

Technical whitepaper

HP Manageability Integration Kit

HP Client Management Solutions

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1 Overview

HP computers are Designed for Manageability (DfM), DfM is centered on two tenets:

- Provide a means that will assist an IT administrator in managing HP BIOS, hardware, and preinstalled software that comes with the computer.
- Provide a solution that works with the client management console of an administrator's choice.

The solution created to address these two tenets is called HP Manageability Integration Kit (MIK).

HP MIK is a client-management-console-agnostic solution that extends management aspects to HP hardware, BIOS, and software capabilities.

The purpose of HP MIK is to enable a user experience that simplifies routine enterprise process and tasks by integrating into existing tools and workflows.

Deploy HP MIK to begin enjoying these key benefits:

- Speed up the basics of management—Reduce the number of steps needed to create, deploy, and manage images, BIOS, and system security so you can focus on business.
- Protect data—Secure BIOS settings, set authentication and credentials requirements, enable Device Guard, and manage Trusted Platform Module (TPM) firmware updates.
- Manage software—Enable IT administrators to remotely manage features supported by the software, such as HP Client Security.

HP MIK is optimized to work with Microsoft® System Center Configuration Manager, although it does work with other client management consoles via scripting. This document includes examples and screenshots only of the HP Manageability Integration Kit plugin within Configuration Manager. For the full user guide, go to the HP Manageability website at <http://www.hp.com/go/clientmanagement>.

2 System requirements

HP Manageability Integration Kit can be installed on servers running supported versions of Microsoft System Center Configuration Manager 2012 and clients running supported Windows® operating systems.

2.1 Supported Microsoft System Center Configuration Manager versions

HP Manageability Integration Kit can be installed on servers running the following versions of the Microsoft System Center Configuration Manager. To determine server operating system requirements, see the Microsoft System Center Configuration Manager documentation.

- Microsoft System Center 2012 R2 Configuration Manager service pack 1 (SP1) with or without cumulative update 1 (CU1) or later
- Microsoft System Center 2012 R2 Configuration Manager
- Microsoft System Center 2012 Configuration Manager SP2 with or without CU1 or later and
- Microsoft System Center 2012 Configuration Manager SP1 and
- Microsoft System Center Configuration Manager 1511, 1602, or 1606
- Microsoft System Center Configuration Manager 1702 or 1706

2.2 Supported client operating systems

The HP Manageability Integration Kit client components are supported on the following client operating systems:

NOTE

Some HP Manageability Kit features have additional requirements.

- Windows 10
- Windows 8.1
- Windows 7

3 Downloading HP Manageability Integration Kit

To download the HP Manageability Integration Kit:

1. Go to <http://www.hp.com/go/clientmanagement>.
2. Under Resources, select **HP Download Library**.
3. Download **HP Manageability Integration Kit (MIK) for Microsoft System Center Configuration Manager**.
4. Under **MIK Client requirements**, download all available SoftPaqs

4 Installing HP Manageability Integration Kit into Configuration Manager

1. Verify that any instances of the Configuration Manager console are closed.
2. If **HP Client Integration Kit (CIK)** is installed on the system, uninstall it.
3. Run the downloaded **HP Manageability Integration Kit (MIK) for Microsoft System Center Configuration Manager SoftPaq** and follow the on-screen instructions to complete the installation.
4. Open the Configuration Manager console and verify that HP Manageability Integration Kit is displayed under Assets and Compliance.

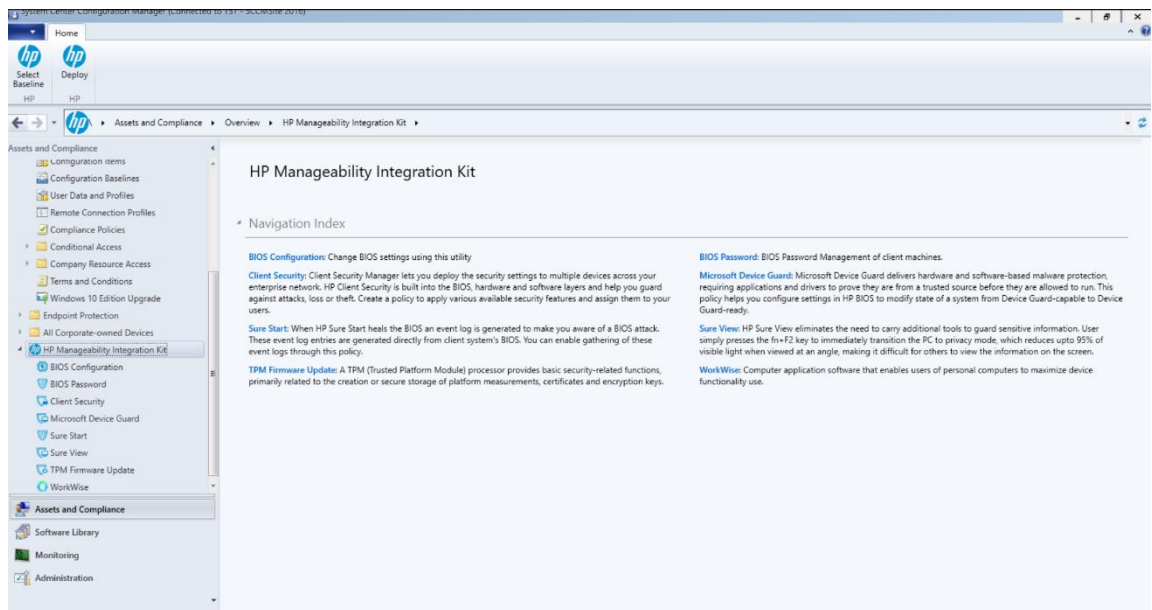


Figure 1 HP Manageability Integration Kit – Navigation Index

4.1 Distributing HP Client Support Packages

After the installation is complete, HP Client Support Packages must be pushed out to the local distribution points.

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Application Management**, select **Packages**, and then select **HP Client Support Packages**.

NOTE

Do not delete or rename the packages in this folder to prevent failure of dependent task sequences. If a package is deleted, reinstall HP Manageability Integration Kit and select Repair in the installation wizard. Then, refresh the task sequences using the package. For more information, see Refreshing task sequences.

2. If this is a first-time installation, right-click **HP Client BIOS Configuration Utility** and select **Distribute Content**, and then follow the on-screen instructions to complete the wizard.

– or –

If this is an upgrade, right-click **HP Client BIOS Configuration Utility** and select **Update Distribution Points**, and follow the on-screen instructions to complete the wizard.

3. If this is a first-time installation, right-click **HP Client Support Tools** and select **Distribute Content**, and then follow the on-screen instructions to complete the wizard.

– or –

If this is an upgrade, right-click **HP Client Support Tools** and select **Update Distribution Points**, and follow the onscreen instructions to complete the wizard.

In the Software Library of Configuration Manager, the following menu items (indicated by dashed lines), folders (indicated by dotted-and-dashed lines), and packages (indicated by solid lines) are created after a driver pack or boot image is created via HP Manageability Integration Kit.

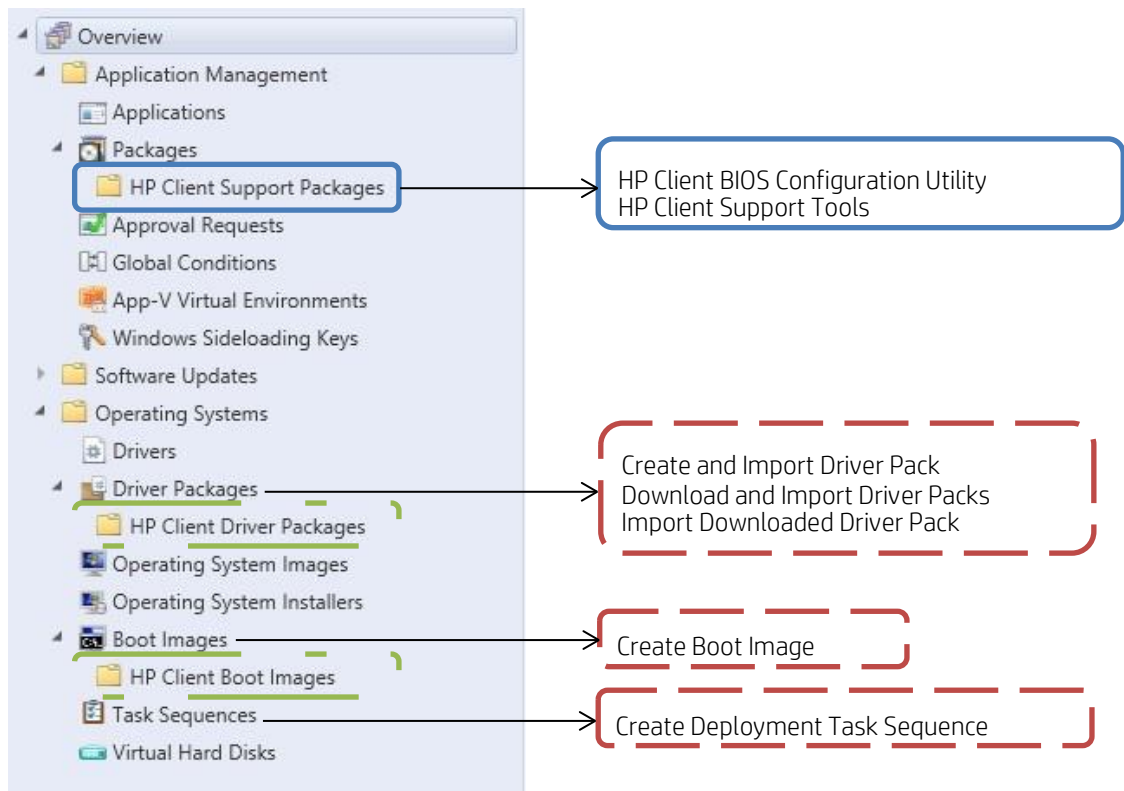


Figure 2 Software Library of Configuration Manager

To open a menu item, either select it in the ribbon menu or use the right-click context menu.

5 HP MIK plugins

By default, the installer extends the functions of Configuration Manager by adding eight plugins under the HP Manageability Integration Kit node.

For more information about these plugins, see the following sections.

- For managing HP BIOS settings, see [HP BIOS Configuration](#).
- For managing the HP BIOS password, see [HP BIOS password](#).
- For managing security settings found in HP Client Security Software, see [HP Client Security with Intel Authenticate Support](#).
- For enabling Device Guard, see [Device Guard \(Windows 10 only\)](#).
- For managing HP Sure Start settings, see [HP Sure Start](#).
- For upgrading or downgrading the TPM firmware version, see [TPM Firmware Update](#).
- For managing HP WorkWise application settings, see [HP WorkWise \(Windows 10 only\)](#).
- For managing display panel privacy settings, see [SureView](#).

HP MIK also includes all features of HP Client Integration Kit (CIK) to help with operating system deployment.

- For importing or creating HP driver packs, see [HP Client Driver Packs](#).
- For creating boot images, see [HP client boot images](#).
- For example task sequences, see [HP client task sequences](#).

5.1 Compliance settings

Policies created or edited using HP MIK plugins are saved as Configuration Manager compliance settings.

To locate a policy:

1. In Configuration Manager, select **Assets and Compliance**.
2. Select **Overview**, select **Compliance Settings**, and then select **Configuration Items**.

On this page, you can perform Configuration Manager functions, such as opening the Properties dialog box and setting the supported operating systems and hardware.

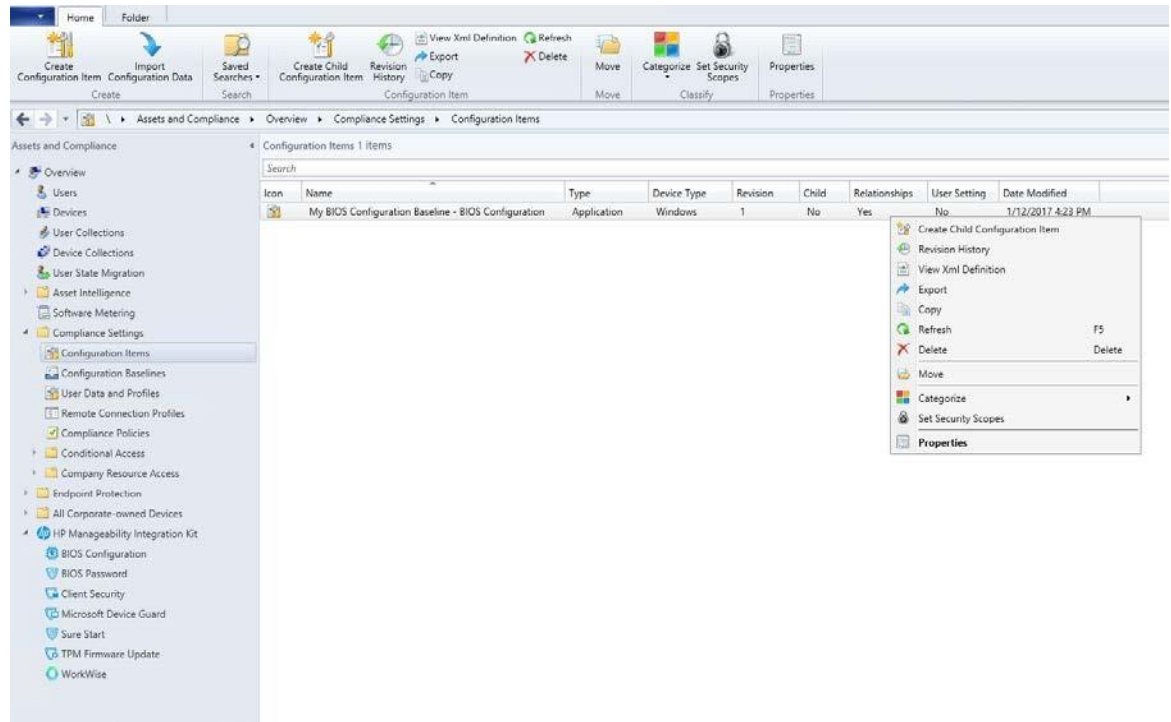


Figure 3 Configuration Items

If you create a configuration item with a plugin, the default name is composed of both the baseline name and the plugin name. For example, a configuration item created with a baseline named My BIOS Configuration Baseline and the HP BIOS Configuration plugin is named My BIOS Configuration Baseline – BIOS Configuration by default.

5.2 Configuration Baselines

IT administrators can select multiple configuration items for one Configuration Baseline. Baselines can also be deployed to different collections.

Right-click Configuration Baselines to select one of the following options:

- **Copy**—Clone the baseline
- **Delete**—Delete the baseline
- **Deploy**—Deploy to different collections
- **Properties**—View the deployed collection, edit the evaluation conditions, and filter the categories or users

6 HP BIOS Password Manager

The HP BIOS Password Manager interface allows the IT administrator to manage Password entry on client systems.

6.1 Supported client platforms

- HP commercial computers (2015 or later)

6.2 Supported client operating systems

- Windows 10
- Windows 8.1
- Windows 7

6.3 Prerequisites

- Microsoft .NET Framework 4.0 or higher.
- HP Manageability Integration Kit

6.4 User interface

The BIOS Password interface is very simple with two sections, current BIOS password and modification password (Change/Set or Remove password)

The current password must be provided in order to change or remove BIOS Password.

6.5 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **BIOS Password**, and then select **Create Policy**.

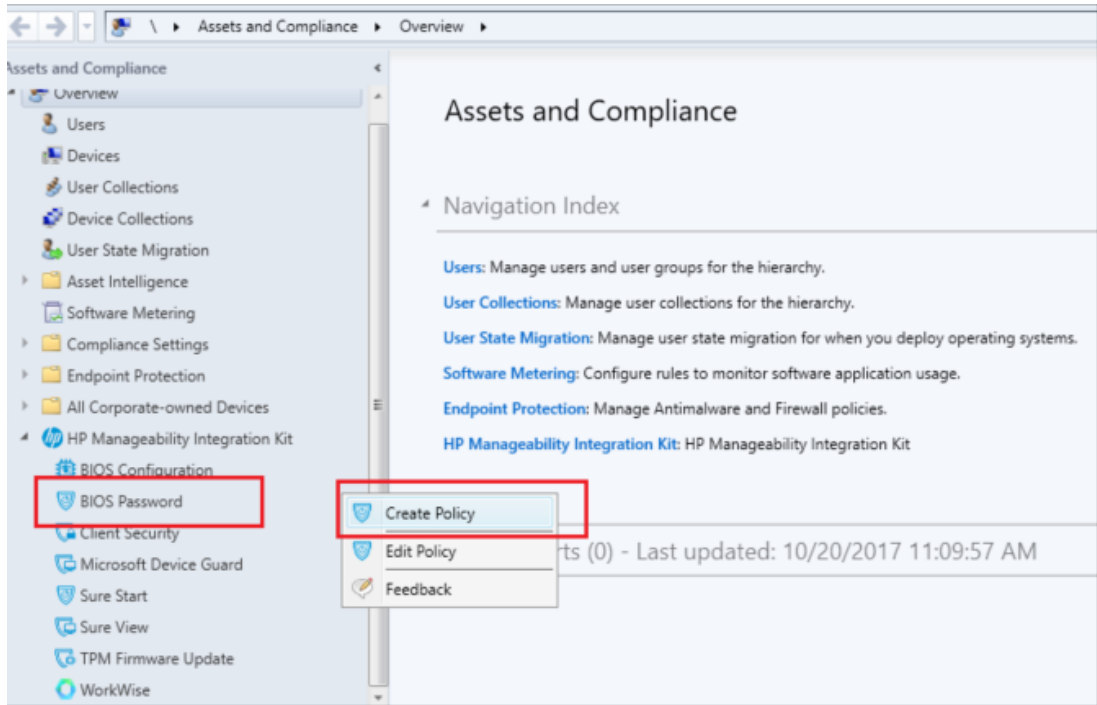


Figure 4 Create Policy

3. Enter a **Baseline** name and start the creating policy wizard.

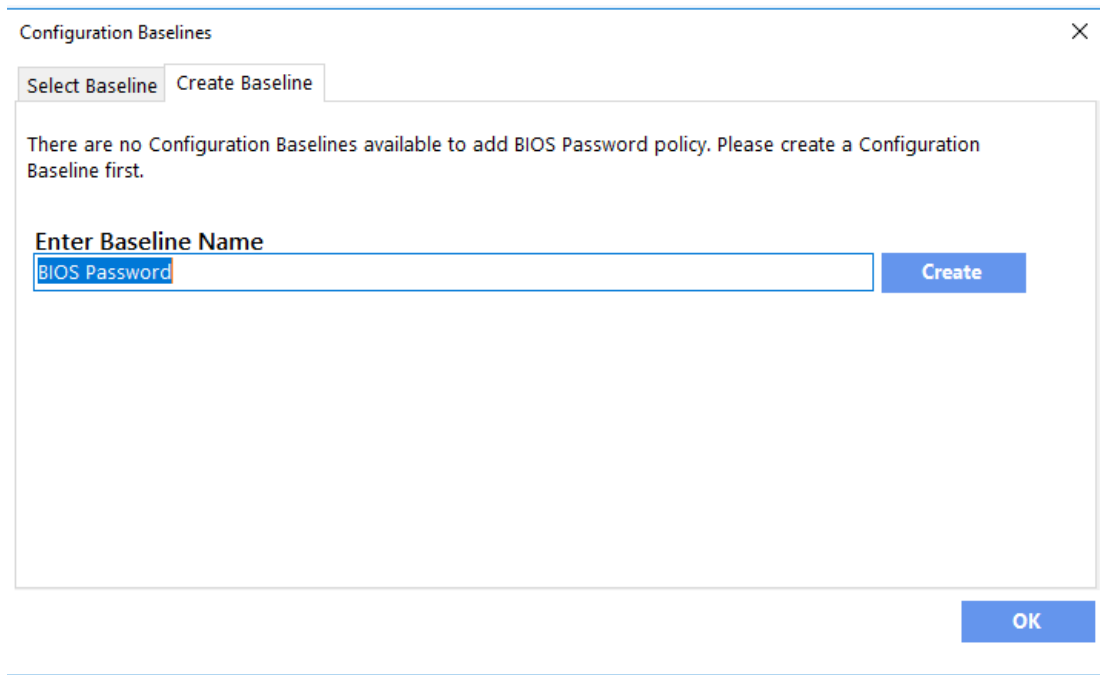
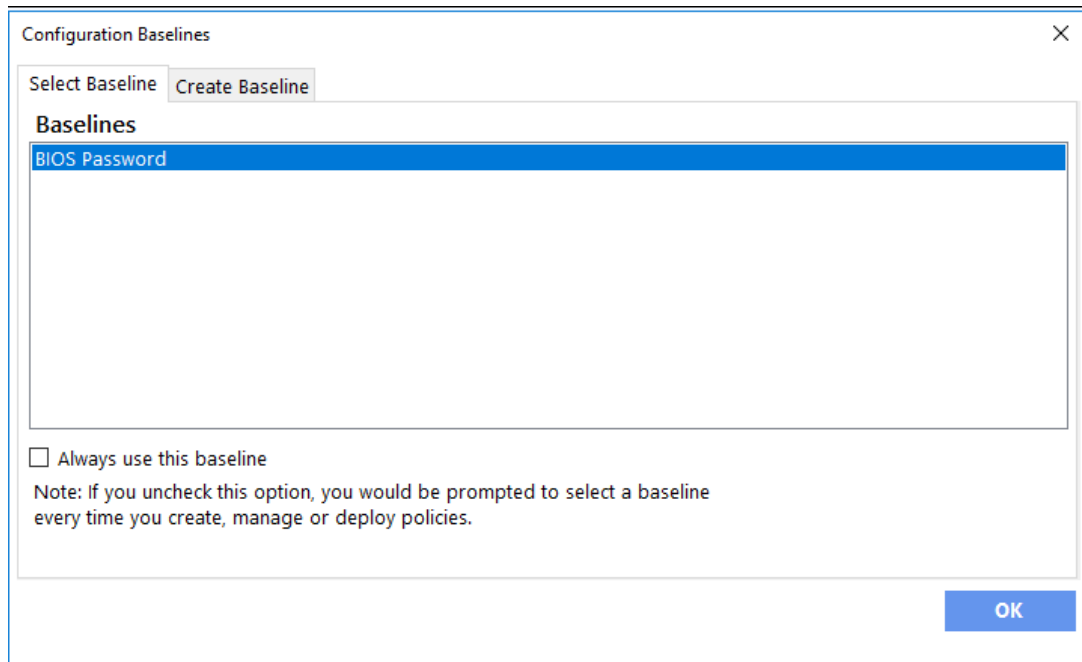


Figure 5 Creating a baseline name

4. Click **Create**



5. Select the newly created baseline and click **OK**

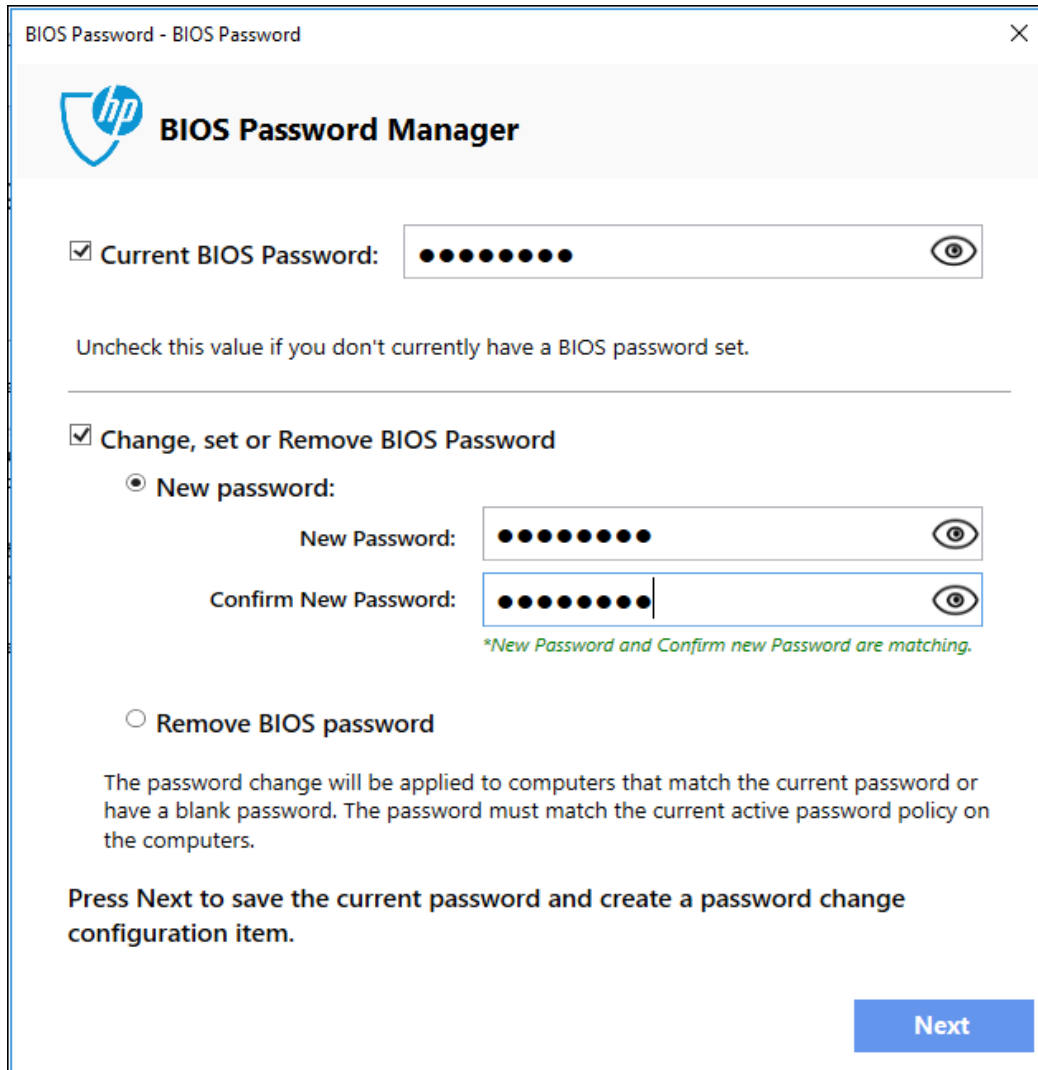
Figure 6 Completing the Create Baseline task

6. In BIOS Password Manager Interface, provide the appropriate password based on your needs.

6.6 Change BIOS Password

This task is to change the current password set on client system to a new password. If your collection includes a mix of devices where some have the BIOS password set and some devices do not, this policy will apply the new password to all devices.

1. Mark the checkbox **Current BIOS Password**, and provide the password
2. Mark the checkbox **Change, Set or Remove BIOS Password**
3. Select the radio button for **New Password**
4. Provide new password string in both **New Password** and **Confirm New Password** fields



The screenshot shows the 'BIOS Password - BIOS Password' window. At the top left is the HP logo and the title 'BIOS Password Manager'. Below this, there is a checked checkbox for 'Current BIOS Password:' followed by a password field with ten dots and an eye icon. A note below says 'Uncheck this value if you don't currently have a BIOS password set.' Below a horizontal line, there is another checked checkbox for 'Change, set or Remove BIOS Password'. Under this, there are two radio button options. The first is 'New password:', which is selected. It includes two password fields: 'New Password:' and 'Confirm New Password:', both with ten dots and eye icons. A green message below these fields reads '*New Password and Confirm new Password are matching.' The second radio button option is 'Remove BIOS password'. Below this, a paragraph explains that the password change will be applied to computers matching the current password or having a blank password, and that the password must match the current active password policy. At the bottom, there is a blue button labeled 'Next'.

Figure 7 Changing the BIOS password

5. Click **Next** to continue
6. Review and click **Save Policy**

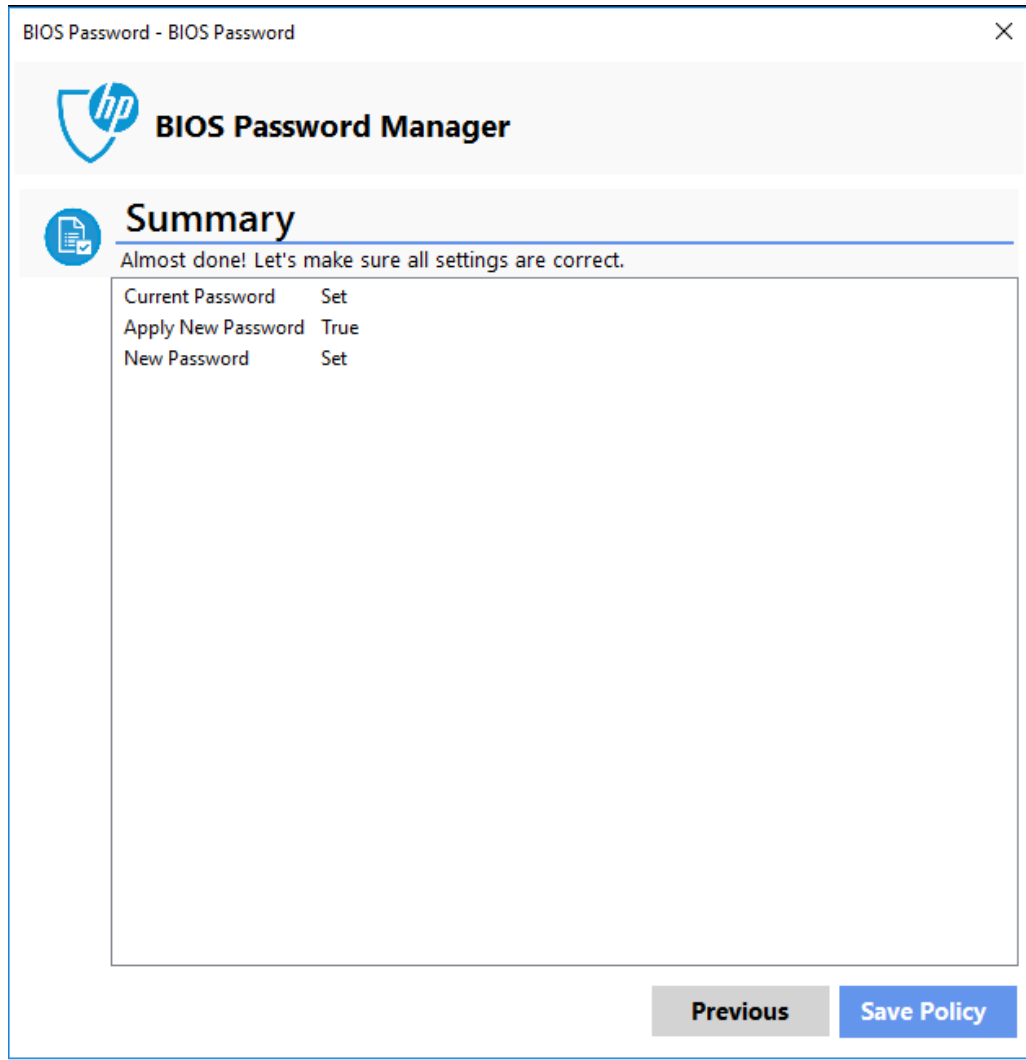


Figure 8 BIOS Password change summary

7. Click **Deploy** button
8. If you click **Close** instead of **Deploy**, MIK will save this baseline and its configuration for later use under Assets and Compliance > Overview > Compliance Settings > Configuration Baselines

