages before you deploy them. There are several tools available that can create a package for use in the Bootstrap Package functionality. For more information, see Custom Bootstrap Packages for Device Enrollment.

Procedure

1. Navigate to **Apps & Books > Internal > Add Application**.
2. Upload a .pkg file that meets these requirements:
   a. Package must be signed with an Apple Developer ID Installer certificate.
   b. Package must be a distribution package.

   For more information about the bootstrap package requirements, see Custom Bootstrap Packages for Device Enrollment.
3. Select **Continue** and modify the items in the **Details** tab and the **Images** tab if necessary.
4. Select **Save & Assign**, and then select **Add Assignment** to configure the **App Delivery Method**.

   By default, the **App Delivery Method** is set to **Auto**. In this configuration, the assigned bootstrap package will only install on newly-enrolled devices.

To install the bootstrap package on enrolled devices, select **On Demand**. On-Demand package deployments require you to manually push the package to devices.

To manually deploy a bootstrap package to enrolled devices, navigate to **Applications > Internal Apps > List View**. Select the package you want to assign to open the **Application Details**. Use the **Devices** tab to select devices to push the package to.

Software Distribution and Management for macOS Applications

3

All file types (.dmg, .pkg, .mpkg) for macOS applications can be managed in the Internal Applications section of the Workspace ONE UEM console. Workspace ONE UEM powered by AirWatch offers the software distribution feature that helps you deploy these macOS applications using the same application flow that exists for all the other internal applications.

For a successful deployment of the macOS applications using the software distribution method, you must perform the following actions:

- Enable Software Management in the Workspace ONE UEM console.
- Generate the `pkginfo` metadata file for the macOS application before uploading the application to the console. You can generate a `pkginfo` metadata file using VMware AirWatch Admin Assistant Tool.

For more information about configuring the software distribution feature and deployment of macOS applications through the software distribution process, refer the *Software Distribution Management* documentation.

macOS Device Profiles

4

Profiles are the primary means to manage devices. Configure profiles so your macOS devices remain secure and configured to your preferred settings.

You can think of profiles as the settings and rules that, when combined with compliance policies, help you enforce corporate rules and procedures. They contain the settings, configurations, and restrictions that you want to enforce on devices.

A profile consists of the general profile settings and a specific payload. Profiles work best when they contain only a single payload.

macOS profiles apply to a device at either the user level or the device level. When creating macOS profiles, you select the level the profile applies to. Some profiles can only be applied to the user level or device level.

Device Access

Some device profiles configure the settings for accessing a macOS device. Use these profiles to ensure that access to a device is limited only to authorized users.

Some examples of device access profiles include:

- Secure a device with a Passcode profile. For more information, see Configure a Passcode Policy Profile
- Configure Apple's Gatekeeper functionality, which secures application downloads and controls specific settings related to user passwords. For more information, see Configure a Security and Privacy Settings Profile.
- Configure accessibility options to accommodate end users' needs. For more information, see Configure an Accessibility Profile.

Device Security

Ensure that your macOS devices remain secure through device profiles. These profiles configure the native macOS security features or configure corporate security settings on a device through Workspace ONE UEM.

Some examples of device security profiles include:

- Use a Wi-Fi profile to connect enrolled devices to your corporate Wi-Fi without sending the network credentials to users. For more information, see Configure a Network Access Profile.
- Implement digital certificates to protect corporate assets. For more information, see Configure a SCEP/Credentials Profile
- Ensure access to internal resources for your devices with the VPN profile. For more information, see Configure a VPN Profile and Configure a VPN On Demand Profile.

Device Configuration

Configure the various settings of your macOS devices with the configuration profiles. These profiles configure the device settings to meet your business needs.

Some examples of device configuration profiles include:

- Set up access to Microsoft Outlook and corporate files with an Exchange Web Services profile. For more information, see Configure an Exchange Web Services Profile.
- Ensure that the devices remain up to date with the macOS Updates profile. For more information, see Configure a Software Update Server Profile.

This chapter includes the following topics:

- Configure a Security and Privacy Settings Profile
- Configure a Full Disk Encryption Profile
- Configure a Login Items Profile
- Configure a Login Window Profile
- Configure an Energy Saver Profile
- Configure a Time Machine Profile
- Configure a Finder Profile
- Configure an Accessibility Profile
- Configure a Printer Configuration Profile
- Configure a Messages Profile
- Configure a Proxy Profile
- Configure a Smart Card Profile
- Configure a Mobility Profile
- Configure an Associated Domains Profile
- Configure a Managed Domains Profile
- Configure an SSO Extension Profile
- Configure a System Extensions Profile
- Configure a Web Content Filter Profile
- Configure an AirPlay Whitelist Profile
- Configure an AirPrint Profile
- Configure an Xsan Storage Profile
- Configure a Firewall Profile
- Configure a Firmware Password Profile
- Configure a Custom Attributes Profile
- Configure a Custom Settings Profile
- Configure a Kernel Extension Policy Profile

Configure a Passcode Policy Profile

Device passcode profiles secure macOS devices and their content. Choose strict options for high-profile employees, and more flexible options for other devices or for those part of a BYOD program.

If multiple profiles enforce separate policies on a single device, the most restrictive policy is enforced. If your password policy is being managed by your directory for network users logging into the devices, Workspace ONE UEM does not recommend a passcode policy.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Passcode** payload.

4 Configure Passcode settings:

Setting	Description
Require passcode on device	Enable mandatory passcode protection.
Allow simple value	Allow the end user to apply a simple numeric passcode.
Require Alphanumeric Value	Restrict the end user from using spaces or non-alphanumeric characters in their passcode.
Minimum Passcode Length	Select the minimum number of characters required in the passcode.
Maximum Passcode Age (days)	Select the maximum number of days the passcode can be active.
Auto-lock (min)	Select the amount of time the device can be idle before the screen is locked automatically.
Passcode History	Enter the number of passwords to store in order to prevent end users from recycling passwords.
Maximum Number of Failed Attempts	Select the number of failed attempts allowed. If the end user enters an incorrect passcode for the set number of times, the device locks.
Delay after failed login attempts	Enter the length of the delay in minutes before allowing another chance to login again after the end user has reached the maximum number of failed passcode attempts.

5 Select **Save & Publish** when you are finished to push the profile to devices.

End users are only prompted to change their password if the Workspace ONE Intelligent Hub is installed and the **Enforce Passcode** check box is selected in the Workspace ONE Intelligent Hub settings in the UEM console. For more information about configuring the Workspace ONE Intelligent Hub, see Chapter 7 Apps for macOS Devices.

Configure a Network Access Profile

A network profile allows devices connect to corporate networks, even if they are hidden, encrypted, or password protected.

This can be useful for end users who travel and use their own unique wireless network or to end users in an office setting where they need to automatically connect their devices to a wireless on-site.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether the profile applies to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **Network** payload.
4. Choose to configure **Wi-Fi** or **Ethernet** settings.

Setting	Description
Network Interface	Select to connect to network payload using Wi-Fi or Ethernet. If Ethernet is selected, you have multiple ethernet interface payload types available for connection from the drop-down list. Payloads with 'active' in their name apply to Ethernet interfaces that are working at the time of profile installation. If there is no active Ethernet interface working, the First Active Ethernet interface type gets configured with the highest service order priority. Payloads without 'active' in the name apply to Ethernet interfaces according to service order regardless of whether the interface is working or not.
Service Set Identifier	Enter the name of the network to which the device connects.
Connectivity	Select the type of connectivity. **Hidden** – Allows a connection to network that is not open or broadcasting. **Auto-Join** – Determines whether the device automatically connects to the network.
Security Type	Select the method for connection encryption to the wireless network.
Use as login window configuration	Allows the user to authenticate to the network at login. This option appears when **WiFi** and **Security Type** is **Enterprise** This option also appears when **Ethernet** is selected.
Protocols	Select protocols for network access. ■ This option appears when **WiFi** and **Security Type** is any of the **Enterprise** choices. This option also appears when **Ethernet** is selected.
Password	Enter the password required to join the **Wi-Fi** network.

5. Configure **Authentication** settings that vary by protocol including but not limited to:

Setting	Description
Use as Login Window Configuration	(For **Device Profiles** only) Select this if any enterprise protocols were selected for the network. Allow authentication with the target machine's directory credentials.
Username	Enter the username for the account.
User Per-Connection Password	Request the password during the connection and send with authentication.
Password	Enter the password for the connection.
Identity Certificate	Select the certificate for authentication.

Setting	Description
TLS Minimum Version	Select the minimum version 1.0, 1.1, and 1.2. If no value is selected, the minimum TLS version defaults to 1.0. **Note** Minimum and Maximum TLS versions can be configured only for TLS , TTLS, EAP-Fast, and PEAP protocol types.
TLS Maximum Version	Select the maximum TLS version 1.0, 1.1, and 1.2. If no value is selected, the maximum TLS version defaults to 1.2
Inner identity	Select the inner identification method.
Outer identity	Select the external authentication method.

6 Enter the name(s) of server certificates.

7 Select **Allow Trust Exceptions** to enable the end user to make trust decisions.

8 Configure **Proxy** settings for either **Manual** or **Auto** proxy types.

9 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a VPN Profile

Virtual private networks (VPNs) provide devices with a secure and encrypted tunnel to access internal resources. VPN profiles enable each device to function as if it were connected through the on-site network.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **VPN** payload.

4 Configure **Connection** settings.

The following settings vary depending on the type of connection selected.

Settings	Description
Connection Name	Enter the name of the connection name to be displayed on the device.
Connection Type	Select one of the following network connection method from the drop-down menu. For detailed information on each of the connection methods, refer to the individual pages. ■ L2TP (default connection) ■ PPTP ■ IPSec (Cisco) (applicable for VPN On Demand) ■ F5 SSL (applicable for VPN On Demand) ■ Custom SSL (applicable for VPN On Demand) ■ F5 Access (applicable for VPN On Demand) **Note** VPN on demand is the process of automatically establishing a VPN connection for specific domains. For increased security and ease of use, VPN on demand uses certificates for authentication instead of simple passcodes.
Server	Enter the hostname or IP address of the server to be connected.
Account	Enter the user account name for authenticating the VPN connection.
Send All Traffic	Select this check box to force all traffic through the specified network.
Per App VPN Rules	For macOS v10.9 devices, use Per-App VPN to choose what apps should connect to what networks.
Provider Type	Select the type of the VPN service. If the VPN service type is an App proxy, the VPN service tunnels the traffic at the application level. If it is a Packet Tunnel, the VPN service tunnels the traffic at the IP layer.
Exclude Local Networks	Enable the option to include all networks to route the network traffic outside the VPN.
Include All Networks	Enable the option to include all networks to route the network traffic through the VPN.
Connect Automatically	Select this check box to allow the VPN to connect automatically to chosen Safari domains.
Enable Safari Domains	Enable this setting to set specific domains or hosts that open the secure VPN connection in the Safari browser. **Add** domains as needed. If you configure a VMware Tunnel Per-App Tunnel network traffic rule for the Safari app for macOS, Workspace ONE UEM disables this setting. The network traffic rules override any configured Safari Domain rules.
Enable Mail Domains	Enable this setting to set specific domains or hosts that open the secure VPN connection in the Mail client. **Add** domains as needed.
Enable Contact Domains	Enable this setting to set specific domains or hosts that open the secure VPN connection in the Contact domain. **Add** domains as needed.

Settings	Description
Enable Calendar Domains	Enable this setting to set specific domains or hosts that open the secure VPN connection in the Calendar domain. **Add** domains as needed.
App Mapping	Enable this setting to allow specific applications to open a secure VPN connection. **Add** app bundle ID(s) for applications allowed to open a secure VPN connection.

5 Configure **Authentication** information.

Setting	Description
User Authentication	Select the radio button to indicate how to authenticate end users through the VPN, through either password or RSA SecurID.
Password	Enter the password for the VPN account.
Machine Authentication	Select the type of machine authentication to authorize end users for the VPN access.
Identity Certificate	Enter the credentials to authorize end users for the VPN connection (if Certificate is selected as machine authentication).
Shared Secret	Enter the Shared Secret key to be provided to authorize end users for the VPN connection (if Shared Secret is selected as machine authentication).
Proxy	Select either **Manual** or **Auto** as the proxy type to configure with this VPN connection.
Server	Enter the URL of the proxy server.
Port	Enter the port used to communicate with the proxy.
Username	Enter the user name to connect to the proxy server.
Password	Enter the password for authentication.
Proxy Server Auto Config URL	Enter the proxy server auto configuration URL.
Provider Designated Requirement	Use this field only when the VPN provider is implemented as a System extension.

6 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a VPN On Demand Profile

VPN on demand is the process of automatically establishing a VPN connection for specific domains. For increased security and ease of use, VPN on demand uses certificates for authentication instead of simple passcodes.

Procedure

1 Ensure your certificate authority and certificate templates in the Workspace ONE UEM are properly configured for certificate distribution.

2 Make your third-party VPN application of choice available to end users by pushing it to devices or recommending it in your enterprise App Catalog.

3 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

4 Configure the profile's **General** settings.

5 Select the **VPN** payload and configure settings as outlined above.

6 Specify the Connection Info for a connection type that supports certificate authentication: IPSec (Cisco), F5 SSL, SSL, or F5 Access.

   a **Server** – Enter the hostname or IP address of the server for connection.

   b **Account** – Enter the name of the VPN account.

7 **Authentication** – Select a certificate to authenticate the device.

8 **Identity Certificate** – Select the appropriate credentials.

9 **Include User PIN** – Select this check box to ask the end user to enter a device PIN.

10 Check the **Enable VPN On Demand** box. **Add** the **Domains**, and choose the **On-Demand Action.**

   a **Always Establish** – Initiates a VPN connection regardless of whether the page can be accessed directly or not.

   b **Never Establish** – Does not initiate a VPN connection for addresses that match the specified the domain. However, if the VPN is already active, it may be used.

   c **Establish if Needed** – Initiates a VPN connection only if the specified page cannot be reached directly.

   For wildcard characters, do not use the asterisk (*) symbol. Instead, use a dot in front of the domain. For example, .air-watch.com.

11 Select **Save and Publish**. After the profile installs on a user's device, a VPN connection prompt will automatically display whenever the user navigates to a site that requires it, such as SharePoint.

Configure an Email Profile

Configure an email profile for macOS devices to configure email settings on the device.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **User Profile**, since email settings can only apply to a single user.

2 Configure the profile's **General** settings.

3 Select the **Email** payload.

4 Configure **Email** settings, including:

Settings	Description
Account Description	Enter a brief description of the email account.
Account Type	Use the drop-down menu to select either IMAP or POP.
Path Prefix	Enter the name of the root folder for the email account (IMAP only).
User Display Name	Enter the name of the end user.
Email Address	Enter the address for the email account.
Host Name	Enter the name of the email server.
Port	Enter the number of the port assigned to incoming mail traffic.
Username	Enter the username for the email account.
Authentication Type	Use the drop-down menu to select how the email account holder is authenticated.
Password	Enter the password required to authenticate the end user.
Use SSL	Select this check box to enable Secure Socket Layer usage for incoming email traffic.
Host Name	Enter the name of the email server.
Port	Enter the number of the port assigned to incoming mail traffic.
Username	Enter the username for the email account.
Authentication Type	Use the drop-down menu to select how the email account holder is authenticated.
Outgoing Password Same As Incoming	Select this to auto-populate the password field.
Password	Enter the password required to authenticate the end user. Select **Show Character**s if you want users to see characters as they type.
Use SSL	Select this check box to enable Secure Socket Layer usage for incoming email traffic.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure an Exchange Web Services Profile

An Exchange Web Services profile allows the end user to access corporate email infrastructures and Microsoft Outlook accounts from the device.

Note This payload is fully supported on macOS v.10.9 and higher, however, macOS will only configure Contacts when this is installed on v10.7 and v10.8.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **User Profile**, since email settings can only apply to a single user.

2 Configure the profile's **General** settings.

3 Select the **Exchange Web Services** payload.

4 Configure **Exchange Web Services** settings including:

Setting	Description
Email Client	Configure the native mail client or Microsoft Outlook on the device. Outlook requires Workspace ONE Intelligent Hub v.1.1.0+ to be installed on the device.
Account Name	Enter the name for the EWS account.
Exchange Host	Enter the name of the Exchange host. This option appears when **Microsoft Outlook** is selected.
Exchange Port	Enter the port number for the Exchange Host. This option appears when **Microsoft Outlook** is selected.
Use SSL	Select to enable Secure Socket Layer usage for communication. This option appears when **Microsoft Outlook** is selected.
Delete all user data when profile is removed	Select to erase all user information, mail, settings, and all configured accounts in Outlook, whether the user is managed or unmanaged. This option appears when **Microsoft Outlook** is selected. **Caution** Do not make this selection if deploying to a personal computer. This forces Outlook to quit and deletes all information from the computer's Microsoft User Data folder.
Username	Enter the username for the email account.
Email Address	Enter the email address for the email account.
Full Name	Enter the first and last name associated with the account. This option appears when **Microsoft Outlook** is selected.
Password	Enter the password required to authenticate the end user.
Payload Certificate	Select the certificate upload for EAS use. This option appears when **Native Mail Client** is selected.
Domain	Enter the domain for the email account. This option appears when **Microsoft Outlook** is selected.

5 Configure more options for **Native Mail Client**:

Setting	Description
Internal Exchange Host	The name of the secure server for EAS use. This option and following appear when **Native Mail Client** is selected.
Port	Enter the number of the port assigned for communication with the internal Exchange host.
Internal Server Path	The location of the secure server for EAS use.
Use SSL For Internal Exchange Host	Select this check box to enable Secure Socket Layer (SSL) usage for communication with the Internal Exchange Host.
External Exchange Host	The name of the external server for EAS use.
Port	Enter the number of the port assigned for communication with the External Exchange Host.

Setting	Description
External Server Path	The location of the external server for EAS use.
Use SSL For External Exchange Host	Select this check box to enable Secure Socket Layer (SSL) usage for communication with the External Exchange Host.

6 Configure **Directory Services** for **Microsoft Outlook.**

Settings	Description
Directory Server	Enter the location of the secure server.
Directory Server Port	Enter the port number of the secure server.
Search Base	Enter the search base of the secure server.
Directory Server Requires SSL	Select this check box if the directory server requires Secure Socket Layer (SSL).

