User Guide

HP Image Assistant

User input syntax key

Text that you must enter into a user interface is indicated by `fixed-width font`.

Item	Description
`Text without brackets or braces`	Items you must type exactly as shown
`<Text inside angle brackets>`	A placeholder for a value you must provide; omit the brackets
`[Text inside square brackets]`	Optional items; omit the brackets
`{Text inside braces}`	A set of items from which you must choose only one; omit the braces
`|`	A separator for items from which you must choose only one; omit the vertical bar
`...`	Items that can or must repeat; omit the ellipsis

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1 Getting started

HP Image Assistant (HPIA) is a Windows® image comparison tool that captures metadata configuration files from images, compares image configuration files, and provides recommendations to help you develop, maintain, and support images for an optimal Windows performance.

HPIA can compare reference images developed by HP to IT-developed target images to highlight differences in such things as the BIOS version, BIOS settings, device drivers, installed software, and Windows updates. By automating these comparisons and providing an interface to quickly locate differences and to download and install updates, HPIA reduces the time needed to develop and maintain quality Windows images with the correct device drivers, software patches, and BIOS settings for HP business computers.

Glossary

- **Reference image**—XML file extracted from a known, good system image to be used as a reference. An IT administrator either can use reference images provided by HP, which correspond to the factory-shipping state, or can create and maintain reference images using HPIA. The image configuration file contains metadata describing the image, but is not an actual image.

- **Target image**—XML file of an image that can be compared to a reference image. HPIA can generate a target image of a system running HPIA or it can use a previously-captured target image from any system. The image configuration file contains metadata describing the image, but is not an actual image.

- **Platform system ID**—Four-character hexadecimal string that identifies an HP platform.

  To retrieve this string, use one of the following methods:

  – In Command Prompt, enter the following command:

    ```
    wmic path win32_baseboard get product /value
    ```

    The platform system ID is displayed like the following example, where 212A is the ID:

    ```
    Product=212A
    ```

  – In a tool with WMI query, such as wbemtest, perform the following query:

    ```
    select Product from Win32_BaseBoard
    ```

    The Product value is the platform system ID (for example, 212A).

- **QFE**—Software update released by Microsoft to a limited-distribution release channel to address severe instability, security problems, preinstallation problems, and problems reported by customers.

- **Driver pack**—Bundle of all driver files (INF) that can be injected into an operating system image using the Microsoft® DISM.exe tool.

- **Reference computer**—Source of the operating system image that is captured and deployed to other computers.

- **SoftPaq**—Downloadable software update package released by HP.

- **TPM**—Abbreviation for Trusted Platform Module, an industry-standard, dedicated microcontroller that provides basic security-related functions.

- **Configuration Manager**—Abbreviation for Microsoft® System Center Configuration Manager, which is enterprise system-management software.

- **MDT**—Abbreviation for Microsoft Deployment Toolkit, a unified collection of tools, processes, and guidance for automating desktop and service deployment.

System requirements

HPIA requires one of the following versions of the Windows operating system (OS) and .NET Framework 4.5.

📝 **NOTE:** HPIA is not supported on computers with embedded or mobile operating systems.

Operating system	.NET Framework 4.5
Windows 10	Included in OS release
Windows 8.1	Included in OS release
Windows 7 SP1	Go to https://www.microsoft.com/en-us/download/details.aspx?id=30653 to download and install the .NET Framework 4.5 software.

HPIA can capture and analyze XML image configuration files from select HP Elite computers, HP Pro computers, and HP workstations running Windows 10, Windows 8.1, or Windows 7 SP1 operating systems. For a full list of platforms supported by HPIA, go to https://ftp.hp.com/pub/caps-softpaq/cmit/imagepal/ref/platformList.html.

HPIA use cases

The HPIA tool suite can be used in several stages of an operating system image life cycle: development, deployment, maintenance, and support.

During the image development process, HPIA can be used by IT administrators to make sure that all required components are included and updated, which improves the quality of the image without manual verification or updates.

HPIA also provides information and support for managing BIOS settings, basic security concerns, QFEs, and optional software. After the reference image is finalized, HPIA can capture, analyze, and save XML image configuration files from supported platforms for future maintenance and support needs.

After the image is developed and deployed, HP recommends periodically performing image maintenance to make security and performance enhancements and install bug fixes. HPIA can analyze the stored XML image configuration file against the latest HP reference image to identify, obtain, and install available updates. After major updates to an image, HP recommends that you use HPIA to capture and save XML configuration files for future reference.

If you need to troubleshoot an end-user issue relating to the BIOS, BIOS settings, drivers, or software,you can run HPIA on the system to compare it to the corresponding HP reference image or any other known, good image XML file.