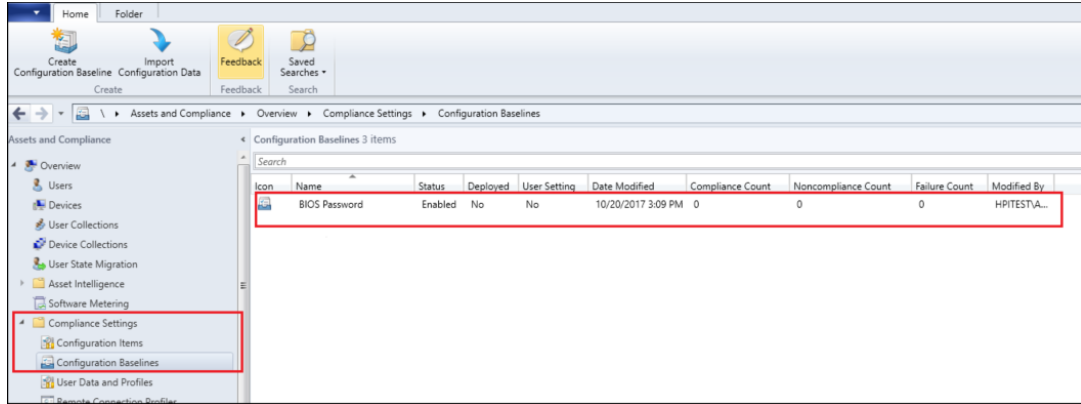


Figure 9 Compliance settings

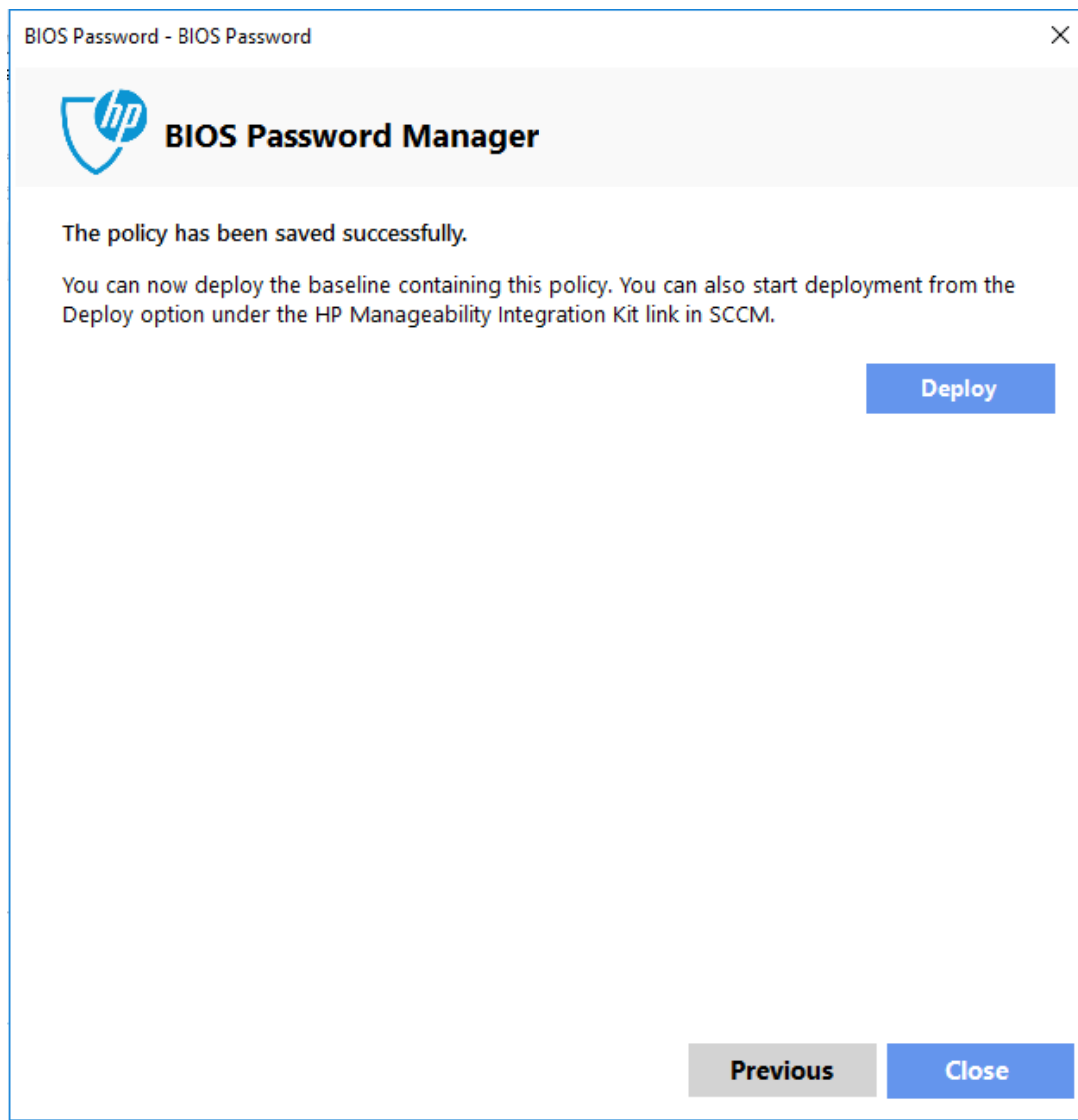
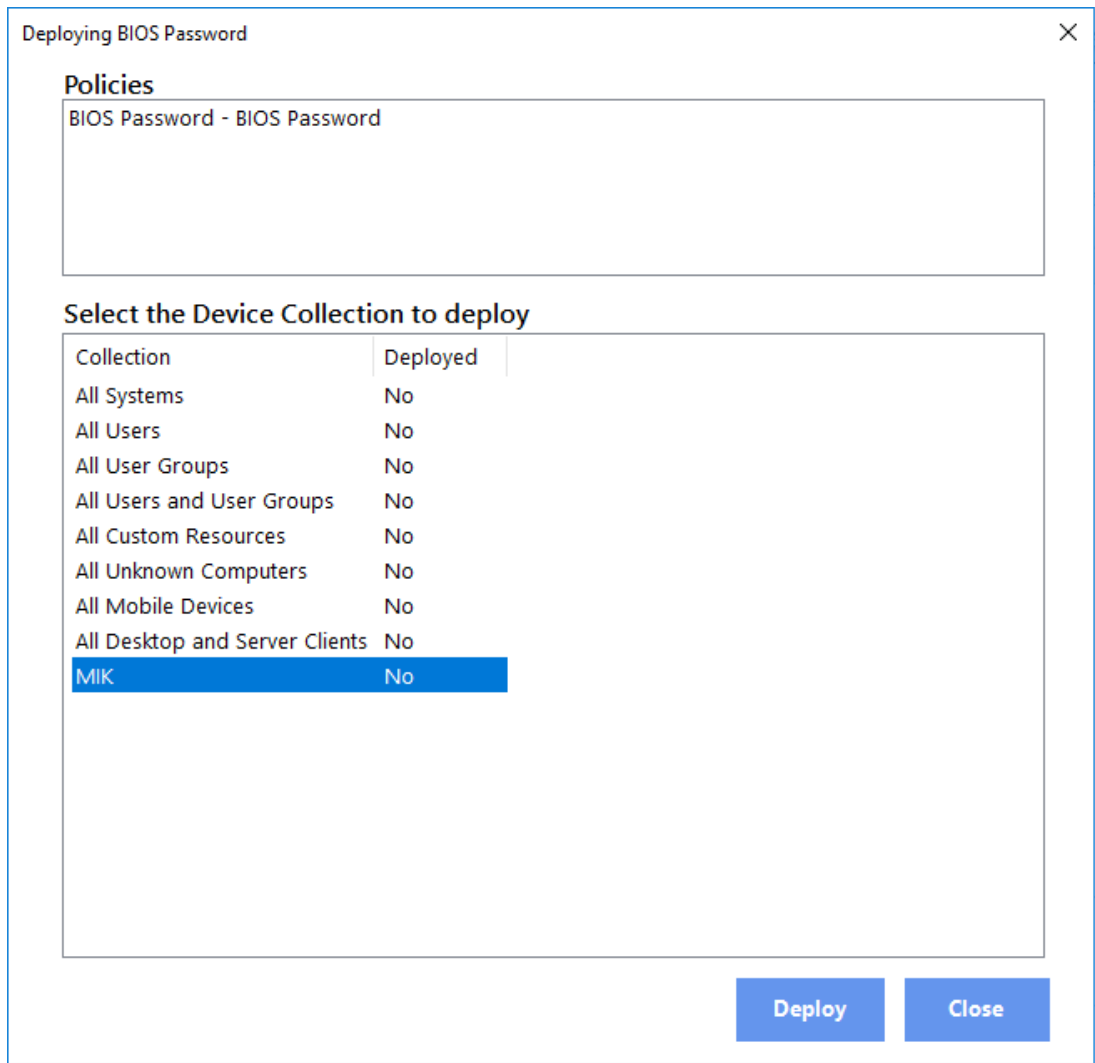


Figure 10 Deploy compliance settings



9. Select the appropriate collection to apply the policy and click **Deploy**

Figure 11 Select Device Collection

6.7 Remove the BIOS Password

This task is to remove or clear the current BIOS password set on client systems. If your collection includes a mix of devices where some devices have the BIOS Password set and some devices do not, the policy will apply to all and return as compliant.

If client systems have a different BIOS password set from the one being removed, the policy will fail and return an error.

1. Mark the checkbox **Current BIOS Password**, and provide the password
2. Mark the checkbox **Change, Set or Remove BIOS Password**
3. Select the radio button for **Remove BIOS password**

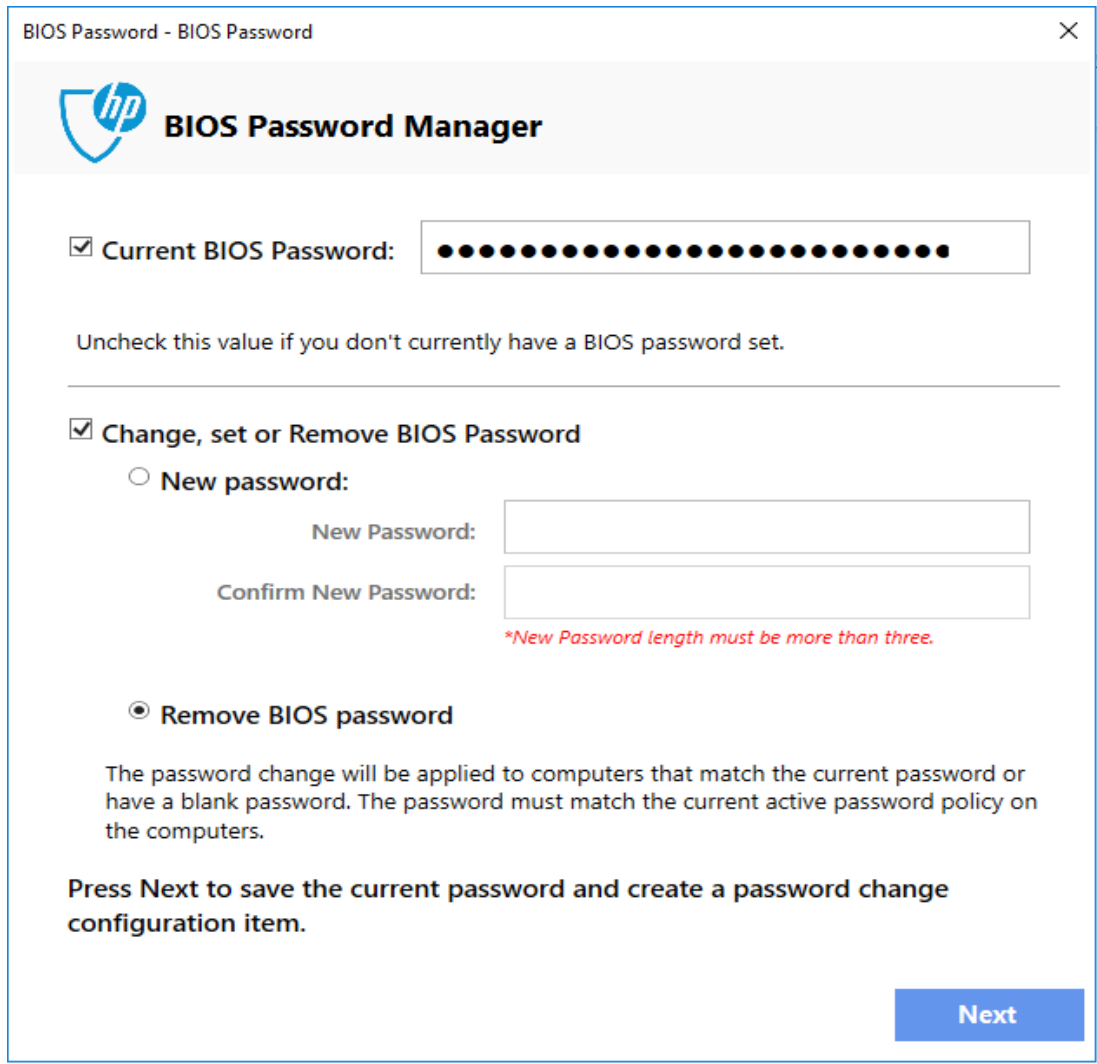


Figure 12 Removing the BIOS password

4. Click **Next**
5. Review and click **Save Policy**
6. Dialog is displayed to confirm that you selected to remove the BIOS Password. Click **OK** to continue

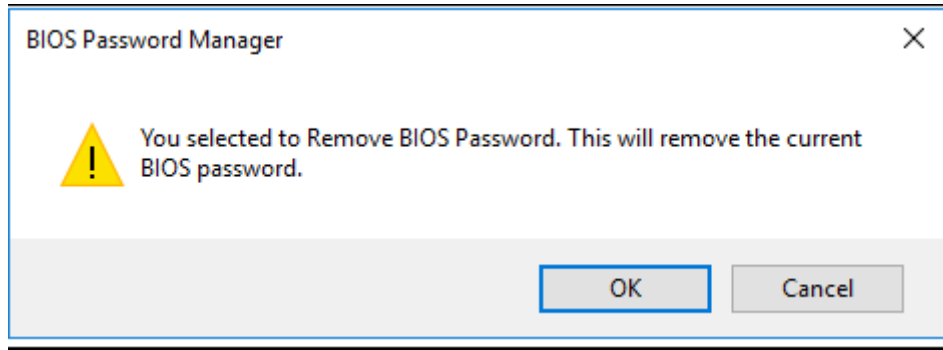


Figure 13 Confirming BIOS password removal

7. Click **Deploy** button to proceed to next screen
8. Select the appropriate collection and click **Deploy**

6.8 Set new BIOS Password

This task is to set a brand new BIOS Password on client system where there is no current BIOS Password set.

1. Mark the checkbox **Change, Set or Remove BIOS Password**
2. Select the radio button **New Password** and provide the password in both **New Password** and **Confirm New Password** fields

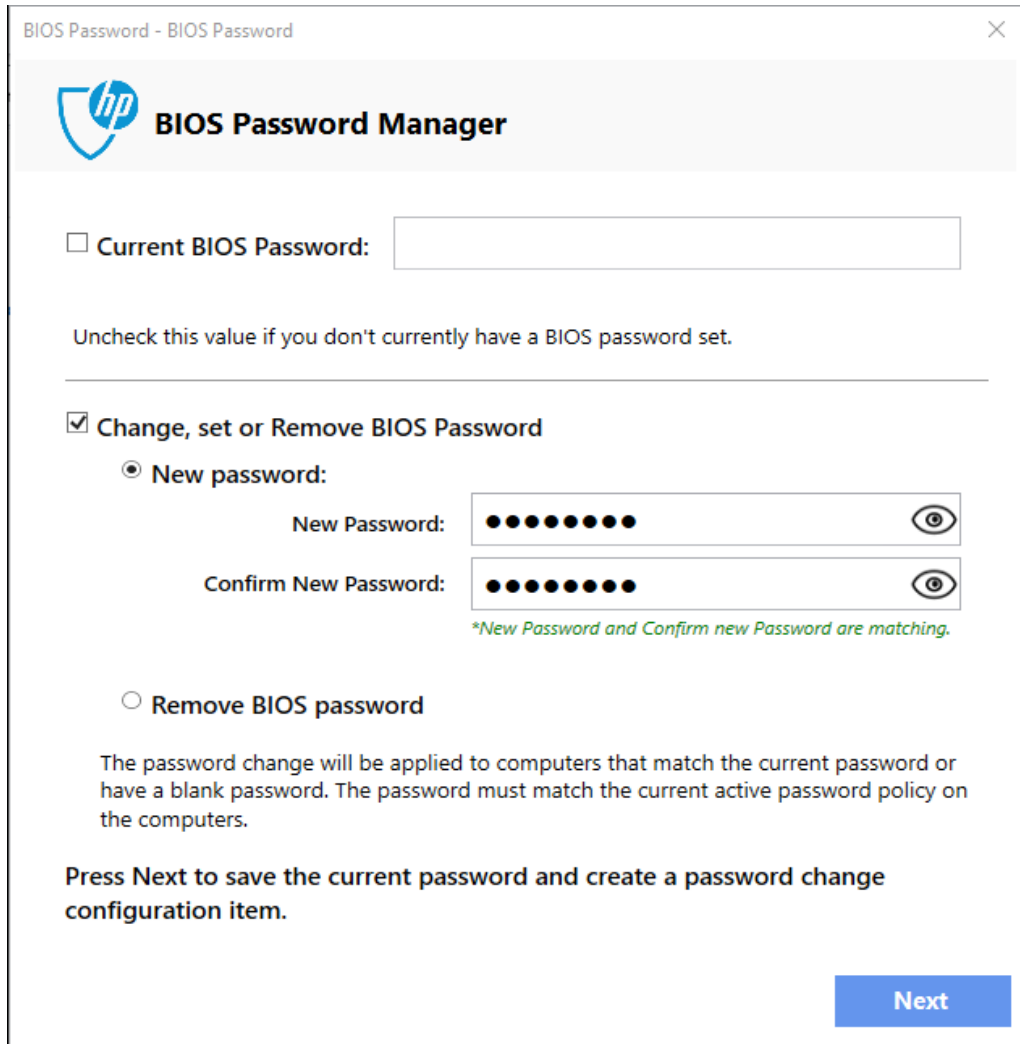


Figure 14 Set new BIOS password

3. Click **Next**
4. Review and click **Save Policy**
5. Dialog is displayed to reconfirm there is no BIOS password set on client system. Click **OK** to continue.

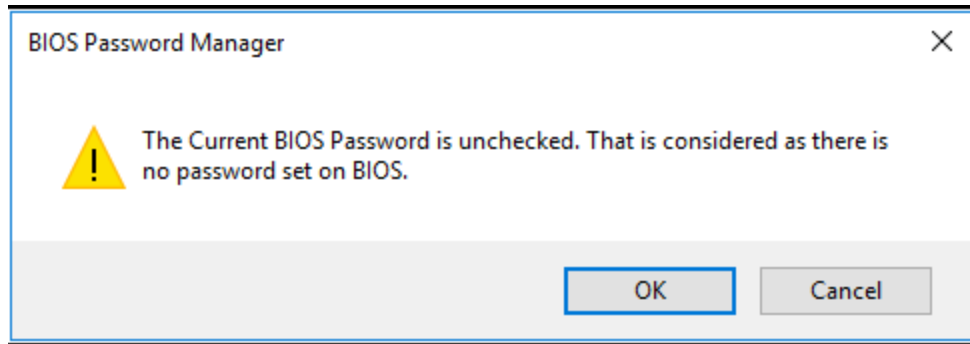


Figure 15 Confirming new BIOS password

6. Click **Deploy** and proceed to select the appropriate collection
7. Click **Deploy**

7 HP BIOS Configuration

The BIOS Configuration interface allows the IT administrator to define and deploy BIOS settings policies to client computers.

7.1 Supported client platforms

- HP commercial computers (2015 or later)

7.2 Supported client operating systems

- Windows 10
- Windows 8.1
- Windows 7

7.3 Prerequisites

- Microsoft .NET Framework 4.0 or higher.
- HP Manageability Integration Kit

7.4 User interface

There are three columns in the HP BIOS Configuration window.

The **Select** column is used to specify whether a setting is enforced by a policy. If a setting is selected, it is set to the specified value. If a setting is cleared, it is not modified.



The **Settings** column displays the setting name.

The **Values** column can be used to either enter a value or select a value from a drop-down menu, depending on the setting. If a specific syntax is required for an entered value, the box background turns green if the syntax is correct and turns red if the syntax needs to be corrected.

NOTE:

In Category View, a category must be expanded to display all three columns.

The icons next to some settings indicate the following behaviors:

-  • Indicates that a setting is only effective for one restart, and then it resets to the default value.
-  • Indicates that a setting requires confirmation on the next restart, and that the restart cannot be completed until confirmation is given.

7.5 Category View button

Select this button to display BIOS Settings as grouped categories

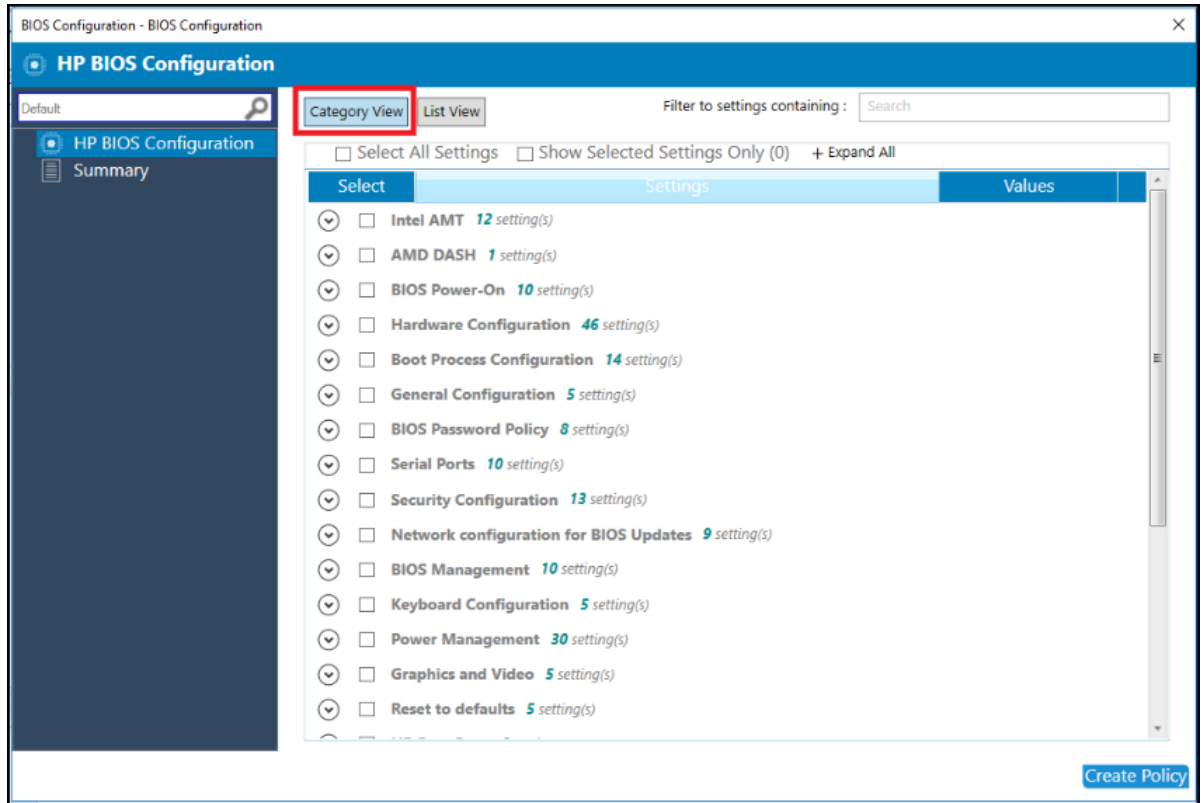


Figure 16 HP BIOS Configuration (Category view)

7.6 List View button

Select this button to display the BIOS settings as a list.

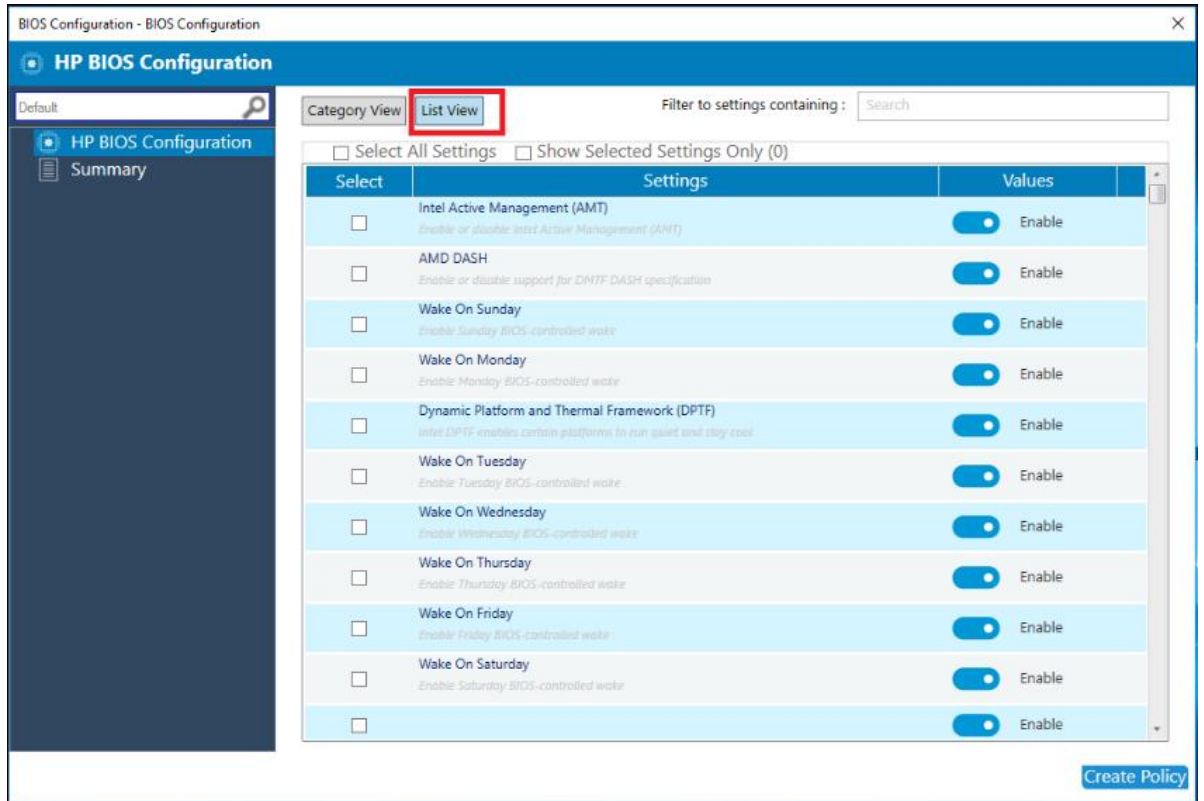


Figure 16 HP BIOS Configuration (List view)

7.7 Select All Settings

Select this checkbox option to select all settings while in Category view or in List view

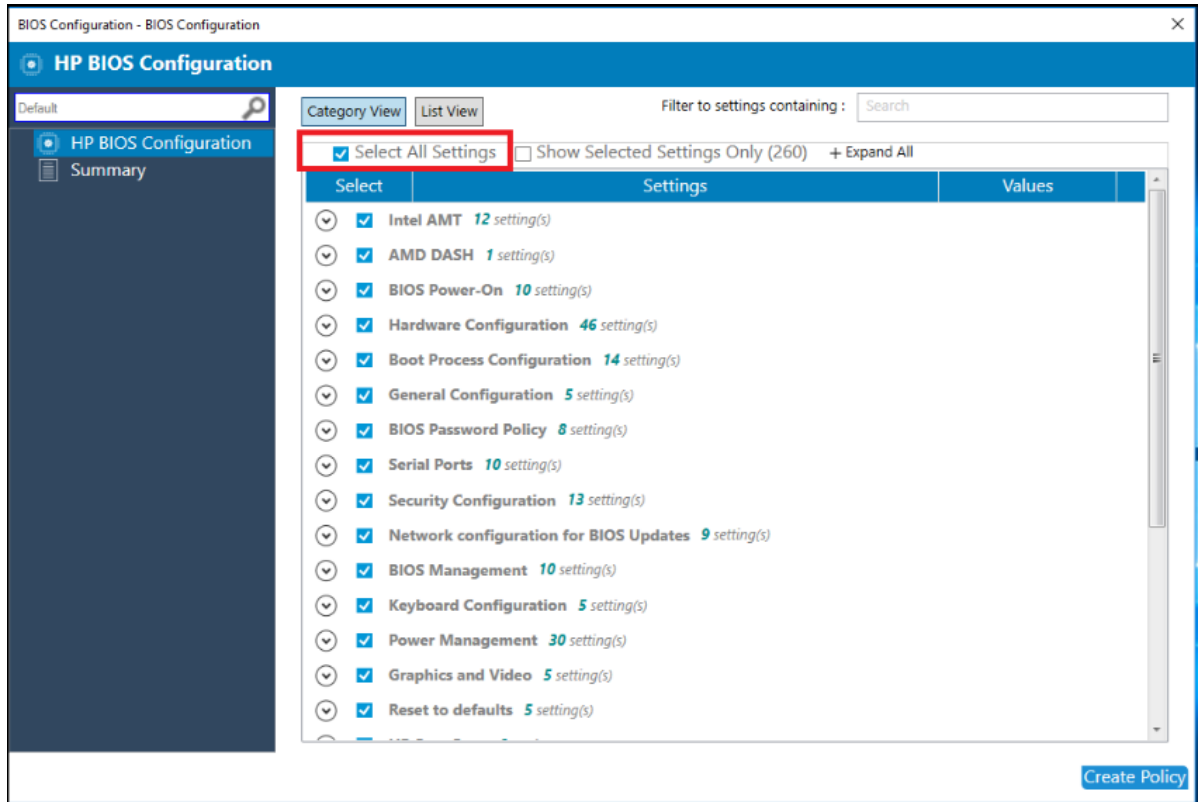


Figure 17 HP BIOS Configuration (Select All Settings)

7.8 Show Selected Settings Only

Select this checkbox option to show only settings that have been selected.

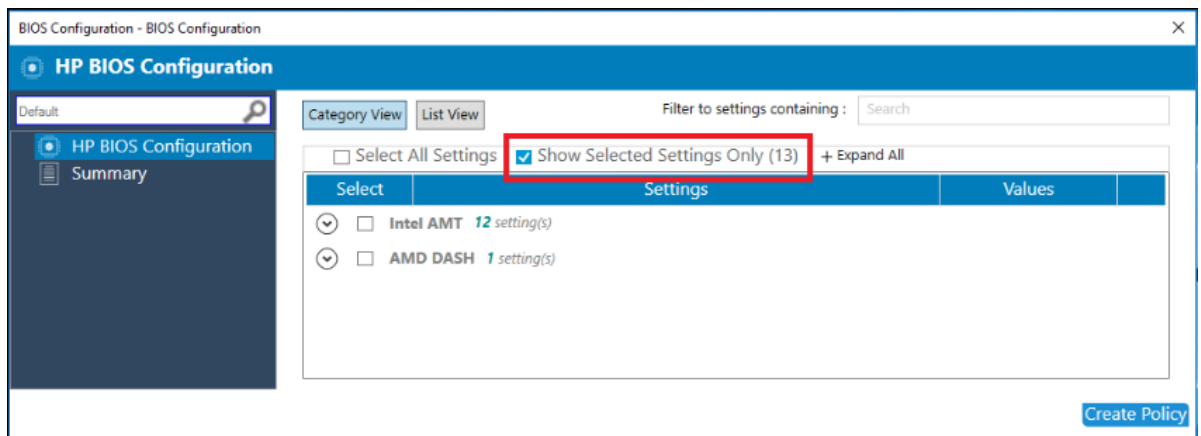


Figure 18 HP BIOS Configuration (Show Selected Settings Only)

7.9 Expand All/Collapse All button

Select this button to expand or collapse the details of each setting.

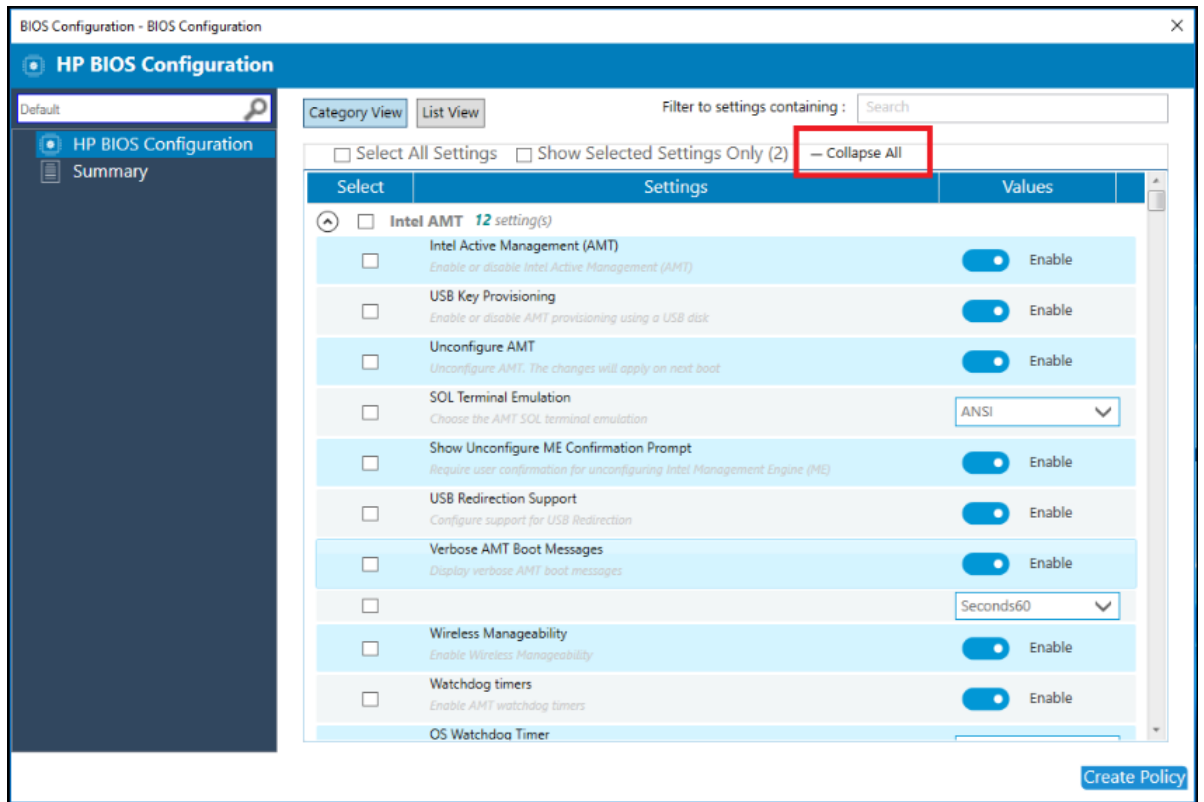


Figure 19 Expand/Collapse All

7.10 Filter to settings containing

Enter a term to quickly locate a setting in the list of settings, based on a partial string match.