7 Select **Save & Publish** when you are finished to push the profile to devices.

Configure an LDAP Profile

An LDAP profile allows end users to access and integrate with your corporate LDAPv3 directory information.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **User Profile**, since these settings can only apply to a single user.

2 Configure the profile's **General** settings.

3 Select the **LDAP** payload.

4 Configure **LDAP** settings:

Setting	Description
Account Description	Enter a brief description of the LDAP account.
Account Hostname	Enter/view the name of the server for Active Directory use.
Account Username	Enter the username for the Active Directory account.
Account Password	Enter the password for the Active Directory account.
Use SSL	Select this check box to enable Secure Socket Layer usage.
Search Settings	Select **Add** and enter settings for Active Directory searches executed from the device.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a CalDAV or CardDAV Profile

Configure a CalDAV or CardDAV profile to allow end users to sync corporate calendar items and contacts.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **User Profile**, since email settings can only apply to a single user.

2 Configure the profile's **General** settings.

3 Select the **CalDAV or CardDAV** payload.

4 Configure CalDAV or CardDAV settings, including:

Setting	Description
Account Description	Enter a brief description of the account.
Account Hostname	Enter/view the name of the server for CalDAV use.
Port	Enter the number of the port assigned for communication with the CalDAV server.
Principal URL	Enter the web location of the CalDAV server.
Account Username	Enter the username for the Active Directory account.
Account Password	Enter the password for the Active Directory account.
Use SSL	Select this check box to enable Secure Socket Layer usage.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Web Clips Profile

Web Clips are web bookmarks that you can push to devices that display as icons and point to commonly used or recommended web resources.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS**, and then select **User Profile.**

2 Configure the profile's **General** settings.

3 Select the **Web Clips** payload.

4 Configure Web Clip settings, including:

Setting	Description
Label	Enter the text displayed beneath the Web Clip icon on an end user's device. For example: "AirWatch Self-Service Portal."
URL	Enter the URL the Web Clip that will display. Below are some examples for Workspace ONE UEM pages: ■ For the SSP, use: **https://<AirWatchEnvironment > /mydevice/**. ■ For the app catalog, use: **https://<Environment > /Catalog/ViewCatalog/{SecureDeviceUdid}/{DevicePlatform}**. ■ For the book catalog, use: **https://<Environment > /Catalog/BookCatalog?uid={DeviceUid}**
Icon	Select this option to upload as the Web Clip icon. Upload a custom icon using a .gif, .jpg, or .png format, for the application. For best results, provide a square image no larger than 400 pixels on each side and less than 1 MB in size when uncompressed. The graphic is automatically scaled and cropped to fit, and converted to .png format if necessary. Web Clip icons are 104 x 104 pixels for devices with a Retina display or 57 x 57 pixels for all other devices.
Show in App Catalog	Select this option to list the application in your App Catalog.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a SCEP/Credentials Profile

Even if you protect your corporate email with Wi-Fi and VPN with strong passcodes and other restrictions, your infrastructure still remains vulnerable to brute force and dictionary attacks or employee error. For greater security, you can implement digital certificates to protect corporate assets.

Prerequisites

To do this, you must first define a certificate authority. Then configure a **Credentials** payload alongside your **Exchange Web Service**, **Wi-Fi**, or **VPN** payload. Each of these payloads has settings for associating the certificate authority defined in the Credentials payload.

To push certificates down to devices, you need to configure a **Credentials** or **SCEP** payload as part of the profiles you created for EAS, Wi-Fi and VPN settings. Use the following instructions to create a credentials payload:

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles > Add > Add Profile**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select either the **Exchange Web Services**, **Wi-Fi**, or **VPN** payload to configure. Configure the payload you selected.

4 Select the **Credentials** (or **SCEP**) payload and **Upload** a certificate or select **Defined Certificate Authority** from the Credential Source drop-down and select the **Certificate Authority** and **Certificate Template** from their respective drop-downs.

5 Navigate back to the previous payload for Exchange Web Services, Wi-Fi, or VPN. Specify the Identity Certificate in the payload:

   a **Exchange Web Service** – Select the **Payload Certificate** under Login Information.

   b **Wi-Fi** – Select a compatible **Security Type** (WEP Enterprise, WPA/WPA2 Enterprise or Any (Enterprise)) and select the **Identity Certificate** under Authentication.

   c **VPN** – Select a compatible **Connection Type** (for example, CISCO AnyConnect, F5 SSL) and select **Certificate** from the machine/User Authentication drop-down. Select the **Identity Certificate**.

6 Return to the Credentials payload and choose the following allowances:

   a **Allow access to all applications** – Select to allow or prevent applications to access the certificate in the Keychain. When this option is enabled, it is not required for the end users to explicitly select the 'allow access to all applications' to access the installed SCEP Certificate and enter credentials to grant access.

   b **Allow export of private key from Keychain** – Select whether to allow or prevent users from exporting the private key from the installed certificate.

7 Select **Save and Publish**.

Configure a Privacy Preferences Control Profile

With the release of macOS Catalina 10.15, Apple has added few more security enhancements around user data protection and privacy. With the enhancements, macOS prompts the user's consent for an application or process to access specific data. If users do not consent to the data access, the applications and processes might fail to function.

The Privacy Preferences Control profile allows you to manage data access consent on behalf of the user on macOS 10.14 and later devices. Through the Privacy Preferences Control profile, you can allow or disallow the application's request to access various macOS services. For example, if an application requests access to user's Calendar data, you can allow or deny the request.

Note The profile can only be delivered to devices that are User Approved MDM Enrolled and macOS 10.14 and later devices. The profile must not be installed on devices before the devices are upgraded else the settings cannot apply. It is required to create a Smart Group for macOS 10.14 and later devices to assign the profile, so that the devices automatically pick up the profile on upgrade.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS**, and then select **Device Profile**.

2 Configure the profile's **General** settings.

3 Select the **Privacy Preferences** payload.

4 Select **Add App** to define the application or the process and configure the following settings.

Setting	Description
Identifier	Enter the bundle ID or installation path of the application or process.
Identifier Type	Select the Identifier type either as Bundle ID or Path. Application bundles are identified by bundle ID. Non-bundled applications are identified by installation path. Helper tools embedded within an application bundle automatically inherit the permissions of their enclosing application bundle.
Code Requirement	Enter the designation displayed by running the following command: `codesign ––display –r – /path/to/app/binary`
Static Code Validation	If enabled, the process or application statically validates the code requirement. Enable this feature only if the process invalidates its dynamic code signature.
Comment	Enter notes for your own use. This is not used by macOS.
Services	Following are the services offered by Apple to pre-configure in this profile. If there are conflicting configurations, the most restrictive settings (deny) are used.
Address Book	Allow or disallow the contact information managed by Contacts.app.
Calendar	Allow or disallow the calendar information managed by Calendar.app.
Reminders	Allow or disallow the reminders information managed by Reminders.app.
Photos	Allow or disallow the pictures managed by Photos.app `–/Pictures/.photoslibrary`
Camera	Access to the camera cannot be given in a profile, it can only be denied.
Microphone	Access to the microphone cannot be given in a profile, it can only be denied.
Accessibility	Allow or disallow to control the application through the Accessibility subsystem.
Post Event	Allow or disallow the application to send the CoreGraphics APIs to send CG Events to the system event stream.
System Policy All Files	Allow or disallow the application access to all protected files.
System Policy Sys Admin Files	Allow or disallow the application access to some files used in system administration.
File Provider Presence (macOS 10.15)	Allows the application to access documents and directories that are stored and managed by another application's File Provider extension.
Listen Event (macOS 10.15)	Allows the application to monitor events from input devices such as mouse, keyboard, and trackpad.
Media Library (macOS 10.15)	User's collection of images, audio, and video from various media sources, such as iTunes or Aperture.
Screen Capture (macOS 10.15)	Allows the application to access control for screen capture and recording.
Speech Recognition (macOS 10.15)	Allows the application to use speech recognition capabilities.
System Policy Desktop Folder (macOS 10.15)	Allows the application to access files on the Desktop.
System Policy Documents Folder (macOS 10.15)	Allows the application to access files in the Documents folder.

Setting	Description
System Policy Downloads Folder (macOS 10.15)	Allows the application to access files in the Downloads folder.
System Policy Network Volumes (macOS 10.15)	Allows the application to access files on Network Volumes.
System Policy Removable Volumes (macOS 10.15)	Allows the application to access files on Removable Volumes.
Apple Events	Allow or disallow the application to send a restricted Apple event to another process. You can add multiple Apple events for an application.
Receiver Identifier	Enter the receiver identifier of the process or application receiving an Apple Event sent by the Identifier process. It is required only for the Apple Events service and is not valid for other services.
Receiver Identifier Type	Enter the type of Apple Event Receiver Identifier value. Must be either bundleID or path. It is required only for the Apple Events service and is not valid for other services.
Receiver Code Requirement	Enter the Code requirement for the receiving application. It is required only for the Apple Events service and is not valid for other services. **Note** Receiver Code Requirement is found using the same method as the **Code Requirement** for the app or service you are defining in the profile.

5 Select **Save**.

6 Navigate back to the Privacy Preferences Control payload's default page to view the list of applications holding the payload policies.

Configure a Dock Profile

Configure a Dock profile to manage the look and feel of the dock and the applications that will display on it. Configuring Dock settings from the UEM console allows for additional control of the users' devices by determining whether or not the users can adjust their own settings later. For example, removing or adding an app from the Dock.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Dock** payload.

4 Configure **Size & Position** settings, including:

Setting	Description
Dock Size	Use the scale to determine the desired size for the Dock.
Allow user to adjust Dock Size	Allow or prevent users from modifying their own Dock Size settings on their devices.
Magnification	Use the scale to determine the desired magnification for the Dock.
Allow user to adjust Magnification	Allow or prevent users from modifying their own Magnification settings on their devices.
Position	Use the drop-down menu to select the position of the Dock on the screen.
Allow user to adjust Dock Position	Allow or prevent users from modifying their own Dock Position settings on their devices.

5 Configure **Items** settings, including:

Setting	Description
Dock Applications	Select **Add** to specify applications to appear on the Dock.
Dock Items	Select **Add** to specify files and folders to appear on the Dock.
Add Other Folders	Configure folder for My Applications, Documents, and Network Home in the Dock.
Allow user to adjust Dock Applications and Items	Allow or prevent users from modifying their own Dock Applications settings on their devices.

6 Configure **Options** settings, including:

Setting	Description
Minimize Using	Select either **Genie** or **Scale** animation for minimizing the Dock.
Allow user to adjust Minimize effect	Allow user to adjust Minimize effect.
Minimize Window Into Application Icon	Select this to create an icon to represent an open window in the Dock when the window is minimized.
Allow user to adjust Minimize into Application icon	Allow or prevent users from modifying their own Minimize windows settings on their devices.
Animate Opening Application	Enable animation when launching an application from the Dock.
Allow user to adjust Animate Opening Application	Allow or prevent users from modifying their own animation settings on their devices.

7 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Restrictions Profile

Use restrictions to secure the native functionality on macOS devices, protect the corporate information, and enforce the data-loss prevention. Restriction profiles limit how employees can use their macOS devices and provide the control needed for the effective lock down of a device if necessary.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS**, and then select **User Profile** or **Device Profile** to apply the profile only to the device's enrollment user or to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Restrictions** payload.

4 Configure **Preferences** restrictions.

Setting	Description
Restrict System panes	Select to view and edit the system preference restrictions options (such as Accessibility, App store, Bluetooth, CDs and DVDs, Date & Time, Desktop & Screen Saver, Dictation & Speech, Displays, Dock, Energy Saver, Extensions, Fibre Channel, Flash Player, iCloud, Ink, Internet Accounts, Keyboard, Language & Region, Mission Control, MobileMe, Mouse, Network, Notifications, Parent Controls, Printers & Scanners, Profiles, Security & Privacy, Sharing, Software Update, Sound, Spotlight, Startup Disk, Time Machine, Trackpad, Users and Groups, and Xscan).
Enable selected items	Select to restrict the functionality. Then, make restriction selections for the available items.
Disable selected items	Select to allow the preferences. Then, make the selections for the available items.

5 Configure **Application** restrictions.

Setting	Description
Game Center	To restrict or allow the use of Game Center, select the option.
Safari	To prevent autofilling web forms, storing login information, or iCloud Keychain details, restrict or allow the use of AutoFill when using Safari.
App Store	To install updates, restrict or allow the use of the App Store, app store adoption, and use of passwords. When the **Restrict App Store to Software Updates** is enabled, prevents third-party app updates from the App Store.
Apple Music	To permit users to stream music from Apple Music to their devices, select **Allow Music Service**.
Launch Restrictions	Choose to restrict applications from launching. Use the **Add** buttons to specify allowed applications, allowed folders and disallowed folders. **Note** Use the absolute path of the application for the restriction to work. Relative path of the application (with ~ symbol) does not work.

6 Configure **Widgets** restrictions.

Setting	Description
Allow only configured widgets	Select to allow widgets. To specify the allowed device widgets, click the **Add** button.

7 Configure **Media** restrictions.

Setting	Description
Network Access	Allow or restrict the network access for AirDrop.
Hard Disk Media Access	Determine what media formats are allowed, require authentication and read-only access for the end user. You can also force to **auto-eject media** at log out.

8 Configure **Sharing** restrictions.

Setting	Description
Restrict which sharing services are enabled	Select which Sharing services, such as AirDrop, Facebook, and Twitter, are enabled on the device. You can also select the **Automatically enable new sharing services** check box as a restriction.

9 Configure **Functionality** restrictions.

Setting	Description
Lock desktop picture	Select to prevent changing of the desktop picture.
Desktop picture path	Enter the path for the desktop picture. Leaving the path blank locks the current desktop picture and prevents it from being changed.
Allow screen capture	Restrict or allow capturing of screen recordings and saving screenshots of the display. It also prevents the Classroom application from observing remote screens.
Camera - Allow Use of Built-in Camera	Restrict or allow the use of the built-in camera. When restricted, all applications whether the native or the enterprise are unable to access the camera.
iCloud	Restrict or allow the use of the iCloud functions. ■ Allow iCloud documents and data ■ Allow use of iCloud password for local accounts ■ Allow backup to My macOS iCloud service ■ Allow Find My Mac iCloud service ■ Allow iCloud Bookmark sync ■ Allow iCloud Mail services ■ Allow iCloud Calendar services ■ Allow iCloud Reminder services ■ Allow iCloud Address Book services ■ Allow iCloud Notes services ■ Allow iCloud Keychain sync ■ Allow iCloud Desktop & Documents Services
Continuity - Allow Handoff	Restrict or allow users to have the capability of Handoff when switching between multiple devices that are all signed in with the same Apple iCloud account (macOS 10.15 and later).
Content Caching - Allow Content Caching	Select to allow end users to enable Content Caching on their devices (macOS 10.13 and later).
Spotlight - Allow Spotlight Suggestions	Restrict or allow the use of Spotlight suggestions when using Spotlight for searching.

Setting	Description
AirPrint	Restrict or allow the use of the AirPrint functions: ■ Force AirPrint to use trusted certificates for the TLS printing communication (macOS 10.13 and higher). ■ Allow the iBeacon discovery of AirPrint printers. Enabling iBeacon discovery prevents spurious AirPrint Bluetooth beacons from phishing for the network traffic (macOS 10.13 and higher).
Passwords	Restrict auto filling of passwords on the devices and sharing of Wi-Fi passwords to the nearby devices.

10 To push the profile to the devices, select **Save & Publish**. The addition or removal of some **Restrictions** profile payloads might not take effect until the target application or utility is restarted on the device.

Configure a Software Update Server Profile

A software update server profile allows you to specify the update server that will be tied to the device for all versioning and update control.

Use this profile to connect to a macOS server with the Workspace ONE Intelligent Hub and configure schedules that actively check and perform updates much more frequently that the system does. If needed, connect to a corporate server to perform updates. Either way, this profile provides a simple solution for managing software updates, restart options and notification updates for end users.

Note Software update profile only updates minor software update patches and not major software updates.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Software Update** payload.

4 Configure Software Update settings:

Setting	Description
Update Source	Choose a server to configure communication with the client computers' .plist. If choosing **Corporate SUS**, enter the hostname of the server (for example, **http://server.net:8088/index.sucatalog**.)
Install macOS updates	Select how and when to check for and control updates. ■ **Install Updates Automatically** – Downloads and installs all updates; sends notifications to the end user. ■ **Download Updates in Background** – Downloads the updates; sends notifications; the end user installs updates when ready. ■ **Check for updates only** – Checks for updates and sends notifications to the end user; the user downloads and installs the updates. ■ **Don't Automatically Check for Updates** – Turns off the ability to update software; monitors .plist settings to match profile only.
Choose Updates	Choose updates to send to the computer. ■ **Choose All** – Sends all updates including Apple updates. ■ **Recommended only** – Sends only security updates.
Allow installation of macOS beta releases	Select this check box to allow beta releases on the server. This option may be best for testing environments only. This does not require the Workspace ONE Intelligent Hub.
Install app updates	Select to allow app updates.
Notify the user updates are installing	Send the end user notifications about receiving updates on the device.
Schedule	Schedule updates with the Workspace ONE Intelligent Hub, ■ **Configure Update Interval** – Choose how often to check for updates in two-hour increments. ■ **Update a Specific Time** – Choose specific days and times to check for updates. Choose times to control updates when there are concerns about use during peak business hours or band-width utilization
Force Restart (if required)	Automatically restart the computer if required to complete the software update. ■ **Grace Period** – Choose to defer a reboot for a certain period of time. After this time expires, the computer automatically reboots. **Note** Grace Period settings will also be translated to the screensaver settings. This setting will also be translated to the screensaver settings. ■ **Allow user to defer** – Enable the user to choose to defer re-starting the computer for a certain period of time. ■ **Defer time** – Chose how often to prompt the user to re-start the computer after deferment. After each allowed deferment, a message appears prompting the user to re-start the computer. ■ **Max number of defers** – Choose how many times the user can defer from re-starting the computer before it is automatically re-started to complete the update process.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Parental Controls Profile

A parental control profile manages settings that limit profanity, blacklist or whitelist specific URLs, time allowances and curfews.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Parental Controls** payload.

4 Configure **Content Filter** settings , including:

Setting	Description
Enable use of Dictation	Select this check box to allow user access to Dictation feature.
Hide Profanity in Dictionary and Dictation	Select this check box to remove profane terminology.
Limit Access To Websites By	Select this check box to enable web restrictions. Then, select the applicable radio button for your desired restriction and add blacklisted and whitelisted URLs as needed.

5 Configure **Time Limits** settings:

Setting	Description
Enforce Limit	Select this check box to enable time limit restrictions.
Allowances	Select the applicable check boxes to set allowed device usage to either weekdays or weekends and use the drop-down menus to specify time limits for daily device usage.
Curfews	Select the applicable check boxes to prevent the end user from accessing the device during weekdays or weekends and use the drop-down menus to set specific time frames when device usage is not allowed.

6 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Directory Profile

By binding a device to the directory service, the device comply with any domain policies and password security settings. You may bind a single device to multiple directories by sending multiple directory service profiles.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Directory** payload. Then, choose the **Directory Type**, Open Directory or Active Directory.

If multiple profiles enforce separate policies on a single device, the most restrictive policy is enforced. If your password policy is being managed by your directory for network users logging into the devices, Workspace ONE UEM does not recommend a passcode policy.

4 Choose **Authentication** settings including:

Setting	Description
Directory Type	Choose **Active Directory** or **Open Directory or LDAP** from the drop-down menu.
Server Hostname	Enter the directory server name.
Username and Password	Enter the credentials of the administrator used to authenticate and bind the device to the server. Administrator credentials should not include the domain. Use "administrator" only, do not use "domain\administrator."
Client ID	Enter the identifier associated with the device in the directory. Enter the Client ID in a format that is allowed by the directory you're attempting to bind. Workspace ONE UEM recommends using {SerialNumber}. Other lookup values (device asset number, etc.) may not generate computer names that comply with Netbios Naming Conventions.

5 Choose **User Experience** settings for Active Directory Accounts:

Setting	Description
Configure a mobile account at login	Select this option to create a mobile account. When this option is selected, the users' data is stored locally and they are automatically logged into a mobile account.
Require confirmation	Send a confirmation message to the end user.
Use UNC path	Select to determine the UNC specified in the Active Directory when mounting the network home.
Mount	Choose either the **AFP** or **SMB** protocols.
Default user shell	Specify the default shell for the user after logging into the computer.

6 Select the **Mappings** tab to specify an attribute to be used for equivalent acronym (GID). By default these are derived from the domain server.

7 Select **Administrative** tab and configure settings including:

Setting	Description
Group Names	Specify groups to determine who has local administrative privileges on the computer.
Preferred domain server	Enter the name of the domain server.
Namespace	Select the primary account naming convention based on **forest** or **domain**.
Packet signing	Choose how to ensure data is secure.
Packet Encryption	Choose to encrypt data.

Setting	Description
Password trust interval	Set to determine how often the computer trust is updated.
Restricts DDNS	Add interfaces to specify updates. Use the format: en0, en1, en2 etc.

8 Select **Save & Publish** to push the profile to the device.

Configure a Security and Privacy Settings Profile

The security and privacy settings profile lets you configure Apple's Gatekeeper functionality settings, which are used for secure application downloads. Gatekeeper also controls specific settings related to user passwords.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Security and Privacy** payload.

4 Choose locations from which apps may be downloaded.

5 Configure OS Updates settings to perform a force delay in updating OS especially from updates being visible to end user for a specified number of days.

Setting	Description
Delay Updates (Days)	Enable this option and specify the number of days to delay the software update. Number of days range from 1 to 90. (macOS 10.13.4+ devices). The number of days dictate the length of time after the release of the software update and not after the time of installation of the profile.

6 Configure **Gatekeeper** settings.

Setting	Description
Gatekeeper	Choose to restrict which types of applications may be downloaded. The available options are: ■ Mac App Store ■ Mac App Store and identified developers ■ Anywhere
Do not allow user to override Gatekeeper setting	Select to prevent the user from modifying settings to Gatekeeper.

7 Configure **Security** settings.

Setting	Description
Apple Watch to Unlock	Select to allow Apple Watch to unlock a paired macOS device (macOS 10.12 and higher).
Touch ID to Unlock	Select to allow Touch ID to unlock a macOS device (macOS 10.12.4 and higher).
Allow user to change Password	Select to allow end users to change their passwords (macOS 10.9+).
Require password after sleep or screensaver begins	Select to require a password after sleep or screen saver begins. Set the grace period to determine when a password should be entered.
Allow user to set lock message	Select to allow end users to set a lock message on their devices (macOS 10.9+).

8 Configure **Privacy** settings to automatically send diagnostic and usage data to Apple.

9 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Full Disk Encryption Profile

If you are using macOS 10.9 and later versions, configure the disk encryption profile and push the profile to the device, whether the Workspace ONE Intelligent Hub is installed or not. Other Workspace ONE UEM enhancements with 10.9 and later versions include the role-based access for recovery keys and the ability to audit who views recovery keys and when.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**.

2 Select **Apple macOS** and then select **Device Profile.** This profile is only applicable to the entire device.

3 Configure the profile's **General** settings.

4 Select the **Disk Encryption** payload and configure the following settings.

Native Device Management (FileVault 2 Encryption Settings)	Description
Recovery Key Type	Select the type of recovery key required to decrypt the disk. The available options are Personal, Institutional, and Personal and Institutional.
FileVault Enterprise Certificate	This option appears only when you select **Institutional** or **Personal and Institutional** recovery key type. Select the FileVaultMaster.cer for the disk encryption that was uploaded into the Configure a SCEP/Credentials Profile payload. For information about using certificates with the disk encryption profile, see the Institutional Recovery for macOS Devices section.
Display Personal Recovery Key	Enable the option to display the personal recovery key to the user when the key is generated.
Escrow Personal Recovery Key to UEM Server	Enable the option to retain the recovery key on the UEM server so that it is always accessible in the Device Details page. For information about recovery keys, see the configuration profile reference guide in the Apple Developer portal.

Native Device Management (FileVault 2 Encryption Settings)	Description
FileVault User	Select the type of user to enable for FileVault. The available user types are: ■ Current or Next Login User - Enables FileVault for the user who is logged in when the profile is installed. If no user is logged in, then the next local or mobile user account is prompted to enable FileVault. ■ Specific User - Enables FileVault only to a specifically defined user.
Username	If Specific User is selected as the FileVault user type, enter the user name for the account.
When to prompt user	To prompt the user to enter the password to enable FileVault at different stages, select one of the following options: ■ Both Login and Logout ■ Logout Only ■ Login Only
Bypass Login(s)	Enter the number of times a user can bypass the FileVault prompt during login. Min number of times is 0 and max number of times is 10.
Require user to unlock FileVault after hibernation	Enable the option to require a password to unlock the FileVault after hibernation and to restore the state of the FileVault when it was last saved.

Intelligent Hub Device Management Settings	Description
Use Intelligent Hub for enforcement	Enable or disable the Intelligent Hub enforcement of disk encryption. If disabled, no Hub notifications are prompted to the user. Only the native device management settings that are defined are applied.
Encryption disabled notification	Enable the option to display the notification to the user to log out allowing the operating system to prompt users for their password to start encryption.
Notification title	Enter the title for the encryption notification. Min length is 1 char and max length is 29 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Notification Message	Enter the message for the encryption notification stating the user to log out and log back in when prompted. Min length is 1 char. Keeping the message under 135 characters avoids truncating the notification in the Notification pane. However, message with 63 characters is the max for keeping the notification preview from being truncated. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Notification dismissal	Enter the number of times for the user to close logout notifications. Min number of attempts is 0 and max number of attempts is 100.
Dismissal interval	Enter the time interval between dismissed notifications. Min interval is 1 hour, and max interval is 168 hours.

Intelligent Hub Device Management Settings	Description
Action after last dismissal	Select the action type that must take place after the last allowed notification dismissal. ■ Force Logout - Automatically sends notifications to the users after the last allowed dismissal prompting to save their work before the system automatically logs them out. ■ Do Nothing - No action is taken.
Prompt for password if encrypted	Enable the option for the Hub to prompt users for their password to rotate the recovery key to escrow if the device has already been encrypted.
Notification title	Enter the title for notification requesting for the password that allows Hub to rotate the recovery key. Min length is 1 char and max length is 29 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Notification message	Enter the message for notification requesting for the password that allows Hub to the rotate recovery key. Min length is 1 char. Keeping the message under 135 characters avoids truncating the notification in the Notification pane. However, message with 63 characters is the max for keeping the notification preview from being truncated. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Dismissal interval	Enter the time interval between dismissed notifications. Min interval is 1 hour, and max interval is 168 hours.
Prompt title	Enter the title for the password prompt to rotate the FileVault recovery key. Min length is 1 char and max length is 50 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Prompt message	Enter the message for the password prompt to rotate the FileVault recovery key. Min length is 1 char and max length is 50 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Success title	Enter the title for the notification when the recovery key validation is successful. Min length is 1 char and max length is 50 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-

Intelligent Hub Device Management Settings	Description
Success Message	Enter the message for the notification when the device is compliant with the organization's disk encryption policy after successful password entry. Min length is 1 char and max length is 150 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Error title	Enter the title for the error notification when the recovery key rotation fails. Min length is 1 char and max length is 50 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Error Message	Enter the error message stating the user to contact the IT administrator when the recovery key rotation fails. Min length is 1 char and max length is 150 char. Allowed characters are: ■ a–z, A–Z ■ 0–9 ■ Special characters - #,;:'"?.!@{}+_-
Retries before error message	Enter the maximum number of passwords retry attempts before displaying an error notification that asks end user to contact the IT administrator. As an admin, you can view the corresponding error event logs in the HubEventLogs.log file and take the necessary troubleshooting steps. Once the error is fixed, use the following hubcli command to reset the Hub to prompt for password retry attempts. `sudo hubcli reset-recoverykey`

5 Select **Save & Publish** to push the profile to the devices.

Note If no CoreStorage logical volume groups are found, the Disk encryption fails and errors out. Disk encryption can be determined by running the following command on devices (10.12.6 or lower) without FileVault 2. If no CoreStorage Volumes are found, the drive must be reformatted using FileVault 2.

```
diskutil cs list
```

Configure a Login Items Profile

A Login Items profile enables you to control the behavior of the users' devices when they launch.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Login Items** payload.

4 Configure Login Items settings, including:

Setting	Description
Applications	Specify which applications to launch at login. Enter the full path of the application, for example, /Applications/Contacts.app.
Files and Folders	Specify which files and folders to launch at login. Enter the full path of the file or folder.
Authenticated Network Mounts	Specify which network mounts to authenticate with the user's login name and password. Use Active Directory (AD) credentials for user login. Enter the full mount path and volume, including protocol, for example, smb://server.example.com/volume.
Network Mounts	Specify which volumes to mount at login. Use AD credentials for user login. Enter the full mount path and volume including protocol, for example, smb://server.example.com/volume.
Add network home SharePoint	Select this to enable network home SharePoint configuration on the device.
User may press shift to prevent items from opening	Select this to allow the user to hold shift upon login to prevent items from opening.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Login Window Profile

Configure the Login Window profile to control the look and feel of the login window, including options for logging in, and directory user access to the device.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Login Window** payload.

4 Configure **Login Window** settings using the tabs, including:

Tab	Description
Window	■ Show additional information in the menu bar, including host name, macOS version, and IP address when the menu bar is selected. ■ Enter custom banner message. ■ Show local user, mobile accounts, network accounts, device admins and "other" information. ■ Show device power options, including Shut Down, Restart and Sleep.
Options	■ Show password hint and set amount of retries before hint is shown, if available. ■ Enable automatic login, console access, Fast User Switching ■ Log out users, enable computer admin to refresh or disable management. ■ Set computer name to computer record name, enable external accounts, allow guest user. ■ Set screen saver to start and set actual screen saver.
Access	■ Allow or deny specific user accounts from accessing device. ■ Allow local-only users to log-in; use available workgroup settings and nesting ■ Combine available work group settings and always show work group dialog during login **Note** This only works with Directory Users, not local users on the device. The device must be bound to the same directory that Workspace ONE UEM is pulling users from.
Scripts	■ Set EnableMCXLoginScripts to TRUE. ■ Set MCXScriptTrust to match the binding settings used to connect the client computer to the directory domain.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure an Energy Saver Profile

An Energy Saver profile enforces the settings for when the computer should sleep and configure wake options.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Energy Saver** payload.

4 Configure Energy Saver settings, including:

Setting	Description
Desktop	■ **Sleep Options** – Set the length of time for the computer or display to go to sleep. ■ **Wake Options** – Set when the computer will wake depending on Ethernet network administrator access, pressing the power button and automatically after a power failure.
Laptop	Laptop power options are identical to desktop power options. Configure specific configurations when the laptop is using battery power or when connected to a power adapter.
Schedule	Set the computer to start up or go to sleep at specific times. Also set unique schedules depending on weekday, specific day and any day.

5 Select **Save & Publish** when you are finished to push the profile to devices. If you push a laptop profile to a desktop device, or vice versa, the profile is ignored by the receiving device.

Configure a Time Machine Profile

By creating a Time machine profile you can specify a backup server location used to mount and backup the device.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Time machine** payload.

4 Configure **Time machine** settings, including:

Setting	Description
Backup all volumes	Secure all volumes associated with the device. By default, only the startup volume is backed up.
Backup system files and folders	Secure all system files and folders, which are skipped by default.
Enable automatic backup	Back up the system automatically at determined intervals.
Enable local snapshots (10.8+)	Configure local backup snapshots when device is not connected to the network.
Backup size limit	Set a maximum size allowed to backup the system. Enter 0 (zero) to set unlimited.
Paths to backup	Choose specific filepaths to backup, in addition to the default startup volume.
Paths to skip	Choose specific filepaths to skip during backup from the startup volume.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Results

Once the profile is pushed to the device, the login user's network credentials are used to configure the system keychain for the backup volume defined in the profile. The backup volume will not mount using a local account because network credentials are required at login to authenticate the drive. After the system keychain is configured the first time, all backups from that computer will be associated with the original user's backup volume.

Configure a Finder Profile

A Finder profile controls general settings related to what end users can see on their devices and the actions they are allowed to perform.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **Finder** payload.
4. Configure settings on the **Preferences**, including:

Setting	Description
Use Regular Finder/Use Simple Finder	Allow user to access either Regular Finder or Simple Finder as a default.
Hard Disk	Show the device's Hard Disk icon on the Desktop.
External Disk	Show any connected external disk icons on the Desktop.
CDs, DVDs, and iPods	Show any inserted media icons on the Desktop.
Connected Server	Show any connected servers icons on the Desktop.
Show warning before emptying the Trash	Present user with prompt before emptying the Trash.

5. Configure settings on the **Commands**, including:

Setting	Description
Connect to server	Allow users to open a dialog box and find servers on a network.
Eject	Allow users to eject removable media and mountable volumes.
Burn Disc	Allow users to write permanent information to a CD or DVD.
Go to Folder	Allow users to open files or folders by typing the path name.
Restart	Allow users to access the restart command from the Apple Menu.
Shut Down	Allow users to access the shutdown command from the Apple Menu.

6. Select **Save & Publish** when you are finished to push the profile to devices.

Configure an Accessibility Profile

Configure accessibility options for end users by creating an Accessibility profile.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Accessibility** payload.

4 Configure options for **Seeing**, including:

Setting	Description
Zoom Options	Enable zoom function using scroll wheel and keyboard, set max/min zoom, smooth images and show preview rectangle when zoomed out.
Display Options	Invert colors, use grayscale, enhance contrast and set cursor size to normal, medium, large or extra large.
Voiceover Options	Enable voiceover for the device.

5 Configure options for **Hearing**, including:

Setting	Description
Flash the screen when an alert occurs	Enable flashing for alerts.
Play stereo audio as mono	Allow stereo to play as mono.

6 Configure options for **Interaction**, including:

Setting	Description
Sticky Keys	Enable Sticky Keys, beep when a modifier is set and display pressed keys on screen.
Slow Keys	Enable Slow Keys, use click key sounds and set key acceptance delay.
Mouse Keys	Enable Mouse Keys, set initial delay and max speed, and ignore device's built-in trackpad.

7 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Printer Configuration Profile

By creating a Printer configuration profile you can tell devices which default printer to use and set printer access and footer options.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **Printing** payload.
4. Select **Add Printer**. An **Add Printer** window appears.
5. Configure the **Printer** settings including:

Setting	Description
Name	Enter the name of the printer to add.
Printer address	Enter the printer address.
Location	Specify the friendly location name.
Model/Driver	Choose the printer type. ■ Set model/driver to **Custom** if the printer does not support generic drivers for macOS devices. If using Custom Driver, the driver text must be the exact name, which can be found by locating the configured printer on the computer and copying the Kind listed under the printer description.
Lock printer settings	Force the user to enter an Admin password to access the printer settings.
Advanced	Unlock the PPD file location and enter it.
Default Printer	Select a printer to be the default printer.
Allow user to modify printer list	Enable end users to modify printers on the device.
Allow printers to connect directly to the device	Enable printers to connect automatically. If checked, you can also require admin passcode.
Only show managed printers	Allow end users to view a list of managed printers available to the device.
Print page footer	Select this to auto-populate the footer with user information and time of print.
Include macOS Address	Add a macOS address to show the location of the pages that print and specify the font name and size of the footer.
Font Name	Specify the font name.
Font Size	Specify the size of the footer.

6. Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Messages Profile

You can create a Messages profile to pre-configure end user laptops to use a Jabber or AOL Instant Messenger (AIM) account. Accounts can be authenticated through SSL certificates or Kerberos. The ability to use Messages applies to User Profiles only.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select (**User Profile**) to apply enrollment to the user's device.
2. Configure the profile's **General** settings.
3. Select the **Messages** payload.
4. Configure **Messages** settings for Jabber , including:

Setting	Description
Account Type	Allow user to access either a **Jabber** or **AIM** account.
Account Description	Configure a brief description of the profile that indicates its purpose. This option appears if **AIM** is selected.
Account Name	Enter the name of the account.
User Name	Enter the user name for this account. Use lookup values (for example, {EnrollmentUser} to pull data from the UEM console.
Password	Optionally enter the password required to authenticate the account. Leave it blank to prompt end users to enter their account password.
Host Name	Enter the name of the account server.
Port	Enter the number of the port assigned to the account.
Use SSL	Select this check box to enable Secure Socket Layer (SSL) usage for authentication.
Use Kerberos v5	Select this check box to enable Kerberos v5 usage for authentication.

5. Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Proxy Profile

Direct traffic through a designated proxy server for Wi-Fi connections.