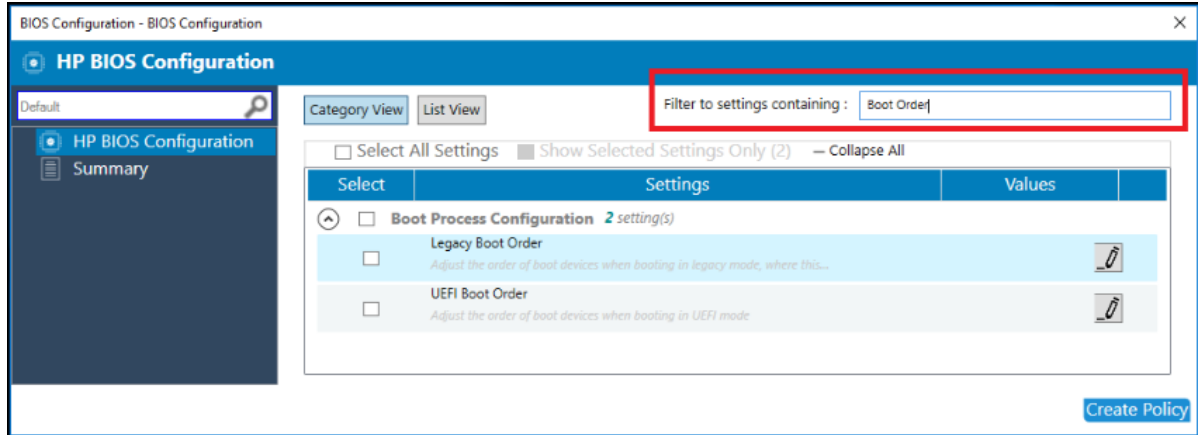
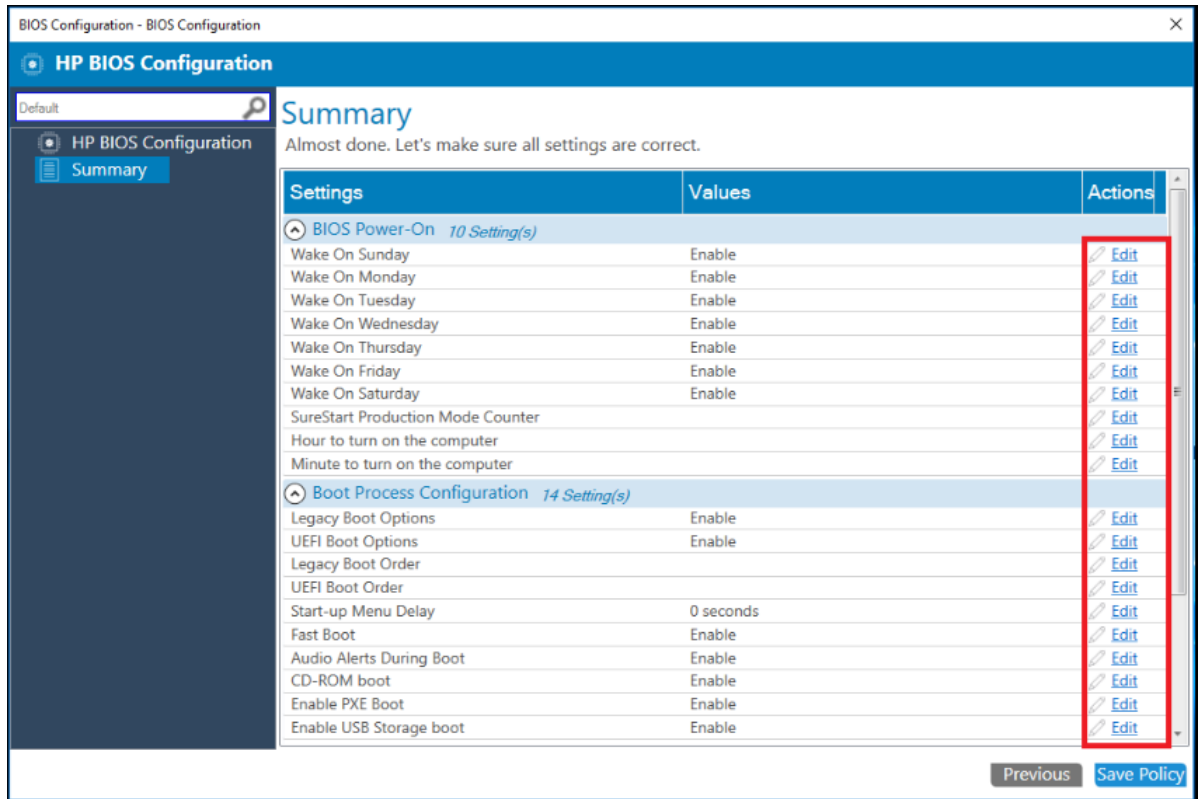


Figure 20 HP BIOS Configuration (Filter to settings containing)

7.11 Creating a policy

1. In Configuration Manager, select **Assets and Compliance** and then select **Overview**.
2. Expand **HP Manageability Integration Kit**, right-click **BIOS Configuration**, and then select **Create Policy**.
3. Enter a **Baseline** name and start the creating policy wizard.
4. Modify settings by selecting the setting and then selecting the new value.
5. After selecting and modifying BIOS settings, select **Next**.
6. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.



7. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.
8. Restart the client computers to ensure that the BIOS settings take effect.

7.12 Editing a policy

1. In Configuration Manager, select **Assets and Compliances** and then select **Overview**.
2. Expand **HP Manageability Integration Kit**, right-click **BIOS Configuration**, and then select **Edit Policy**.
3. Select an existing baseline policy to edit and click **OK** to continue the wizard.

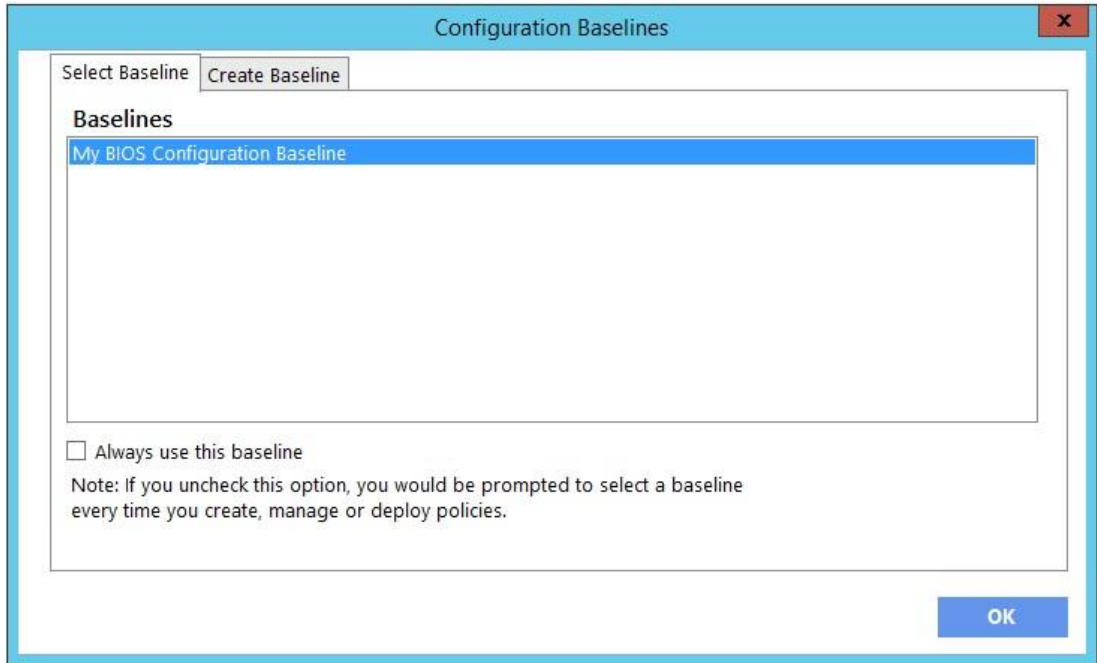


Figure 21 Configuration baseline list

4. Follow steps 4 through 8 of Creating a policy.

NOTE:

For client computers, the HP MIK BIOS Configuration logs are stored in %PROGRAMDATA%\HP\HP MIK\Logs.

8 HP Client Security with Intel Authenticate Support

HP Client Security with Intel® Authenticate™ Support enables the management of HP Client Security software through Configuration Manager. HP Client Security uses features built into the BIOS, hardware, and software layers to help protect against attacks, loss, or theft. It can also take advantage of Intel® Authenticate™ capabilities to further enhance security.

8.1 Supported client platforms

- HP commercial computers using KBL processor (2015 or later)
- Intel Authenticate requires commercial level ME firmware 11.8.50.3399.
- If three factor authentication is desired, computers must be vPro enabled.
- Modern Standby – At this time Intel Authenticate does not fully support Modern Standby. Please disable this feature in the OS if using Intel Authenticate.

8.2 Supported client operating systems

- Windows 10 (Intel® Authenticate™ only supports Windows 10)
- Windows 8.1
- Windows 7

8.3 Other client system prerequisites

- Microsoft .NET Framework 4.6.1 or higher
- HP Client Security Manager 9.3.10.2571 or higher
- The HP Device Access Manager 8.4.12.0 or higher
- Intel Authenticate Engine 3.0.0.78 (optional)

NOTE:

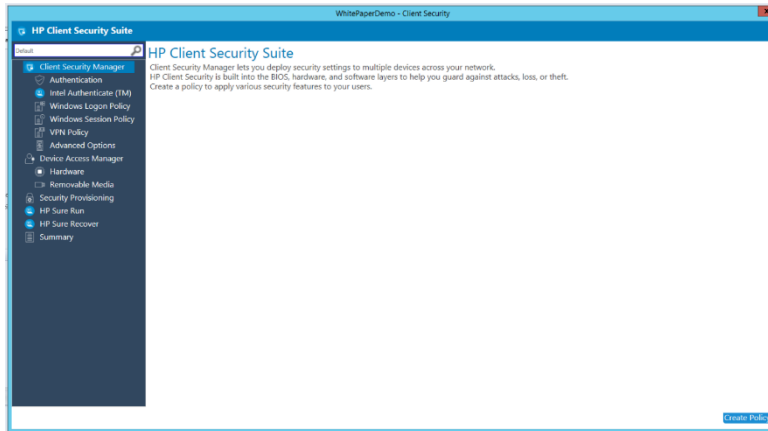
Intel® Authenticate™ Engine is required to make use of Intel® Authenticate™ enhanced security features and requires the following additional drivers:

- Intel Management Engine Driver 11.6.0.1019 or higher
 - Intel Bluetooth® Driver 19.00.1626.3453 or higher
 - Intel Graphics Driver 21.20.16.4481 or higher - Intel Authenticate requires use of the Intel graphics card. If the PC has more than one graphics solution, Intel graphics must be used for Intel Authenticate PTD PIN authentication.
 - Synaptics Touch Fingerprint Driver 5.5.6.1099 or higher (Swipe sensors are not supported.)
-

8.4 User interface

HP Client Security includes Client Security Manager, Device Access Manager, Sure Run, and Sure Recover

When you open HP Client Security, an introduction with a high-level description of the plugin is displayed. Select **Create Policy**. You will then be prompted to name your new policy baseline, select the new baseline, and enter any BIOS passwords needed (See HP BIOS Password Manager.)

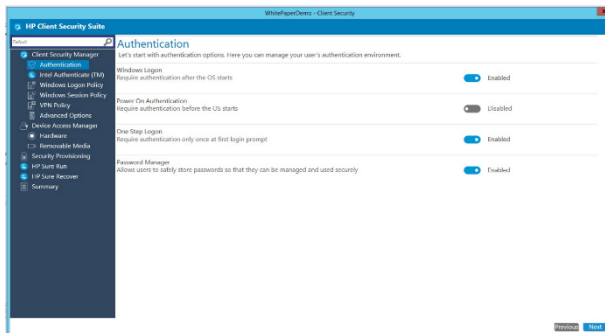


8.5 Client Security Manager

8.5.1 Authentication

This page allows you to configure the high-level features of HP Client Security Manager.

Figure 22 Configure high-level features of HP Client Security Manager



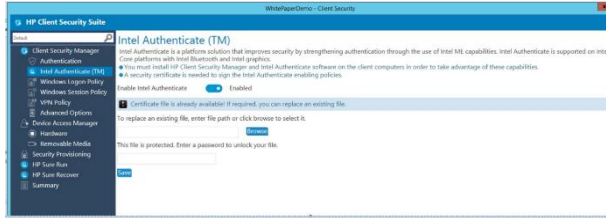
The following options are available:

- **Windows Logon**—Requires authentication at Windows logon (after the operating system starts)
- **Power On Authentication**—Requires authentication at computer start before the operating system starts.
- **One Step Logon**—Requires authentication only once at first logon prompt. **Power-On Authentication** must be enabled. (Please note that if using Intel® Authenticate™, One Step Logon is not supported due to the heightened security level.)
- **Password Manager**—Allows secure logon using security questions in case of a forgotten password or lost authentication device.

8.5.2 Intel Authenticate

This page allows you to configure Intel Authenticate, if Intel Authenticate Engine is installed.

Figure 23 Configure Intel Authenticate



The following options are available:

- **Enable Intel Authenticate**—Enables Intel Authenticate support. Please note that Intel Authenticate requires that certain hardware and software prerequisites be met in all computers in the collection the policy is being applied to. It also cannot be used with AMD processors so a separate collection of devices that meet the minimum requirements will need to be made. You can use the Authenticate_Check.exe file to determine if your computers meet the minimum requirements. Information on the minimum requirements and how to use the Authenticate_Check.exe can be obtained in the “Intel(R) Authenticate OEM Bring Up Guide” included with the Intel Authenticate engine on the HP Manageability website. If this option is enabled, you can select the certificate used to provision or communicate with the Intel Authenticate engine on client computers.
- **Type the location of the security certificate**—Browse to and select an X.509 certificate file, in Personal Information Exchange (PFX) format.
- **Enter the password to unlock your certificate**—Select this option and enter a password, if the certificated is protected by a password.
- **My certificate does not have a password**—Select this option and enter a password, if the certificated is protected by a password.

8.5.3 Windows Logon Policy

This page allows you to configure Windows Logon authentication.

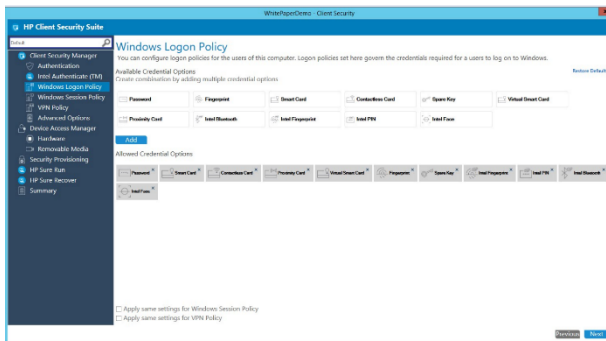
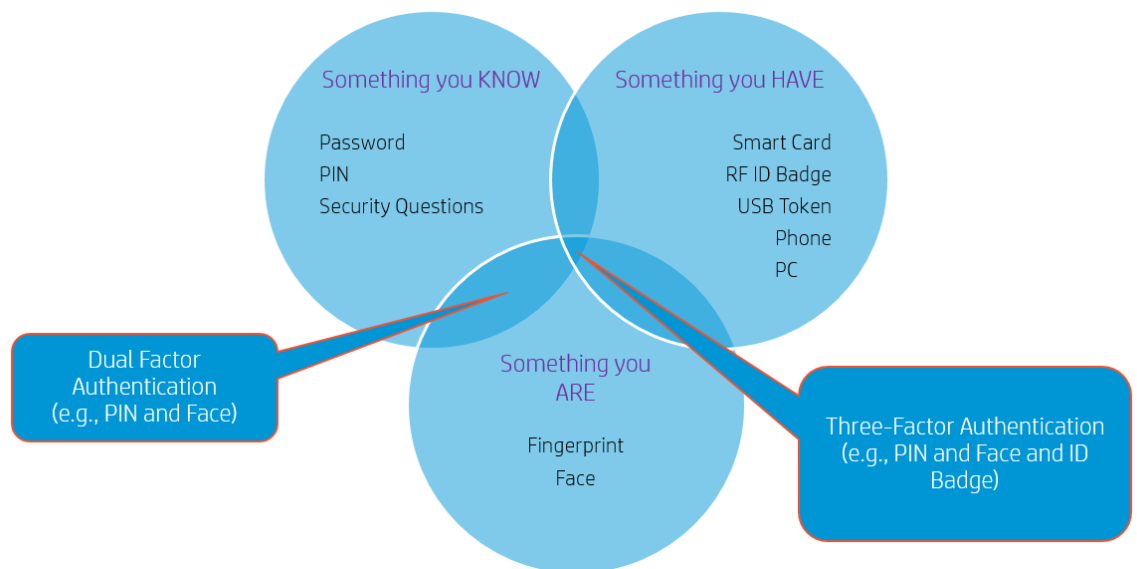


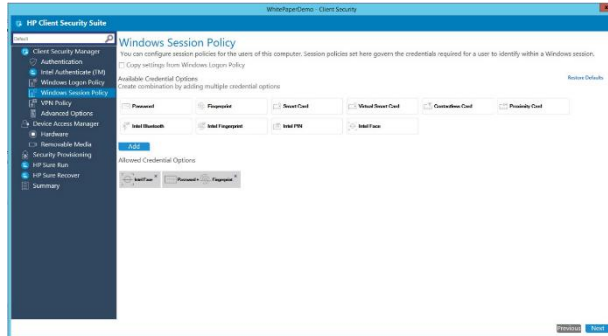
Figure 24 Configure Windows Logon authentication

- **Add Credential**— Select a credential or a combination of two or three credentials (three factor authentication requires vPro be enabled on the client computers) required for Windows Logon. To remove a configured credential, select the X icon in the upper-right corner of the credential. Each credential can only be used in one combination.
 - Please note: If allowing both Intel Authenticate fingerprint as well as classic Fingerprint, both policies must match. For example if combining Intel Fingerprint with password you should do the same for classic Fingerprint.
 - If allowing Intel Authenticate Bluetooth, please note the following. The Intel Authenticate application must be downloaded from the appropriate store for Android or iOS. In order to force pairing of the phone via BLE the application must be open while pairing the phone to the computer. (Please see the document Intel Authenticate Bluetooth Pairing Steps) Also note that as of the writing of this guide some issues have been reported with iPhones receiving error31 or error35 when attempting to authenticate. Until this is corrected or tested in your environment it is suggested that if Intel Authenticate Bluetooth is allowed, another credential be allowed as well in case of Bluetooth failure.
 - If allowing use of Intel Authenticate Fingerprint for authentication, it has been reported that some sensors are timing out and not authenticating if no internet connection is available. To resolve this, please ensure the touch area fingerprint sensor reader has the latest driver available. Please see pre-requisites section.
 - At the time of this writing, Intel Authenticate supports only one user per device. This is expected to be enhanced in future releases late 2018. If more than one user is going to log into the computer, it is suggested that Intel Authenticate not be enabled in the managed scenario.
- **Restore Default**—Restores default settings, providing a way to start configuration from a known state.
- **Apply Same Settings for Session and VPN policies** – Applies the settings from this page to the Session and VPN policy pages automatically.
- **Policy Creation Suggestions:** When creating a policy keep in mind three types of authentication methods. These factors can include something you know (Password / PIN), something you are (Fingerprint / Face), and something you have (Phone / Contactless card). When allowing these items to be used for authentication it is recommended you combine one from each type of factor for best security. Keep in mind that when creating a policy with something you have, such as a Bluetooth phone, it is recommended that you allow an alternate method of authentication in case the authenticating item is inaccessible.



8.5.4 Windows Session and VPN Policy

Figure 25 Configure policy and credentials for Windows sessions and VPN policies



This page allows you to configure the policy and credentials used for a Windows session. This is for authenticating with applications such as Password Manager and Device Access Manager. The following page allows you to set the policy used for VPN authentication. Please see the document entitled VPN_Setup_Instructions for information on how to set up the VPN environment to authenticate with Intel Authenticate.

- **Copy Settings from Logon Policy**—Automatically copies the policy from Logon Policies
- **Allowed Credential Options**—Select a credential or a combination of two or three credentials (three factor authentication requires vPro be enabled on the client computers) allowed for Session Logon.

8.5.5 Advanced Options

This page allows you to further configure various credentials managed by HP Client Security.

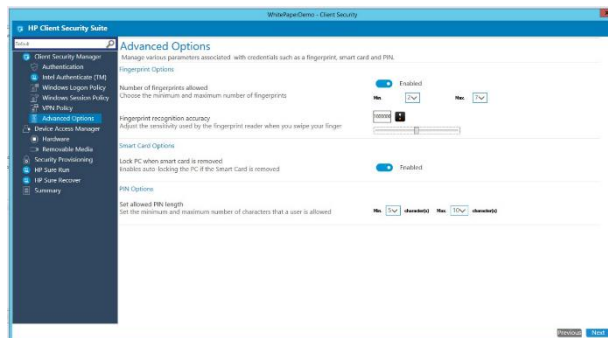


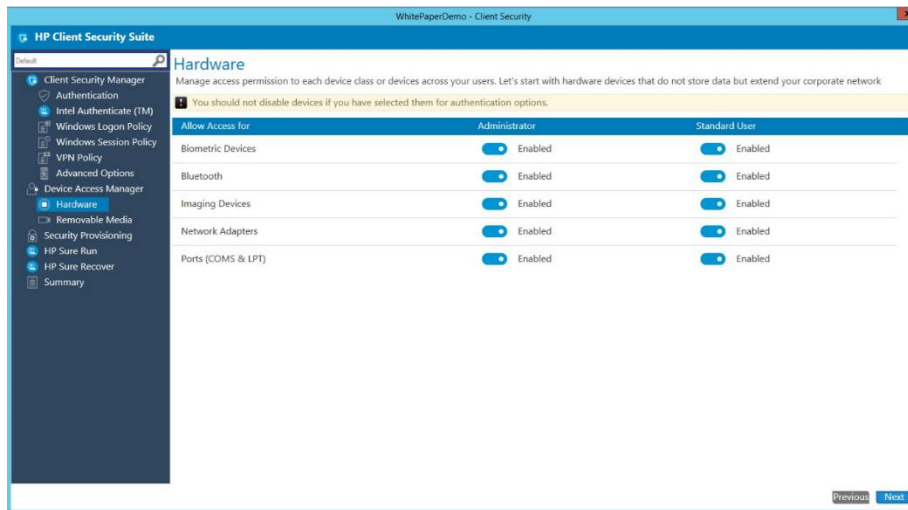
Figure 26 Configure Advanced Options

- **Fingerprint Options**
 - **Minimum number of fingerprints** and **Maximum number of fingerprints**—Specify the minimum and maximum number of fingerprints a user can enroll. **Force number of fingerprints to enroll** must be selected.
 - **Fingerprint recognition accuracy**—Configure the required fingerprint reader accuracy. (Not supported with Intel Authenticate fingerprint)

- **Smart Card Options**
 - – **Lock PC when smart card is removed**—Automatically locks the computer when a smart card used as a credential is ejected.
- **PIN Options**
 - – **Set allowed PIN length**—Specify the minimum number of characters for a user PIN. (Not supported with Intel Authenticate PIN)

8.6 Device Access Manager

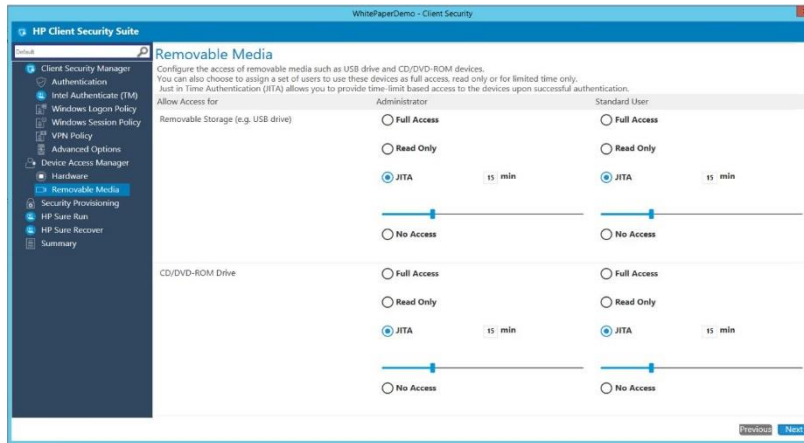
8.6.1 Hardware



On this page, you can deploy access permission for a variety of device classes or devices. The access can be set for both administrators and standard users. The following device classes and devices are listed: biometric devices, Bluetooth, imaging devices, network adapters, and ports (COM & LPT).

- **Allow Access for Administrators**—Enables an administrator to access a device class or device
- **Allow Access for Standard User**—Enables a standard user to access a device class or device.

8.6.2 Removable Media



On this page, an IT administrator can set access permissions for removable storage, such as USB drives, and CD/DVD-ROM drives. Configure Removable Media options

The options can be configured with one of the following rights each for both administrators and standard users:

- **Full Access**—Allows users to add, edit, delete, and read files from the selected removable media.
- **Read Only**—Allows users only to read files from the selected removable media.
- **JITA (Just In Time Authentication)**—Allows users to add, edit, delete, and read files for the amount of time (beginning after the user has entered their credentials) specified in the dropdown box.
- **No Access**—Disables user access to any of the files available in the selected removable media.

8.7 Creating a policy

5. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
6. Select **HP Manageability Integration Kit**, right-click **Client Security Manager**, and then select **Create Policy**.
7. Enter a **Baseline** name and start the creating policy wizard.
8. Modify settings. After configuring the settings, select **Next**.
9. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.

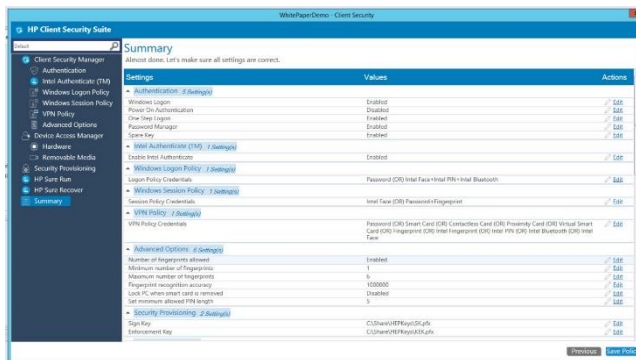


Figure 27 Review Summary

10. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.

8.8 Editing a policy

11. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
12. Select **HP Manageability Integration Kit**, right-click **Client Security Manager**, and then select **Edit Policy**.
13. Select an existing baseline policy to edit, and then select **OK**.
14. Follow the on-screen instructions to complete the wizard.

8.9 Additional information

Policies created with HP Client Security create configuration items for both Client Security Manager and Device Access Manager.

Be sure to configure Intel Authenticate before creating policies. See the Intel Authenticate documentation for more information on whether your computer is supported and how to set up Intel Authenticate.

8.10 Security Provisioning

Remotely managed systems need to be configured for activating HP Sure Run and HP Sure Recover.

HP Sure Run and HP Sure Recover are managed using cryptographically verified commands that use public/private key pairs. In the steps below two separate key pairs are set up:

- The 'signing key' which is the key pair whose private key is used to sign the settings being sent.
- The key pair embedded within the 'key endorsement certificate' whose private key is used only to sign any updates to the 'signing key'. The client systems will also display the organization string specified in this certificate on the first boot following provisioning.

This provisioning typically happens only once and the public keys are sent to the client systems as the keys to use for signature validation of future HP Sure Run and HP Sure Recover commands.

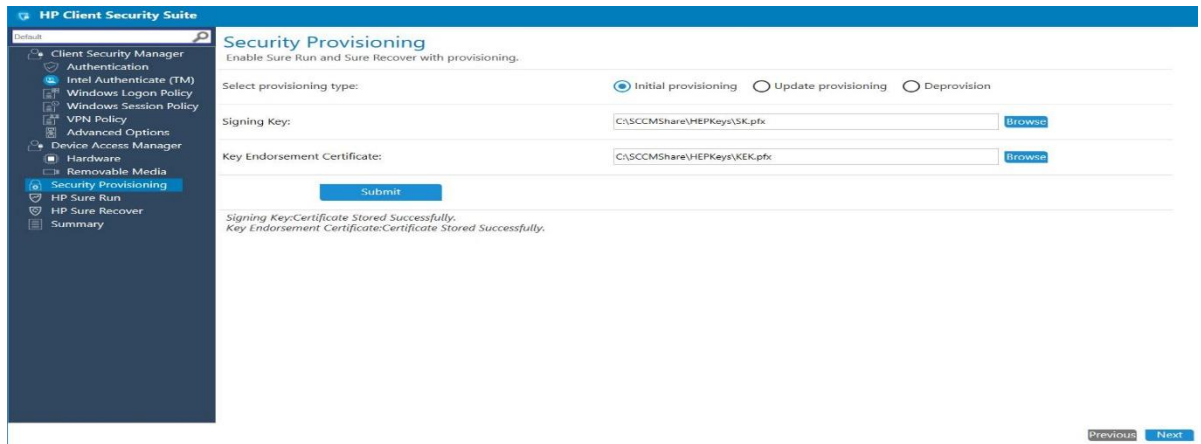
8.10.1 Initial Provisioning or Update Provisioning

8.10.1.1 Initial Provisioning – Provision system for 1st time setup.

The screenshot shows the 'HP Client Security Suite' interface. The left sidebar contains a navigation menu with the following items: Client Security Manager, Authentication, Intel Authenticate (TM), Windows Logon Policy, Windows Session Policy, VPN Policy, Advanced Options, Device Access Manager, Hardware, Removable Media, Security Provisioning (highlighted), HP Sure Run, HP Sure Recover, and Summary. The main content area is titled 'Security Provisioning' and includes the instruction 'Enable Sure Run and Sure Recover with provisioning.' Below this, there are three radio buttons for 'Select provisioning type:': 'Initial provisioning' (selected), 'Update provisioning', and 'Deprovision'. There are two text input fields: 'Signing Key:' and 'Key Endorsement Certificate:'. Each field has a 'Browse' button to its right. A 'Submit' button is located below the input fields. At the bottom right of the interface, there are 'Previous' and 'Next' navigation buttons.

End user needs to provide both signing key and Key Endorsement Certificate for initial provisioning. Click on Browse option next to text field to select the key/certificate saved on local disks.

Once selected select Submit and then hit Next. Note - The Key format supported is Personal Information Exchange (PFX).



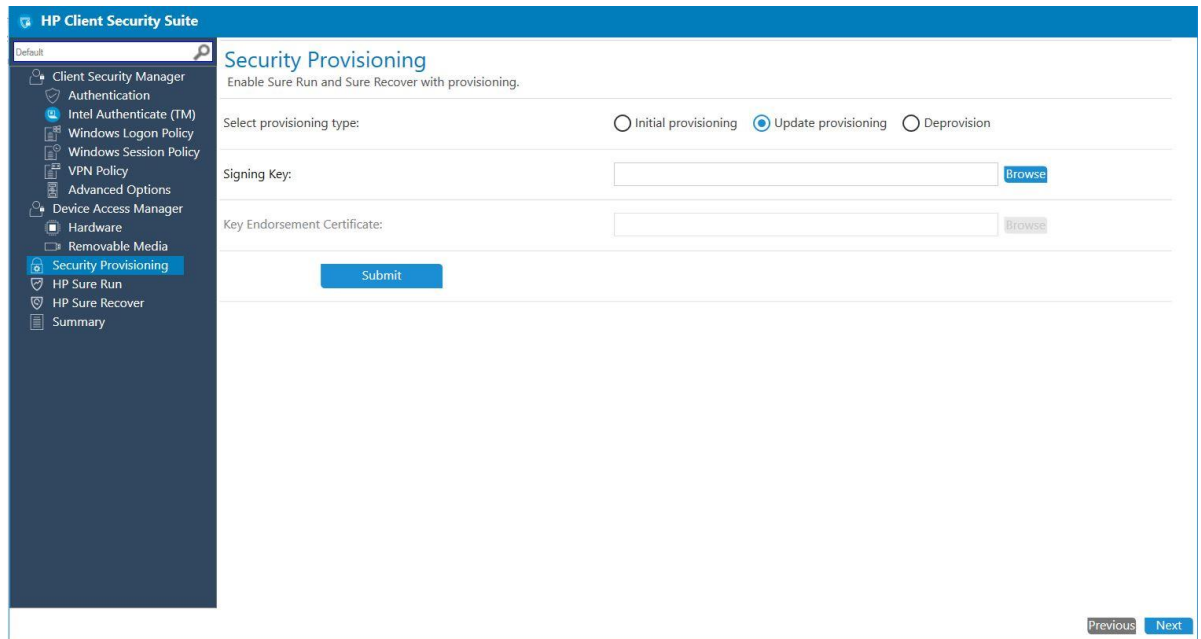
8.10.1.2 Update Provisioning

For collection of systems that have already been provisioned with above , IT Administrator has the ability to re-provision with an updated signing key.

Navigate to Security Provisioning and select option Update Provisioning.

Administrator need to provide signing key for update provisioning. Click on Browse option next to text field to select the key saved on local disks.

Once selected select Submit and then hit Next



8.10.2 Deprovision

For collection of systems that have already been provisioned , IT administrator has the ability to deprovision the systems.

Navigate to Security Provisioning and select option Deprovision. Click Next to Deprovision.

HP Client Security Suite

Default

Client Security Manager

Authentication

Intel Authenticate (TM)

Windows Logon Policy

Windows Session Policy

VPN Policy

Advanced Options

Device Access Manager

Hardware

Removable Media

Security Provisioning

Summary

Security Provisioning

Enable Sure Run and Sure Recover with provisioning.

Select provisioning type: Initial provisioning Update provisioning Deprovision

Signing Key:

Key Endorsement Certificate:

2. While deprovisioning previously provisioned systems, features of HP Sure Run and HP Sure Recover will be automatically disabled as part of the policy push.

8.10.3 Additional information

8.10.3.1 For client system to be successfully provisioned

1. 1 time reboot of client system is needed post policy deployment.
2. Post reboot end user will be prompted to type in 4 digit security code as displayed on screen at boot time.
3. IT Administrator needs to ensure the keys required for provisioning are saved in a secure location. The signing key is used every time a setting in HP Sure Run or HP Sure Recover is changed. The key endorsement certificate is only used in cases where an update to the signing key needs to be made.