Choose from multiple proxy connections to properly route traffic depending on your organizations needs and add proxy exceptions as needed.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select whether this profile will apply only to the enrollment user on the device (**User Profile**), or to the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **Proxies** payload from the list.

4 Choose **Network Proxies** for systems running macOS 10.11, or choose **Global HTTP Proxy** for legacy support on systems running macOS 10.9 and 10.10.

a For **Network Proxy** settings, choose:

Setting	Description
Auto Proxy Configuration	Choose this and enter the **Proxy PAC File URL** to automatically configure the device to PAC file settings.
Web Proxy (HTTP)	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. This tells the device to use this proxy for any HTTP traffic.
Secure Web Proxy (HTTPS)	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. This tells the device to use this proxy for any HTTPS traffic.
FTP Proxy	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. This tells the device to use this proxy for any FTP traffic.
SOCKS Proxy	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. This proxy establishes a TCP traffic connection to a device.
Streaming Proxy	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. This proxy is configured using a RTSP if needed for applications such as AirPlay.
Gopher Proxy	Choose to enable this and enter the **Host Name** and optionally enter the **Port** used to communicate with the proxy. Gopher proxy enables Gopher-based content.

b For **Global HTTP Proxy** settings, choose:

Setting	Description
Proxy Type	Select the type of proxy. Select **Manual** for proxies that require authentication, or **Auto** to specify a Proxy PAC URL.
Proxy PAC File URL	Only required if the proxy type is **Auto**. This option appears when **Auto** is selected.
Proxy Server	Enter the URL of the Proxy Server. This is required if you selected Manual as the proxy type. This option appears when **Manual** is selected.
Proxy Server Port	Enter the port used to communicate with the proxy. This is required if you selected Manual as the proxy type. This option appears when **Manual** is selected.
Proxy Username/Password	If the proxy requires credentials, you can use look-up values to define the authentication method. This is required if you selected Manual as the proxy type. This option appears when **Manual** is selected.

5 Enter **Proxy Exceptions** as needed.

6 Enable or disable **Passive FTP Mode (PASV)**.

7 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Smart Card Profile

The Smart Card profile controls the restrictions and settings for the Smart card pairing on macOS 10.12.4 and later devices.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add Profile**. Select **Apple macOS**, and then select the type of profile to apply either to the enrollment user on the device (**User Profile**), or to the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **SmartCard** payload from the list.
4. Configure the Smart Card settings:

Setting	Description
Allow Smart Card authentication	Enable the option to use the Smart Card for logins, authorizations, and screensaver unlocking. If disabled, Smart Card cannot be used for logins, authorizations, or screensaver unlocking, but can be still used for signing emails and web access. After assigning the profile, the user must restart the device for the change in the settings to take effect.
Require Smart Card for all authentication	Enable the option to allow the user to log in or authenticate only with a Smart Card.
Show user pairing dialog	Enable the option to allow the user to view the pairing dialog box to add new Smart Cards. If disabled, the user cannot view the pairing dialog box, although existing pairings still work.
Restrict one card per user	Enable the option to allow the user to pair with only one Smart Card, although existing pairings are allowed if already set up.
Certificate trust check validation	Enable the option to perform a standard certificate trust validity check without any additional revocation checks.
Additional revocation check	By default, the Additional revocation check is disabled. If enabled, the standard certificate trust validity check is performed with the additional revocation check. The available additional revocation check types are: ■ **Soft** - If selected, the certificate trust check is turned on with a soft revocation check. The certificate is considered as valid until the CRL/OCSP explicitly rejects it. Soft revocation check implies that unavailable or unreachable CRL/OCSP allows the check to succeed. ■ **Hard** - If selected, the certificate trust check is turned on with a hard revocation check. The certificate is considered as invalid unless CRL/OCSP explicitly says **this certificate is OK**. Hard revocation check is the most secure option.
Screen saver on Smart Card removal	Enable the option to activate the Screen saver on the Smart Card removal.

Configure a Mobility Profile

Mobility profiles allow configuration of portable home directories for network accounts, so users can log into the network even when they are not connected to the network.

With a mobility profile, you can also set home and preference sync settings to optionally sync the home folder with a central server.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS**, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).
2. Configure the profile's **General** settings.
3. Select the **Mobility** payload.
4. Using the **Account Creation** tab, set up the mobile account profile. When this account is set up, a local copy of the user's network home folder is created for use when they are not connected to the network.

Setting	Description
Configure Mobile account	Select to configure the account for the user to log into the network.
Require Confirmation	Select to send a confirmation message to the end user.
Show "Don't ask me again"	Select to allow end users to skip the confirmation message after the initial prompt to create the mobile account.
Configure Home Using	Choose settings to either **Network home and default sync settings** or **Local home template** from the drop-down navigation menu.
Home folder location	Choose either the **on startup volume folder**, at **path** and enter the **path** location on the user's computer where the home folder will reside, or set the location that the **user chooses.**
Encrypt Contents with FileVault	Select to encrypt contents with FileVault. If you choose to enable Encryption, select the following settings: ■ Select the **Require computer master password** check box to require a master password. ■ Select **Restrict Size** to restrict the size of the network home quota. Determine a **Fixed Size** with **megabytes** or a **Percentage of the home network quota** and the **Size** of the percentage.
Delete mobile accounts	Select to determine how and when to delete the account. ■ Select the **Delete mobile accounts** check box to configure options for deleting the account. ■ Choose **After** and select how many hours, days or weeks to delete the account after it expires. Setting the value to 0 causes the account to be deleted as soon as the computer is able to delete it. ■ Select **Delete only after successful sync** to delete the device after it syncs with the central server.

5 Choose the **Rules** tab to configure sync options:

Setting	Description
Preference Sync	Enable syncing for user preferences. Choose when, what folders to sync and items that do not need to be synced. ■ Select **Merge with User Settings** check box to add or append the user's sync settings. If this is not selected, the user's settings will be wiped when the new settings are applied.
Home Sync	Enable syncing for desktop preferences. Choose when, what folders to sync and items that do not need to synced and may be skipped. ■ Select **Merge with User Settings** check box to add or append the user's sync settings. If this is not selected, the user's settings will be wiped when the new settings are applied.
Options	Determine how to sync, how often, and allow syncing status to show in Apple Menu bar.

6 Select **Save & Publish** to push the profile to the device.

Configure an Associated Domains Profile

To establish a connection between your domain (website) and your application, to share data or credentials or for the features of the application that are based on your website, configure an Associated Domains profile. Associated Domains can be used with features such as Extensible AppSSO, universal links, and Password AutoFill.

Prerequisites

Before you configure an Associated Domains profile, you need to have an apple-app-site-association file on your website and an entitlement in your application. An associated domain matches the associated domains entitlement with an apple-app-site-association file. For more information, see https://developer.apple.com/documentation/security/password_autofill/setting_up_an_app_s_associated_domains

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS** and then select **User Profile** or **Device Profile**.

2 Configure the profile's **General** settings.

3 Select the **Associated Domains** payload.

4 Configure Associated Domains settings including:

Setting	Description
App Identifier	Enter the identifier of the application to associate with the domains. The application identifier or the bundle ID should be in the following format `<Team Identifier>.<Bundle Identifier>`
Associated Domains	Enter the domains to be associated with the application. ■ Each string should be in the form of **<service>:<fully qualified domain>[:port number]**. ■ To match all subdomains of an associated domain, specify a wildcard with the prefix ***.** before the beginning of a specific domain (the period is required).

5 Select **Save & Publish** when you are finished to push the profile to the devices.

Configure a Managed Domains Profile

Managed domains are another way Workspace ONE UEM enhances Apple's "open in" security feature on macOS computers. Use the "open in" feature and manage email domains to protect corporate data by helping end users verify which emails are sent to corporate accounts.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles > Add > Add Profile**. Select **Apple macOS**, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Managed Domains** payload from the list.

4 Enter **Managed Emails Domains** to specify which email addresses are corporate domains. For example: **mdm.company.com**. Emails sent to other domains are highlighted in the email application to indicate that the address is not part of the corporate domain.

5 Select **Save & Publish**.

Configure an SSO Extension Profile

To enable single sign-on for native macOS apps and websites with various authentication methods, configure the SSO Extension profile with the Generic extension type. You can also use the new built-in Kerberos extension on macOS 10.15 to log users into native apps and sync local user passwords with the directory. With the SSO Extension profile, users do not have to provide their user name and password to access specific URLs. This profile is applicable only to macOS 10.15 and later devices.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple iOS**, and then select **User Profile** or **Device Profile** to apply the profile only to the device's enrollment user or to the entire device.
2. Configure the profile's **General** settings.
3. Select the **SSO Extension** payload.
4. Configure the profile settings.

Setting	Description
Extension Type	Select the type of the SSO extension for the application. If Generic is selected, provide the Bundle ID of the application extension that performs the SSO for the specified URLs in the **Extension Identifier** text box. If Kerberos is selected, provide the Active Directory Realm and Domains.
Type	Select the type of SSO, either Credential or Redirect. Use the challenge/response authentication for Credentials extension. Use OpenID Connect, OAuth, and SAML authentication for Redirect extension.
Team Identifier	Enter the Team Identifier of the application extension that performs the SSO for the specified URLs. Team Identifier is required on macOS and and the value must be `apple` for the Kerberos extension.
URLs	Enter one or more URL prefixes of identity providers where the application extension performs SSO. Required for Redirect payloads. Ignored for Credential payloads. The URLs must begin with `http://` or `https://`, the scheme and host name are matched case-insensitively, query parameters and URL fragments are not allowed, and the URLs of all installed Extensible SSO payloads must be unique.
Additional Settings	Enter additional settings for the profile in XML code which is added to the ExtensionData node.
Active Directory Realm	The option appears only if Kerberos is selected as the Extension Type. Enter the name for the Kerberos Realm which is the realm name for Credential payloads. This value should be properly capitalized. The key is ignored for Redirect payloads. If in an Active Directory forest, this is the realm where the user logs in.
Domains	Enter the host names or the domain names which can be authenticated through the application extension. Host or domain names are matched case-insensitively, and all the host/domain names of all installed Extensible SSO payloads must be unique.
Use Site Auto-Discovery	Enable the option to make the Kerberos extension to automatically use LDAP and DNS to determine the Active Directory site name.
Allow Automatic Login	Enable the option to allow passwords to be saved to the keychain.
Require User Touch ID or Password	Enable the option to require the user to provide Touch ID, FaceID, or passcode to access the keychain entry.
Certificate	Select the certificate to push down to the device which is in the same MDM profile.
Allowed Bundle IDs	Enter a list of the application bundle IDs to allow access to the Kerberos Ticket Granting Ticket (TGT).

5 Configure **Password Settings** when Kerberos is selected as the Extension type for the application.

Setting	Description
Allow Password Change	Enable or disable the option to have the password change.
Sync Local Password	Enable or disable the syncing of local password. Syncing password does not work if the user is logged in with a mobile account on macOS devices.
Match AD Password Complexity	Enable or disable the option for the passwords to meet Active Directory's password complexity.
Password Change Message	Provide the text for the password requirements to the user.
Minimum Password Length (in characters)	Enter the value for the minimum number of characters to be used for a user's password.
Password History Count (number of passwords)	Enter the number to specify the amount of prior passwords that cannot be reused on the domain.
Password Minimum Age (in days)	Enter the minimum number of days before the user can change their password.
Password Expire Notification (in days)	Enter the number of days before the user gets notification of their password expiry.

6 Select **Save and Publish**.

Configure a System Extensions Profile

Use a System Extensions profile to explicitly allow applications and installers that use system extensions to load on your end users' devices. The profile controls restrictions and settings for loading System Extensions on a User Approved MDM enrolled device running macOS v10.15 and later.

Prerequisites

The System Extensions framework allows an application to provide any of the following capabilities:

- Network extensions (supported network extension apps such as content filters, DNS proxies, and VPN clients can be distributed as system extensions).
- Endpoint security extensions (supported endpoint security clients such as Endpoint Detection and Response software and antivirus software).
- Device driver extensions (supported drivers are those drivers that are developed using the DriverKit framework for USB, Serial, NIC, and HID devices).

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select **Apple macOS**, and then select **User Profile** or **Device Profile** to apply the profile only to the device's enrollment user or to the entire device.

2 Configure the profile's **General** settings.

3 Select the **System Extensions** payload.

4 If you want the users to approve additional extensions that are not specified in the profile, enable **Allow User Overrides**.

5 Configure **Allowed System Extension Types** settings. Provide the **Team Identifier** of the application extension and allow all or any of the supported system extension types to load on the device. You can configure multiple System Extension types in the same way. The default top row with the Team Identifier '*' represents global settings. Settings for specific Team Identifiers take precedence over any settings applied to this row.

6 Configure **Allowed System Extensions** by providing the **Team Idenfier** or **Bundle Identifier** of the application extension. You can also configure multiple System Extensions.

7 Select **Save and Publish**.

Configure a Web Content Filter Profile

This payload allows you to configure settings and authentication with third-party web content filters.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles > Add > Add Profile**. Select **Apple macOS**, and then select whether this profile will apply to only the enrollment user on the device (**User Profile)**, or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **Content Filter** payload.

4 In the **Filter Type**, see that **Plug-in** is enabled.

5 Complete the required **Content Filter** information including:

Setting	Description
Filter Name	Enter the name of the filter that displays in the app and on the device.
Identifier	Enter the bundle ID of the identifier of the plug-in that provides filtering service.
Service Address	Enter the hostname, IP address or URL for service.
Organization	Choose the organization string that is passed to the 3rd party plug-in.
Filter WebKit Traffic	Select this check box to choose whether to filter WebKit traffic.
Filter Socket Traffic	Select this check box to choose whether to filter Socket traffic. **Note** Either WebKit or Socket traffic needs to be enabled in order for the payload to work.

6 Configure the **Authentication** information including:

Setting	Description
User Name	Use look-up values to pull directly from the user account record. Ensure your Workspace ONE UEM user accounts have an email address and email username defined.
Password	Enter the password for this account.
Payload Certificate	Choose the authentication certificate.

7 Add **Custom Data** which includes keys required by the third-party filtering service. This information goes into the vendor config dictionary.

8 Select **Save & Publish**.

Configure an AirPlay Whitelist Profile

Configuring the AirPlay payload allows you whitelist a specific set of devices to receive broadcast privileges according to a device ID.

Additionally, if the display access to a device is password-protected, you can pre-enter the password to create a successful connection without revealing the PIN to unauthorized parties.

Note AirPlay whitelisting currently only pertains to macOS Yosemite devices.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles > Add > Add Profile**. Select **Apple macOS**, and then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **AirPlay Mirroring** payload tab.

4 Select **Add** under Whitelisted AirPlay Destinations.

5 Enter the destinations and device information, including:

Setting	Description
Destination Name	This is the name of the destination display. The name must match the device name and is case-sensitive. The device name can be found on the device.
Allowed Destination Device ID	This is the device ID for the destination display. Device IDs include the BonjourID.
Password	This is the password that shows on the user's device when attempting to mirror to the destination. This password is only required if a password is required to mirror to the device.

6 Click **Save & Publish** when you are done configuring AirPlay settings.

Configure an AirPrint Profile

Configure an AirPrint payload for an Apple device to enable computers to automatically detect an AirPrint printer even if the device is on a different subnet than the AirPrint printer.

Procedure

1 Navigate to **Devices > Profiles > List View > Add** and then **Add** the appropriate platform. If you select Apple macOS, then select whether this profile will apply to only the enrollment user on the device (**User Profile**), or the entire device (**Device Profile**).

2 Configure the profile's **General** settings.

3 Select the **AirPrint** payload tab.

Setting	Description
IP address	Enter the IP address (XXX.XXX.XXX.XXX).
Resource Path	Enter the Resource Path associated with the AirPrint printer (ipp/printer or printers/Canon_MG5300_series). To find the Resource Path and IP address information of a printer, see the Retrieve AirPrint Printer Information section.

4 Select **Save & Publish**.

Retrieve AirPrint Printer Information

To know the AirPrint printer's information such as IP address and Resources path, perform the steps mentioned in this section.

1 Connect an macOS device to the local network (subnet) where the AirPrint printers are located.

2 Open the Terminal window (located in /Applications/Utilities/), enter the following command and then press Return.

```
ippfind
```

Note Make a note of the printer information that is fetched through the command. The first part is the name of your printer and the last part is the resource path.

```
ipp://myprinter.local.:XXX/ipp/portX
```

3 To get the IP address, enter the following command and the name of your printer.

```
ping myprinter.local.
```

Note Make a note of the IP address information that is fetched through the command.

```
PING myprinter.local (XX.XX.XX.XX)
```

4 Enter the IP address (XX.XX.XX.XX) and resource path (/ipp/portX) obtained from the steps 2 and 3 into the AirPrint payload settings.

Configure an Xsan Storage Profile

Apple's Xsan, or storage access network allows macOS with Thunderbolt to Fibre Channel capabilities to quickly access the shared block storage. Configure a payload to manage Xsan directly from the UEM console.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select (**User Profile**) to apply the enrollment to the user's device.

2 Configure the profile's **General** settings.

3 Select the **Xsan** payload.

4 Configure **Connection Info** for Xsan including:

Setting	Description
XSAN name	Enter the name of the storage system.
Authentication Secret	Enter the authentication key for the server.
File System Name Servers	Enter the Hostname or IP address of the file system name servers. Use the **+** button to add additional file system servers as needed.

5 Select **Save & Publish** when you are finished to push the profile to devices.

Configure a Firewall Profile

Push a firewall profile with the Workspace ONE Intelligent Hub v2.2+ for macOS to filter unauthorized connections to your enterprise network.

Using the native firewall combined with the Workspace ONE Intelligent Hub, you can monitor firewall settings and revert settings if unauthorized changes occur. Also, use the firewall to control incoming connections and protect computers against probing requests.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Select the **Firewall** payload.

4 Select **Enable** to allow firewall protection.

5 Configure the following firewall settings:

Description	Setting
Block all incoming connections	Select this to block all incoming connections from sharing services, except for connections required for basic Internet services.
Automatically allow signed software to receive incoming connections	Select this to automatically allow only software signed by a developer and approved by Apple to provide services accessed from their network.
Enable stealth mode	Select this to prevent the computer from responding to or acknowledging requests made from test applications.

6 Select **Save & Publish** to push the profile to the device. All Workspace ONE Intelligent Hub functionality continues including Push Notifications even if **Block incoming connections** is selected.

Configure a Firmware Password Profile

Enforce a firmware password to increase security at the hardware level when allowing macOS v10.10+ to start up using an external drive, partition, or using Recovery Mode.

Prerequisites

The Workspace ONE Intelligent Hub v2.2+ for macOS is required with this profile that provides enhanced security and allows you to determine when end users need to enter firmware passwords.

Important If a firmware password is already set on the computer, then profile installation will fail.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.

2 Configure the profile's **General** settings.

3 Configure the **Firmware Password**:

Setting	Description
Firmware Password	Enter the password for the device.
Mode	Select the **Mode** when end users are required to enter the password: ■ **Command Mode** – Require the password when attempting to boot to another drive or partition. After the end user enters the password, the computer begins using Command Mode. Then, the macOS Hub prompts the end user to re-start the computer. ■ **Full Mode** – Require the password every time the computer starts up. After the end user enters the password, the macOS Hub prompts the end user to re-start the computer. When the computer re-starts, it begins using Full Mode. Once the profile is configured, it cannot be removed remotely.

4 Select **Save & Publish** to push the profile to the device.

Configure a Custom Attributes Profile

Write a command or script and report it as a custom attribute using the Workspace ONE Intelligent Hub for macOS v.2.3 and higher. Choose when to execute the command or script on hourly intervals or during an event.

Custom Attributes can also be used in Assignment Rules for Products. For more information about Products, see Product Provisioning for macOS .

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles** and select **Add** then **Add Profile**. Select Apple macOS, and then select **Device Profile**, since this profile is only applicable to the entire device.
2. Scroll down the menu bar on the left and select **Custom Attributes** followed by **Configure**.
3. Enter the **Attribute Name**.
4. Enter the **Script/Command** to run. Expand the text box as needed.
5. Choose an **Execution Interval** to allow for scheduling to report either in hours or as an event occurs.
6. Use the **+** and **-** buttons at the bottom of the payload to create multiple scripts.
7. Select **Save & Publish** when you are finished to push the profile to devices.

Note Custom Attribute values cannot return the following special characters: **/ \ " * : ; < > ? |**. If a script returns a value which contains these characters, the value is not reported on the console. Trim these characters from the script's output.

Configure a Custom Settings Profile

The **Custom Settings** payload can be used when Apple releases new functionality or features that Workspace ONE UEM does not currently support through its native payloads.

If you do not want to wait for the newest release of Workspace ONE UEM to be able to control these settings, you can use the **Custom Settings** payload and XML code to manually enable or disable certain settings.

You can create a "test" organization group to avoid affecting users before you are ready to save and publish the new settings. Also, any device not upgraded to the latest macOS version ignores the enhancements you create. Since the code is now customized, test the profile devices with older macOS versions to verify expected behavior.

Procedure

1. Navigate to **Devices > Profiles & Resources > Profiles > Add > Add Profile**. Select **Apple macOS > macOS**.
2. Configure the profile's **General** settings.
3. Configure the appropriate payload (for example, Restrictions or Passcode).

4 Select Save.

5 Navigate back to the Profiles page and select a profile using the radio button next to the profile name. Menu options appear above the list.

6 Select View XML from the actions menu for the row of the profile you want to customize.

7 Find and copy the section of text starting with <dict>...</dict> that you configured previously, for example, Restrictions or Passcode. This text contains a configuration type identifying its purpose, for example, restrictions.

   For more examples and information on the XML code, refer to the KB article: https://support.workspaceone.com/articles/115005038288. There are many such examples available on the Knowledge Base portal.

8 If you see encrypted text between dict tags in the XML window, you can generate the decrypted text by modifying the settings in the profiles page. To do this:

   a Navigate to **Groups & Settings > All Settings > Devices > Users > Apple > Profiles**.

   b Override the custom settings option.

   c Disable Encrypt Profiles option and then Save.

9 Navigate back to **Custom Settings** profile and paste the XML you copied in the text box. The XML code you paste should contain the complete block of code, from <dict> to </dict>.

10 Remove the original payload you configured by selecting the base payload section, for example, Restrictions, Passcode and selecting the minus [-] button. You can now enhance the profile by adding custom XML code for the new functionality.

11 Select Save and Publish.

Configure a Kernel Extension Policy Profile

Use a Kernel Extension Policy profile to explicitly allow applications and installers that use kernel extensions to load on your end users' devices.

This profile controls restrictions and settings for User Approved Kernel Extension Loading on macOS v10.13.2 and later.

Procedure

1 Navigate to **Devices > Profiles & Resources > Profiles** and select **Add**. Select Apple macOS, and then select **Device Profile**.

   This profile is not enabled for the User level.

2 Configure the profile **General** settings.

3 Select the **Kernel Extension Policy** payload.

4 Select the **Allow User Overrides** check box to approve additional kernel extensions not explicitly allowed by configuration profiles.

   This option allows any application to install on the end users' devices without approval for a kernel extension. If you select this option, the extension policy settings below provide no additional functionality.

5 If you choose not to allow users to override kernel extensions, configure the extension policy settings.

Setting	Description
Whitelist Team Identifiers	Team identifiers for which all validly signed kernel extensions will be allowed to load. Use the **Add** button to add additional identifiers.
Whitelist Kernel Extentions	Signed kernel extensions that will always be allowed to load on the machine. Enter a **Team Identifier** and a **Bundle ID** for each app. For unsigned legacy kernel extensions, use an empty key for the team identifier. Use the **Add** button to add additional extensions.

Full Disk Encryption with FileVault

5

Enforce an encryption policy on macOS computers to protect data on the hard drive and escrowing recovery keys stored in Workspace ONE UEM so the keys can be recovered at later time.

With FileVault2, Workspace ONE UEM builds on native capabilities to encrypt the drive and provides functionality within the Workspace ONE Intelligent Hubto force the user to complete the encryption process.

Once the decision is made to encrypt your managed devices, you have options that allow you to choose the best recovery model for your deployment. These include recovery keys for Personal use, Institutional use, or a combination of both.

This chapter includes the following topics:

Institutional and Personal Recovery for macOS Devices

Institutional and Personal recovery is useful if the user will benefit from viewing and keeping a Personal Recovery Key, but the company will need a quick way to decrypt the device using a Institutional Recovery Key when necessary.

Procedure

1. Configure a new **Disk Encryption** profile.
2. Choose **Personal & Institutional** as the recovery type and configure the recovery key settings as needed.
3. Configure a FileVault Master Keychain. For more information, see the Configure a FileVault Institutional Recovery Key for macOS Devices section.
4. Upload the FileVaultMaster.cer to the Disk Encryption profile to encrypt the assigned computers with your Institutional Recovery Key

Results

Once FileVault is enabled on the device, the Personal Recovery Key will be reported to the server.

Institutional Recovery for macOS Devices

Institutional recovery is beneficial because the network administrator can decrypt any device using a single Institutional Recovery Key, saving time by not needing to enter a unique Personal Recovery Key for each computer.

Generally, Institutional recovery is reserved for Corporate Owned, Line-of-Business devices where the user does not have the ability to decrypt the device if they forget the login password.

Procedure

1. Configure a new **Disk Encryption** profile
2. Choose **Institutional** as the recovery type and configure the recovery key settings as needed.
3. Configure a FileVault Master Keychain. For more information, see the Configure a FileVault Institutional Recovery Key for macOS Devices section.
4. Upload the FileVaultMaster.cer to the Disk Encryption profile to encrypt the assigned computers with your Institutional Recovery Key.

Results

Once FileVault is enabled on the device, the Institutional Recovery Key will be reported to the server.

Configure a FileVault Institutional Recovery Key for macOS Devices

An Institutional recovery key is a pre-made recovery key that can be installed on a system prior to the encryption process. Institutional recovery keys are not automatically generated and must be manually created before they can be used.

This section explains how to create an Institutional Recovery Key for macOS High Sierra (10.13) and above. However, the steps to create an Institutional Recovery Key for macOS Sierra (10.12) and below can be found at https://support.apple.com/en-us/HT202385.

To distribute the corporate recovery key through Workspace ONE UEM, first create the FileVault Corporate Recovery Key and then upload it to the configuration profile on the UEM console by following the steps:

Procedure

1. Create FileVault Keychain
2. Copy FileVaultMaster Keychain to Documents
3. Unlock FileVaultMaster Keychain
4. Add FileVaultMaster Keychain to Keychain Access Utility
5. Validate FileVaultMaster Keychain Unlock
6. Delete and Confirm Private Key Deletion
7. Export FileVault Recovery Key Certificate

8 Some of the additional steps to perform after exporting FileVaultMaster Recovery Key certificate are to:

   a Re-Lock the FileVaultMaster Keychain.

   b Delete keychain from keychain access – To remove references to the FileVaultMaster keychain in Keychain Access.

   c Store the keychain and password – Store both the keychain (containing the certificate and private key) and the Keychain Password in multiple, secure locations. Without both you will be unable to decrypt any FileVault 2 drives encrypted with this Institutional Recovery Key.

Create FileVault Keychain

You can use commands to create a FileVaultMaster keychain in macOS. The keychain contains both private and public keys required for recovering FileVault 2 encrypted devices.

Procedure

1 On a macOS computer (10.13+), select the **Launchpad** icon and then select **Others** > **Terminal**.

2 In the Terminal window, type the following command to create a FileVaultMaster keychain. Follow the prompts to apply password to the created keychain.`sudo security create-filevaultmaster-keychain /Library/Keychains/FileVaultMaster.keychain`

3 Once the command is complete, launch the **Finder**.

4 Press **Shift+command+G** and enter /Library/keychains as the folder name.

5 Select **Go** to access the folder and to fetch the created keychain.

   Ensure you make copies and securely store both the keychain file and the password used to create the keychain. This keychain contains the certificate and private key to decrypt any FileVault 2 encrypted devices.

Copy FileVaultMaster Keychain to Documents

Before you start using the created FileVaultMaster keychain, make a copy of it and save in a secure location. Because, you need the modified keychain to encrypt a device and unmodified keychain to recover encryptrd devices.

In Terminal, type the following to copy the keychain file. When prompted, enter your admin account password to elevate your rights.

```
cp /Library/Keychains/FileVaultMaster.keychain ~/Documents/FileVaultMaster.keychain
```

```
sudo cp /Library/Keychains/FileVaultMaster.keychain /Library/Keychains/FileVaultMaster2.keychain
```

Unlock FileVaultMaster Keychain

You can unlock the FileVaultMaster keychain using command followed by providing password.

Unlock the FileVaultMaster keychain by entering the following command and enter the password you used when the keychain was created.

```
security unlock-keychain /Library/Keychains/FileVaultMaster.keychain
```

If you get an unexpected result during this step, the unlock idle time might have elapsed. You need to re-issue the unlock command in the Terminal window.

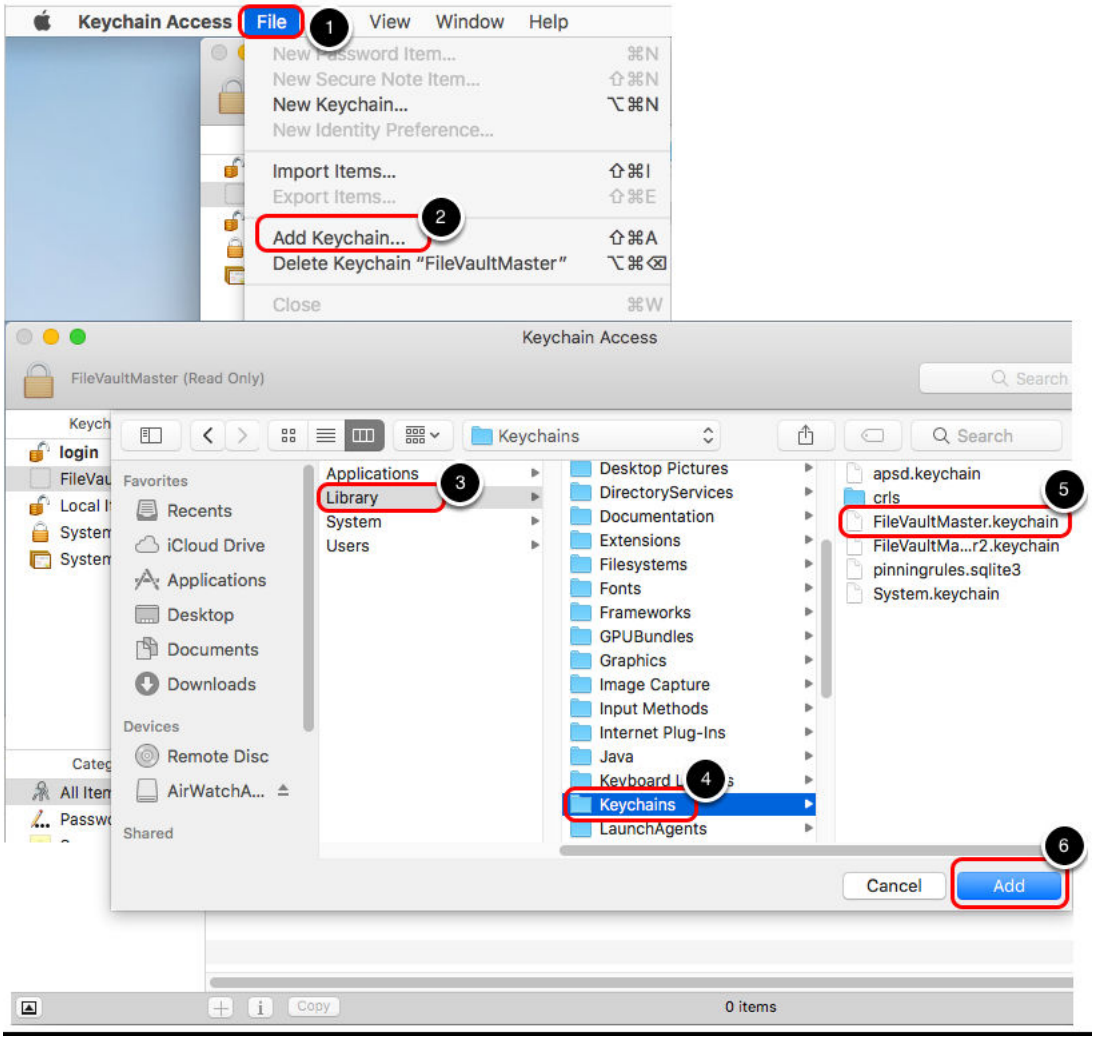
Add FileVaultMaster Keychain to Keychain Access Utility

Add the FileVaultMaster keychain to the Access Utility using the keychain access application.

Prerequisites

Before you add the FileVaultMaster keychain to the Keychain Access Utility, open the Keychain Access application through Terminal window using the following command.

```
open /Applications/Utilities/Keychain\ Access.app/
```



Procedure

1 Select File.

2 Select **Add Keychain...**.

3 Browse to the **Library** folder.

4 Select **Keychains**.

5 Select **FileVaultMaster.keychain**.

6 Select **Add**.

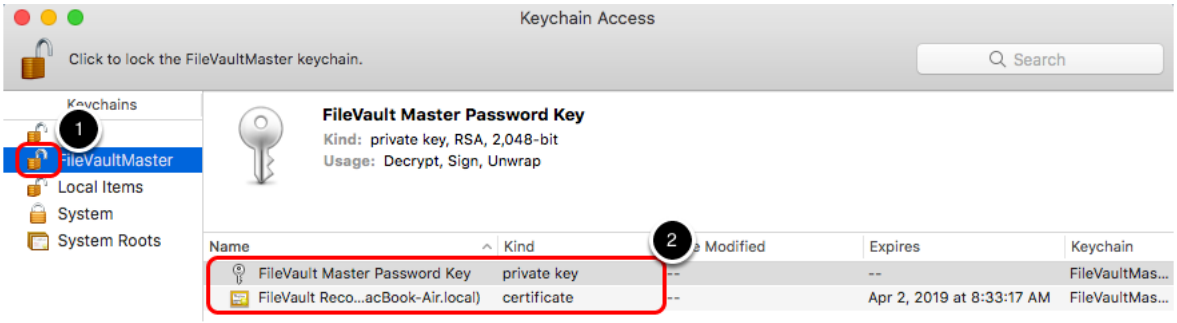
Results

If you unlocked the keychain correctly, the keychain should show the unlocked icon in Keychain Access Utility. If it does not, you need to re-issue the unlock and re-add the keychain.

Validate FileVaultMaster Keychain Unlock

Validate the FileVaultMaster keychain to ensure it is unlocked.

After adding the FileVaultMaster keychain file, validate if it is unlocked by performing the following steps.



Procedure

1 Ensure that the FileVaultMaster keychain shows unlocked icon.

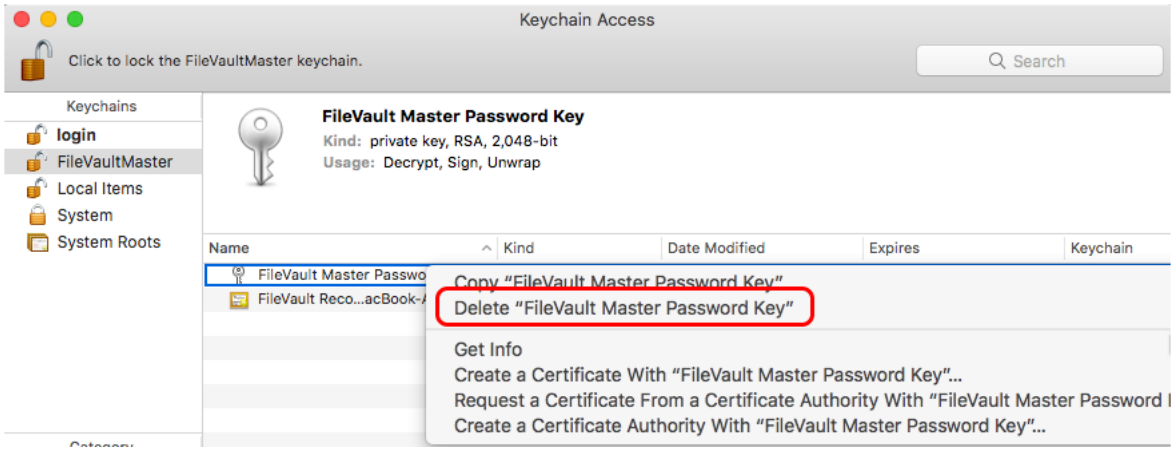
2 Ensure that you can view the private key and certificate in the keychain.