8.10.3.2 Update Provisioning for provisioned systems

To update both the signing key and Key Endorsement certificate ,administrator will have to first deprovision and do Initial Provisioning again.

If the private half of the signing key becomes compromised it can be replaced by choosing the “Update Provisioning” option and selected a new signing key then clicking Next.

NOTE: Should the private half of the key endorsement certificate become compromised the method used to replace it depends on the state of the private half of the signing key on the client systems.

- If the signing key has not been replaced on the client systems perform a deprovision and do the initial provisioning again with a new signing key pair and a new endorsement certificate. It is important to verify that all system were successfully updated.
- If the signing key has been replaced on the client systems it is necessary to use the “Unprovision SPM” option on the “Secure Platform Management” menu in BIOS F10 Setup (this option is not available remotely).

8.10.3.3 For client system to be successfully un-provisioned.

1. Multiple “Evaluate” attempts (within SCCM Configuration Manager) may be required in some cases for deprovisioning to be successful.
2. It is recommended to first send out a policy with HP Sure Run disabled and/or HP Sure Recover disabled followed by a second policy push with Deprovision selected.

8.10.3.4 Systems which fail to be unprovisioned

HP Sure Run / HP Sure Recover can only be managed via the local (HP Client Security Manager) or remote (MIK) approach, on a first come, first served basis. Once enabled and configured using one of these approaches, the other is no longer available until it is unconfigured and disabled. This can be accomplished by using the “Unprovision SPM” option on the “Secure Platform Management” menu in BIOS F10 Setup (this option is not available remotely).

8.10.3.5 What to do if the signing key or endorsement certificate are lost

It is possible to manually deprovision HP Sure Run and HP Sure Recover by using the “Unprovision SPM” option on the “Secure Platform Management” menu in BIOS F10 Setup (this option is not available remotely).

8.10.3.6 BIOS Admin Password

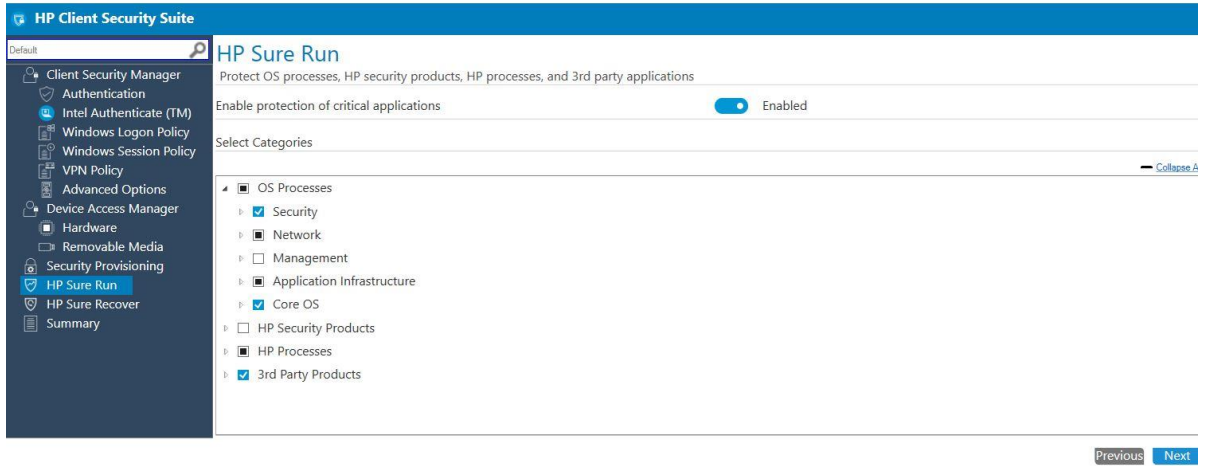
While a BIOS Admin Password is not required to use HP Sure Run or HP Sure Recover, it is recommended to use a BIOS administrator password to prevent an attacker with physical access from disabling HP Sure Run via the HP Computer (BIOS) Setup page.

8.11 HP Sure Run

8.11.1 Overview

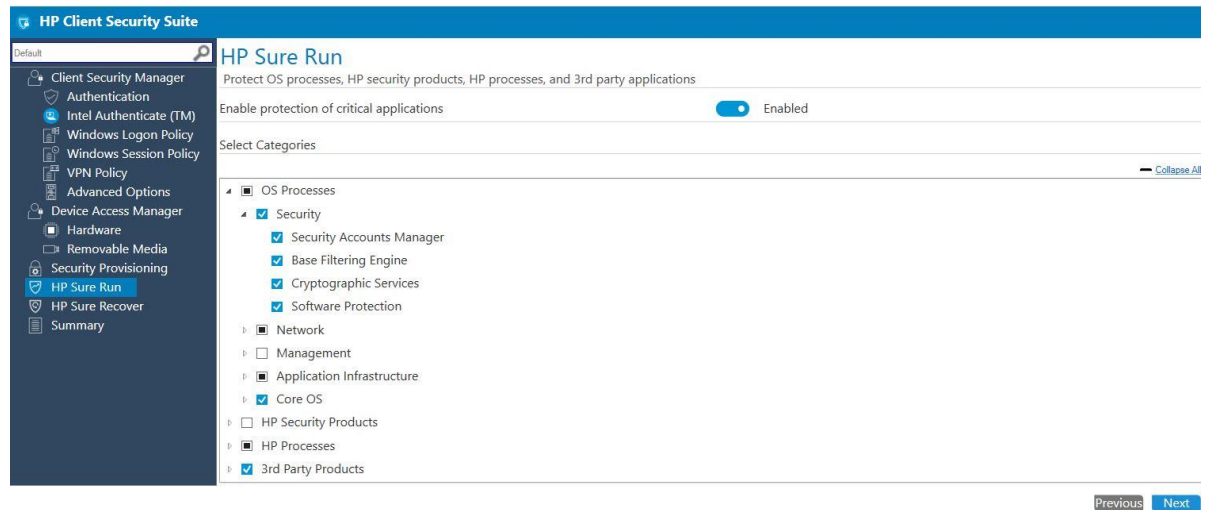
HP Sure Run can help you monitor critical applications and alert you in case of external threat.

HP Sure Run allows selection of individual applications or application categories to be monitored.



IT Administrator will have HP-recommended policy pre-selected, with ability to modify as needed. Listed below are categories and sub-categories available for monitoring.

OS Processes – Sub category “Security”



OS Processes – Sub category “Network” / “Management” / “Application Infrastructure”

The screenshot shows the HP Client Security Suite interface. The left sidebar lists various security components, with 'HP Sure Run' selected. The main panel is titled 'HP Sure Run' and includes a search bar, a description 'Protect OS processes, HP security products, HP processes, and 3rd party applications', and a toggle for 'Enable protection of critical applications' which is turned on. Below this is a 'Select Categories' section with a 'Collapse All' button. The categories are expanded to show the following sub-categories and their status:

- OS Processes
 - Security
 - Network
 - WLAN AutoConfig
 - Extensible Authentication Protocol
 - Management
 - Group Policy Client
 - Application Infrastructure
 - Windows Installer
 - Task Scheduler
 - Core OS
 - HP Security Products
 - HP Processes
 - 3rd Party Products

Navigation buttons for 'Previous' and 'Next' are located at the bottom right.

OS Processes – Sub category “Core OS”

The screenshot shows the HP Client Security Suite interface. The left sidebar lists various security components, with 'HP Sure Run' selected. The main panel is titled 'HP Sure Run' and includes a search bar, a description 'Protect OS processes, HP security products, HP processes, and 3rd party applications', and a toggle for 'Enable protection of critical applications' which is turned on. Below this is a 'Select Categories' section with a 'Collapse All' button. The categories are expanded to show the following sub-categories and their status:

- OS Processes
 - Security
 - Network
 - Management
 - Application Infrastructure
 - Core OS
 - DCOM Server Process Launcher
 - Remote Procedure Call (RPC)
 - RPC Endpoint Mapper
 - Windows Event Log
 - Volume Shadow Copy
 - HP Security Products
 - HP Processes
 - 3rd Party Products

Navigation buttons for 'Previous' and 'Next' are located at the bottom right.

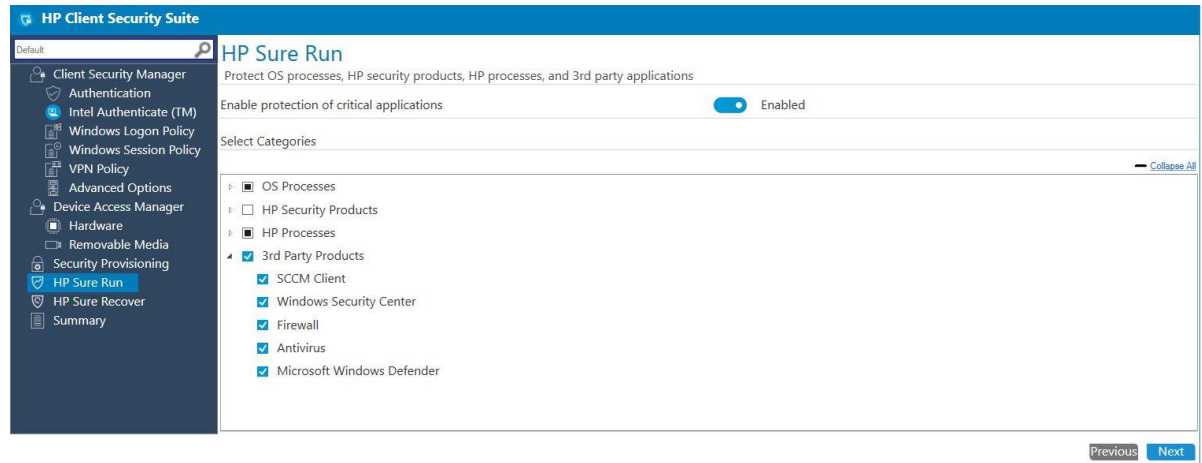
HP Products / HP Processes

The screenshot shows the HP Client Security Suite interface. The left sidebar lists various security components, with 'HP Sure Run' selected. The main panel is titled 'HP Sure Run' and includes a search bar, a description 'Protect OS processes, HP security products, HP processes, and 3rd party applications', and a toggle for 'Enable protection of critical applications' which is turned on. Below this is a 'Select Categories' section with a 'Collapse All' button. The categories are expanded to show the following sub-categories and their status:

- OS Processes
- HP Security Products
 - HP Client Security Manager
 - HP Device Access Manager
 - HP Sure Click
- HP Processes
 - HP Notifications
 - HP Hotkey
 - HP 3D DriveGuard Service
 - HP WMI Providers
- 3rd Party Products

Navigation buttons for 'Previous' and 'Next' are located at the bottom right.

3rd Party Products



8.11.3 Supported client platforms

- HP commercial PCs – Intel (KBL-R,800 series and above) , AMD (Ryzen , 700 series)

8.11.4 Supported client operating systems

- Windows 10 RS3 and above.

8.11.5 Other client system prerequisites

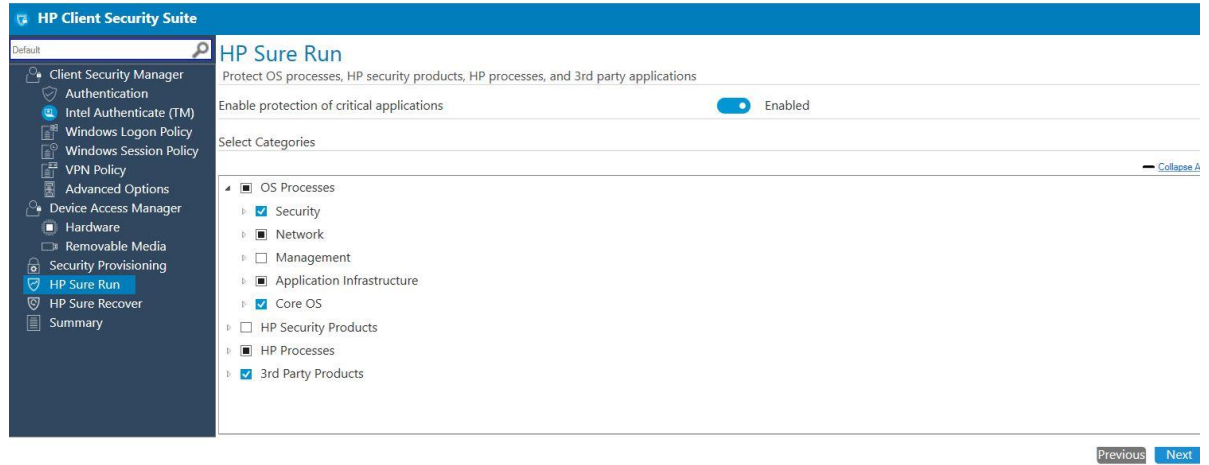
- Microsoft .NET Framework 4.6.1 or higher
- HP Client Security Manager 9.3.11.XXXX or above
- HP MIK Client v2.0.18.1 or higher.

8.11.6 Pre-Requirement

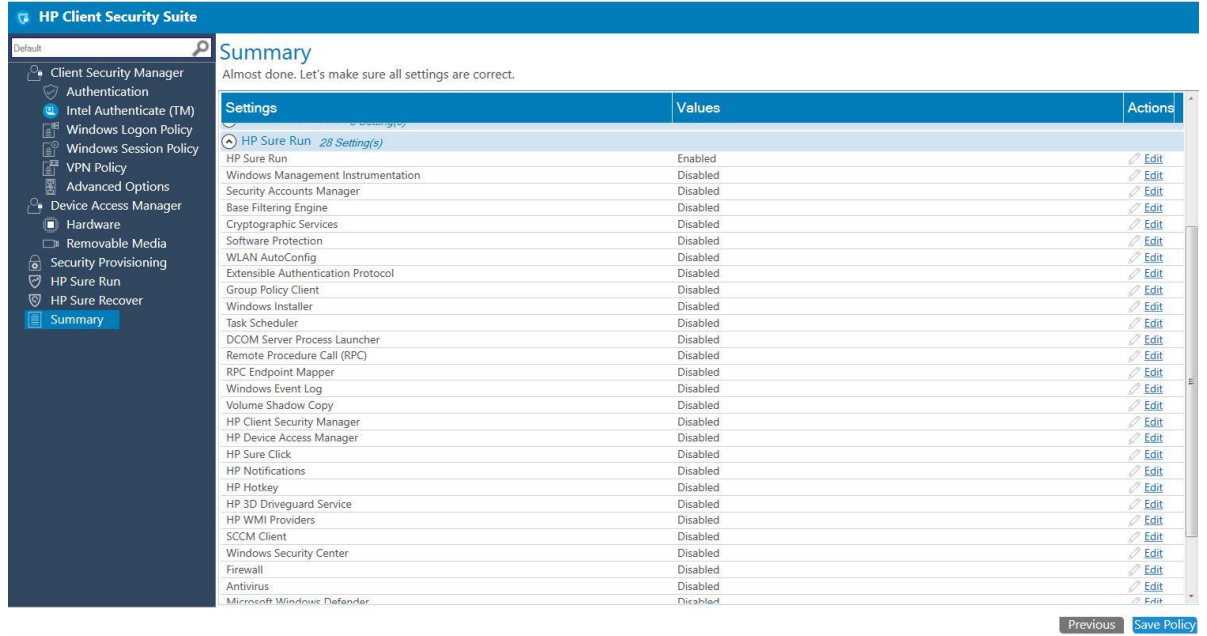
All client systems are provisioned for HP Sure Run Policy to be applied. Please review section on Security Provisioning for details.

8.11.7 Creating a policy

1. In Configuration Manager, select Client Security, and then select Overview.
2. Select HP Manageability Integration Kit, right-click Client Security Manager, and then select Create Policy.
3. Enter a Baseline name and start the creating policy wizard.
4. Navigate to HP Sure Run page. Confirm default selections and modify as needed. Click on Next.



5. On Summary Page under section HP Sure Run selected sub-categories are available for final review and changes. Clicking on edit for any sub-category will re-open HP Sure Run page for policy updates.
6. Select Save Policy.
7. After the policy has been saved successfully, select **Deploy**, and then select the target collection(s) to apply the policy.



8.11.8 Additional information

1. Client system must be rebooted for policy to be applied successfully. In case a policy fails to deploy, an additional reboot may be required.
2. IT Administrator need to ensure selected application[s] installed on client systems. Otherwise end user will see continuous toaster notifications for applications not installed.
3. Any potential malicious activity on client system will result in:
 - o Toaster pop-up displayed to end user.
 - o Equivalent HP Sure Run messages logged in Windows Event Viewer.

8.11.8.1 Uninstalling protected applications

If protected applications are no longer needed, the HP Sure Run configuration must be modified to remove the application from the watch list before uninstalling.

8.11.8.2 Interaction between HP Sure Run and HP Sure Recovery

If an OS recovery is performed using HP Sure Recover, HP Sure Run is automatically disabled following the recovery process and must be reenabled.

8.11.8.3 Resetting or clearing of the TPM will result in HP Sure Run failures

HP Sure Run requires the use of TPM 2.0 to perform signing and decryption operations. When the TPM is reset or cleared any keys that HP Sure Run created will be invalidated and cannot be used. The only way to resolve this is to disable HP Sure Run and then reenable it.

8.12 HP Sure Recover

8.12.1 Overview

HP Sure Recover helps you to restore OS / DVD image over the network with minimal user interaction.

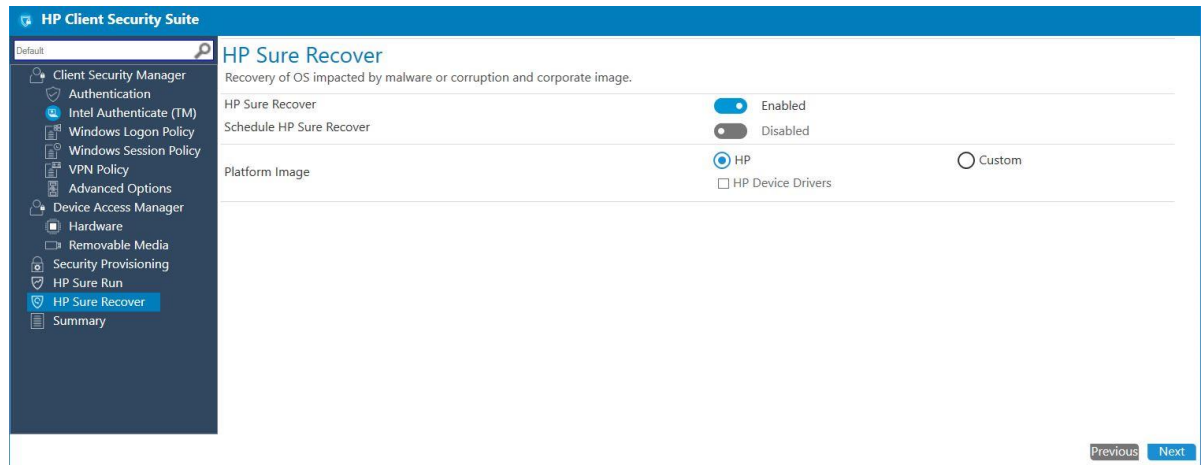
8.12.2 Configuration

Navigate to HP Sure Recover Page. To enable HP Sure Recover select “**Enable**”.

IT Administrator can configure location to download OS image from HP FTP or custom enterprise location.

8.12.2.1 Recovery from HP

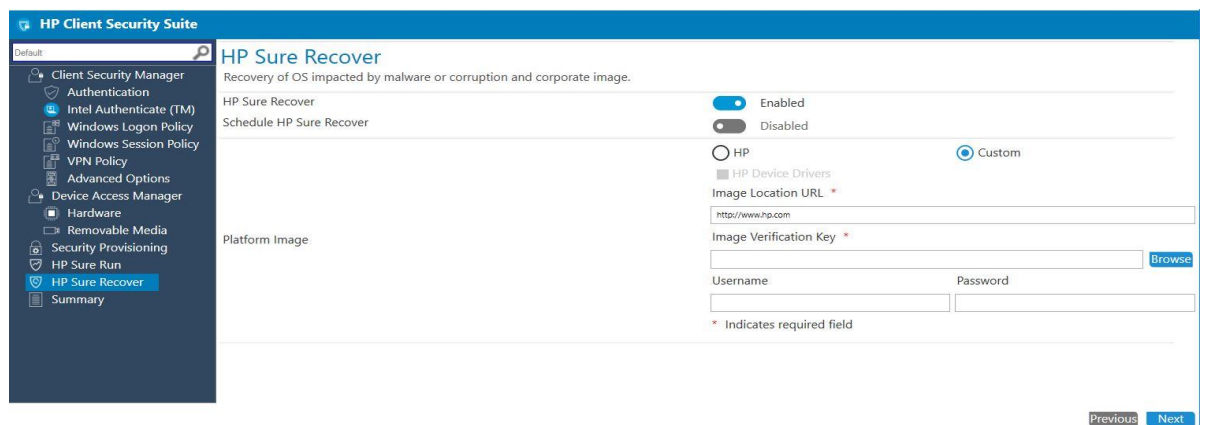
IT Administrator will have HP-recommended policy pre-selected, with ability to modify as needed.



To recover from HP recommended OS (with drivers) image download please select HP Device Drivers checkbox.

8.12.2.2 Custom Recovery

Select Custom option for restore with customized OS image. The IT administrator needs to provide the URL to download the image from and Image verification key for image validation.

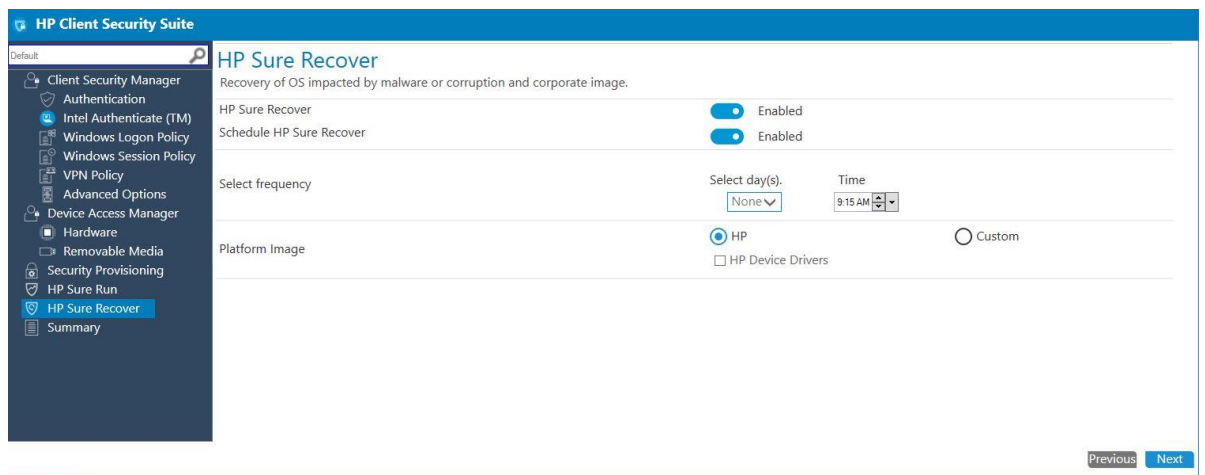


Note

1. Both FTP & HTTP are supported.
2. Username / Password are optional and depend on the way FTP/HTTP accounts are configured.
3. Image Key format supported is .pem / .pfx
4. URL must be provided in following format - example <ftp://abc.ftp.com/<folder>/<name>.mft>. Refer to section #8.12.8 **Additional Information** for details on how to create manifest file.

8.12.2.3 Schedule Recovery on client systems

IT administrator can schedule OS recovery on managed devices by enabling Schedule HP Sure Recover. Recovery can be scheduled for a day or multiple days in a week at a specific time.



8.12.3 Supported client platforms

- HP commercial PCs – Intel (KBL-R, 800 series and above), AMD (Ryzen, 700 series).

8.12.4 Supported client operating systems

- Windows 10 RS3 and above.

8.12.5 Other client system prerequisites

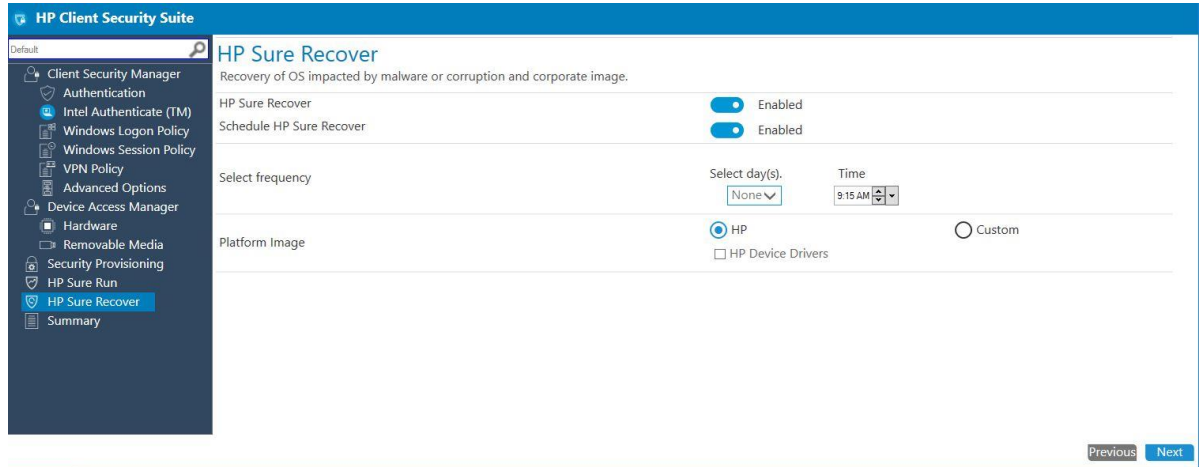
- Microsoft .NET Framework 4.6.1 or higher
- HP Client Security Manager 9.3.11.XXXX or above
- HP MIK client v2.0.18.1 or higher.

8.12.6 Pre-Requisite

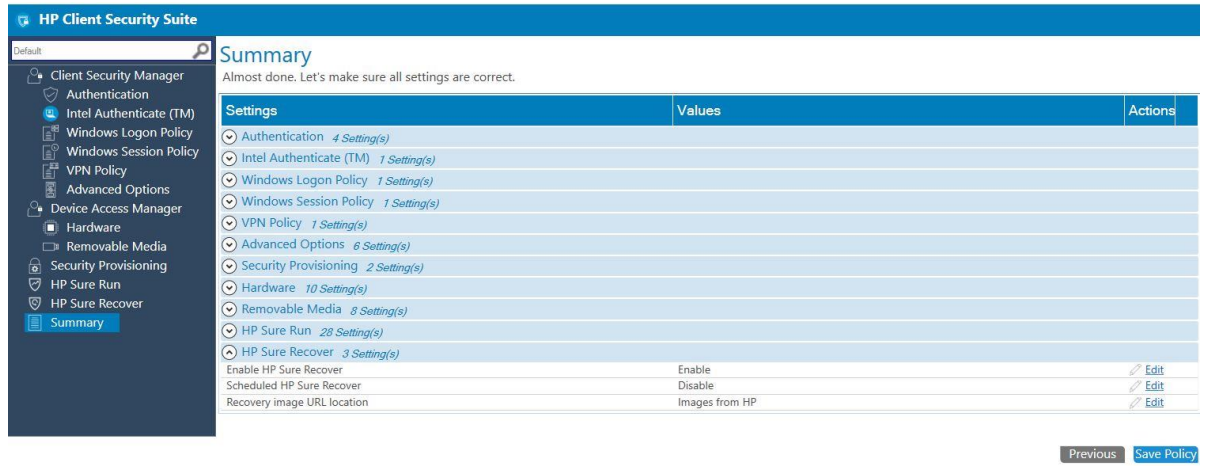
All client systems are provisioned for HP Sure Recover Policy to be applied. Please review section on Security Provisioning for details.

8.12.7 Creating a policy

1. In System Center Configuration Manager, select **HP Manageability Integration Kit**, right-click **Client Security Manager**, and then select **Create Policy**.
2. Navigate to HP Sure Recover Page. Confirm default selections and modify as needed. Click on Next.



3. On Summary Page under section HP Sure Recover selections are available for final review and changes. Clicking edit for any of the item listed will re-open HP Sure Recover page for policy updates.



4. Select Save Policy.

8.12.8 Additional information

1. Client system must be rebooted for policy to be applied successfully. In case a policy fails to deploy, an additional reboot may be required.
2. Steps to generate manifest file

- a. Pre-requisites, access to **sha256sum** tool & **Openssl** tool
- b. Create image manifest file

The manifest format for the custom image is the output of the SHA256SUM.EXE command.

Example:

```
>sha256sum os-drivers.wim > image.mft
>type image.mft
8f161eac8d9197088ad8892e5d529b0287b5a9b8604c546e5a66d8737531c1ab *os-drivers.wim
```

Note:

- i. sha256sum tool available for download online.
 - ii. Your output hash will be certainly different.
- c. Sign the manifest file

Create RSA 2048 bits key pair

```
C:\OpenSSL\bin>openssl.exe dgst -sha256 -sign recovery_private.pem -out image.sig image.mft
```

Note:

- i. The signing key used should match the one used when provisioning CPR, otherwise you are going to get an authentication failure when running the recovery process.
- ii. sha256sum tool available for download online.

8.12.8.1 Interaction between HP Sure Run and HP Sure Recovery

If an OS recovery is performed using HP Sure Recover, HP Sure Run is automatically disabled following the recovery process and must be reenabled.

9 Device Guard (Windows 10 only)

Device Guard is included with Windows 10 and provides hardware- and software-based malware protection, by verifying that applications and drivers are from a trusted source before they are allowed to run. In HP MIK, Device Guard policies provide an easy option for an IT administrator to enable Device Guard.

9.1 Supported client platforms

- HP commercial computers (2015 or later)

9.2 Supported client operating systems

- Windows 10

9.3 Other client system prerequisites

- Microsoft .NET Framework 4.0 or higher
- HP MIK

9.4 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **Device Guard**, and then select **Create Policy**.
3. Enter a **Baseline** name and then follow the on-screen instructions to complete the wizard.
4. Select one of the following options:

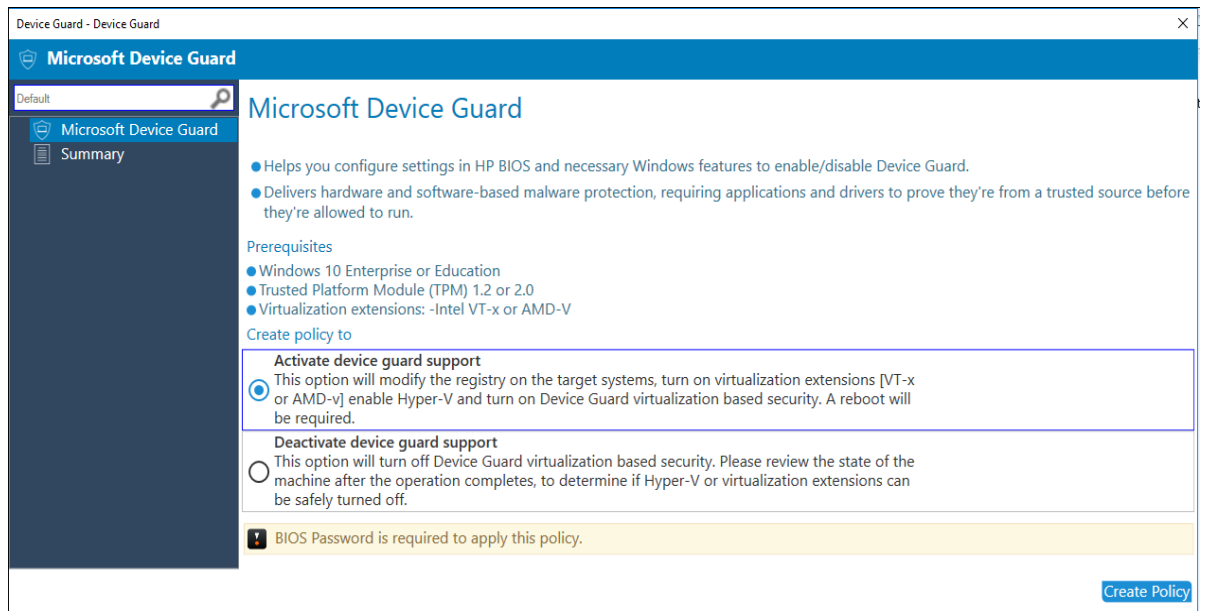


Figure 28 Microsoft Device Guard

- a. **Create a policy to activate device guard support**—Modifies the registry on target systems, enables the virtualization extension, enables Hyper-V, and enables Device Guard virtualization-based security.

The following registry settings are modified:

- i. [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\DeviceGuard]
 1. "EnableVirtualizationBasedSecurity"=dword:00000001
 2. "HypervisorEnforcedCodeIntegrity"=dword:00000001
 3. "RequirePlatformSecurityFeatures"=dword:00000002
- ii. [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Lsa]
 1. "LsaCfgFlags"=dword:00000001

The following Windows features are modified:

- i. Microsoft Hyper-V and Isolated User Mode are enabled.

The following BIOS settings are modified (if they are available on the client computer)

- i. SVM CPU Virtualization is enabled on AMD Platforms
- ii. Virtualization Technology (VTx) is enabled on Intel platforms
- iii. Virtualization Technology for Directed I/O (VTd) is enabled on Intel Platforms
- iv. TPM Device is set to available
- v. TPM State are set to available
- vi. CD-ROM Boot is disabled
- vii. PXE Boot is disabled
- viii. USB Storage Boot is disabled
- ix. Legacy Boot is disabled
- x. UEFI Boot is enabled
- xi. Configure Legacy Boot Support is set to Legacy Support Disable and Secure Boot Enable

- b. **Create policy to deactivate device guard support**—Disables Device Guard virtualization-based security.