Delete and Confirm Private Key Deletion

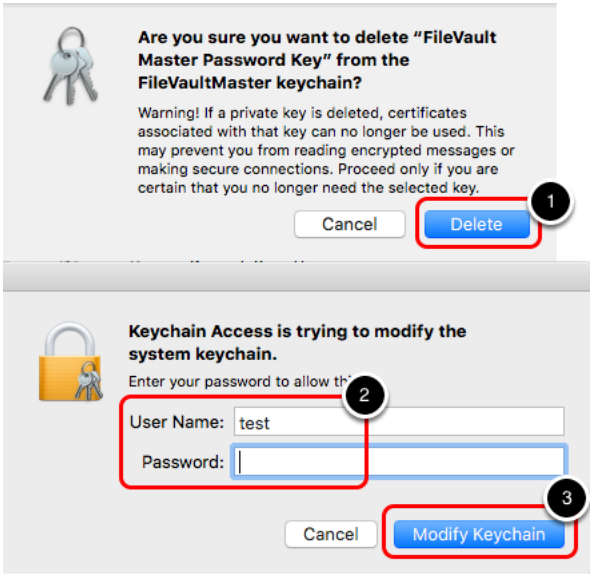
Once the validation of FileVaultMaster keychain file is complete, ensure you delete the FileVaultMaster Password Key (private key).

Procedure

1 Navigate to **FileVault Master Password Key** > **Delete "FileVault Master Password Key"** and select **Delete** to confirm deletion of the private key.



2 Enter your administrative **User Name** and **Password**.



3 Select **Modify Keychain**.

By the end of this step, you have a FileVaultMaster.keychain file which does not contain the private key. This Keychain can be placed in \Library\Keychains in order to manually enable FileVault2 encryption with an Corporate Recovery Key.

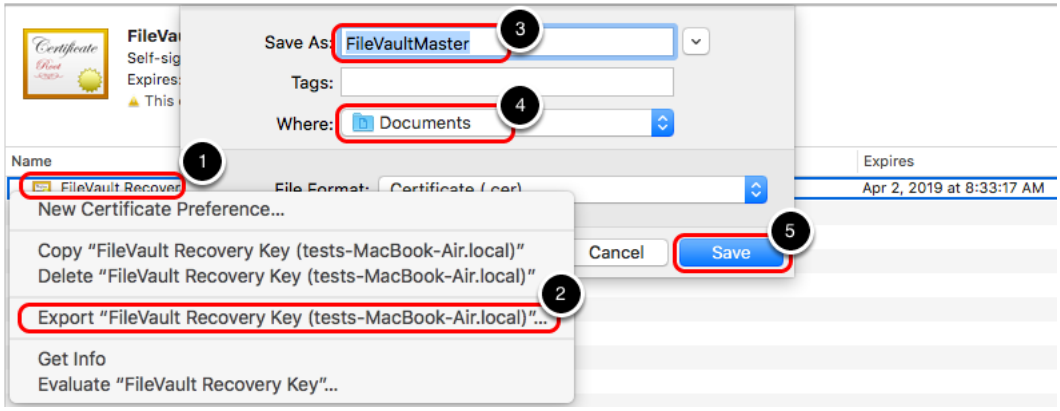
Export FileVault Recovery Key Certificate

The configuration profile which configures the Institutional recovery key on the Workspace ONE UEM console requires only the certificate and not the keychain file.

Procedure

1 Select the **FileVault Recovery Key certificate** in the FileVaultMaster keychain.

2 Select **Export FileVault Recovery Key (....)...**



3 Provide the certificate name as **FileVaultMaster** (in keeping the name consistent with the keychain file that it was created from).

4 Choose the location to save the certificate where you can access the key from your browser. (In this example, ~/Documents/)

5 Select **Save**.

By the end of this step, you now have a certificate file which DOES NOT contain the private key.

Personal Recovery for macOS Devices

Enabling **Personal** as the recovery type will allow the user of the device to use a recovery key to decrypt their device. Additionally, that key can be reported to the UEM console to allow administrators to use the key to decrypt the device if necessary.

Use Personal keys rather than Enterprise keys because Workspace ONE UEM can audit access to these keys, since they are escrowed in the UEM console. Also, Personal keys are beneficial because they are unique to each device. This means that the compromise of one key on one device does not compromise the security of other devices.

Once this profile is deployed to the device, the user will see a prompt from the Workspace ONE Intelligent Hub taking them through the process of encrypting the disk. If configured, users may also be shown the recovery key to give them the option of saving it for later use. After a reboot, the device will begin the encryption process in the background and the user can continue their daily tasks normally without fear of interruption.

Enable Personal Recovery Encryption for a macOS Device

Personal recovery encryption is useful if the user wants the benefit of viewing and keeping a Personal Recovery Key from decrypt.

Procedure

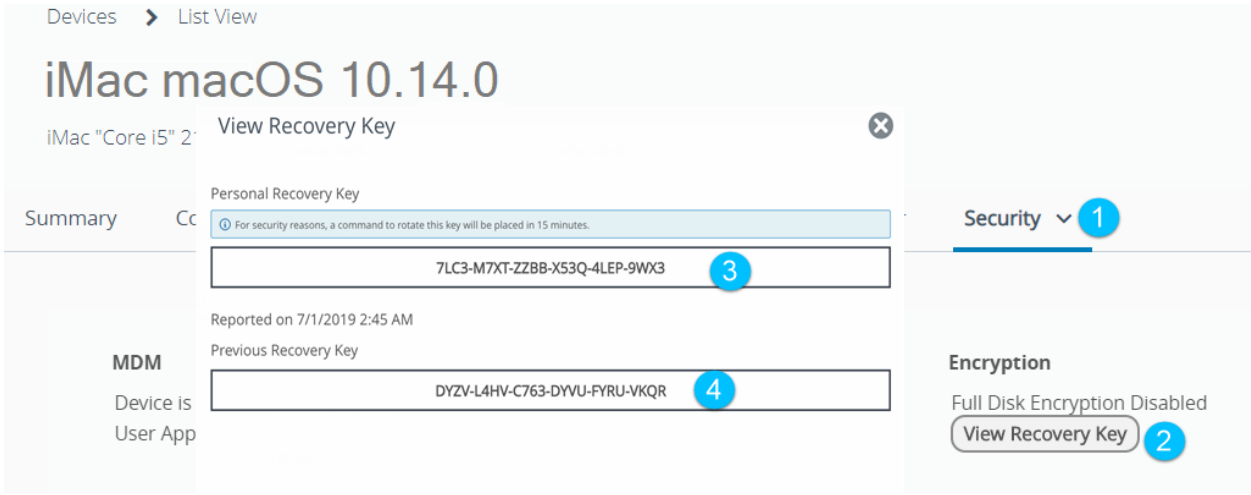
1 Configure a new **Disk Encryption** profile.

2 Choose **Personal** as the recovery type and configure the recovery key settings as needed.

Once FileVault is enabled on the device, the Personal Recovery Key will be reported to a Workspace ONE UEM server or another designated server.

View Escrowed Personal Recovery Key on the UEM Console

The personal recovery key is generated when FileVault 2 encryption is enabled and remains valid until the personal recovery key is changed or the disk is decrypted using that key.



To view an escrowed recovery key, perform the following within the **Device Details** page on the UEM console.

Procedure

1 Select the **Security** tab.

2 Select **View Recovery Key**.

3 Note the Personal Recovery Key that is escrowed.

4 If required, note the Previous Recovery Key. The Previous Recovery Key field is loaded with the old key only if the Personal Recovery Key had been rotated at least once.

5 **Close** when finished viewing the key.

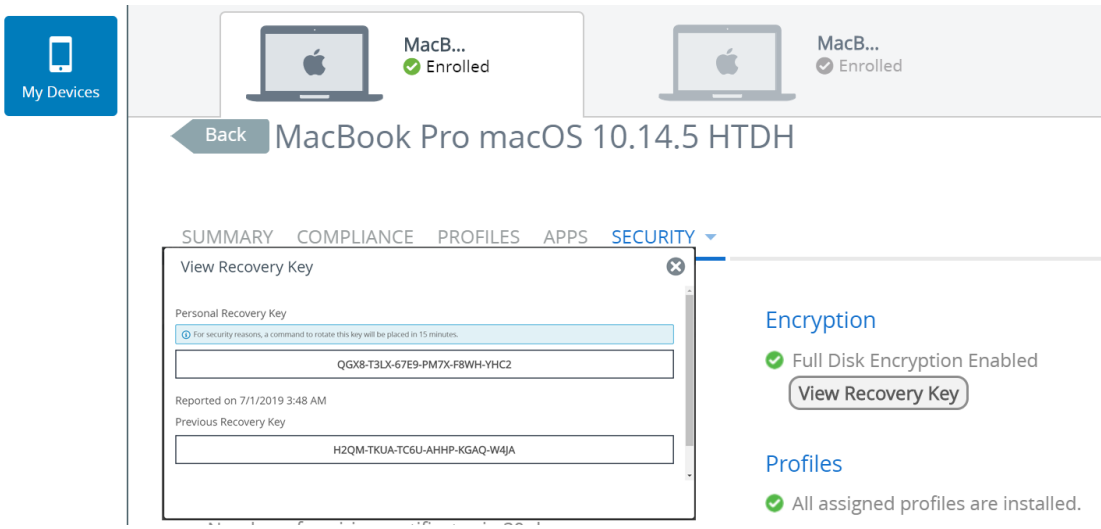
If an encrypted macOS volume is decrypted and then re-encrypted, then the previous personal recovery key would become invalid and a new one is created as part of the re-encryption process.

View Escrowed Personal Recovery Key on the SSP

The personal recovery key can also be viewed on the Self Service Portal, where the FileVault Personal Recovery Key (PRK) is automatically rotated 15 minutes after being accessed by the device user.

To view an escrowed recovery key on the SSP portal, perform the following steps:

Prerequisites



Procedure

1. Enter the **https://<AirWatchEnvironment>/MyDevice** URL in the browser.
2. Select **Go to Details** icon.
3. Select **Security** from the **More** drop down menu.
4. Select the **View Recovery Key** and note the Personal Recovery Key that is escrowed.
5. If required, note the Previous Recovery Key. The Previous Recovery Key field is loaded with the old key only if the Personal Recovery Key had been rotated at least once.
6. Close when finished veiwing the key.

Recover an Encrypted Disk Using a Personal Recovery Key

If you forget your personal password for FileVault, you can use a Recovery Key to regain access.

Procedure

1. Start into recovery-mode (**CMD+R** at start), a different partition or connect the disk to another macOS.
2. Access the terminal and run the following command. The command fetches a list of the Logical CoreStorage Volumes.`diskutil cs list`

3 Find the Logical Volume (last on the list) and copy the UUID – it is in the format of XXXXXXXX-XXXX-XXXX-XXXXXXXXXXXX. Logical Volume is used to specify which volume must be unlocked and

decrypted.

4 Ensure that you have the Personal Recovery Key available and run the command below. Replace "UUID" with the UUID retrieved in step 3. You are prompted to enter the Passphrase and the Personal Recovery Key.

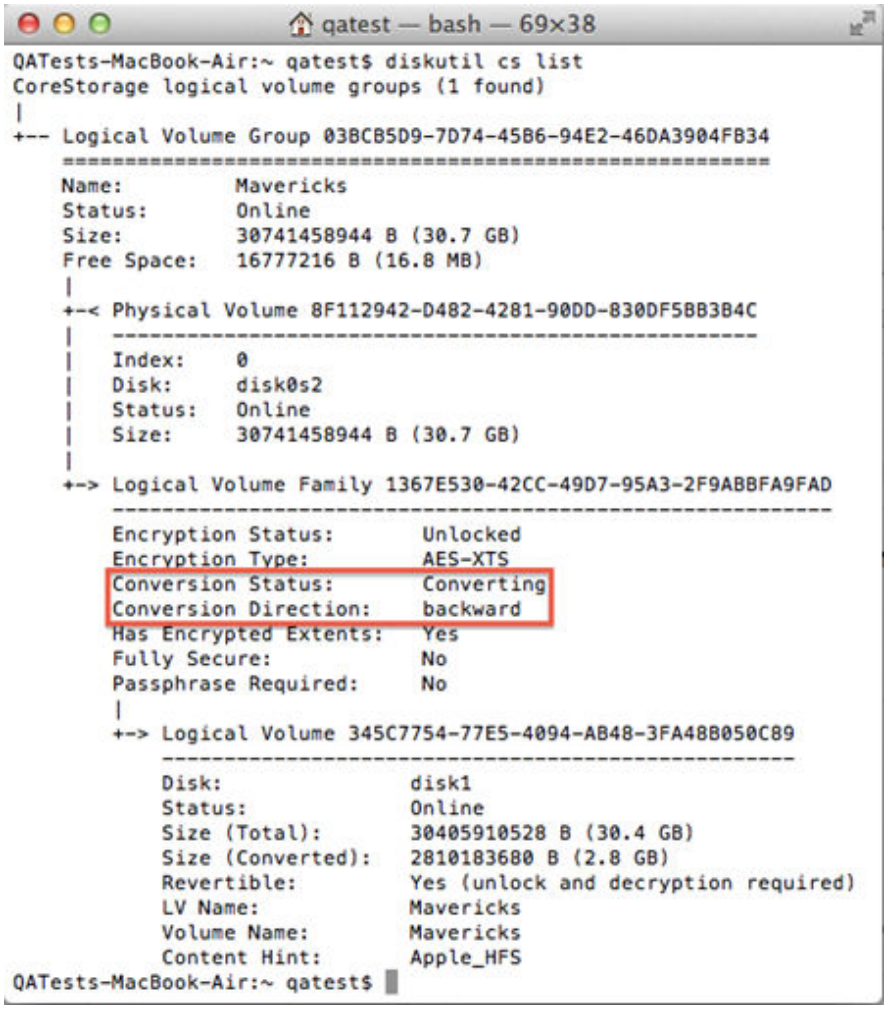
```
diskutil cs unlockVolume UUID
```

You can now see a response showing that the volume is unlocked and mounted. Now, you can recover any necessary files.

5 Now that the volume is unlocked, you can begin the decryption process by using the following command and replacing "UUID" with the UUID retrieved in step 3. You are prompted to enter the Passphrase and the Personal Recovery Key.`diskutil cs revert UUID`

To monitor the decryption status, use the following command. The status is located in the Logical Volume Family information.

```
diskutil cs list
```



Personal Recovery Key Rotation

To maintain the security of the FileVault Personal Recovery Key (PRK), Workspace ONE UEM supports a native MDM mechanism to automatically rotate the key after they have been accessed by a user in Self-Service Portal or by an administrator in the UEM Console in Device Details. This enforces a security practice that the PRK should only be viewed when needed to unlock a disk, and it needs to be re-secured in a timely manner

To use the automatic recovery key rotation feature, you must have:

- The latest UEM console or the existing UEM console that is upgraded to the latest version.
- macOS devices 10.14 and later
- The devices must be encrypted and have an existing recovery key escrowed to the UEM console.

Automatic Recovery Key Rotation When Viewed

When the Personal Recovery Key (PRK) is accessed through the Device Details page or the Self Service Portal, 15 minutes later, the native MDM command to rotate the PRK is queued for the device to process the command on the next check-in. Additionally, an event log is captured with the details, such as when

the key was last viewed and by what user. The event logs also report the status of the PRK rotation command lifecycle.

Recovery key rotation can be performed by both the admins (through the UEM console) and the users (through the SSP). Step 1 details the procedure for admins and step 2 details the procedure for users.

Prerequisites

Device must be encrypted with a Personal Recovery Key escrowed to the UEM console.

Procedure

1 To access the Device Details page, navigate to **Devices > List View** and select a macOS device.

   a Select the **View Recovery Key** under the **Security** section of the **Summary** tab. The **View Recovery Key** page appears displaying the **Current Personal Recovery Key** with the timestamp it was rotated and additionally the previous recovery key for backup.

   If the recovery key was never rotated, the Previous Personal Recovery Key field remains empty.

   b Approximately 15 minutes after completing step **a**, the MDM command to rotate the recovery key is queued for the device. For more information on auditing the key access and rotation lifecycle, see the View Recovery Key Event Logs section.

2 To access the device through SSP, enter the **https://<AirWatchEnvironment>/MyDevice** URL in the browser.

   a Select the **View Recovery Key** under the **Security** section of the **Summary** tab. The **View Recovery Key** page appears displaying the **Current Personal Recovery Key** with the timestamp it was rotated and additionally the previous recovery key for backup.

   b Approximately 15 minutes after completing step **a**, the MDM command to rotate the recovery key is queued for the device.

View Recovery Key Event Logs

When the command to rotate the recovery key is initiated, or when the recovery key sample is received, or any event related to the PRK occurs, it can be viewed on the UEM console. The events are tracked as Event Logs in the **Troubleshooting** tab on the Device Details page.

Procedure

1 Navigate to **Device > List View** and select a macOS device to access the Device Details page.

2 To view Event Logs and Commands information, select **Troubleshooting** from the **More Actions** drop-down menu.

Compliance Policies

6

The compliance engine is an automated tool by Workspace ONE UEM that ensures all devices abide by your policies. These policies can include basic security settings such as requiring a passcode and having a minimum device lock period.

For certain platforms, you can also decide to set and enforce certain precautions. These precautions include setting password strength, blacklisting certain apps, and requiring device check-in intervals to ensure that devices are safe and in-contact with Workspace ONE UEM. Once devices are determined to be out of compliance, the compliance engine warns users to address compliance errors to prevent disciplinary action on the device. For example, the compliance engine can trigger a message to notify the user that their device is out of compliance.

In addition, devices not in compliance cannot have device profiles assigned to it and cannot have apps installed on the device. If corrections are not made in the amount of time specified, the device loses access to certain content and functions that you define. The available compliance policies and actions vary by platform.

For more information about compliance policies, including which policies and actions are supported for a particular platform, see the **Managing Devices** documentation on docs.vmware.com.

Apps for macOS Devices 7

Combine Workspace ONE UEM MDM features with Workspace ONE UEM apps to even further enhance security and functionality. Easily manage Workspace ONE UEM apps throughout the entire lifecycle across employee-owned, corporate-owned, and shared devices from the UEM console. This section provides you more information on the supported managed applications on macOS devices.

For more information about managing applications, see Mobile Application Management guide.