Deactivating Device Guard reverts registry settings to their default settings.

- i. Hyper-V is disabled.
- ii. BIOS Virtualization is disabled.

5. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.
6. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.

9.5 Editing policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **Device Guard**, and then select **Edit Policy**.
3. Select an existing baseline policy to edit, and then select **OK**.

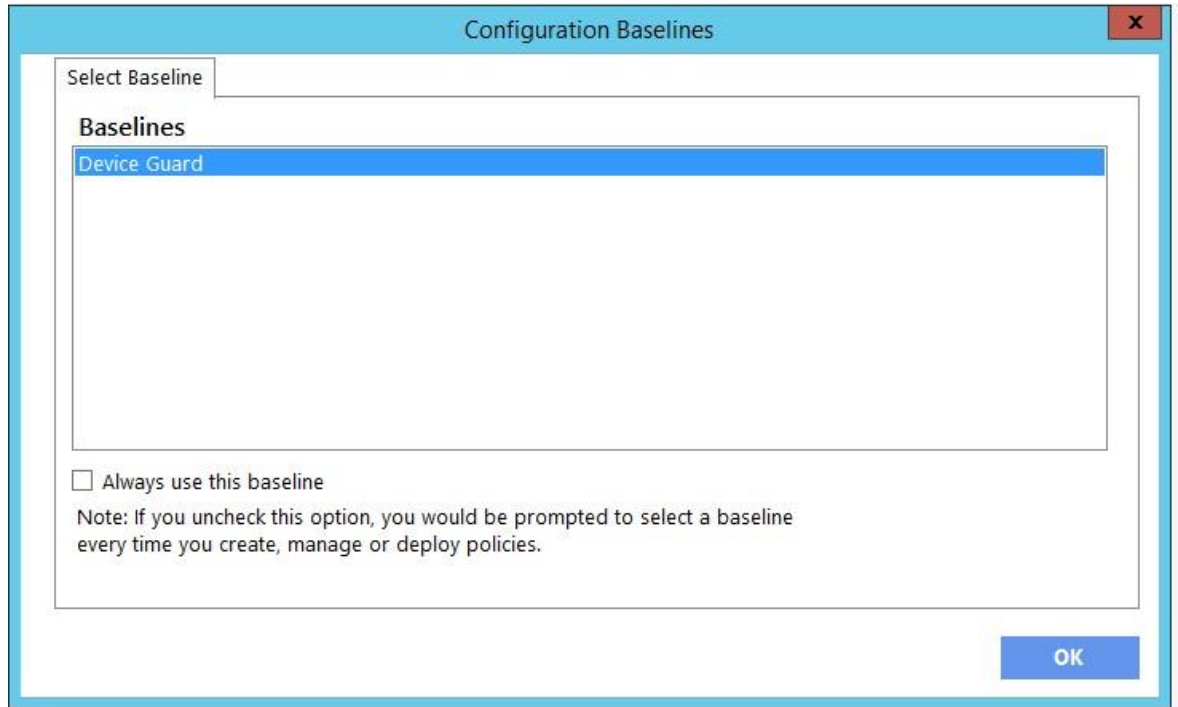


Figure 29 Edit baseline policies

4. Complete the procedure for steps 4 through 6 in Creating a policy.

9.6 Additional information

For client computers, the HP MIK Device Guard policy log is created in `%PROGRAMDATA%\HP\HP MIK\Logs`.

The following error codes might be encountered:

Table 1 Device Guard error code table

| Error code | Description |
|------------|---|
| 0 | OK |
| 1 | Item is not known. There might be an installation error. |
| 2 | Operating system not supported. See the operating system requirements. |
| 3 | CPU/Chipset not supported. See the platform requirements. |
| 4 | Outdated Graphics Driver. Update the graphics driver before attempting the operation again. |

| Error code | Description |
|-------------------|--|
| 5 | Failed to enable BIOS CPU Virtualization |
| 6 | Failed to set BIOS TPM Device as Available |
| 7 | Failed to disable BIOS USB device boot |
| 8 | Failed to disable BIOS PXE boot |
| 9 | Failed to disable BIOS Floppy boot |
| 10 | Failed to disable BIOS CD-ROM boot |
| 11 | Failed to change BIOS Boot Mode to UEFI Native (Without CSM) |
| 12 | Failed to enable BIOS Secure Boot |
| 13 | Failed to set Hyper-V |
| 14 | Failed to set Isolated User Mode |
| 15 | Error in setting Registry value(s) |
| 16 | Failed to modify Windows features |

10 HP Sure Start

HP Sure Start protects the HP BIOS from any malware or virus threat by verifying the integrity of the BIOS when the computer starts or restarts, by default. Additional policies can increase the frequency with which the BIOS is verified and the BIOS event log policy can capture any event.

HP Sure Start policy management in HP MIK allows you to manage policies remotely and ensures the appropriate logging and notification of malicious attacks and security breaches in BIOS and the subsequent repairs.

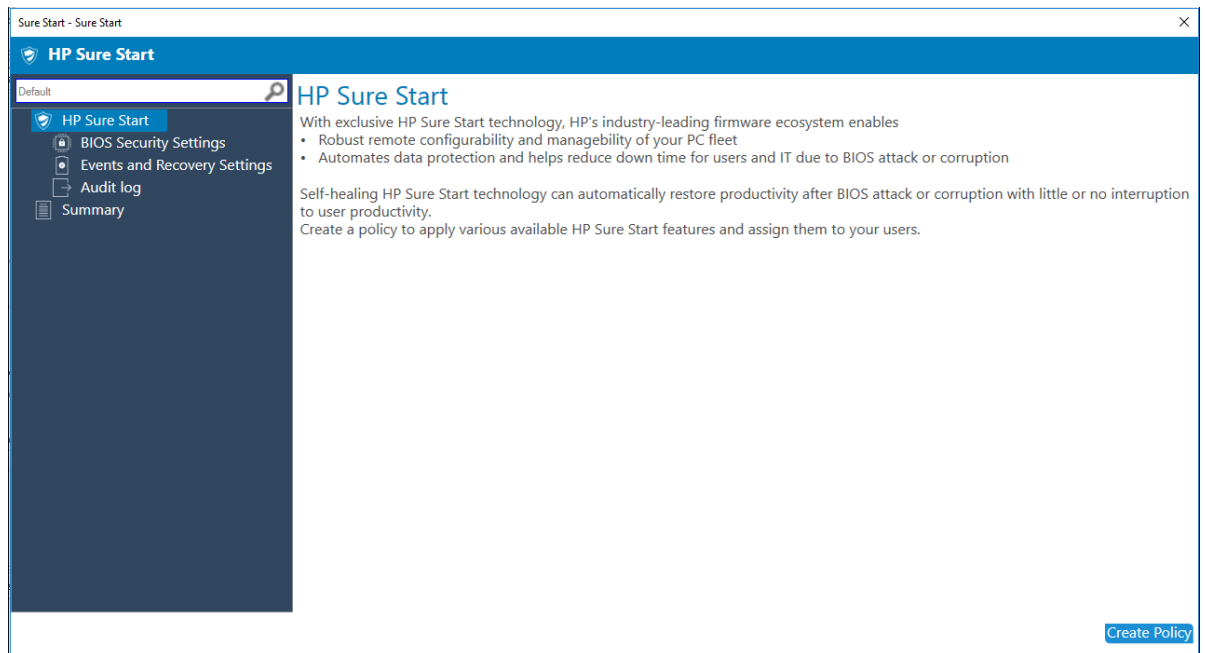


Figure 30 HP Sure Start

10.1 Supported client platforms

- HP 700 series and higher commercial computers (2014 or later)

10.2 Supported client operating systems

- Windows 10
- Windows 8.1
- Windows 7

10.3 Other client system prerequisites

- Microsoft .NET Framework 4.0 or higher
- HP MIK

10.4 User interface

10.4.1 BIOS Security Settings tab

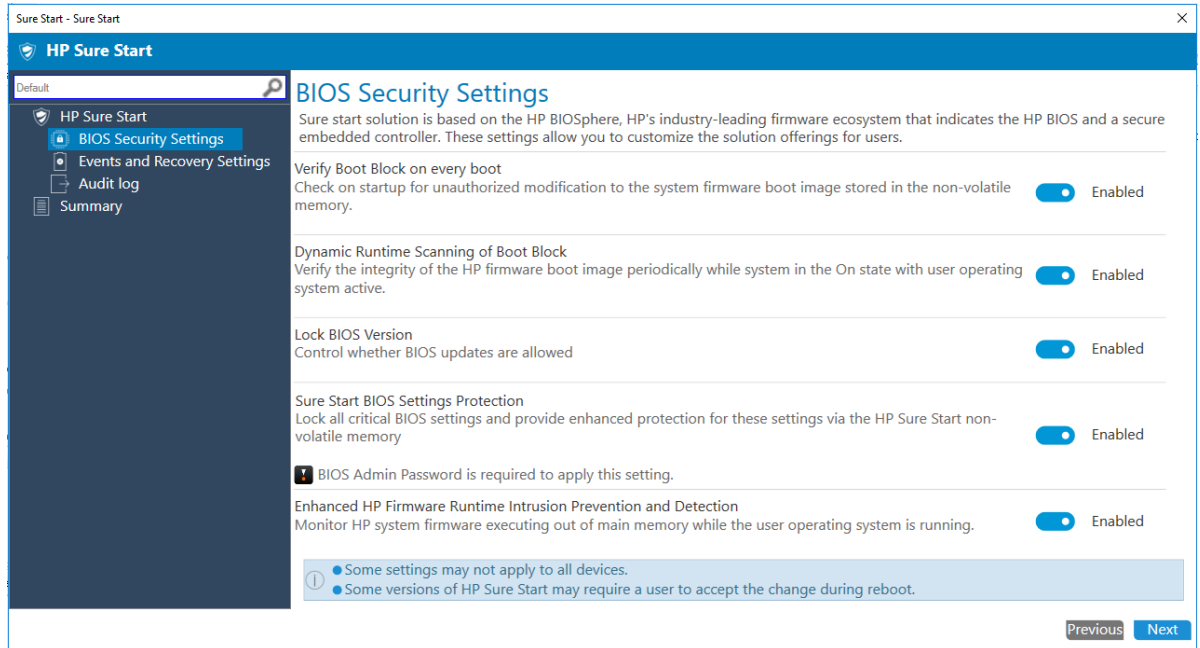


Figure 31 BIOS security settings

- **Verify Boot Block on every boot**—Verifies that authorized modifications to the system boot image are stored in the non-volatile memory.

When enabled, HP Sure Start verifies the integrity of the HP firmware boot image when the computer starts or restarts, or exits Hibernation or Sleep mode. This setting provides higher security, but can increase start time.

When disabled, HP Sure Start verifies the integrity of the HP firmware boot image when the computer starts or exits Hibernation or Sleep mode.
- **Dynamic Runtime Scanning of Boot Block**—Verifies the integrity of the HP boot image periodically while the computer is on and the operating system is running.

When enabled, HP Sure Start verifies the integrity of the HP boot image every 15 minutes.
- **Lock BIOS Version**—Disables BIOS updates.
- **Sure Start BIOS Setting Protection**—Disables changes to all critical BIOS settings and provides enhanced protection for these settings via the HP Sure Start non-volatile memory.

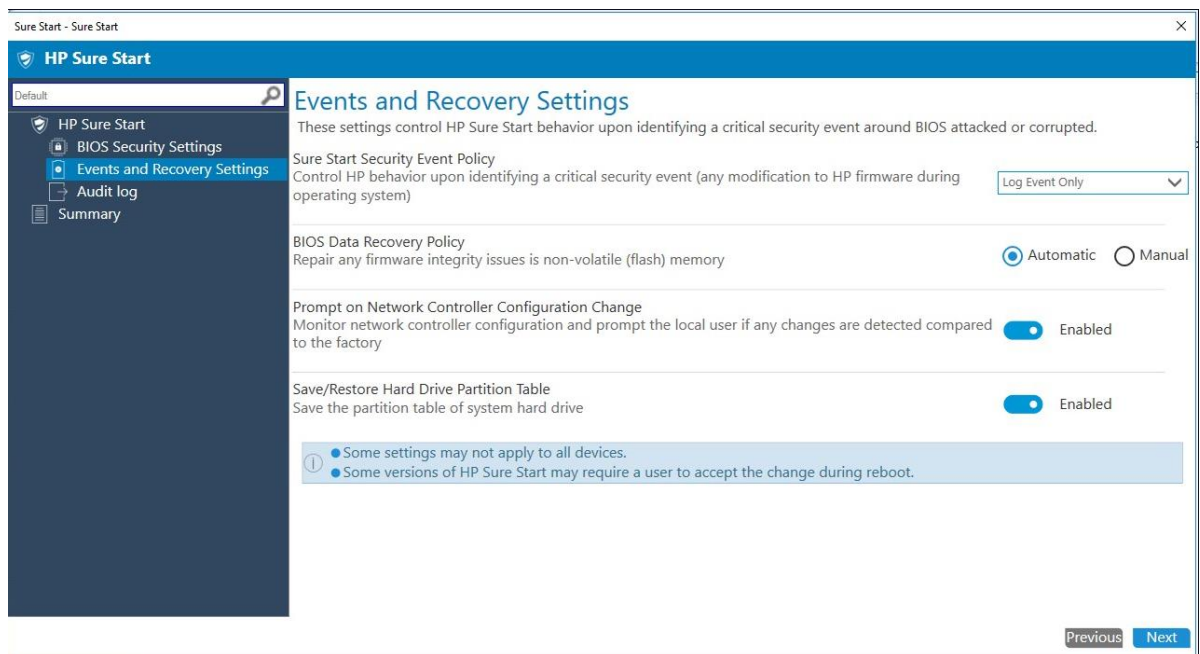
The BIOS administrator password is required to enable this setting.
- **Enhanced HP Firmware Runtime Intrusion Prevention and Detection**—Monitors HP system firmware executing out of main memory while the operating system is running.

10.4.2 Events and Recovery Settings tab

These setting control HP Sure Start behavior after a critical security event, such as the BIOS being attacked or corrupted, is identified.

Figure 32 Events and Recovery Settings

- **Sure Start Security Event Policy**—Select **Log Event Only** to log all critical security events in the HP Sure Start Audit Log within the HP Sure Start non-volatile memory. Select **Log Event and Power Off System** to power off the system after detecting and logging a HP Sure Start Security Event. Because data might be lost, HP recommends using this setting only in situations where security integrity of the system is a higher priority than the risk of potential data loss.
- **BIOS Data Recovery Policy**—Select **Automatic** to automatically repair any firmware integrity issues in the non-volatile (flash) memory. Select **Manual** to repair firmware integrity issues when the **Esc+Windows+Up Arrow+Down Arrow** key combination is pressed. HP recommends this setting for IT administrators only.
- **Prompt on Network Controller Configuration Change**—Monitors the network controller configuration and prompts the local user if any changes are detected compared to the factory configuration.
- **Save/Restore Hard Drive Partition Table**—Saves the Master Boot Record (MBR) or the GUID Partition Table (GPT) of the system hard drive.



10.4.3 Audit Log tab

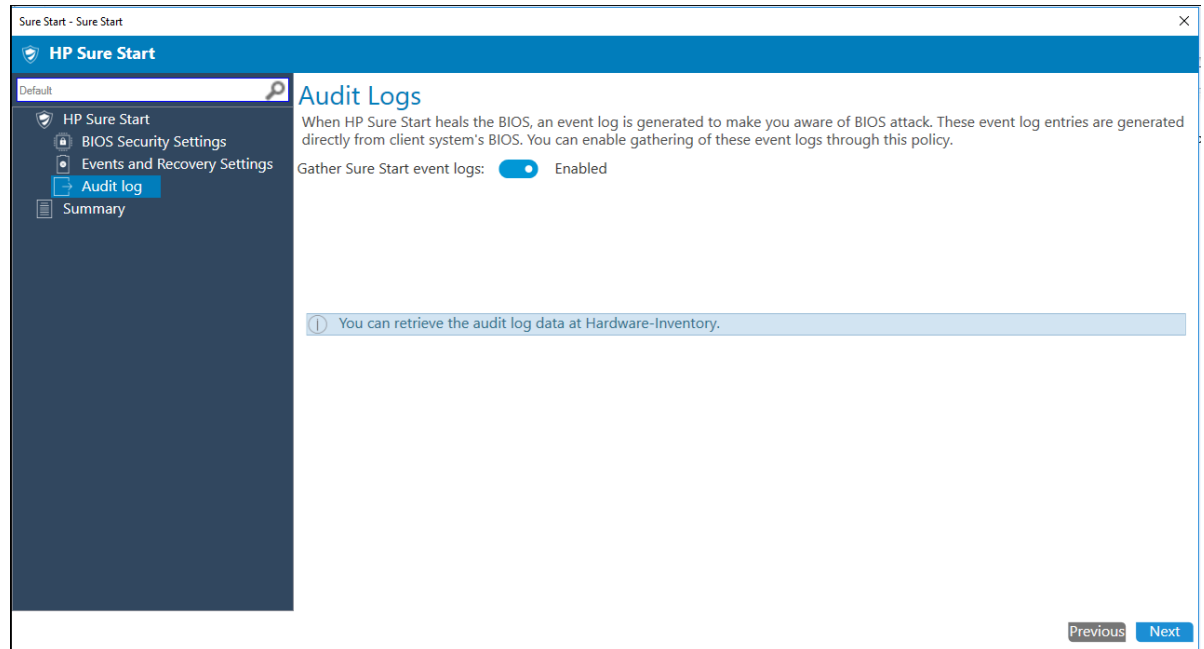


Figure 33 HP Sure Start Audit Log

If Gather Sure Start event logs is select, HP MIK retrieves HP Sure Start event logs from the client computers and stores them in the Configuration Manager hardware inventory.

10.5 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **Sure Start**, and then select **Create Policy**.
3. Enter a **Baseline** name, and then select **Start Policy**.

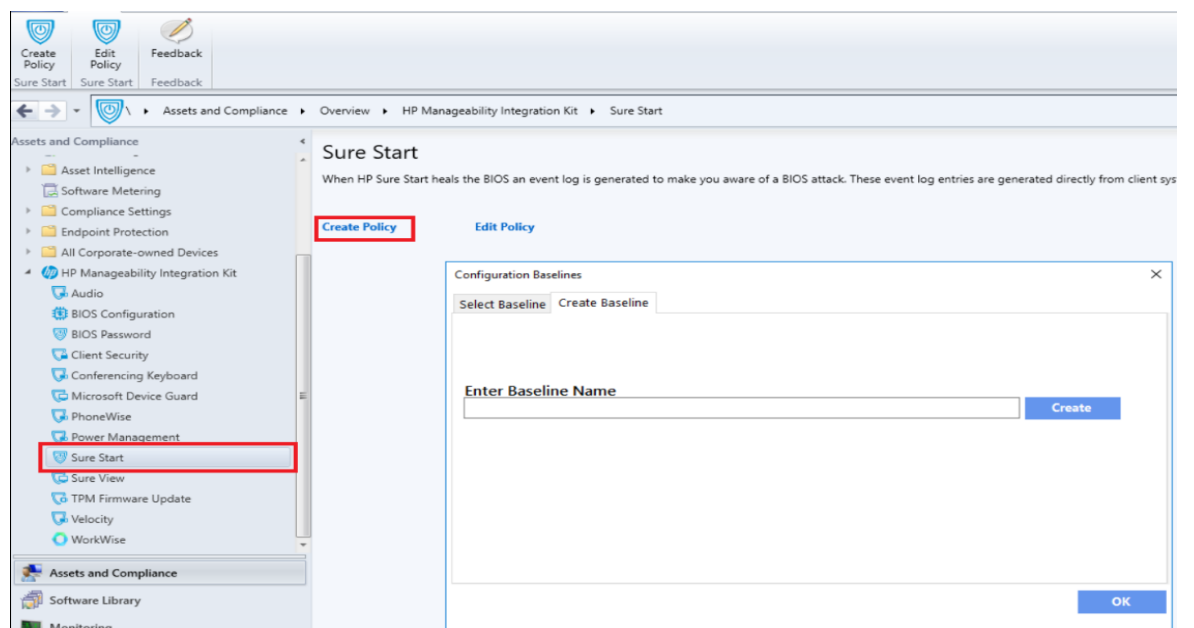
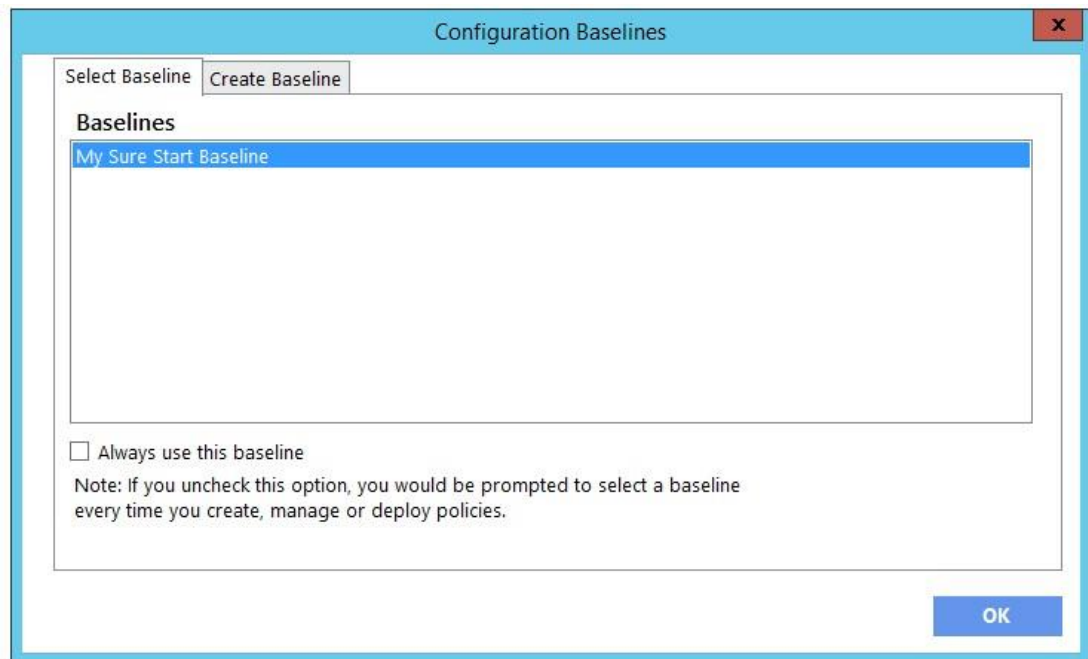


Figure 34 HP Sure Start Policy Configuration

4. Modify the settings, and then click **Next**.
5. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.
6. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.

10.6 Editing a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **Sure Start**, and then select **Edit Policy**.



3. Select an existing baseline policy to edit and select **OK** to continue the wizard.

Figure 35 Configure Sure Start Baselines

4. Complete the procedure for steps 4 through 6 in Creating a policy.

10.7 Additional information

Not all features are supported on all systems.

Certain systems might require a manual action to restart after a configuration change.

10.7.1 Audit logs

For client computers, the HP MIK Sure Start policy log is created in %PROGRAMDATA%\HP\HP MIK\Log.s.

If enabled, HP MIK retrieves HP Sure Start logs as part of the Configuration Manager hardware inventory.

To view the audit log entries:

1. In Configuration Manager, select **Assets and Compliance**, select **Overview**, and then select **Devices**.
2. Right-click a device, select **Start**, and then select **Resource Explorer**.
3. Select **Hardware**, and then select **HP Sure Start Audit Logs**.

| Account | Date | Data 2 | Data 3 | Data 4 | Device | Event ID | Int. | H. | P. | Severity | Source ID | Status | S | Fact |
|---------|------|--------|--------|--------|----------|---------------|------|----|----|----------|-----------|--------|---|--|
| 1 | 253 | 0 | 0 | 0 | HP_Su_49 | FADP5B79-0000 | 0 | H. | 0 | 3 | 254 | 2 | | System was taken out of manufacturing programming mode. |
| 1 | 249 | 0 | 0 | 0 | HP_Su_30 | FADP5B79-0001 | 0 | H. | 0 | 3 | 254 | 0 | | Sure Start found the primary BIOS in altered flash memory is either corrupted or missing. Possible causes include but not limited to interrupted BIOS updates or recent BIOS attack. |
| 0 | 252 | 0 | 0 | 0 | HP_Su_35 | FADP5B79-0002 | 0 | H. | 0 | 3 | 254 | 2 | | Sure Start has updated the backup copy of BIOS. |
| 0 | 252 | 0 | 0 | 0 | HP_Su_30 | FADP5B79-0003 | 0 | H. | 0 | 3 | 254 | 2 | | Sure Start found that backup and primary copy of BIOS do not match. |
| 1 | 253 | 0 | 0 | 0 | HP_Su_48 | FADP5B79-0004 | 0 | H. | 0 | 3 | 254 | 2 | | System was placed in manufacturing programming mode. |
| 1 | 253 | 0 | 0 | 0 | HP_Su_49 | FADP5B79-0005 | 0 | H. | 0 | 3 | 254 | 2 | | System was taken out of manufacturing programming mode. |
| 1 | 253 | 0 | 0 | 0 | HP_Su_48 | FADP5B79-0006 | 0 | H. | 0 | 3 | 254 | 2 | | System was placed in manufacturing programming mode. |
| 1 | 253 | 0 | 0 | 0 | HP_Su_49 | FADP5B79-0007 | 0 | H. | 0 | 3 | 254 | 2 | | System was taken out of manufacturing programming mode. |
| 1 | 253 | 0 | 0 | 0 | HP_Su_48 | FADP5B79-0008 | 0 | H. | 0 | 3 | 254 | 2 | | System was placed in manufacturing programming mode. |
| 0 | 252 | 0 | 0 | 0 | HP_Su_35 | FADP5B79-0009 | 0 | H. | 0 | 3 | 254 | 2 | | Sure Start has updated the backup copy of BIOS. |
| 0 | 252 | 0 | 0 | 0 | HP_Su_31 | FADP5B79-0010 | 0 | H. | 0 | 3 | 254 | 2 | | Sure Start found the backup BIOS is either corrupted or missing. Possible causes include but not limited to interrupted BIOS updates. |

Figure 36 HP Sure Start Audit Logs

11 HP Sure View

11.1 Overview

HP Sure View eliminates the need to carry additional tools to guard sensitive information. Users simply press the fn+F2 key to immediately transition the PC to privacy mode, which reduces up to 95 percent of visible light when viewed at an angle, making it difficult for others to view information on the screen.

11.2 Supported Client Platforms

- HP EliteBook 840 G3
- HP EliteBook 1040 G3

11.3 Supported client operating systems

- Windows 10
- Windows 8.1
- Windows 7

11.4 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.

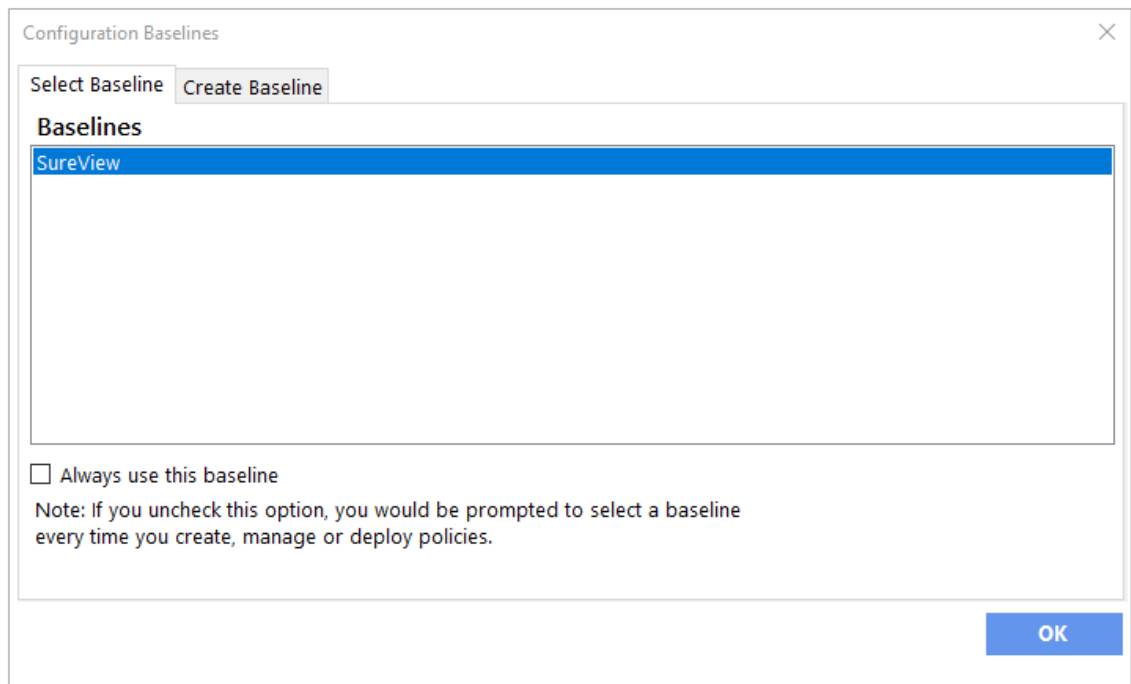


Figure 37 HP SureView Baseline configuration

2. Select **HP Manageability Integration Kit**, right-click **SureView**, and then select **Create Baseline**.
3. Enter a **Baseline** name, and then click 'OK' to save the Baseline with that name.
4. HP Sure View will be enabled by default.

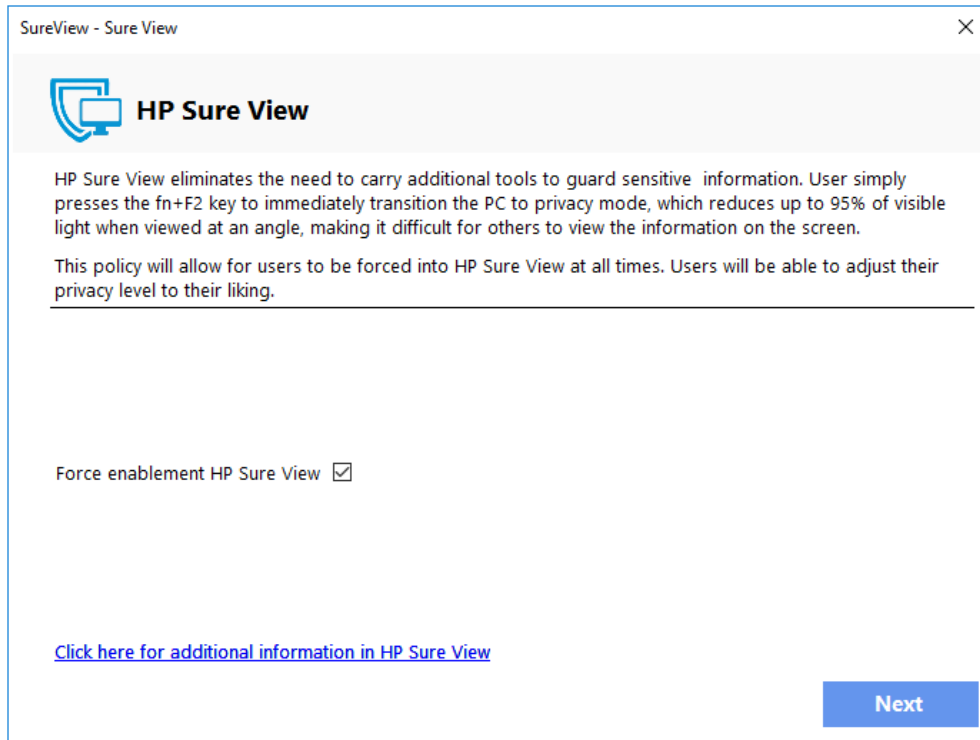


Figure 38 HP Sure View

5. Click 'Next' and save the policy. Then select the collection the policy should be applied to.

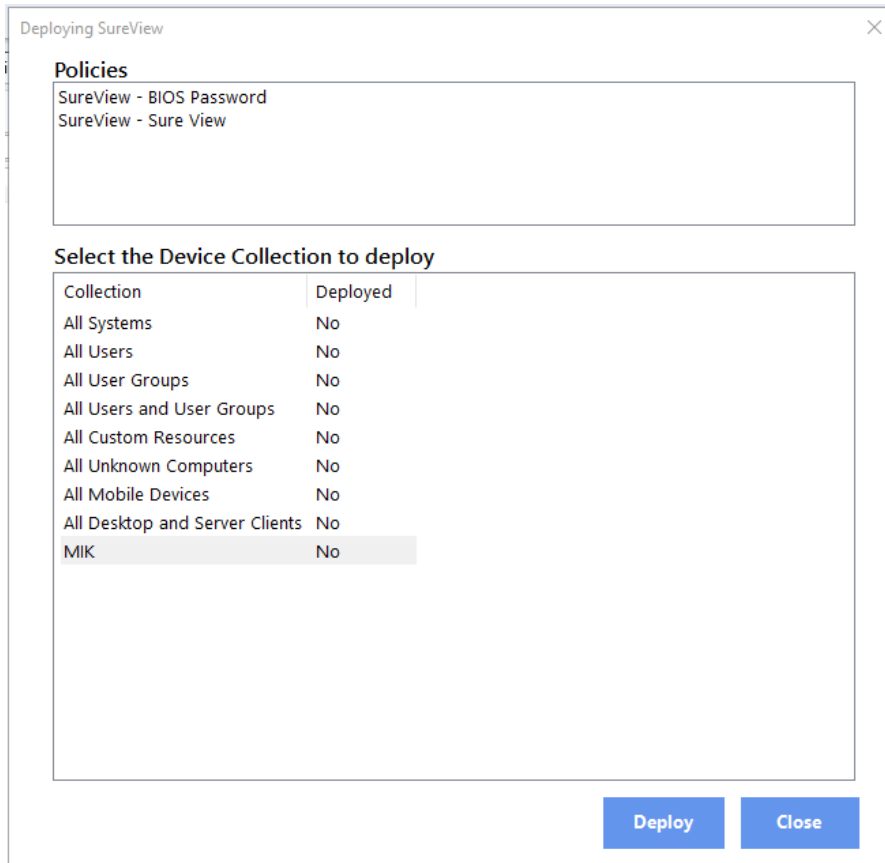


Figure 39 Deploy a Device Collection

6. Click 'Deploy' to apply the policy to the client systems within the collection.

11.5 Editing a policy

1. In **Configuration Manager**, select the policy you want to edit.

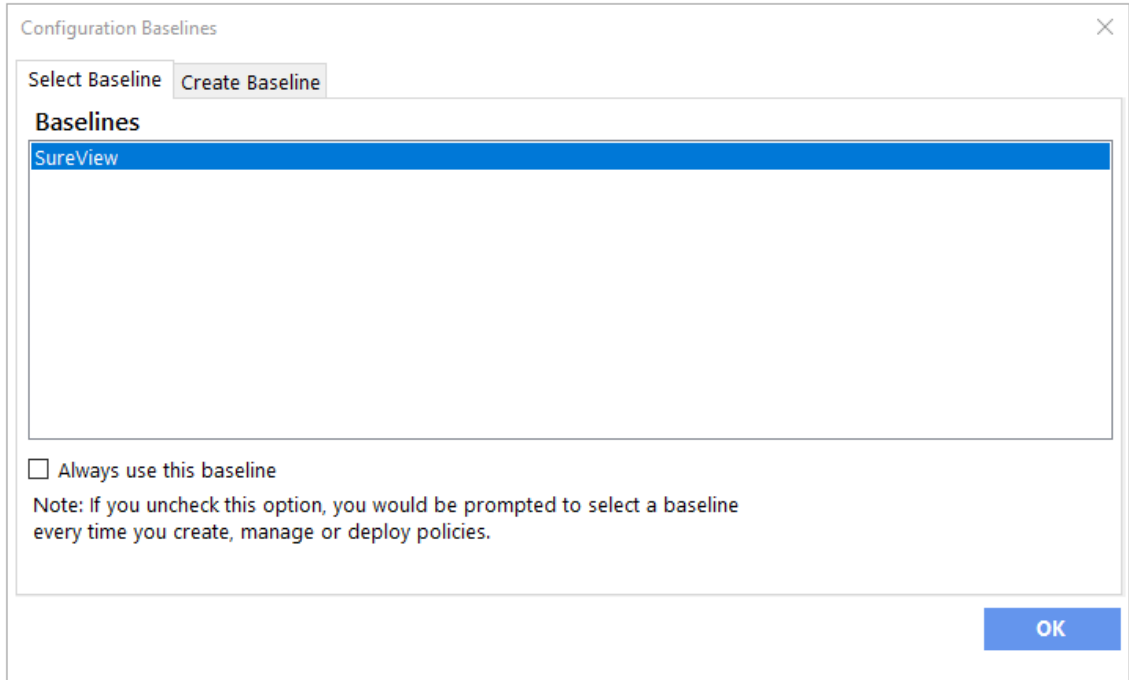


Figure 40 HP SureView baselines

2. Select **HP Manageability Integration Kit**, right-click **SureView**, and then select **Edit Policy**.
3. Make any necessary changes, and then click 'OK' to save the policy with that name.

12 TPM Firmware Update

The TPM firmware update policy helps perform the following actions:

- Upgrading from an older TPM 1.2 firmware to a newer TPM 1.2 firmware
- Upgrading from an older TPM 2.0 firmware to a newer TPM 2.0 firmware
- Converting from TPM 1.2 to TPM 2.0
- Converting from TPM 2.0 to TPM 1.2

12.1 Supported client platforms

12.1.1 Desktop computers:

- HP EliteDesk 705 G2 Desktop Mini PC
- HP EliteDesk 800 35W G2 Desktop Mini PC
- HP EliteDesk 800 65W G2 Desktop Mini PC
- HP EliteDesk 800 G2 Small Form Factor PC
- HP EliteDesk 800 G2 Tower PC
- HP EliteOne 800 G2 23-inch Non-Touch All-in-One PC
- HP EliteOne 800 G2 23-inch Touch All-in-One PC
- HP ProDesk 400 G2 Desktop Mini PC
- HP ProDesk 400 G3 Microtower PC
- HP ProDesk 400 G3 Small Form Factor PC
- HP ProDesk 480 G3 Microtower PC
- HP ProDesk 490 G3 Microtower PC
- HP ProDesk 498 G3 Microtower PC
- HP ProDesk 600 G2 Desktop Mini PC
- HP ProDesk 600 G2 Microtower PC
- HP ProDesk 600 G2 Small Form Factor PC
- HP ProOne 400 G2 20-inch Non-Touch All-in-One PC
- HP ProOne 400 G2 20-inch Touch All-in-One PC
- HP ProOne 600 G1 All-in-One PC
- HP ProOne 600 G2 21.5-inch Non-Touch All-in-One PC
- HP RP9 G1 Retail System Model 9015
- HP RP9 G1 Retail System Model 9018

12.1.2 Notebook computers:

- HP EliteBook 1030 G1 Notebook PC
- HP EliteBook 1040 G3 Notebook PC

- HP EliteBook 725 G3 Notebook PC
- HP EliteBook 745 G3 Notebook PC
- HP EliteBook 755 G3 Notebook PC
- HP EliteBook 820 G3 Notebook PC
- HP EliteBook 840 G3 Notebook PC
- HP EliteBook 850 G3 Notebook PC
- HP EliteBook Folio G1 Notebook PC
- HP Elite x2 1012 G1
- HP ProBook 430 G3 Notebook PC
- HP ProBook 440 G3 Notebook PC
- HP ProBook 450 G3 Notebook PC
- HP ProBook 455 G3 Notebook PC
- HP ProBook 470 G3 Notebook PC
- HP ProBook 640 G2 Notebook PC
- HP ProBook 645 G2 Notebook PC
- HP ProBook 650 G2 Notebook PC
- HP ProBook 655 G2 Notebook PC
- HP ZBook 15 G3 Mobile Workstation
- HP ZBook 17 G3 Mobile Workstation
- HP ZBook Studio G3 Mobile Workstation

12.2 Supported client operating systems

- Windows 10
- Windows 8.1
- Windows 7 (TPM 1.2 only)

12.3 Other client system prerequisites

- Infineon SLB9670 TPM chip
- Latest commercial BIOS
- Microsoft .NET Framework 4.0 or higher.
- HP MIK

12.4 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **TPM Firmware Update**, and then select **Create Policy**.
3. Enter a **Baseline** name, and then follow the on-screen instructions to complete the wizard.
4. Select the target TPM version, and then select **Create Policy**. See [Additional information](#) for warnings and limitations.

HP Trusted Platform Module Firmware Update

A TPM (Trusted Platform Module) processor provides basic security-related functions, primarily related to the creation or secure storage of platform measurements, certificates, and encryption keys.

This policy will provide the users the ability to update Trusted Platform Module (TPM) firmware from version 1.2 to version 2.0 and also move from version 2.0 to version 1.2.

Which version of the firmware do you want to move to?

Version 2.0

TPM Firmware Version 2.0

TPM 2.0 enables greater crypto agility by being more flexible with respect to cryptographic algorithms. TPM 2.0 also offers a more consistent experience across different implementations. Overall, TPM 2.0 products and systems have important security advantages over TPM 1.2.

Create Policy

Figure 41 HP Trusted Platform Module Firmware Update

5. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.
6. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.

12.5 Editing a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **BIOS Configuration**, and then select **Edit Policy**.
3. Select an existing baseline policy to edit, and then select **OK** to continue the wizard.

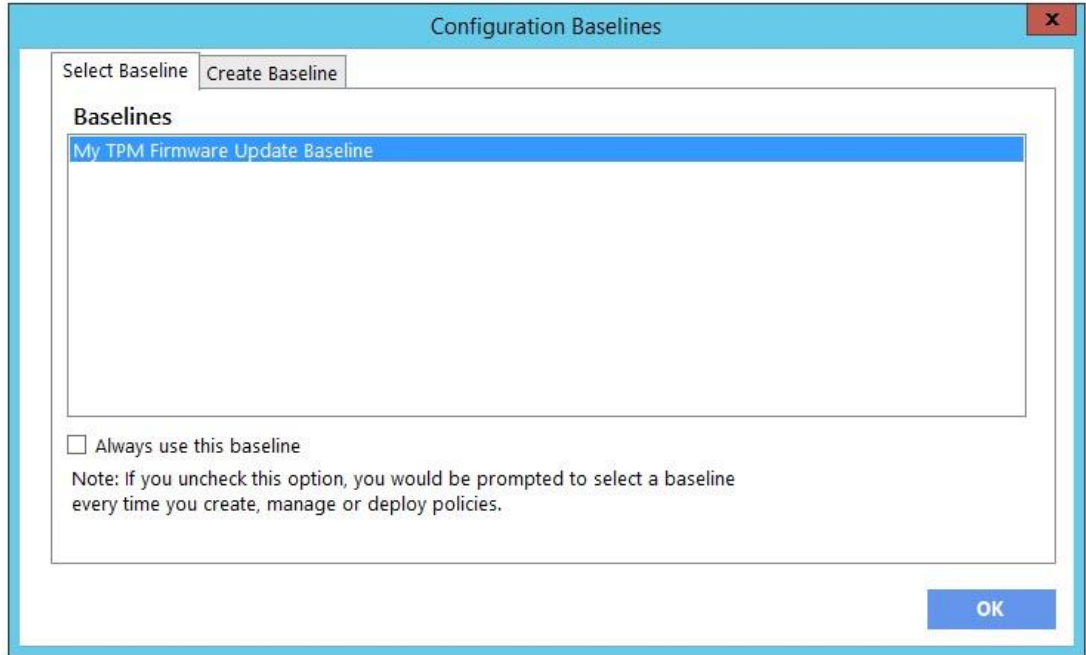


Figure 42 HP TPM Firmware Update Baseline

4. Complete the procedure for steps 4 through 6 in Creating a policy.

12.6 Additional information

WARNING!

To avoid a complete loss of data, the primary drive must be in a decrypted state before pushing this policy. The policy has a built-in check for BitLocker and WinMagic disk encryption solutions only. If BitLocker or WinMagic drive encryption is used, the policy exits with an appropriate error code logged. The policy does not detect other disk encryption solutions.

TPM can be converted between TPM 1.2 and TPM 2.0 up to a maximum of 64 times.

Converting TPM involves potentially upgrading to a newer TPM firmware. The following rules govern this operation:

- If the system has TPM 1.2 and the target is TPM 2.0, TPM 2.0 is enabled and upgraded with the latest firmware version.
- If the system has TPM 2.0 and the target is TPM 1.2, TPM 1.2 is enabled and upgraded with the latest firmware version.
- If the system has TPM 1.2 and the target is TPM 1.2, TPM 1.2 is upgraded to the latest firmware version.
- If the system has TPM 2.0 and the target is TPM 2.0, TPM 2.0 is upgraded to the latest firmware version.
- This procedure requires a manual action to complete the reboot.

13 HP WorkWise (Windows 10 only)

HP WorkWise is a smartphone-to-computer integrated HP app that helps you secure, monitor, and simplify your PC experience.

Users can download apps from the Microsoft app store, but IT administrators can specify which features are available on the client computers.

13.1 Supported client platforms

- HP commercial computers (2016 or later)

13.2 Client system prerequisites

- Windows 10 Anniversary Update
- Microsoft .NET Framework 4.0 or higher.

The HP WorkWise software must be installed on the client computers. For app-specific requirements, see the HP WorkWise documentation.

13.3 User interface

The user interface for this app allows you to enable or disable the HP WorkWise features.

HP WorkWise

Computer application software that enables users of personal computers to maximize device functionality use.

All Features

Security

| | | |
|------------------|-------------------------------------|---------------------------|
| Lock/Unlock | <input checked="" type="radio"/> On | <input type="radio"/> Off |
| Tamper Detection | <input checked="" type="radio"/> On | <input type="radio"/> Off |

Performance

| | | |
|--------------------|-------------------------------------|---------------------------|
| PC Dashboard | <input checked="" type="radio"/> On | <input type="radio"/> Off |
| Hot PC remediation | <input checked="" type="radio"/> On | <input type="radio"/> Off |

Printer

| | | |
|--------------------------|-------------------------------------|---------------------------|
| Printer Driver Installer | <input checked="" type="radio"/> On | <input type="radio"/> Off |
|--------------------------|-------------------------------------|---------------------------|

Create Policy

Figure 43 HP WorkWise Feature Selection

- **All Features**—Select to enable all features.
- **Security**—Select to enable both Lock/Unlock and Tamper Detection.
- **Performance**—Select to enable the computer performance monitoring features, PC Dashboard and Hot PC remediation.
- **Printer**—Select to enable Printer Driver Installer.

13.4 Creating a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.
2. Select **HP Manageability Integration Kit**, right-click **HP WorkWise**, and then select **Create Policy**.
3. Enter a **Baseline** name, and then follow the on-screen instructions to complete the policy wizard.
4. Modify the settings.
5. Review the **Summary** page. If changes are necessary, select the **Previous** button; otherwise, select **Save Policy**.
6. After the policy has been saved successfully, select **Deploy**, and then select the target collections to which to apply the policy.

13.5 Editing a policy

1. In Configuration Manager, select **Assets and Compliance**, and then select **Overview**.

2. Select **HP Manageability Integration Kit**, right-click **HP WorkWise**, and then select **Edit Policy**.
3. Select an existing baseline policy to edit and select **OK** to continue the wizard.

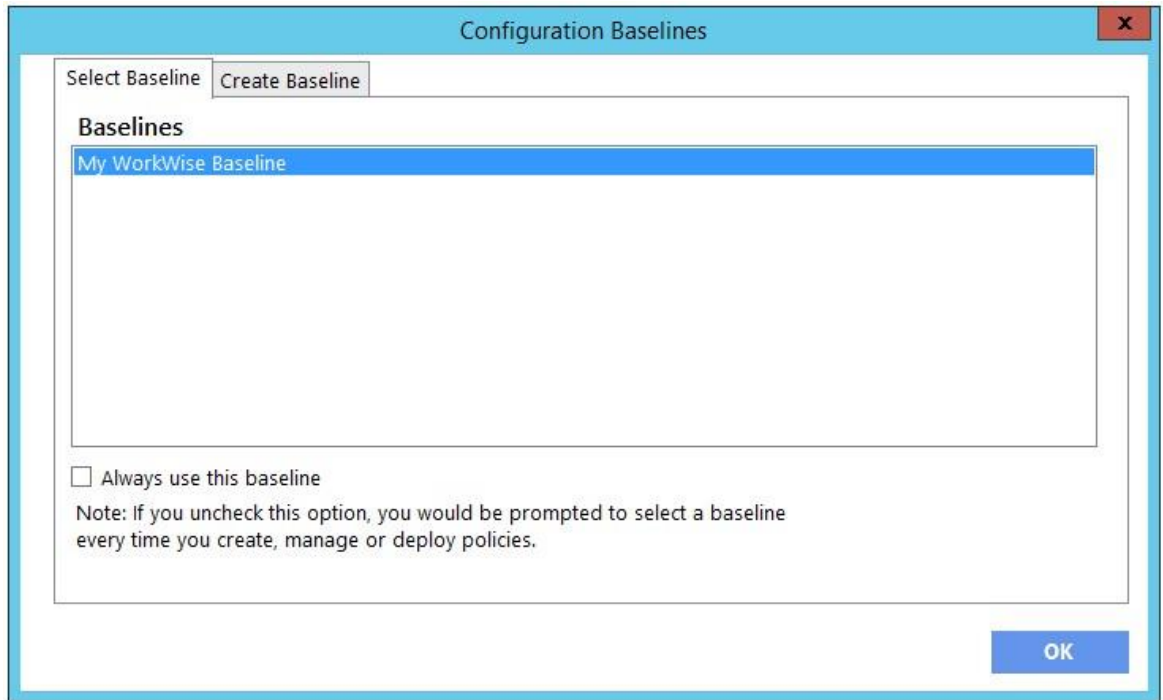


Figure 44 HP WorkWise Baseline configuration

4. Complete the procedure for steps 4 through 6 in Creating a policy.

14 HP Client Driver Packs

14.1 Creating and importing an HP driver pack

The Create and Import HP Client Driver Pack option displays the drivers for supported HP products. This works similarly to the option previously available with HP CIK.

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Operating Systems**, and then select **Driver Packages**.
2. Select **HP Client PCs**, and then select **Create and Import HP Client Driver Pack**. The Create and Import HP Client Driver Pack wizard is displayed.
3. Select the **Operating system**.
4. Only the products that support driver-pack creation are displayed in the **Available products** column. Optionally, enter keywords into the **HP product name** box, and then press **Enter** to filter the list of available products.
5. Select an available product, and then select the right-arrow button to add the product to the **Selected products** column.
6. Repeat step 5 to select another product, as necessary. HP recommends selecting products of the same family model to create a driver pack with the optimal relevant drivers. Also, HP recommends selecting no more than five products per driver pack.

For example, you might select HP ProBook 640 G1 Notebook PC and HP ProBook 650 G1 Notebook PC to create an HP ProBook 600 series G1 Notebook PC driver pack.

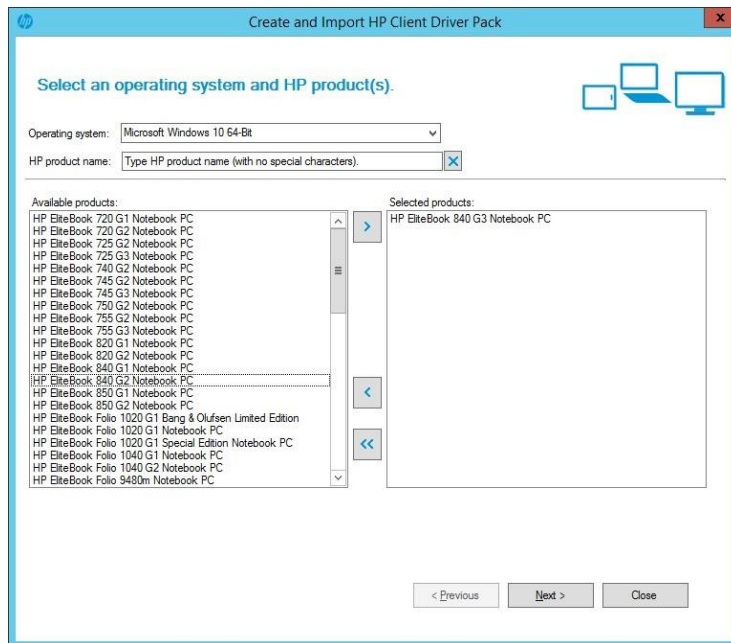


Figure 45 HP Client Driver Pack selection

7. Click **Next**.
8. By default, the **Create driver package with the selected drivers below** import option is selected. This creates a driver package for the selected drivers.
 - a. Enter a **Name** for the driver package. Enter a **Version** and a **Comment**, if necessary.
 - b. Under drivers, verify that the drivers to include in the driver package are selected and be sure that all other drivers are cleared.

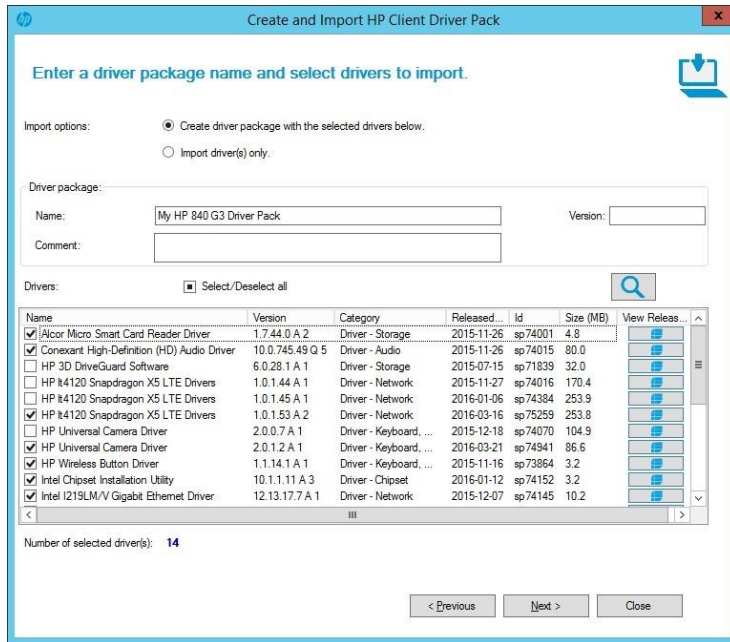


Figure 46 HP Client Driver Pack Create and Import

– Or –

To import drivers to auto apply or to create a driver pack later, select the **Import driver(s) only** import option. By default, the **Driver category** for imported drivers is **HP Client Driver**. Select a different driver category, if necessary.

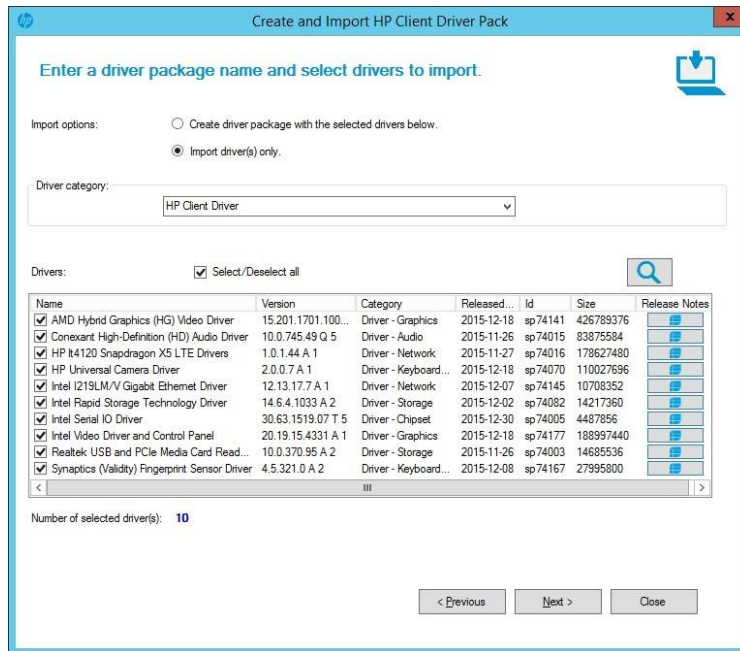


Figure 47 HP Client Driver Pack Driver Selection

9. Click **Next**.

10. If you are creating a driver package, configure the distribution points and network shares as follows:

- a. Select the **Distribution point(s)** to assign the driver pack to specific destinations. Cloud distribution points are not supported.
- b. Select the location for Configuration Manager to save the **Drivers** and **Driver package(s)**. Be sure that the specified locations have sufficient rights to be accessed by all necessary user accounts.

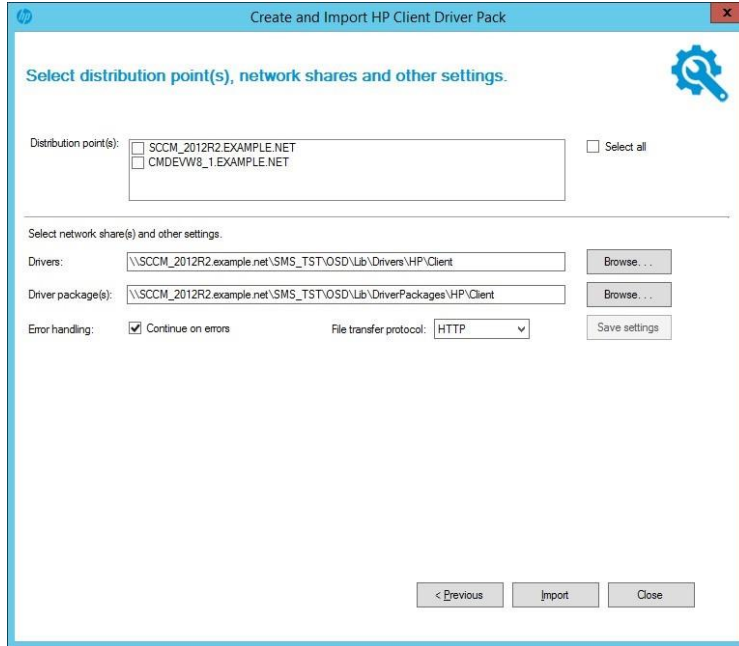


Figure 48 HP Client Driver Pack Distribution Point, Network Shares, and other settings

11. If you are importing drivers only, select the location for Configuration Manager to save the **Drivers**. Be sure that the specified location has sufficient rights to be accessed by all necessary user accounts.

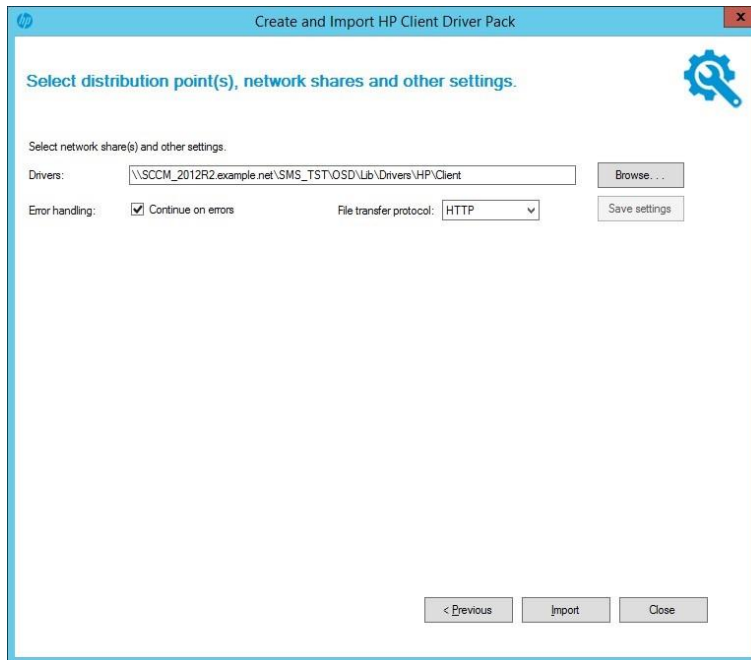


Figure 49 HP Client Driver Pack Distribution Points, Network Shares, and other settings

12. If you require the import to stop when an error is encountered, clear the **Continue on errors** option. By default, this box is selected. When multiple drivers are selected, the next selected drivers are imported if the current driver fails to import.

13. By default, HP MIK uses Hypertext Transfer Protocol (HTTP) to download the selected drivers. If necessary, select **FTP**.
14. Any change to the settings in **Select network share(s) and other settings** enables the **Save settings** button. Select this button to save the settings for subsequent driver and driver package creation or import procedures.

14.2 Downloading and importing HP driver packs

The Download and Import Driver Packs option displays a list of HP products with driver packs. This works similarly to the option previously available with HP CIK.

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Operating Systems**, and then select **Driver Packages**.
2. Select **HP Client PCs**, and then select **Download and Import Driver Packs**.
3. Select an **Operating system**.
4. The **Available products** column displays the products that support driver packs. Optionally, enter keywords into the **HP product name** box and press **Enter** to filter the list of available driver packs.
5. Select a driver pack to include in the targeted operating system deployment, and then select the right arrow button to add the products to the **Selected products** column. The associated driver packs of the selected products are displayed in the **Available driver packs** list.
6. Optionally, select distribution points to assign the imported driver packs to a specific destination; however, cloud distribution points are not supported.
7. If necessary, change the default location for Configuration Manager to save the drivers and driver package. Be sure that the specified location has sufficient rights to be accessed by all necessary user accounts.
8. Any change to this path or other settings enables the **Save settings** button. Select this button to save the settings for subsequent driver package download and import procedures.
9. If the driver pack download and import process must stop when an error is encountered, clear the **Continue on errors** option. By default, this box is selected. When multiple driver packs are selected, the process continues to the next selected driver pack if the download and import process of the current driver pack fails.
10. By default, HP MIK uses HTTP to download the driver packs. If necessary, select **FTP**.
11. Select **Download and Import** to start the driver pack download and import process.

NOTE:

The Reset Form button clears all selections.

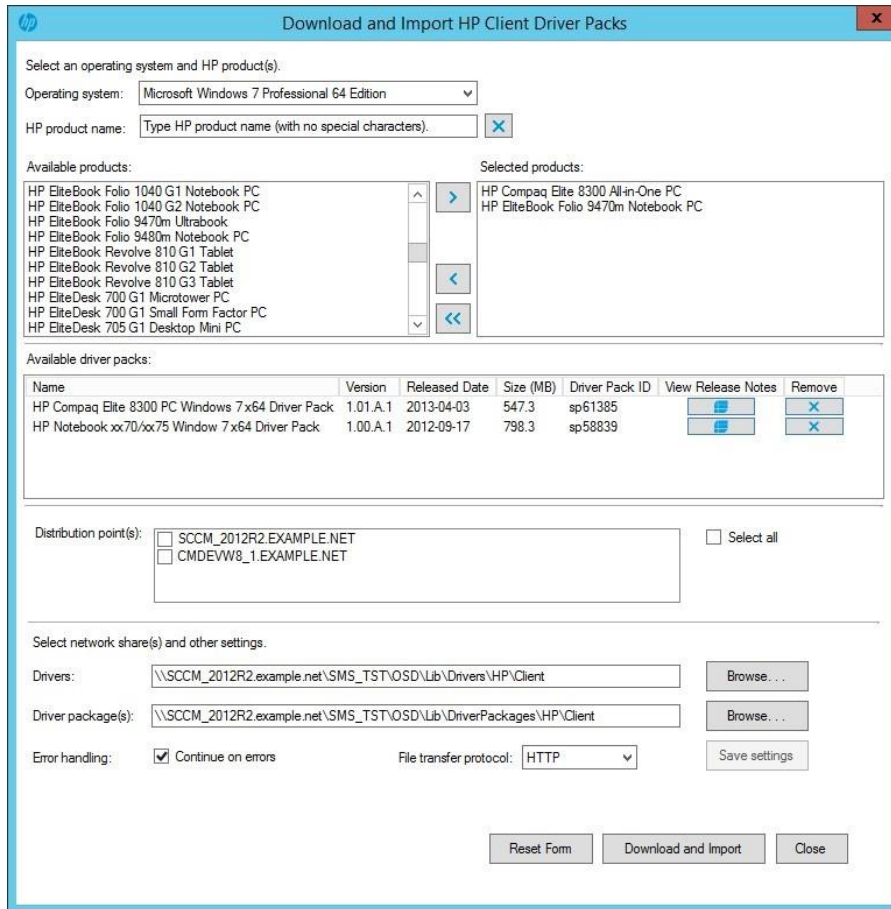


Figure 50 HP Client Driver Packs – Download and Import

During the download and import process, a dialog box displays the current operation and progress. The process downloads the selected driver packs and imports them into Configuration Manager. If one or more selected driver packs already exists in Configuration Manager, the process prompts the user to skip or overwrite the existing driver packs.

After the process is complete, a summary of the import status of each driver pack is displayed.



Figure 51 HP Import Driver Pack Status Window

The imported driver packs are created in Driver Packages > HP Client Driver Packages.

Before the imported driver packs can be used in a task sequence, they need to be pushed out to the distribution points. If no distribution points were selected in the download and import dialog box or if additional distribution points are needed, select each imported driver pack, select Distribute Content, and then follow the on-screen instructions to push the driver packs to the distribution points.

NOTE:

This process requires a continuous internet connection to ftp.hp.com. If the driver pack information cannot be retrieved from ftp.hp.com on the device with the Configuration Manager console installed, open a browser session to verify the connection, and then try to complete the process again.

If there is no internet connection to ftp.hp.com from the device with the Configuration Manager console installed, obtain the HP driver packs via one of the following methods and use the Import Downloaded Driver Pack menu item instead.

14.3 Obtaining HP driver packs

There are several ways to obtain driver packs:

NOTE:

Not all driver packs available for download can be used with HP MIK. Driver packs listed under categories such as **System – Software Management** cannot be imported with HP MIK.

- HP Client Management Solutions website
- HP Support product pages
- HP SoftPaq Download Manager (SDM)

To obtain driver packs using the HP Client Management Solutions website:

1. Go to <http://www.hp.com/go/clientmanagement>.
2. Under Resources, select **HP Driver Packs**.

3. Select **32-bit** or **64-bit**, depending on the target operating system.
4. Download the appropriate driver pack for the target client computer and operating system.

To obtain driver packs using HP Support product pages:

1. Go to <http://www.hp.com/support>.
2. Select **Get software and drivers**.
3. Enter the client computer model number, and then select **Find my product**.
4. Select the client computer.
5. Select your language and operating system.
6. Under **Manageability – Tools**, download the appropriate driver pack.

NOTE:

WinPE driver packs listed on the download page are used only to create HP client boot images.

To obtain driver packs using HP SDM:

1. Go to <http://www.hp.com/go/clientmanagement>.
2. Under Resources, select **HP Download Library**.
3. Download **SoftPaq Download Manager**.
4. Select **Start**, select **All Programs**, select **HP**, and then select **HP SoftPaq Download Manager**.
5. Select **Show software for all supported models**.
6. Select **English – International** as the target language.
7. Under Product Catalog, select the target platform and operating system, and then select **Find Available SoftPags**.
8. Download the driver packs in the category **Manageability – Driver Pack**.