This chapter includes the following topics:

Workspace ONE Intelligent Hub

With the Workspace ONE Intelligent Hub installed on the devices, users authenticate with the Hub and enroll their devices. Based on the admin UEM console configurations, users can access the enterprise applications and Web applications through the Intelligent Hub Catalog and other services of the Hub.

Note The Hub features detailed in the following sections are supported only in the Intelligent Hub 19.04 and later version.

Intelligent Hub Accounts Screen

When the Hub Services are enabled on the UEM console, users can click the Intelligent Hub Accounts icon in the bottom left corner of the screen to access the Hub Accounts page. If the Hub Services are disabled, the Accounts page is the default landing page.

Note Hub Services is available only with cloud-hosted deployments. For more information on enabling the Hub services, see the *Rolling Out VMware Workspace ONE Intelligent Hub* guide.

The following information found on the Accounts page can be used for troubleshooting purpose and to contact support.

- This Device - Displays device enrollment status, device information, compliance status, network data, and messages.
- Support - Users can call or email support. Collect Logs link lets users easily collect all logs and information in a compressed .zip format.

- About - Intelligent Hub app version, legal, and privacy information can be viewed.

Intelligent Hub Catalog as App Catalog

Users can access and install their enterprise applications and Web applications through the Intelligent Hub Catalog. During the app installation, a pop-up appears to let users know what is happening next. The information displayed is based on the app type and platform. For more information about enabling access to apps (such as purchased VPP apps, Non-App Store macOS apps, and web apps), see the Mobile Application Management guide.

Other Services of Intelligent Hub

The Workspace ONE Intelligent Hub's services differ depending on the Hub configurations with or without VMware Identity Manager in the UEM console. If you enable the Hub service without VMware Identity Manager, users can have access to services such as Hub Catalog, Home tab, and Branding. If the Hub service is enabled with the VMware Identity Manager, users can access People and Notification services. For more information on integration of Hub services with and without VMware Identity Manager, see the *Rolling Out VMware Workspace ONE Intelligent Hub* guide.

Configure Settings for the macOS Workspace ONE Intelligent Hub

You can configure settings specific to the macOS Workspace ONE Intelligent Hub and its impact on the installed device through the UEM console.

Procedure

1. From the UEM console, navigate to **Devices > Device & Users > Apple > Apple macOS > Intelligent Hub Settings**.
2. Click the **Override** radio button to enable setting modification, if necessary.
3. Configure the Hub settings:

Table 7-1. General

Setting	Description
Download Latest Version	Download the latest version of the VMware Workspace ONE Intelligent Hub.
Install Hub after Enrollment	Enable or disable the option to automatically install the Hub on devices after enrollment through Apple Business Manager's DEP or Web enrollment.
Check-in Interval	Enter the frequency for the Hub to check in with the server to receive new commands.
Data Sample Interval	Enter the frequency for the Hub to scan devices to collect data such as product provisioning status, disk encryption status, custom attributes, GPS location, and other basic system information.

Table 7-1. General (continued)

Setting	Description
Data Transmit Interval	Enter the frequency for the Hub to send data samples to the Hub UEM server.
Uninstall Privileges	Enable or disable the option to provide end users the ability to uninstall the Hub application from their devices.

Note The Workspace ONE Intelligent Hub file for the macOS devices is distributed through the Device Services (DS) server. If the Content Delivery Network (CDN) is configured, then the Hub file is distributed through the CDN.

4 Click **Save**.

(Legacy) AirWatch Catalog and Workspace ONE Catalog

Apart from using the Intelligent Hub Catalog as an app catalog, users can also use the Workspace ONE app or the (legacy) AirWatch Catalog depending on the app catalog settings established in the UEM console. Deploy an app catalog to your end users to access enterprise and Web applications that you manage in the UEM console.

The Workspace ONE app integrates resources from environments that use VMware Identity Manager and Workspace ONE UEM. If your catalog deployment does not use VMware Identity Manager, you can publish the legacy (AirWatch Catalog) as a Webclip to the device. The webclip can be installed on all macOS devices enrolled to an organization group by enabling the legacy catalog at **Settings > Apps > Workspace ONE > AirWatch Catalog > General > Publishing**. Saving this page with the toggle enabled redeploys the webclip to devices.

Content Locker Sync

VMware Content Locker Sync is an application that lets your end users sync personal content between VMware Workspace ONE Content on their devices, their Self-Service Portal (SSP), and their PC or macOS computers.

End users download the application from the SSP and install it on their PC or macOS. From there, they can add files to a folder they designate on their computer, which is then synced with their SSP for viewing on other computers and their VMware Content Locker application on mobile devices.

For more information on enabling, using, and managing content with VMware Content Locker Sync, please refer to the **VMware Workspace ONE UEM Mobile Content Management Guide**.

Additional macOS Configurations

8

Learn more about the available macOS Configurations.

Kiosks for macOS Devices

Workspace ONE UEM offers the ability to utilize devices in your mobile fleet as kiosks. Kiosks limit your users to a single website browsing and to specific applications. For example, a retail establishment can deploy devices in device kiosk mode for use in store, utilizing corporate applications for in-store functionality like querying inventory and checking product pricing as well as custom branding to enhance the kiosk functionality.

A kiosk is configured from individual profiles. To build a kiosk, create profiles in the UEM console, and then let the device handle the configuration of a kiosk profile. Use device kiosks to remotely configure allowed applications, desktop wallpapers, allow widgets, specify websites and create other restrictions.

This chapter includes the following topics:

Build a Device Kiosk for a macOS Device

Finder and Dock profile configuration is required in order to lock the file system and manage system commands. Configure these profiles in the UEM console.

Configure the **Dock** profile

- Allow specific applications and items to show on the Dock. By default, user adjustments are disabled, but you can enable these adjustments as needed. Do not select any check boxes that would allow the user to make changes to the settings. Also, do not allow these settings to merge with the user dock. If you choose to override the Dock, it will not be reverted to its original state when the profile is removed or upon an enterprise wipe.

Configure the **Finder** profile.

- Restrict access to the file system and commands using the Simple Finder and then choose commands to limit on the computer such as **Shut Down**. De-select the commands to make them unavailable to the user.

Additional macOS Profiles for Kiosk Mode

To use Kiosk mode effectively, enable additional profiles in the UEM console.

Safari browsing

Configure profiles to control web browsing. Create a content filter within the **Parental Controls** profile and a list of allowed websites. These sites show up as Bookmarks in the Safari browser.

Optionally, use the **Global HTTP Proxy** profile to limit network access.

Restrictions

Customize a **Restrictions** profile to match your control Preferences, widgets and more.

Apply Media restrictions to prevent mounting of external drives. This prohibits USB or external storage devices from connecting and transferring files. Additionally, disable AirDrop functionality.

Apply Desktop restrictions to lock wallpaper on the desktop and allow for the configuration of default wallpaper

Time Limits and Schedules

Create a device curfew in the **Parental Controls** profile to limit use to operating hours.

Accessibility

Accommodate all users by configuring settings for enhanced vision, hearing, and keyboard and mouse interactions to further improve the usability of the kiosk.

Mirror Screens with Apple AirPlay on macOS Devices

Apple AirPlay allows administrators to mirror screens from a macOS computer or tvOS on the same subnet. If an end user needs assistance, simply send an AirPlay request to share your screen with an end user's computer running macOS Yosemite or higher.

Procedure

1. Navigate to **Devices > List View**and select the device. The device summary screen appears.
2. Select **More > Support > Start AirPlay** in the administrative menu bar. An **AirPlay** window appears.
3. Select **Add a Destination** to start adding destinations to view. An **Add New AirPlay Destination** window appears.

4 Configure the destination information including:

   a **Destination Name** – Friendly name for the device.

   b **Destination Address** – macOS address of the device to view.

   c **Password** – Password for the destination.

   d **Scan Time** – Length of time that the device may search for the destination. The default value is 30 seconds.

   e Select the **Set as Default** check box to make the current destination the default destination. The next time AirPlay is used, the default destination appears as the **Destination Name**. It does not have to be entered again.

5 Select **Save and Start** to send the AirPlay request to the device.

   a This destination is saved for the next request in the **Destination Name** drop-down menu.

6 To **Stop AirPlay** on devices, navigate back to the UEM console. Go to **Devices > List View > Select the Device > Support > More > Stop AirPlay.**

7 To edit an AirPlay destination:

   a Navigate to **Devices > List View > Select Device > Support > More > AirPlay.** An **AirPlay** window appears.

   b Choose the **Device Destination** to edit from the drop-down menu.

   c Select **Edit** to start editing the destination settings. An **Edit AirPlay Destination** window appears.

   d Select **Save and Start** to send the AirPlay request to the device.

Custom Fonts for macOS Devices

Available to the devices running iOS 7 and later, the UEM console provides a means to upload fonts and install them onto devices.

Installing specific fonts allows users to view and read text that is not supported by standard means. Compatible font file types include .ttf or .otf. There is no limit to the number of fonts you install on devices, and you can remove a font at any time.

Manage Fonts on macOS Devices

Manage fonts by installing, deploying, and deleting them through the UEM console at any time.

Procedure

1 Navigate to **Devices > Device Settings > Apple > Install Fonts**.

2 Drag and drop a supported font file type (.ttf or .otf) onto the screen.

3 Locate the font file and select **Save** to send the font to all the devices enrolled in the current organization group.

4 Click the ✖ button to delete a font.

5 Click the </> button to view and export the XML file.

Product Provisioning for macOS Devices

Product provisioning enables you to create, through Workspace ONE ™ UEM, products containing profiles, applications, files/actions, and event 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 UEM console. Create these servers for each store or warehouse to store product content for distribution to your devices.

For more information on using product provisioning with macOS devices, see the **Product Provisioning for macOS Guide**.

Workspace ONE Assist

Workspace ONE Assist, previously named Advanced Remote Management (ARM), allows you to connect remotely to end-user devices so you can help with troubleshooting and maintenance. Assist requires your macOS device and the end-user device to connect to the Assist Server to facilitate communication between the Workspace ONE UEM console and the end-user device.

For more information, see *VMware Workspace ONE Assist Documentation* on docs.vmware.com.

macOS Device Management

9

After your devices are enrolled and configured, manage the devices using the Workspace ONE ™ UEM console. The management tools and functions enable you to keep an eye on your devices and remotely perform administrative functions.

You can manage all your devices from the UEM console. The Dashboard is a searchable, customizable view that you can use to filter and find specific devices. This feature makes it easier to perform administrative functions on a particular set of devices. The Device List View displays all the devices currently enrolled in your Workspace ONE UEM environment and their status. The **Device Details** page provides device-specific information such as profiles, apps, Workspace ONE Intelligent Hub version and which version of any applicable OEM service currently installed on the device. You can also perform remote actions on the device from the Device Details page that are platform-specific.

This chapter includes the following topics:

Device Dashboard

As devices are enrolled, you can manage them from the Workspace ONE UEM powered by 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.

- **Security** – View the top causes of security issues in your device fleet. Selecting any of the doughnut charts displays a filtered **Device List** view comprised of devices affected by the selected security issue. If supported by the platform, you can configure a compliance policy to act on these devices.
  - **Compromised** – The number and percentage of compromised devices (jailbroken or rooted) in your deployment.
  - **No Passcode** – The number and percentage of devices without a passcode configured for security.
  - **No Encryption** – The number and percentage of devices that are not encrypted for security. This reported figure excludes Android SD Card encryption. Only those Android devices lacking disc encryption are reported in the donut graph.

  Ownership – View the total number of devices in each ownership category. Selecting any of the bar graph segments displays a filtered **Device List** view comprised of devices affected by the selected ownership type.
- **Last Seen Overview/Breakdown** – View the number and percentage of devices that have recently communicated with the Workspace ONE UEM MDM server. For example, if several devices have not been seen in over 30 days, select the corresponding bar graph to display only those devices. You can then select all these filtered devices and send them a message requesting that they check in.
- **Platforms** – View the total number of devices in each device platform category. Selecting any of the graphs displays a filtered **Device List** view comprised of devices under the selected platform.
- **Enrollment** – View the total number of devices in each enrollment category. Selecting any of the graphs displays a filtered **Device List** view comprised of devices with the selected enrollment status.
- **Operating System Breakdown** – View devices in your fleet based on operating system. There are separate charts for Apple iOS, Android, Windows Phone, and Windows Rugged. Selecting any of the graphs displays a filtered **Device List** view comprised of devices running the selected OS version.

Device List View

Use the Device List View to see a full listing of devices in the currently selected organization group.

The **Last Seen** column displays an indicator showing the number of minutes elapsed since the device has checked-in. The indicator is red or green, depending on the number of minutes defined in **Device Inactivity Timeout (min)**. This indicator can be set by navigating to **Groups & Settings > All Settings > Devices & Users > General > Advanced**.

Select a device friendly name in the **General Info** column at any time to open the details page for that device. A **Friendly Name** is the label you assign to a device to help you differentiate it from other devices, particularly other devices of the same make and model.

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 select 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** views of the current OG.

Once all your customizations are complete, select the **Accept** button to save your column preferences and apply this new column view. You can 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, within the current organization group and all child groups.

Device Details Page for macOS Devices

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

You can access the Device Details page by either selecting a device's Friendly Name from the Device Search page by using any of the available Dashboards or search tools in the UEM console.

Use the Device Details menu tabs to access the specific device information.

Tab	Description
Summary	View general statistics on: platform/model/OS, compliance, Workspace ONE UEM Cloud Messaging, enrollment, last seen, firewall, firmware, supervision status, time machine, contact information, groups, serial number, UDID, asset number, power status, storage capacity, physical memory and virtual memory, and warranty information. If Apple's Global Service Exchange information is accessible, select the warranty link to see when the status was last updated.
Compliance	Display the status, policy name, date of the previous and forthcoming compliance check and the actions already taken on the device. The **Compliance** tab includes advanced troubleshooting and convenience features. ■ Non-Compliant devices, and devices in pending compliance status, have troubleshooting functions available. You can reevaluate compliance on a per-device basis () or get detailed information about the compliance status on the device (). ■ Users with Read-Only privileges can view the specific compliance policy directly from the **Compliance** tab while Administrators can make edits to the compliance policy.

Tab	Description
Profiles	View all the MDM profiles and their status currently installed on a device. For more information on the corrupted status of the profiles, see Certificate Profile Resiliency.
Apps	View all the apps currently installed or pending installation on the device.
Security	View the last received security information statuses from the device. Security tab shows System Integrity Protection (SIP) status, FileVault encryption status and Personal Recovery Key, Firewall status, Supervision status, and Secure Boot status (macOS 10.15 or later devices), and Managed Admin User details. For more information on accessing and rotating managed admin password, see Admin Password Auto-Rotation.
Location	View current location or location history of a device.
User	Access details about the user of a device and the status of the other devices enrolled to this user.

Additional menu tabs are available by selecting **More** from the main Device Details tab.

Tab	Description
Network	View current network status (Cellular, Wi-Fi, Bluetooth) of a device.
Restrictions	View all restrictions currently applied to a device. This tab also shows specific restrictions by Device, Apps, Ratings, and Passcode.
Notes	View and add notes regarding the device. For example, note the shipping status or if the device is in repair and out of commission.
Certificates	Identify device certificates by name and issuant. This tab also provides information about the certificate expiration.
Products	View the complete history and status of all packages provisioned to the device and any provisioning errors.
Custom Attributes	View the Custom Attributes associated with the device.
Files/Actions	View the files and other actions associated with the device.
Shared Device Log	View the history of the shared device including past check-ins and check-outs and status.
Trouble Shooting	View **Event Log** and **Commands** logging information. This page features export and search functions, enabling you to perform targets searches and analysis. ■ **Event Log** – View detailed debug information and server check-ins, including a **Filter** by **Event Group Type**, **Date Range**, **Severity**, **Module**, and **Category**. In the **Event Log** listing, the **Event Data** column can display hypertext links that open a separate screen with even more detail surrounding the specific event. This information allows you to perform advanced troubleshooting such as determining why a profile fails to install. ■ **Commands** – View detailed listing of pending, queued, and completed commands sent to the device. Includes a **Filter** that allows you to filter commands by **Category**, **Status**, and specific **Command**.
Status History	View history of device in relation to the enrollment status.
Targeted Logging	View the logs for the Console, Catalog, Device Services, Device Management, and Self Service Portal. You must enable Targeted Logging in settings and a link is provided for this purpose. You must then select the **Create New Log** button and select a length of time the log is collected.
Attachments	Use this storage space on the server for screenshots, documents, and links for troubleshooting and other purposes without taking up space on the device itself.
Terms of Use	View a list of End User License Agreements (EULAs) which have been accepted during the device enrollment.

Certificate Profile Resiliency

Workspace ONE repushes profiles containing credential payloads when the certificate is detected as missing in the device Certificate List sample.

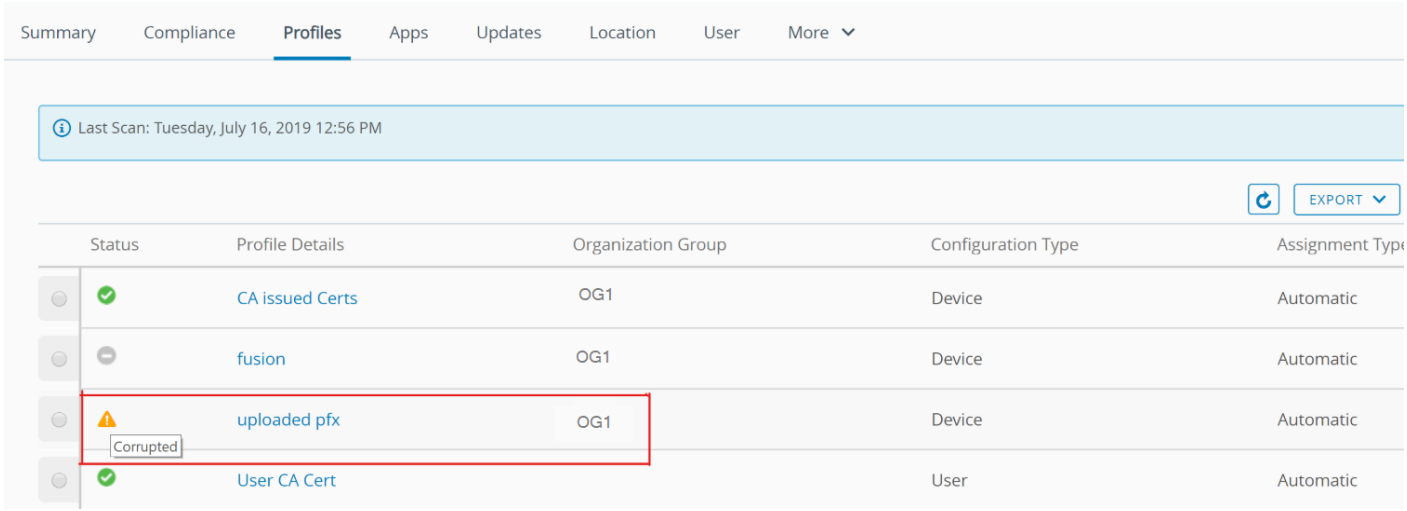
When a profile with a certificate payload is installed on a device and if the certificate goes missing from the keychain on the device, Workspace ONE reissue the certificate to the device. Certificates can go missing due to a number of reasons, but most commonly due to the following:

- The certificate does not install properly in the keychain.
- Some installed software (such as security tools) on the device removes the installed certificate.
- The end-user manually removes the certificate from the keychain.