14.4 Creating driver packs using HP SDM

To create driver packs using HP SDM (version 3.5.2.0 or higher):

1. Select **Start**, select **All Programs**, select **HP**, and then select **HP SoftPaq Download Manager**.
2. Select **Tools**, and then select **Configuration Options**.
 - a. On the **OS Filter** tab, select the **Win7**, **Win 8**, or **Win 8.1** operating system.
 - b. On the **Language Filter** tab, select **English – International** as the target language.
 - c. Select **OK**.
3. On the **Build Driver Pack** tab, select the plus sign (+) next to a product category to display all products in the category. Select products to add to the driver pack.
4. Select the platforms and operating systems, and then select **Find Available SoftPags**.

5. Select the SoftPaqs to include in the driver pack.
6. In the Download SoftPaqs window, select an action from the drop-down menu next to the Download button:
 - Build CAB File—Select this option to use Microsoft Deployment Toolkit or HP MIK in conjunction with Configuration Manager to deploy the driver pack.
 - Build ZIP File—Select this option to use HP MIK with Configuration Manager or to manually deploy the driver pack through another application.
7. Select **Download**.
8. If the EULA appears, accept the license and continue.
9. The Driver Pack Builder screen displays boxes for the **Driver Pack Name**, **OS-Bitness**, and **Output directory**. Enter any necessary information, and then select **Build**.
10. A message is displayed indicating that the driver pack build is complete. Select **OK**.

The driver pack and associated logs are now available in the output directory.

14.5 Importing HP driver packs

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Operating Systems**, and then select **Driver Packages**.
2. In the HP Client PCs section of the ribbon menu, select **Import Driver Pack**.
3. Under Driver package, select **Browse**, and then select the HP driver pack to be imported.
4. Optionally, select distribution points to assign the imported driver packages to a specific destination; however, cloud distribution points are not supported.
5. Change the default location for Configuration Manager to save the drivers and driver package, if necessary. Be sure that the specified locations have sufficient rights to be accessed by all necessary user accounts. The location per user is saved automatically after a successful importation.

Any change to this path or other settings enables the **Save settings** button. Select this button to save the settings for subsequent driver package download and import procedures.
6. Select **Import**.

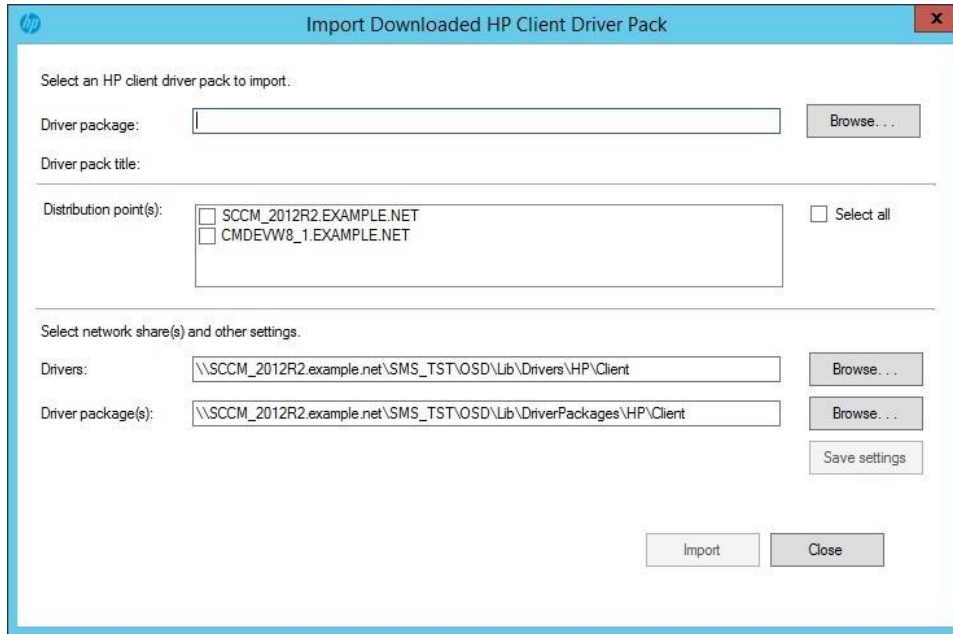


Figure 52 HP Client Driver Pack Import Download

During the importation process, a dialog box displays the current operation and progress.

After the importation process is complete, the imported driver pack is available in Software Library under **HP Client Driver Packages**. Before the imported driver pack can be used in a task sequence, it needs to be pushed out to the distribution points. If no distribution points were selected during the import process or if additional distribution points are needed, select the driver pack and then select **Distribute Content**.

15 HP client boot images

15.1 Obtaining a WinPE driver pack

1. Go to <http://www.hp.com/go/clientmanagement>
2. Under Resources, select **HP Download Library**.
3. Download either **HP WinPE Driver Pack 32-bit** or **HP WinPE Driver Pack 64-bit**.

Not all platforms or configurations require the WinPE 4.0 driver pack, as WinPE 4.0 already contains many of the necessary hardware drivers needed to support operating system deployment. HP recommends creating and using the WinPE 4.0 driver pack, because the added drivers do not impact systems or configurations that do not need them.

WinPE 5.0 natively supports HP commercial desktops, notebooks, and workstations shipping from 2011 to 2013. Platforms shipping in 2014 or later might require the WinPE 5.0 driver pack. The WinPE 5.0 driver pack cannot be used with WinPE 4.0, nor can the WinPE 4.0 driver pack be used with WinPE 5.0.

Because each version of Configuration Manager supports the customization or addition of drivers and components to a specific version of WinPE only, HP MIK Create Boot Image provides limited support. For more information about the specific requirements for WinPE customization, go to <http://technet.microsoft.com/en-us/library/dn387582.aspx>.

Before a boot image is made available to a distribution point, Configuration Manager might use Windows Assessment and Deployment Kit (ADK), particularly DISM.exe, to inject drivers to a boot image. DISM might fail to appropriately recognize the signature of some boot-critical drivers added to the boot image because DISM has certain requirements that depend the version of ADK and the operating system. For more information, go to <http://technet.microsoft.com/enus/library/hh825070.aspx>.

The HP MIK Create Boot Image feature leverages the Configuration Manager and ADK customization support for boot images, so the limitations of HP MIK are dependent on the Configuration Manager version, the ADK version, and the operating system version of the site server.

15.2 Importing a WinPE driver pack and creating boot images

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Operating Systems**, and then select **Boot Images**.
2. In the HP Client PCs section of the ribbon menu, select **Create Boot Image**.
3. Under HP client WinPE driver pack, select **Browse**. Select the HP WinPE driver pack to import. HP MIK shows only the boot images appropriate for the selected WinPE driver pack and supported for customization by Configuration Manager.
4. Select the base boot images to use, and then select **Create** to create boot images with drivers from the selected HP WinPE driver pack.
5. Optionally, select distribution points to assign the boot images to a specific destination; however, cloud distribution points are not supported.
6. Change the default locations for Configuration Manager to save the drivers, the driver package, and the boot images, if necessary. Be sure that the specified locations have sufficient rights to be accessed by all necessary user accounts.

The location per user is saved automatically after a successful importation. Any change to this path or other settings enables the **Save settings** button. Select this button to save the settings for subsequent boot image creation and driver or driver pack import procedures.

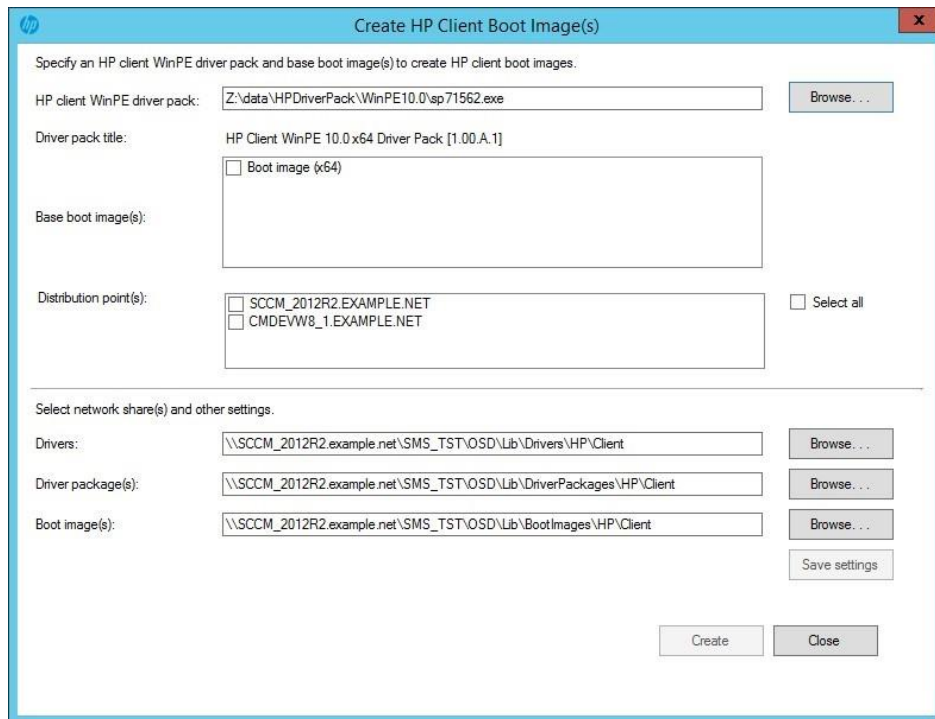


Figure 53 Create HP Client Boot Image(s)

Depending on the architecture of the base image and the architecture supported by the Windows Preinstallation

Environment boot image, x86 and/or x64 images are created. HP Windows Preinstallation Environment driver packs for Windows 10 contain drivers for 64-bit boot images. Windows Preinstallation Environment driver packs for previous versions of Windows contain drivers for both 32- and 64-bit boot images.

After the process is complete, the new boot images are created in **Boot Images > HP Client Boot Images**.

To access the command prompt during the WinPE portion (F8) for debugging purposes:

1. Right-click the image and select **Properties**, and then select **Customization**.
2. Select **Enable command support (testing only)**.

Before these boot images can be used in a task sequence, the boot images need to be pushed out to the distribution point. If no distribution points were selected in the import process or if additional distribution points are needed, or if there is a change to the boot image properties, select the boot image and then select **Distribute Content**.

16 HP client task sequences

16.1 Creating a deployment task sequence

1. In Configuration Manager, select **Software Library**, select **Overview**, select **Operating Systems**, and then select **Task Sequences**.
2. In the HP Client PCs section of the ribbon menu, select **Create Deployment Task Sequence**.
3. Select a template from the **Task Sequence Template** drop-down menu.

The following examples show how to reference HP tools to aid with the deployment process.

4. Enter information as instructed.
5. If you do not plan to use BitLocker Drive Encryption (BDE), clear the **Include BitLocker Drive Encryption steps** option. For more information on Configuration Manager BDE steps, go to <https://technet.microsoft.com/enus/library/hh846237.aspx>.
6. Select **Create** to create a basic, bare metal deployment task sequence for HP client systems. A message box displays confirmation of the successful creation of the task sequence.

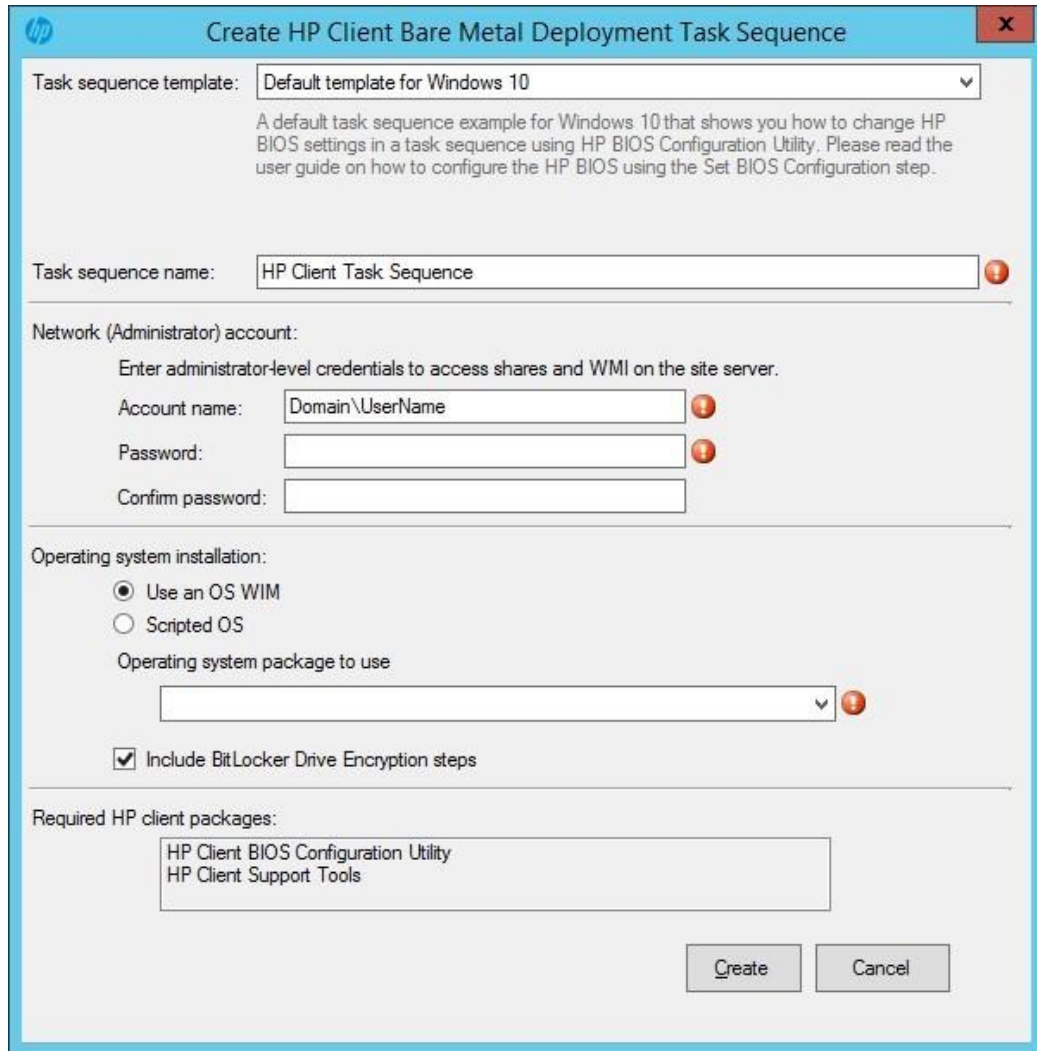


Figure 54 HP Client Bare Metal Deployment Task Sequence

IMPORTANT!

Depending on the selected template, some of the steps in the created task sequence are destructive, including the following:

- Remove Disk Partitions (diskpart clean)
- Format and Partition Disk
- Call Intel RSTCli Utility – Delete All Metadata
- Call Intel RSTCli Utility – Configure RAID Volume

HP recommends creating task sequences and testing them thoroughly in a test environment prior to any production deployments. HP is not responsible for any data loss caused by the created task sequences.

16.2 Configuring task sequences

Refresh the list of task sequences to see the created task sequence. Before using the task sequence, additional configuration must be performed for the task sequence to successfully execute.

The template **Configure RAID Example** contains specific steps that are discussed in [Using the Configure RAID Example template](#).

1. Be sure that the target platform driver pack has been imported. See [Importing HP driver packs](#).
2. Right-click the task sequence and select **Edit**.

The following figure is a task sequence created by the **Default Template for Windows 7 or Windows 8**. This task sequence can be used with either Windows 7 or Windows 8.

There is also the **Default Template for Windows 10**. The default disk partition configuration in the templates is different. For Windows 10, the recommended Windows recovery tool partition is at the end of the drive; in previous versions of Windows, it was at the beginning. The default partition takes up 1% of the disk space. Change this value to your Windows recovery image size, usually at least 500 megabytes (MB).

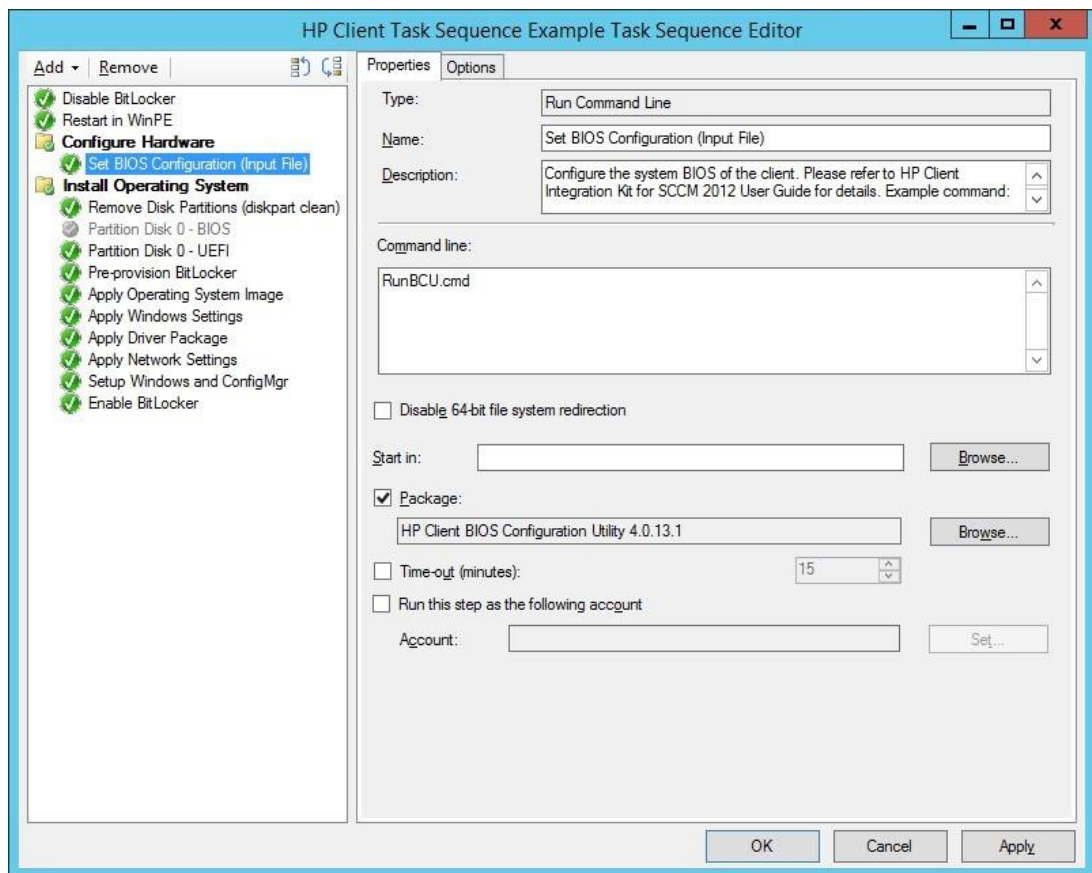


Figure 55 HP Client Task Sequence Example Task Sequence Editor

3. Depending on the target operating system of the deployment, some or all of the following steps need to be configured:
 - **Set BIOS Configuration (Input File)**—Allows the setting of BIOS settings via BCU. The TPM must be turned on and initialized before it can be used. See the section [Configuring the Set BIOS Configuration task step](#) for more details.
 - **Remove Disk Partitions (diskpart clean)**—This step does not need configuration; however, for the task sequence to run properly on all disk scenarios, the deployment and all packages and content within it need to

be configured to allow access to the content directly from the network. See [Allowing access to deployment content](#) for more information. If this step is not needed, disable the step.

- **Format & Partition Disk**—Enables the appropriate step to format and partition the disk to your need. For example, if deploying to a system that is set to UEFI or UEFI Hybrid (with CSM), enable the EFI format step and be sure that the BIOS format step is disabled.
 - **Apply Driver Package**—Specifies the HP driver package imported for the target platform and operating system.
 - **Apply Network Settings**—Specifies the workgroup or domain options for your deployment and enter the correct account information for the task sequence to join an Active Directory domain, if necessary. Review each additional task sequence step and set parameters as needed.
4. After all task sequence steps have been configured, select either **OK** or **Apply** to save changes. The task sequence can now be modified, and task sequence steps can be added as needed to perform your operations.

16.2.1 Assigning a boot image

1. Right-click the task sequence and select Properties.
2. Select the **Advanced** tab and then select **Use a Boot Image**.
3. Select **Browse** and then select the appropriate boot image from the **HP Client Boot Images** folder.

NOTE:

Select the boot image with the same architecture as the operating system being deployed (for example, an x86 image for an x86/32-bit operating system and an x64 image for an x64/64-bit operating system).

16.2.2 Allowing access to deployment content

To run properly, the **Remove Disk Partitions (diskpart clean)** step in the HP MIK task sequence needs to be run directly from the network. For this to happen, all packages and content in the task sequence (including the boot image) need to be configured as follows:

1. Right-click the content/package and select **Properties**.
2. Select the **Data Access** tab, and select **Copy the content in this package to a package share on distribution points**.
3. Select **OK**.
4. If necessary, select the **Access content directly from the distribution point** option on the Distribution Points step of the wizard.

If this step is not needed, or if you wish to use the download content setting, disable this task sequence step. If you still need to be able to run this step when the **Download content locally** option is selected, see [The Remove Disk Partitions \(diskpart clean\) step is needed, but I cannot use the Access Content Directly option](#) for possible workarounds.

5. After the task sequence has been modified and amended as needed, deploy to the target collection and distribute content as needed to use the task sequence. Follow the on-screen instructions to complete this process.

16.3 Configuring the Set BIOS Configuration task step

The Set BIOS Configuration (Input File) task step allows the configuration of BIOS settings on platforms managed by HP. This Run Command Line task uses BCU.

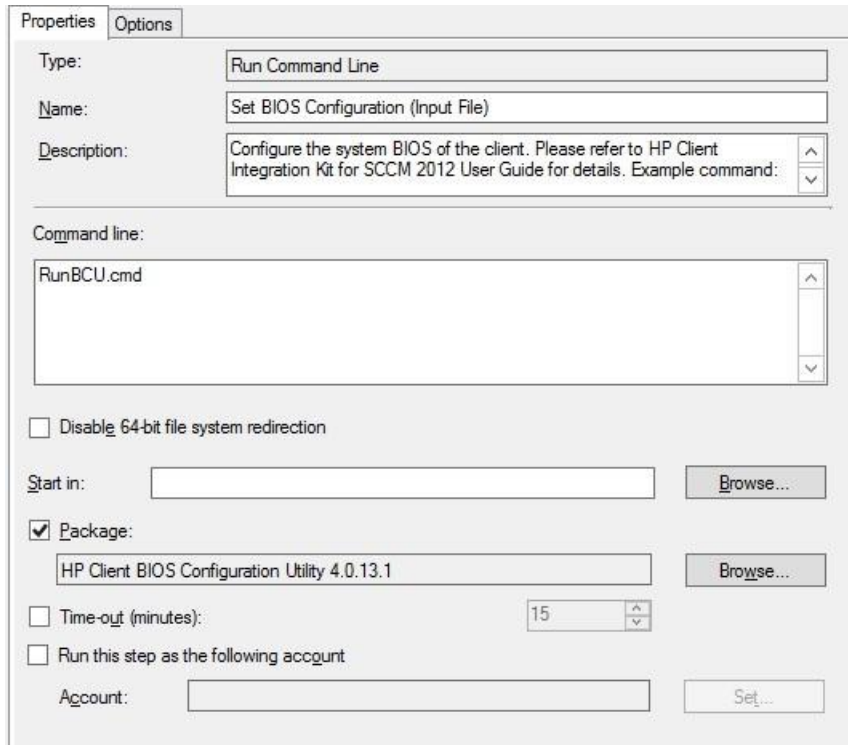


Figure 56 Configuring the Set BIOS Configuration task step

This task sequence step is run with the following command line:

```
RunBCU.cmd <parameters to pass to BCU>
```

For a list of parameters and options, see the *HP BIOS Configuration Utility User Guide*.

This action applies the BIOS settings specified in the selected REPSET file and/or executes specified command line options. The batch file calls the appropriate version of BCU depending on the architecture of the current operating system.

An example REPSET file is included with the package; \ located in the **Config** folder of the package source folder and named **BCUSettingExampleOnly.REPSET**. If this REPSET file is used in this task step, the command line is as follows:

```
RunBCU.cmd /setconfig:"Config\BCUSettingExampleOnly.REPSET"
```

HP recommends saving the REPSET file in the source folder or subfolder of the package so that you can easily reference it in the command line.

16.3.1 Adding and editing configuration files

NOTE:

Be aware of the following when using this task sequence step:

- After making changes or adding a configuration file to the package folder, be sure to update the HP Client BIOS Configuration Utility package to the distribution points to ensure that the new configuration files are available for the task sequence.
- Some BIOS setting changes might not take effect until after a restart of the target client; a restart might be needed to be sure all settings apply.

- Changing certain BIOS settings might cause task sequences to fail to complete. Be sure to test the desired BIOS configuration file before deploying the task sequence widely.
- Certain characters used in BIOS passwords might require special escaping to work properly; see the *HP BIOS Configuration Utility User Guide* link included with the HP MIK for details.

For more information, see [HP BIOS Configuration Utility \(BCU\)](#).

1. Obtain the configuration file from the target platform and edit the file by setting the new values and removing settings and values from the configuration file that are not required to be applied through this configuration.
2. Go to the package source folder location of BCU. By default, the package is located in the HP Client Support Packages section of the Configuration Manager Software Library.
3. Select the source folder location and copy the REPSET file to the folder.
4. Update the distribution points so that the REPSET file is made available to the task sequence.

16.4 Refreshing task sequence references

Task sequence references might need to be refreshed if one of the following applies:

- HP MIK was uninstalled and then reinstalled.
- Some or all of the HP Client Support Packages were deleted and reinstalled using the Repair option in the installer. To refresh the references:
 1. Right-click the task sequence and select **Edit**.
 2. Follow the on-screen instructions in the Action column of the following table.

Table 2 Refreshing task sequence references

| Task sequence step | Action |
|---|--|
| Set BIOS Configuration (Input File) | Select the package HP Client BIOS Configuration Utility in the folder HP Client Support Packages. |
| Remove Disk Partitions (diskpart clean) | Select the package HP Client Support Tools in the folder HP Client Support Packages. |

16.5 Using the Configure RAID Example template

16.5.1 Preparing the boot image used by the task sequence

1. Make sure that the boot image has the necessary drivers as shown in [Importing a WinPE driver pack and creating boot images](#).
2. Remove any existing Intel Rapid Storage Technology (Intel RST) RAID drivers to avoid any conflict with the driver added in the following step.
3. Add the version of the **Intel Rapid Storage Technology RAID Driver** that supports the target client systems to the boot image.

16.5.2 Preparing the packages used by the task sequence

1. Be sure that the target platform driver pack has been imported as shown in [Importing HP driver packs](#).

2. Go to <https://downloadcenter.intel.com>, and then search for **Smart Response Technology Command Line Interface Deployment Tool**. Locate the tool version that matches the driver version, and follow the on-screen instructions to download it.

NOTE:

The major version and minor version values of the driver and the command line tool must match. For example, the command line tool version 12.8.x works with the driver version 12.8.x.

3. Unzip the downloaded file. The file might contain zip files for the 64-bit and 32-bit binaries of the tool. Those also need to be extracted.
4. Copy the extracted files and folders of the command line tool to the location to be the source of the software package for this tool.
5. Create a software package that references the source location.

16.5.3 Configuring task sequence steps

1. To begin configuration, right-click the task sequence and select **Edit**.

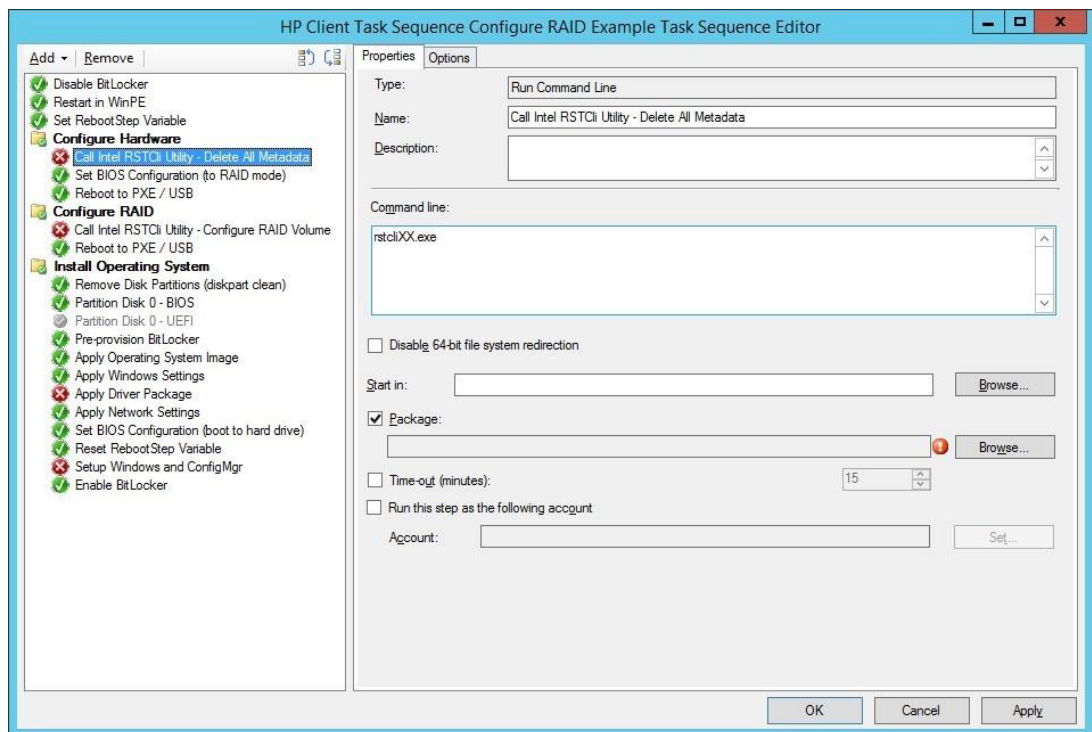


Figure 57 HP Client Task Sequence Configure RAID Example Task Sequence Editor

2. The following steps need to be configured:
 - a. **Call Intel RSTcli Command Line Utility – Delete All Metadata**—Removes all previously configured disk metadata.
 - i. Replace the command: The command line in the step, rstcliXX.exe, is just a placeholder. Read the utility documentation carefully and replace the placeholder command with the actual

command. The package containing the command line utility in the preparation step earlier needs to be selected in this step.

The following is an example of the command line:

```
IntelRSTCl\12.8\x64\rstcli64.exe --manage --delete-all-metadata
```

In this example command, IntelRSTCl\12.8\x64 is the relative location from the source folder to the actual command line utility in the content of the package.

- ii. Select the Intel command line tool package prepared earlier.
- b. **Set BIOS Configuration (to RAID mode)**—Allows the setting of BIOS settings via BCU. See [Configuring the Set BIOS Configuration task step](#) for more details.
 - c. **Call Intel RSTCl Command Line Utility – Configure RAID Volume**—Configures the RAID volume on the target client.
 - i. Replace the command: Like the step to delete all metadata, the command line in the step, `rstcliXX.exe`, is just a placeholder. See the utility documentation and replace the placeholder command with the actual command. The package containing the command line utility needs to be selected. The following is an example of the command line to configure RAID level one (mirror) with hard drives:

```
IntelRSTCl\12.8\x64\rstcli64.exe --create --level 1 -n Volume  
0-0-0-0 0-10-0
```

Again, IntelRSTCl\12.8\x64 is the relative location from the source folder to the actual command line utility in the content of the package.
 - ii. Select the Intel command line tool package prepared earlier.
 - d. **Remove Disk Partitions (diskpart clean)**—This step does not need configuration; however, for the task sequence to properly run on all disk scenarios, the deployment and all packages and content within it need to be configured to allow access to the content directly from the network. See [Allowing access to deployment content](#) for more information.
 - e. **Format & Partition Disk**—By default, the task sequence has the BIOS (legacy/MBR) format step enabled and the EFI (GPT) step disabled. If deploying to a system that is set to UEFI or UEFI Hybrid (with CSM), enable the EFI format step and disable the BIOS format step.
 - f. **Apply Driver Pack**—Specifies the HP driver pack imported for the target platform and operating system.
 - g. **Require Reboot to PXE/USB**—Because this task sequence requires one or more immediate reboots in the WinPE when the disk has not been defined yet, the `RebootStep` variable is used to control the flow of the task sequence.
3. Review each task sequence step and set parameters as needed for the rest of the task steps. If these steps do not work, verify that you entered the correct network credentials in the task sequence creation dialog.
 4. After all task sequence steps have been configured, select **OK** or **Apply** to save changes. The task sequence can now be modified and task sequence steps can be added as needed to perform your desired operations.

16.5.4 Assigning a boot image

1. Right-click the task sequence and select **Properties**.

2. Select the **Advanced** tab and then select **Use a Boot Image**.
3. Select **Browse**, and then select the appropriate boot image that had the Intel RST RAID driver added during the boot image preparation.

NOTE:

Select the boot image with the same architecture as the operating system being deployed (for example, an x86 image for an x86/32-bit operating system and an x64 image for an x64/64-bit operating system).

16.5.5 Allowing access to deployment content

To run properly, the **Remove Disk Partitions (diskpart clean)** step in the HP MIK Configure RAID Example task sequence needs to be run directly from the network. For this to happen, all packages and content in the task sequence (including the boot image) need to be configured as follows:

1. Right-click the content/package and select **Properties**.
2. Select the **Data Access** tab, and select **Copy the content in this package to a package share on distribution points**.
3. Select **OK**.
4. When deploying, the **Access content directly from the distribution point** option can be selected on the Distribution Points step of the wizard.
5. After the task sequence has been modified and amended as needed, deploy to the target collection and distribute content as needed to use the task sequence. Follow the on-screen instructions to complete this process.

16.5.6 Understanding the task sequence execution flow

The task sequence is divided into three task groups—Configure Hardware, Configure RAID, and Install Operating System.

Conditions on the three groups and a computer variable are used to control the processing of the task sequence across multiple reboots over PXE/USB. The Set RebootStep Variable task increments the RebootStep variable by one (1) each time it is executed. If the variable is not present, it is created and set to 0 before being incremented.

During the initial execution of the task sequence, the tasks in the Configure Hardware group are executed. After rebooting and re-executing the task sequence, the Set RebootStep Variable task increments RebootStep to two (2). Because the Configure Hardware group has the condition that it only runs when the value of the RebootStep variable is one (1), this group is skipped after the reboot. The next group, Configure RAID Volume, looks for a RebootStep value of two (2), then it is executed. The last group, Install Operating System, looks for a RebootStep value of three (3). If this condition is met, the third group of steps runs.

Towards the end of the task sequence, the Reset RebootStep Variable task resets RebootStep to zero (0).

Note the following additional points about deploying a task sequence:

- When deploying a task sequence with reboot to PXE/USB, on the Distribution Points screen, set the deployment options to **Access content directly from a distribution point when needed by the running task sequence**. For this option to be available for each package referenced by your task sequence, select the **Data Access** tab of the Properties dialog box, and select **Copy the content in this package to a package share on distribution points**.
- If the task sequence is deployed as **Available** and not as required, the task sequence must be selected upon reboot for deployment to be continued.
- The target client system must have the appropriate boot order set for reboots for this step to work properly. (That is, if booting via PXE, the PXE NIC should be before any other boot devices in the boot order.) To rerun a required task sequence on a target client system, clear the PXE advertisement:

- a. In Configuration Manager, select **Assets and Compliance workspace**.
 - b. Select **Devices**.
 - c. Select the target client system.
 - d. Select **Clear Required PXE Deployments** on the ribbon.
- If the task sequence failed to run completely, it might be necessary to clear or reset the RebootStep variable as follows:
 - a. Right-click the target client system and select **Properties**.
 - b. Select the **Variables** tab.
 - c. Select the **RebootStep** variable, and then select the delete button with the X-like icon.

17 HP BIOS Configuration Utility (BCU)

BCU is a free tool that enables you to do the following:

- Read available BIOS settings and their values from a supported desktop, workstation, or notebook computer
- Set or reset Setup Password on a supported desktop, workstation, or notebook computer
- Replicate BIOS settings across multiple client computers

For more information, see the HP BIOS Configuration Utility User Guide.

NOTE:

The version of BCU included with HP MIK includes a batch file (RunBCU.cmd) that automatically detects the current operating system and runs the correct version of BCU (32- or 64-bit).

18 HP Password Utility

HP Password Utility is a tool for creating an encrypted password file that can be used with a BCU password file parameter. This tool is included with BCU. For more information, see the *HP BIOS Configuration Utility User Guide*.

19 Uninstalling HP MIK

1. In Control Panel, select **Programs and Features**.
2. Select **HP Manageability Integration Kit**, and then select **Uninstall**.

Any imported driver packages and boot images, and task sequences created by HP MIK remain on the server. The supporting client packages and source files are deleted; however, to preserve the BIOS configuration files, the source folder for BCU is not deleted.

20 Appendix A—Device collection query examples

IT administrators can create device collections defined by query rules in Configuration Manager. For more information on how to create device collection and query rules, go to <https://technet.microsoft.com/en-us/library/qq712295.aspx>.

NOTE:

HP recommends verifying your device collection queries in a test environment to ensure accurate software and policy deployment to supported systems before pushing the queries out to production environments.

The following are some basic HP collection queries that can be used as a starting point when working with HP systems and HP MIK features.

20.1 All HP systems

NOTE:

Older models might have Hewlett-Packard named as the manufacturer. The query might need to have a condition to include those systems. Be sure to check the support platform list for each HP MIK feature to create the appropriate system collections to manage the feature.

```
select SMS_R_SYSTEM.ResourceID,  
SMS_R_SYSTEM.ResourceType,  
SMS_R_SYSTEM.Name,  
SMS_R_SYSTEM.SMSUniqueIdentifier,  
SMS_R_SYSTEM.ResourceDomainORWorkgroup,  
SMS_R_SYSTEM.Client from SMS_R_System  
  
inner join SMS_G_System_COMPUTER_SYSTEM on  
  
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and  
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%'
```

20.2 All HP Systems including older models

```
select SMS_R_SYSTEM.ResourceID,  
SMS_R_SYSTEM.ResourceType,  
SMS_R_SYSTEM.Name,  
SMS_R_SYSTEM.SMSUniqueIdentifier,  
SMS_R_SYSTEM.ResourceDomainORWorkgroup, SMS_R_SYSTEM.Client from SMS_R_System
```

```
inner join SMS_G_System_COMPUTER_SYSTEM on SMS_G_System_COMPUTER_SYSTEM.ResourceId
= SMS_R_System.ResourceId

where

(SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'Hewlett-Packard%' and
SMS_G_System_COMPUTER_SYSTEM.Model not like '%Proliant%') or
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%
```

20.3 HP systems with a specific model name

```
select SMS_R_SYSTEM.ResourceID,

SMS_R_SYSTEM.ResourceType,

SMS_R_SYSTEM.Name,

SMS_R_SYSTEM.SMSUniqueIdentifier,

SMS_R_SYSTEM.ResourceDomainORWorkgroup,

SMS_R_SYSTEM.Client from SMS_R_System

inner join SMS_G_System_COMPUTER_SYSTEM on SMS_G_System_COMPUTER_SYSTEM.ResourceId
= SMS_R_System.ResourceId

and SMS_G_System_COMPUTER_SYSTEM.Model = 'HP EliteBook 850 G4'
```

20.4 Windows 10 Enterprise systems

```
select SMS_R_SYSTEM.ResourceID,

    SMS_R_SYSTEM.ResourceType,

    SMS_R_SYSTEM.Name,

    SMS_R_SYSTEM.SMSUniqueIdentifier,

    SMS_R_SYSTEM.ResourceDomainORWorkgroup,

    SMS_R_SYSTEM.Client

from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on

SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%'

inner join SMS_G_System_Operating_System on SMS_R_System.ResourceID =
SMS_G_System_Operating_System.ResourceID

and SMS_G_System_Operating_System.Caption like '%Windows%10%Enterprise%'
```

20.5 Determining whether Device Guard can be enabled

To determine which systems can have Device Guard enabled, go to <https://blogs.technet.microsoft.com/enterprisemobility/2015/10/30/managing-windows-10-device-guard-withconfiguration-manager/> and follow the steps in the *Determine applicable systems* section.

21 Systems with HP Sure Start support

For all HP client computers with HP Manageability Integration Kit, HP Sure Start support information can be retrieved via the Configuration Manager hardware inventory extension.

To add HP_SureStartPolicy BIOS Sure Start settings and Sure Start version information to the Configuration Manager default client settings:

1. In Configuration Manager, select **Administration workspace**. Then, select **Client Settings**.
2. Right-click **Default Client Settings**, and then select **Properties**.
3. In the Default Settings window, select **Hardware Inventory** and then select **Set Classes**.
4. In then Hardware Inventory Classes window, select **Add**.
5. In the Add Hardware Inventory Class window, select **Connect**.
6. If Configuration Manager is installed on an HP system that has the HP MIK client installed, then leave the default computer name (which is the system the console is on). Otherwise, specify the name of a system that has the HP MIK client installed.
7. Enter `root\HP\InstrumentedServices\v1` for the WMI namespace.
8. Select **Recursive**, and enter the user name and password to connect to the WMI of the specified system.
9. Add the HP_SureStartPolicy class. Select **OK** to add the class to hardware inventory.
10. Select **OK**, and then select **OK** again to close all windows.

After client computers download the updated machine policy and run the hardware inventory cycle, the extended data is reported to Configuration Manager. The data then is available to create collections.

The following is the query to select all HP systems with HP Sure Start support.

```
select SMS_R_SYSTEM.ResourceID, SMS_R_SYSTEM.ResourceType,
       SMS_R_SYSTEM.Name,
       SMS_R_SYSTEM.SMSUniqueIdentifier,
       SMS_R_SYSTEM.ResourceDomainORWorkgroup,
       SMS_R_SYSTEM.Client
from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%'
inner join SMS_G_System_HP_SureStartPolicy on SMS_R_System.ResourceId =
SMS_G_System_HP_SureStartPolicy.ResourceId
and SMS_G_System_HP_SureStartPolicy.SureStartVersion like 'SS%'
```

21.1 TPM queries

These example TPM queries use TPM data from the **Win32_TPM** class of the **ROOT\cimv2\Security\MicrosoftTpm** namespace from clients. Be sure that this TPM class is added to hardware inventory. When a client computer applies the latest machine policy and reports its hardware inventory data has been reported to Configuration Manager, the client must be included in the appropriate TPM collection.

21.1.1 Systems with TPM Version 1.2

```
select SMS_R_SYSTEM.ResourceID,
SMS_R_SYSTEM.ResourceType,
SMS_R_SYSTEM.Name,
SMS_R_SYSTEM.SMSUniqueIdentifier,
SMS_R_SYSTEM.ResourceDomainORWorkgroup, SMS_R_SYSTEM.Client
from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%' inner join
SMS_G_System_TPM on SMS_R_System.ResourceId = SMS_G_System_TPM.ResourceId
and MS_G_System_TPM.SpecVersion like '1.2%'
```

21.1.2 Systems with TPM Version 2.0

```
select SMS_R_SYSTEM.ResourceID,
SMS_R_SYSTEM.ResourceType,
SMS_R_SYSTEM.Name,
SMS_R_SYSTEM.SMSUniqueIdentifier,
SMS_R_SYSTEM.ResourceDomainORWorkgroup, SMS_R_SYSTEM.Client
from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%' inner join
SMS_G_System_TPM on SMS_R_System.ResourceId = SMS_G_System_TPM.ResourceId
and SMS_G_System_TPM.SpecVersion like '2.0%'
```

21.2 Systems with a specified application installed

```
select SMS_R_SYSTEM.ResourceID,
SMS_R_SYSTEM.ResourceType,
SMS_R_SYSTEM.Name,
SMS_R_SYSTEM.SMSUniqueIdentifier,
```

```

SMS_R_SYSTEM.ResourceDomainORWorkgroup, SMS_R_SYSTEM.Client from
SMS_R_System

inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%' and
(SMS_R_System.ResourceId in (select ResourceId from

SMS_G_System_ADD_REMOVE_PROGRAMS_64 where ProdID = '<Application product
ID>' and Version

>= '<Miminum supported application version>'))

or (SMS_R_System.ResourceId in (select ResourceId from
SMS_G_System_ADD_REMOVE_PROGRAMS where ProdID = '<Application product ID>'
and Version >= '<Miminum supported application version>'))

```

For example, the following query returns the systems with HP WorkWise version 1.3.1.1 or later installed.

```

select SMS_R_SYSTEM.ResourceID,

SMS_R_SYSTEM.ResourceType,

SMS_R_SYSTEM.Name,

SMS_R_SYSTEM.SMSUniqueIdentifier,

SMS_R_SYSTEM.ResourceDomainORWorkgroup, SMS_R_SYSTEM.Client from
SMS_R_System

inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%' and
(SMS_R_System.ResourceId in (select ResourceId from

SMS_G_System_ADD_REMOVE_PROGRAMS_64 where ProdID = '{56051A5A-7A04-4CD4-
A5CD-

781F1AC10112}' and Version >= '1.3.1.1')

or (SMS_R_System.ResourceId in (select ResourceId from
SMS_G_System_ADD_REMOVE_PROGRAMS where ProdID = '{56051A5A-7A04-4CD4-A5CD-
781F1AC10112}' and Version >= '1.3.1.1') ))

```

21.3 Systems with Intel Authenticate or a valid Intel Authenticate policy enforced for HP Client Security

For all HP systems that have HP Client Security (with HP MIK support) installed, the WMI class CM_IntelAuthenticatePolicies with the properties State and IsValidPolicyInstalled can be retrieved via the Configuration Manager hardware inventory extension.

To add CM_IntelAuthenticatePolicies to the Configuration Manager default client settings:

1. In Configuration Manager, select **Administration workspace**. Then, select **Client Settings**.
2. Right-click **Default Client Settings**, and then select **Properties**.

3. In the Default Settings window, select **Hardware Inventory** and then select **Set Classes**.
4. In then Hardware Inventory Classes window, select **Add**.
5. In the Add Hardware Inventory Class window, select **Connect**.
6. If Configuration Manager is installed on an HP system that has the HP MIK client and HP Client Security installed, then leave the default computer name (which is the system the console is on). Otherwise, specify the name of a system that has the HP MIK client and HP Client Security installed.
7. Enter `root\HP\InstrumentedServices\v1` for the WMI namespace.
8. Select **Recursive**, and enter the user name and password to connect to the WMI of the specified system.
9. Add the `CM_IntelAuthenticatePolicies` class. Select **OK** to add the class to hardware inventory.
10. Select **OK**, and then select **OK** again to close all windows.

After a client computer downloads the updated machine policy and runs the hardware inventory cycle, the extended data is reported to Configuration Manager. The data then is available to create collections.

The following image shows the `CM_IntelAuthenticatePolicies` WMI Class on a client computer.

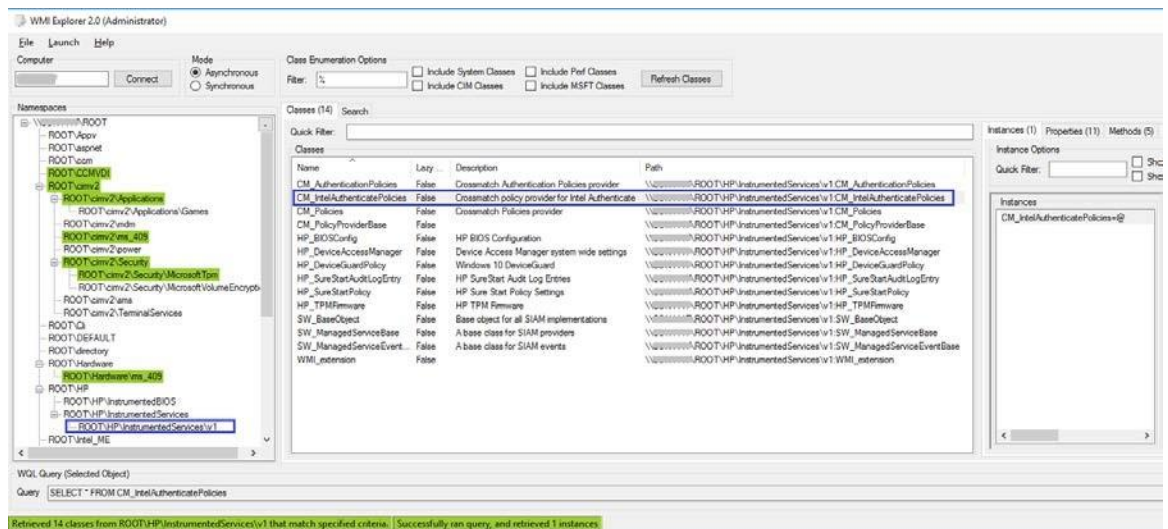


Figure 58 `CM_IntelAuthenticatePolicies` WMI Class

The following query selects all HP systems that are ready to receive a valid Intel Authenticate policy for HP Client Security.

```
select SMS_R_SYSTEM.ResourceID,
       SMS_R_SYSTEM.ResourceType,
       SMS_R_SYSTEM.Name,
       SMS_R_SYSTEM.SMSUniqueIdentifier,
       SMS_R_SYSTEM.ResourceDomainORWorkgroup,
       SMS_R_SYSTEM.Client
```

```
from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on
SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%'

inner join SMS_G_System_CM_IntelAuthenticatePolicies on
SMS_R_System.ResourceId =
SMS_G_System_CM_IntelAuthenticatePolicies.ResourceId and
SMS_G_System_CM_IntelAuthenticatePolicies.State = 'Active'
```

If a system does not have Intel Authenticate installed, its `State` returns `NotInstalled`, meaning that Intel Authenticate has either not been installed or failed to install. Install Intel Authenticate and restart the client computer to enable HP Client Security to detect the status change.

Similarly, the query to select all HP systems that have a valid Intel Authenticate policy for HP Client Security enabled is as follows:

```
select SMS_R_SYSTEM.ResourceID,

       SMS_R_SYSTEM.ResourceType,

       SMS_R_SYSTEM.Name,

       SMS_R_SYSTEM.SMSUniqueIdentifier,

       SMS_R_SYSTEM.ResourceDomainORWorkgroup,

       SMS_R_SYSTEM.Client

from SMS_R_System inner join SMS_G_System_COMPUTER_SYSTEM on

SMS_G_System_COMPUTER_SYSTEM.ResourceId = SMS_R_System.ResourceId and
SMS_G_System_COMPUTER_SYSTEM.Manufacturer like 'HP%'

inner join SMS_G_System_CM_IntelAuthenticatePolicies on
SMS_R_System.ResourceId =
SMS_G_System_CM_IntelAuthenticatePolicies.ResourceId

and SMS_G_System_CM_IntelAuthenticatePolicies.IsValidPolicyInstalled
='True'
```

If a system does not have a valid Intel Authenticate policy for HP Client Security, the `IsValidPolicyInstalled` property returns **False**.

22 Appendix B—Troubleshooting

22.1 HP MIK installation issues

An error occurred while installing a supporting package (HP Client BIOS Configuration Utility or HP Client Support Tools)
Verify that the user account running the installer has permission to access the Configuration Manager server and modify the data, or log on as a user that has those permissions.

HP MIK did not completely uninstall

Imported driver packs, created boot images, and task sequences created via HP MIK are not removed when the product is uninstalled. If they are no longer needed, they can be deleted from Configuration Manager.

A task sequence fails to run after reinstalling and/or repairing the installation

When reinstalling and/or repairing the installation, existing task sequences using packages installed by HP MIK are not automatically updated. To function correctly, task sequence references must be refreshed (see [Refreshing task sequence references](#) for details).

22.2 Driver pack issues

Configuration Manager reports that the SoftPq is not a valid driver pack

Only driver packs under the category **Manageability – Tools** can be imported with HP MIK. Other driver packs listed under other categories (such as **Software – System Management**) cannot be used with HP MIK.

HP MIK fails to complete the driver pack import process while processing driver INFs

This might happen if an existing driver is detected but the driver source is missing. Verify that the existing driver's source is present. If not, either delete the driver and reimport the driver pack or restore the missing driver source.

22.3 WinPE image creation issues

Some available boot images are not selectable as base boot images

Because each version of Configuration Manager supports the customization or adding drivers and components to a specific version of WinPE only, the HP MIK Create Boot Image feature can provide only limited support. For more information about the specific requirements for WinPE customization, go to <http://technet.microsoft.com/en-us/library/dn387582.aspx>.

If ADK and the operating system of your site server fail to appropriately verify the signature of some drivers during the boot image creation, you might get this HP MIK error:

```
Object version mismatch error; a ConfigMgr object has been modified or updated before changes could have been saved. Please try the operation again.
```

If a retry attempt fails, manually customize or add the drivers to your boot image.

22.4 Before troubleshooting a task sequence

- Verify your task sequence settings. The primary cause of task sequence failures is related to the settings you provided in the task sequence steps. Be sure to check the task sequence steps for the following:
 - Valid environment or task sequence variable references.
 - Valid package references—You must make sure that all packages referenced in the task sequence are available from the distribution points and are up to date.

- Verify that the task sequence was created with the currently installed kit or a previously installed version that was updated. If the kit was uninstalled and then reinstalled, or an HP Client Support Package was removed but reinstalled via setup, the HP packages need to be selected again for the task sequence steps that use them. See this document for more information on updating task sequences with new package references.
- Verify that the downloaded driver packs are removed properly by HP MIK.
 - Driver packs downloaded by HP MIK are stored in `%TEMP%\hpdriverpack`, where `%TEMP%` is the environment variable defining the default application temporary location for the currently logged on user. HP MIK attempts to remove the downloaded driver packs after a successful import.
- Verify and examine log files.
 - Configuration Manager Console log files are located in the **AdminUILog** folder. This folder is located in the install directory of the Configuration Manager Console.
 - Log files generated by HP MIK are stored in `%TEMP%\hpclient`, where `%TEMP%` is the environment variable defining the default application temporary location for the currently logged on user.

Extended logging information can be added to the kit log files by adding a debug flag to the registry. In the registry, add a DWORD value named `DebugLogging` and set the value to 1 for the applicable registry key:

```
HKLM\Software\Wow6432Node\HP\Client\ConfigMgr Integration Kit
```
 - Additional applicable log files may be available in the Configuration Manager log folder (typically located at `%ProgramFiles%\Microsoft Configuration Manager\Logs`).

22.5 Common task sequence problems

The following are some common problems that might be encountered. If an issue is not listed here, the subsequent troubleshooting sections might provide answers.

Some drivers fail to be injected into the boot image

This might occur when a driver is signed with a newer driver signing method than what DISM and the operating system support. In that case, the driver is treated as an unsigned driver and is not injected into the boot image. For example, when running SCCM 2012 SP1 on Windows Server 2008 R2, some Windows 8/8.1 drivers cannot be injected into a Windows Preinstallation Environment boot image. If the driver in question is not required for your environment, remove the driver from the boot image driver list, and then manually reinject the remaining drivers. For more information, go to <https://technet.microsoft.com/en-us/library/hh825070.aspx>.

Task sequence fails to start after target platform boots to Windows Preinstallation Environment

There are several possible causes, as follows:

- There is no network connection because the network adapter is unsupported.
- There is no network connection because the boot image does not contain the necessary network driver.
- Configuration Manager does not recognize the target HP client platform.
- One or more of the packages referenced by the task sequence are not available.

To resolve this issue:

1. Install a supported network adapter and set it as the PXE NIC.
2. Use an HP Client WinPE image containing the appropriate HP WinPE driver pack.
3. Verify that the target HP client platform was imported into Configuration Manager with the correct identification information.
4. Open the task sequence and fix any errors that might be present.

Updated or new BIOS configuration input files were not used or available during task sequence execution

Verify that the **HP Client BIOS Configuration Utility** package was pushed to the appropriate distribution points.

Task sequence starts, but fails to continue

There are several possible causes, as follows:

- A BIOS setting or BIOS configuration change prevents the system from correctly starting.
- The incorrect driver package was selected for the target platform.

To resolve this issue:

1. Verify that the correct driver package was selected for the given target platform.
2. Verify that all dependencies of the task sequence were distributed to distribution points or groups that the target clients or collections can access.

Task sequence fails to open for editing, or error messages appear when viewing certain task sequence steps

There are several possible causes:

- The plugin has been uninstalled. (Error messages such as “There may be too many steps in the task sequence object” might appear.)
- The plugin is corrupted.
- HP MIK has not been installed on the primary site server.

To resolve this issue:

1. Reinstall the plugin to verify that all necessary files are present and registered.
2. Install HP MIK on the primary site server.
3. Repair the plugin installation. This can be done either by running the setup again and selecting **Repair** or by selecting the **Repair** option in **Programs and Features** in Control Panel.
4. Recreate the task sequence in a new task sequence.
5. Reselect the packages for some task sequence steps (see Refreshing task sequence references).

22.6 Task sequence creation and management issues

The error “There may be too many steps in the task sequence object” appears when attempting to edit a task sequence created by HP MIK

This error generally appears when HP MIK has been uninstalled from the server. HP MIK must be reinstalled to the server before the task sequence can be viewed or edited.

The Remove Disk Partitions (diskpart clean) step is needed, but I cannot use the Access Content Directly option

There are a number of workarounds that are possible, including the following:

- Use the **Connect to Network Folder** task sequence step to connect to the network share containing the package files, and use a **Run Command Line** task to run the step from the network share.
- Add the package files to the boot image and use a **Run Command Line** task to run the step, referencing the files in the boot image.

See the Configuration Manager documentation for details about how to perform these actions.

22.7 Task sequence execution issues

System fails to boot using PXE

If the client machine is EFI x86 (IA-32), such as the HP ElitePad 900, then Cumulative Update 1 for Configuration Manager 2012 SP1 (KB2817245) must be installed for PXE boot to work successfully. Configuration Manager 2012 R2 does not need this update.

PXE is an extension of DHCP, which uses a broadcast type of communication. Broadcast communication uses standard timeout values that are not readily changeable. As a result, a computer waits for a default timeframe to receive a DHCP or PXE response before timing out and causing a failure condition. Each time a computer is rebooted, it must renegotiate the connection to the switch. Some network switches arrive configured with default settings that might cause connectivity delays. The settings on the switch might cause a DHCP or PXE timeout because they fail to negotiate a connection in time.

The following features might be affected by negotiation timeouts:

- **Spanning Tree Protocol (STP)**—STP is a protocol that prevents loops and provides redundancy within a network. A networking device using this algorithm might experience some latency as it collects information about other network devices. During this period of information collection, servers might boot to PXE and time out while waiting for a response from Windows Deployment Services. To prevent these issues, disable the STP or enable PortFast on end-node ports for the target server. For further information, see the manufacturer's documentation.
- **EtherChannel or Port Aggregation Protocol (PAgP)**—EtherChannel enables multiple links between devices to act as one fast link and share the load between the links. Running the EtherChannel Protocol in automatic mode might cause a connectivity delay of up to 15 seconds. To eliminate this delay, switch to a manual mode or turn off this feature.
- **Speed and duplex negotiation**—If auto-negotiation on the switch is set to off and the server is not configured to that speed and duplex setting, then the switch does not negotiate with that server.

Verify that PXE is also running properly on the server. The system must be set to boot off PXE before any other bootable devices are present in the system.

System booted PXE, but timed out waiting for the PXE server to respond

Verify that the WinPE boot images are pushed to the appropriate distribution point. In addition, the distribution points used must have PXE enabled.

To verify this setting:

- Select Administration, select Site Configuration, and then select Server and Site System Roles.
- Select the appropriate distribution point.
- Right-click the Distribution Point role, select Properties, and then select PXE.

WinPE never starts the task sequence

See the SMSTS.LOG file at X:\windows\temp\smstslog\smsts.log. If a package does not download or cannot be accessed, you might not have the appropriate network drivers installed. You might need to update the WinPE image with newer WinPE drivers for the target platform. Verify that all packages referenced in the task sequence are available from the distribution point. WinPE validates all packages to make sure they are available before processing the task sequence.

A task sequence reports “Failed to resolve task sequence dependencies”, with the driver pack imported by HP MIK as the dependency at fault, even though the content status says “Distributed”

There is an issue with Configuration Manager where sometimes the hashes for a package are not generated, which results in the device being unable to locate the content since the hashes are used for those purposes.

To resolve this issue:

1. Select the driver pack.
2. Right-click and select **Update Distribution Points**.

3. Select **Yes** on the dialog box that appears.

After the process completes, the driver pack can be located and resolved by the task sequence.

Target system failed to run or use an updated BCU file

You must update the distribution points containing the BCU package when you modify, add, or remove a configuration file.

The default boot order does not enable PXE to boot when a valid drive exists

When an active partition is created on a hard drive, it automatically becomes a bootable device if a valid operating system has been installed. If the PXE NIC is after the hard drive in the boot order, then the hard drive boots to Windows before PXE or causes an “Invalid System Partition” error if Windows is not installed.

To resolve this issue:

4. Verify that PXE is placed before the hard drive in the boot order.
5. If necessary, set the boot order using **HP Client BIOS Configuration Utility** in a task step.

– or –

Set the boot order in the BIOS on the target platform. See the platform documentation for specific instructions on how to do this.

For more info on using BCU to set the boot order, see [Configuring the Set BIOS Configuration task step](#).

If PXE is first in the boot order, the computer does not actually boot to PXE unless Configuration Manager has a mandatory task sequence for it to run.

Task sequence fails with the error “Failed to Download Policy”

This error code (0x80093102 or 0x80004005) refers to a certificate validation issue. The SMSTS.LOG file displays an entry with any of the following text:

```
CryptDecryptMessage ( &DecryptParams, pbEncrypted, nEncryptedSize,0,  
&nPlainSize,0 ), HRESULT=80093102  
no cert available for policy decoding
```

The following are possible causes:

- A misconfiguration of your domain or site server, such as the DNS not pointing to the site server or the site server not specifying a valid FQDN (which is referred to by the DNS listing), can cause this error. If your site server does not specify a FQDN and only specifies the NETBIOS name, and your DNS server tries to refer to the FQDN, an incorrect lookup might cause this error.
- The certificate being used for PXE and boot media is blocked or missing. Verify whether any of the certificates under the **Site Settings** node are blocked or missing. Open the certificates to verify that they are actually installed into the certificate store. If not, install them.

If the task sequence still fails, remove the package from the distribution points and/or groups, and then add it back. This causes the package hash to be regenerated.

A task sequence does not run again even after clearing the PXE advertisement

You must make sure that the deployment is set to allow a rerun so that the advertisement is applied to the computer regardless of whether it previously ran the task sequence.

To resolve this issue:

1. On the properties page of the deployment, select **Scheduling**.
2. Select Rerun behavior.

Task sequence fails at Apply Operating System step with “Failed to make volume X:\bootable” error message

This issue is indicated by log content similar to the following message:

```
MakeVolumeBootable( pszVolume ), HRESULT=80004005
(e:\nts_sms_fre\sms\client\osdeployment\applyos\installcommon.cpp,759)
Failed to make volume E:\ bootable. Please ensure that you have set an
active partition on the boot disk before installing the operating system.
Unspecified error (Error: 80004005; Source: Windows)
ConfigureBootVolume(targetVolume), HRESULT=80004005
(e:\nts_sms_fre\sms\client\osdeployment\applyos\applyos.cpp,326)
Process completed with exit code 2147500037
```

To resolve this issue if you are using a Format & Partition action in your task sequence to partition the hard drives for MBR systems:

- Select the **Make this the boot partition** option. If you do not select this option and the computer has a single hard drive, then the task sequence engine automatically makes one of the partitions the boot partition. If there are multiple drives, it cannot automatically determine which boot partition must be bootable.

System environment variables are not carried over to the next action in the task sequence

When a task sequence runs, commands are executed in a command shell. When that task ends, so does that command shell environment, causing the loss of any system variables defined within that task. Verify that variables that pass between tasks are set as Task Sequence variables, Collection variables, or Machine variables.

Task sequence reported an error while executing

Although there can be a wide variety of reasons why a task sequence fails to fully execute, there are a number of common reasons that might need to be resolved to fix the task sequence execution issue:

- Verify that the DNS and WINS servers are working properly and are stable.
- Verify that the supplied credentials in the task sequence steps have the necessary access rights to the SCCM server to clear and set task sequence variables and PXE flags.
- If attempting to apply BIOS settings via the BCU while in WinPE, the disk must already be partitioned and formatted to allow downloading of the package to the system.

Examining the log files as shown in step 5 of [Diagnosing driver pack or task sequence errors](#) might also provide insight into the reason for failure.

22.8 Diagnosing driver pack or task sequence errors

1. Export the task sequence by right-clicking the task sequence and selecting **Export**.
2. If the issue appears, collect screen captures of the relevant portions.
3. If the issue is related to the installation of the product or occurs soon after installation:
 - a. Copy the MSI installation log located in the temporary files directory (locate using the %TEMP% environment variable). This file is usually located in a "1" directory and has a random name that is formatted as follows:

`MSI<RandomCharacters>.LOG.`
 - b. Copy the support packages installation log located in the temporary files directory (locate using the %TEMP% environment variable). The file name is `HPClientSCCM2012Kit-setup.log`.

4. If the issue occurred while using the console, copy the HP MIK log files located in %TEMP%\hpcclient. In addition, the Configuration Manager console log files located in the **AdminUILog** folder of the Configuration Manager console should be copied as well.
5. If the issue occurred while running a task sequence, the following files should be copied from the WinPE environment. These files can be accessed during task sequence execution by pressing **F8** to open the command prompt. To use the command prompt in WinPE, select the **Enable command support** option for the boot image. This option can be found by right-clicking the boot image and selecting **Properties**, and then selecting **Windows PE**.
 - a. Copy the **SMSTS.LOG** file from where WinPE might be stored:
 - For PXE boot: X:\Windows\Temp\Smstslog
 - On a local (for example, C: or D:) drive under \Smstslog
 - SMSTSLOG<Time-Based-Name>.LOG
 - b. Copy the files used as input to the configuration task, such as configuration INI or XML files.
 - c. Copy SetupAPI.APP.LOG and SetupAPI.DEV.LOG from WinPE stored in X:\Windows\inf for PXE boot.
6. If the error relates to baselines and policies, capture the following log files:
 - a. HP MIK console log files located in %PROGRAMDATA%\HP\HP MIK\Logs B. All HP MIK client side log files located in %PROGRAMDATA%\HP\HP MIK\Logs and

%SYSTEMROOT%\System32\config\systemprofile\AppData\Roaming\hpqLog\com.hp.siam.log
7. If examining these log files does not help you resolve the issue and you need to contact HP, prepare a complete, detailed explanation of the issue, including the following:
 - a. The exact point of failure (for example, the action running when the process failed, a description or screen captures of error messages and error codes)
 - b. A detailed description of the computers being configured (model, hardware configuration, and NIC details) – A description of other circumstances, such as the following:
 - i. Has this task sequence or action ever worked? When did it stop working?
 - ii. If it had worked before, what is different now? Is the task sequence being applied to different computer types, is it using different configuration files or different task sequence variables, or has something else been modified?

23 For more information

For all your client manageability needs, go to the HP Client Management Solutions website:

<http://www.hp.com/go/clientmanagement>. For all HP client tools and driver packs, select **HP Download Library** on the HP Client Management Solutions home page.