Note The certificate will only be repushed to the device if the system detects that it is missing from the Certificate List sample. No certificates will be pushed after the initial profile installation if the sample confirms that it is installed. To prevent looping, the reinstall command is queued only one time until a successful response is received from the device.

Corrupted State Detection

Each time the system receives a certificate list sample from the device, a check is conducted to determine if there are any missing certificates based on the device's assigned profiles. If a certificate is detected as missing, the profile certificate is considered to be in **Corrupted** state and the device profile status is set to **Not Installed**.



In this scenario, when a device profile status is set to **Not Installed**, a command is queued automatically to reinstall the profile on the device. Reinstalling the profile reinstalls the certificate to the device. The following certificate types are not supported:

- User Certificate (S/MIME)
- SCEP

Admin Password Auto-Rotation

From the UEM console, you can view the password of the macOS device admin account that is created during the DEP enrollment. To help re-secure the admin accounts, these passwords are automatically rotated 8 hours after they are accessed.

To view the password in Device Details:

Prerequisites

- Device must be DEP enrolled with a DEP profile with the **Unique Random Password** enabled for the admin account.

Procedure

1. Navigate to **Device > List View** and select a macOS device.
2. Select the **Security** tab and then select **View Admin Password** under the **Managed Admin User** section. The **View Admin Password** page appears displaying the current password with the timestamp it was set. You can also view the password using the following API:

```
GET /api/mdm/devices/<DeviceUUID>/security/managed-admin-information
```

What to do next

When the admin password is viewed from the Device Details page on the UEM console or accessed using an API, an MDM command is automatically queued to rotate the admin password after 8 hours. The event logs show logs for when the password was accessed and when it was rotated in the **Troubleshooting** section.

Note Alternatively, the following API can also be used to rotate passwords on-demand:

```
POST /api/mdm/devices/<DeviceID>/commands?command=RotateDEPAdminPassword
```

Device Actions

Perform common device actions with the action button cluster including Query, Send, Lock, and other actions accessed through the **More Actions** button.

Device Details Action Button Cluster

Note Available Device Actions vary by device model, enrollment status and type, and the specific configuration of your Workspace ONE UEM console. For more information on full listing of remote actions that you can invoke using the UEM console, refer **VMware Workspace ONE UEM Mobile Device Management Guide**.

Run commands remotely to individual (or bulk) devices in your fleet. Each of the following device actions and definitions represents remote commands that you can invoke from the UEM console.

- **Add Tag** – Assign a customizable tag to a device, which can be used to identify a special device in your fleet.
- **Apps (Query)** – Send an MDM query command to the device to return a list of installed apps.
- **Certificates (Query)** – Send an MDM query command to the device to return a list of installed certificates.
- **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.
- **Change Ownership** – Change the Ownership setting for a device, where applicable. Choices include Corporate-Dedicated, Corporate-Shared, Employee Owned and Undefined.
- **Delete Device** – Delete and unenroll a device from the console. Sends the enterprise wipe command to the device that gets wiped on the next check-in and marks the device as **Delete In Progress** on the console. If the wipe protection is turned off on the device, the issued command immediately performs an enterprise wipe and removes the device representation in the console.
- **Device Information (Query)** – Send an MDM query command to the device to return basic information on the device such as friendly name, platform, model, organization group, operating system version and ownership status.
- **Device Wipe** – Send an MDM command to wipe a device clear of all data and operating system. This puts the device in a state where recovery partition will be needed to reinstall the OS. This action cannot be undone.
  - iOS Device Wipe Considerations
    - For iOS 11 and below devices, the device wipe command would also wipe the Apple SIM data associated with the devices.
    - For iOS 11+ devices, you have the option to preserve the Apple SIM data plan (if existed on the devices). To do this, select the **Preserve Data Plan** checkbox on the Device Wipe page before sending the device wipe command.
    - For iOS 11.3+ devices, you have an additional option to enable or disable to skip the **Proximity Setup** screen while sending down the device wipe command. When the option is enabled, the Proximity Setup screen will be skipped in the Setup Assistant and thus preventing the device user from seeing the Proximity Setup option.
  - For Windows Desktop Devices, you can choose the type of device wipe.
    - **Wipe** - This option wipes the device of all content.
    - **Wipe Protected** - This option is similar a normal device wipe, but this option cannot be circumvented by the user. The Wipe Protected command keeps trying to reset the device until it is successful. In some device configurations, this command can leave the device unable to boot.

    - **Wipe and Persist Provisioning Data** - This option wipes the device but specifies that provisioning data should be backed up to a persistent location. After the wipe executes, the provisioning data is restored and applied to the device. The provisioning folder is saved. You can find the folder by navigating on the device to `%ProgramData%\Microsoft\Provisioning` .

- **Edit Device** – Edit device information such as **Friendly Name**, **Asset Number**, **Device Ownership**, **Device Group** and **Device Category**.
- **Enroll** – Send a message to the device user to enroll their device. You may optionally use a message template that may include enrollment information such as step-by-step instructions and helpful links. This action is only available on unenrolled devices.
- **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 Workspace ONE UEM 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.
- **Location** – Reveal a device's location by showing it on a map using its GPS capability enabled via the macOS Workspace ONE Intelligent Hub. Also requires user approval to enable the functionality in macOS System Preferences.
- **Lock Device** – Send an MDM command to lock a selected device, rendering it unusable until it is unlocked.
- **Profiles (Query)** – Send an MDM query command to the device to return a list of installed device profiles.
- **Query All** – Send a query command to the device to return a list of installed apps (including Workspace ONE Intelligent Hub, where applicable), books, certificates, device information, profiles and security measures.
- **Reboot Device** – Send an MDM command to restart macOS 10.13+ devices remotely. This action reproduces the effect of powering the device off and on again.
- **Security (Query)** – Send an MDM query command to the device to return the list of active security measures (device manager, encryption, passcode, certificates, etc.).
- **Send Message** – Send a message to the user of the selected device. Choose between **Email**, **Push Notification** (through AirWatch Cloud Messaging), and **SMS**.
- **Start AirPlay** – Stream audiovisual content from the device to an AirPlay mirror destination. The MAC address (format "xx:xx:xx:xx:xx:xx" with no case-sensitive) of the destination is required. A passcode can also be specified if required. Scan Time defines the number of seconds (10-300) to spend searching for the destination. Requires macOS 10.10 or greater.
- **Install macOS Workspace ONE Intelligent Hub** – Send an MDM command to the device to install the latest seeded macOS Workspace ONE Intelligent Hub.

- **Managed settings** – Managed settings lets you enable or Bluetooth through an MDM command. Requires macOS 10.13.4 or greater.
- **Shut Down** – Send an MDM command to shut down macOS 10.13+ devices remotely.
- **Request Device Log** – Request the debug log on the selected device. To view the log. select the **More** tab and then choose **Attachments > Documents**. You cannot view the log within the Workspace ONE UEM console. The log is delivered as a ZIP file that can be used to troubleshoot and provide support. When you request a log you can choose to receive the logs from the **System** or the **Hub**. **System** provides system-level logs. **Hub** provides logs from the multiple agents running on the device. For more information, see Request Device Log.

  Note You can retrieve detailed logs from corporate-owned macOS devices and view them in the console to quickly resolve issues on the devices.

Request Device Log

The Request Device Log command allows you to retrieve Workspace ONE Intelligent Hub or detailed system logs from corporate-owned devices and view them in the console quickly to resolve any issues on the device. The Request Device Log dialog box allows you to customize your logging request for macOS devices.

Procedure

1. Navigate to **Groups & Settings > All Settings > Devices and Users > General > Privacy** and enable **Request Device Log** in the Privacy Settings. .

   Employee- owned devices are not allowed to be selected due to privacy concerns.
2. Navigate to **Devices > List View**.
3. Select a macOS device from the list and then navigate to **More Actions > Request Device Log**.
4. Customize the log settings.

Setting	Description
Type	Select **Snapshot** to retrieve the latest log records available from devices. Select **Timed** to collect a rolling log over a specified period. Multiple log files may be sent to Workspace ONE UEM.
Duration	Specify the duration of time for the device to collect and report logs to the UEM console.
Level	Determine the level of details to be included in the log (Standard or Debug).

5. Select **Save**.
6. To review the log files, navigate to **Device Details > More > Attachments > Documents**.
7. You can cancel the device log request after the logs have been received and there is no further need for the log collection. To cancel the device log request, navigate to **Devices > List View > Select device from list > More Actions > Cancel Device Log**.

Configure and Deploy a Custom Command to a Managed Device

Workspace ONE UEM enables administrators to deploy a custom XML command to managed Apple devices. Custom commands allow more granular control over your devices.

Use custom commands to support device actions that the UEM console does not currently support. Do not use custom commands to send commands that exist in the UEM console as Device Actions. Samples of XML code you can deploy as custom commands are available in the Workspace ONE UEM Knowledge Base at https://support.workspaceone.com/kb.

Important Improperly formed or unsupported commands can impact the usability and performance of managed devices. Test the command on a single device before issuing custom commands in bulk.

Procedure

1. In the UEM console, navigate to **Devices > List View**.
2. Select one or more macOS devices using the check boxes in the left column.
3. Select the **More Actions** drop-down and select **Custom Commands**. The Custom Commands dialogue box opens.
4. Enter the XML code for the action you want to deploy and select **Send** to deploy the command to devices.

   Browse XML code for Custom Commands on the Workspace ONE UEM Knowledge Base at https://support.workspaceone.com/kb.

   If the Custom Command does not run successfully, delete the command by navigating to **Devices > List View**. Select the device to which you assigned the custom command. In the Device **Details View**, select **More > Troubleshooting > Commands**. Select the Command you want to remove, and then select **Delete**. The Delete option is only available for Custom Commands with a Pending status.

AppleCare GSX

Apple Global Service Exchange (GSX) allows administrators to look up device details related to the display model name, the device purchase and warranty status directly from the UEM console.

If any devices in an organization group are missing a display model name, then a time scheduler runs periodically to search and update these names using the GSX information that was configured for the devices at that organization group level.

Only authorized Apple employees or organizations that have registered with Apple's Self-Servicing Account Program can access GSX information.

Create a GSX Account

Before you can integrate your deployment, you must create an Apple GSX account. To apply for a GSX account, you must have a service contract with Apple. Contact your Apple Account Executive to learn more about GSX.

To apply for a GSX account, visit http://www.apple.com/support/programs/ssa/.

Obtain an Apple Certificate to Integrate AppleCare GSX

To integrate AppleCare GSX with your Workspace ONE UEM deployment, you must first obtain an Apple certificates and convert them to .p12 format.

For more information, see Obtain an Apple Certificate to Integrate AppleCare GSX.

Configure AppleCare in the UEM console

Once you have obtained and configured an Apple Certificate, you must upload the certificate to the UEM console and configure your AppleCare instance.

For more information, see Configure AppleCare GSX in the UEM Console.

Obtain an Apple Certificate to Integrate AppleCare GSX

To integrate AppleCare GSX with your Workspace ONE UEM deployment, you must first obtain an Apple certificate and convert them to .p12 format.

Procedure

1. Generate a certificate signing request (CSR) using OpenSSL or Java Keytool.
2. Send the CSR and the following GSX account information to Apple to receive Apple certificates (.pem files).
   a. GSX Sold-To account number
   b. Primary IT contact name
   c. Primary IT contact email
   d. Primary IT contact phone number
   e. Outgoing static IP address of the server that sends requests to GSX Production

      If your environment is hosted on the AW SaaS, refer to https://support.air-watch.com/articles/115001662168 for the IP address. If the IP range for your environment is not listed, please open a support ticket to have our Network Operations team facilitate it.

      Apple generates the Apple certificate(.pem) and returns a signed certificate and a chain certificate. For ease of use, rename the files “cert.pem” and “chain.pem” for use in subsequent steps.

      You may also receive a file labeled “issuer” that is not needed for this process.

3 Convert the Apple certificates to .p12 format.

   a Create a .p12 file using the private key and Apple certificates by executing the following command:`sudo openssl pkcs12 –export –inkey privatekey.pem –in cert.pem –certfile chain.pem –out GSX_Cert.p12`

   b The certificate saves as a .p12 file in the location you specified.

   If you do not specify a path before the file name when running the conversion command, the file saves to your working directory.

Configure AppleCare GSX in the UEM Console

Once you have obtained and configured an Apple Certificate, you must upload the certificate to the UEM console and configure your AppleCare instance.

Procedure

1 Navigate to **Groups & Settings > All Settings > Devices & Users > Apple > AppleCare**.

   To configure a GSX connection with the UEM console, you must have a GSX account with manager-level access, access to web services, and access to coverage and warranty information.

2 Enter **GSX settings** including:

Setting	Action
GSX User ID	Enter the account user ID.
GSX Password	Enter the account password.
Sold-to Account Number	Enter the 10-digit service account number. This account number can be found in the GSX portal at the bottom of the web page.
Time Zone	Use the drop-down menu to select the appropriate time zone.
Language	Use the drop-down menu to choose a language.

3 Select **Save** to complete the integration with AppleCare.

4 Navigate to the **List View**, select a device, and use the **More** menu to find **AppleCare** information in the UEM console.

Shared Devices

10

Shared Device/Multi-User Device functionality ensures that security and authentication are in place for every unique end user. And if applicable, shared devices allow only specific end users to access sensitive information.

Issuing a device to every employee in certain organizations can be expensive. Workspace ONE UEM powered by AirWatch lets you share a mobile device among end users in two ways: using a single fixed configuration for all end users, or using a unique configuration setting for individual end users.

When administering shared devices, you must first provision the devices with applicable settings and restrictions before deploying them to end users. Once deployed, Workspace ONE UEM uses a simple login or log-out process for shared devices in which end users simply enter their directory services or dedicated credentials to log in. The end-user role determines their level of access to corporate resources such as content, features, and applications. This role ensures the automatic configuration of features and resources that are available after the user logs in.

The login or log-out functions are self-contained within the Workspace ONE Intelligent Hub. Self-containment ensures that the enrollment status is never affected, and that the device is managed whether it is in use or not.

Shared Devices Capabilities

There are basic capabilities surrounding the functionality and security of devices that are shared across multiple users. These capabilities offer compelling reasons to consider shared devices as a cost-effective solution to making the most of enterprise mobility.

Functionality

- Personalize each end-user experience without losing corporate settings.
- Logging in a device configures it with corporate access and specific settings, applications, and content based on the end-user role and organization group (OG).
- Allow for a log in/log out process that is self-contained in the Workspace ONE Intelligent Hub or VMware Identity Manager.
- After the end user logs out of the device, the configuration settings of that session are wiped. The device is then ready for login by another end user.

Security

- Provision devices with the shared device settings before providing devices to end users.
- Log in and log out devices without affecting an enrollment in Workspace ONE UEM.
- Authenticate end users during a login with directory services or dedicated Workspace ONE UEM credentials.
- Authenticate end users using VMware Identity Manager.
- Manage devices even when a device is not logged in.

Platforms that Support Shared Devices

The following devices support shared device/multi-user device functionality.

- Android 4.3+
- iOS devices with Workspace ONE Intelligent Hub v4.2+,
- MacOS devices with Workspace ONE Intelligent Hub v2.1+.

This chapter includes the following topics:

Define the Shared Device Hierarchy

While strictly optional, making an organization group (OG) specific to shared devices offers many benefits due to multi-tenancy and inherited device settings.

If you have a large number of shared devices in your fleet and you want to manage them apart from single user devices, you can make a shared device-specific OG. Making a shared device hierarchy in your OG structure is optional. Features like smart groups and user groups mean you do not have to rely strictly on OG hierarchy design to simplify device management.

However, having a shared device OG (or nested OGs) simplifies device management by enabling you to standardize device functionality through profiles, policies, and device inheritance without the processing overhead required by a smart group or a user group.

Procedure

1. Navigate to **Groups & Settings > Groups > Organization Groups > Organization Group Details**.

   Here, you can see an OG representing your company.
2. Ensure the **Organization Group Details** displayed are accurate, and then use the available settings to make modifications, if necessary. If you make changes, select **Save**.
3. Select **Add Child Organization Group**.

4 Enter the following information for the first OG underneath the top-level OG.

Setting	Description
Name	Enter a name for the child organization group (OG) to be displayed. Use alphanumeric characters only. Do not use odd characters.
Group ID	Enter an identifier for the OG for the end users to use during the device login. Group IDs are used during the enrollment of group devices to the appropriate OG. Ensure that users sharing devices receive the **Group ID** as it might be required for the device to log in depending on your Shared Device configuration. If you are not in an on-premises environment, the Group ID identifies your organization group across the entire shared SaaS environment. For this reason, all Group IDs must be uniquely named.
Type	Select the preconfigured OG type that reflects the category for the child OG.
Country	Select the country where the OG is based.
Locale	Select the language classification for the selected country.
Customer Industry	This setting is only available when **Type** is Customer. Select from the list of Customer Industries.
Time Zone	Select the time zone for the OG's location.

5 Select **Save**.

Log In and log out of Shared macOS Devices

Multiple users can log in to and out of a macOS shared device, activating the automatic push of device profiles.

Log In to a macOS Device - Using assigned Network credentials, log in to a macOS device that has been staged and you receive the profiles assigned to your account in Workspace ONE UEM.

Log out of a macOS Device - The standard macOS log-out procedure also logs the device out of your assigned Workspace ONE UEM user profile.