If you need to contact HP for support for BIOS, driver, or software issues, you can capture an XML image configuration file from the system and send it to HP to help resolve your issue.

After an in-place upgrade, an IT administrator can run HPIA on a reference computer to analyze whether HP software is up-to-date and then update it, if necessary. For wipe-and-load scenarios, the IT administrator can run HPIA on a representative system to be migrated and receive the HP OS migration recommendations. These recommendations include high-level migration steps with detailed recommendations on HP settings, updates, and best practices to help reduce the time needed to prepare for and execute a migration.

Downloading HPIA

1. Go to http://www.hp.com/go/clientmanagement.

2. Under **Resources**, select **HP Download Library**.

3. Locate and download **HP Image Assistant** by selecting the latest SoftPaq.

4. Locate the downloaded SoftPaq on your system, double-click, and follow the on-screen instructions to extract the HPIA files. The HPIA files are saved to the location specified in the installation wizard.

2 HPIA components and configuration

HPIA components

HPIA comprises HPImageAssistant.exe, ImageCapture.exe, language resource files, and other supporting files. HPIA can be run from a USB flash drive, a target computer, or any other computer running a Windows 10, Windows 8.1, or Windows 7 operating system. HPIA does not update the registry or copy files to the target computer.

HPImageAssistant.exe is the HPIA user interface.

NOTE: HPImageAssistant.exe supports the parameter `/debug` to write log files for troubleshooting issues.

ImageCapture.exe is a standalone tool that captures an XML image configuration file that can then be compared against a reference image.

You must run these executable files as an administrator to capture image configuration files using HPIA.

HPIA user interface

Testing the connection

Many operations performed by HPIA require Internet access to get the latest SoftPaq data. By default, HPIA uses Internet Explorer connection settings to access the Internet. Be sure that you can successfully connect to either of the following links using Internet Explorer:

- https://hpia.hpcloud.hp.com/

- https://ftp.hp.com/pub/caps-softpaq/cmit/imagepal/ref/platformList.html

If your network environment requires proxy settings and you cannot connect to either link, run HPIA and configure the web proxy. See Configuring a web proxy on page 4

Running HPImageAssistant.exe

1. Right-click **HPImageAssistant.exe**.

2. Select **Run as administrator**.

Changing the user-interface language

▲ Select **Languages**, and then select one of the supported languages.

Configuring a web proxy

1. Select **Tools**, and then select **Proxy Configuration**.

2. Enter the network proxy information.

3. Select **Save**.

The proxy information is saved in the tool configuration file, which is in the same location as HPImageAssistant.exe. The information is retained and available for subsequent use.

Configuration options

From the menu bar, select **Tools** and then select **Configuration Options**.

Download

To change the **Download Folder** location:

1. Select **Browse**.

2. Select a location or select **Make New Folder** to create a new folder.

3. Select **OK**.

Download options

- **Single folder**—Downloads all SoftPaqs to a single folder.

- **Separate folders by SoftPaq names**—Downloads all SoftPaqs into separate folders by SoftPaq name.

Restore defaults—Clears all changes and sets values back to default selections.

▲ To save changes select **OK**. To close the dialog box without saving changes, select **Cancel.**

Unpack

To change the **Unpack Directory** location:

1. Select **Browse**.

2. Select a location or select **Make New Folder** to create a new folder.

3. Select **OK**.

4. Select one option from **Unpack folder options**.

5. To save changes select **OK**. To close the dialog box without saving changes, select **Cancel.**

To clear all changes and set values back to default selections, select **Restore defaults**.

Proxy

1. Type the Proxy IP address into the **Address** box.

2. Type the port number into the **Proxy** box.

3. Type the username, password, and network domain of the domain user account.

4. To save changes select **OK**. To close the dialog box without saving changes, select **Cancel.**

To clear all changes and set values back to default selections, select **Restore defaults**.

Thread

The **Number of simultaneous downloads** can be set up to 5.

📝 **NOTE:** Entering a number higher than one can impact network performance.

Finding the supported platform list

▲ Select **Help**, and then select **Supported Platforms** to display the list of reference images provided by HP.

The supported platforms list can be organized by **Product**, **OS**, **Architecture**, or the date the image was **Last Modified**. A keyword search feature is also available for the supported platforms list to assist in finding specific systems.

User Guides

▲ Select **Help**, select **User Guide** and then select a **Language**.

3 Analyzing a system image

1. On the **Analyze image** tab, select an option under **STEP 1 Choose Target Image**.

   - **Browse**—Select the previously saved XML image configuration file to be analyzed.

   - **<This Computer>**—Selects the computer HPIA is running on to be analyzed. When the analysis is started, HPIA captures the image configuration information and then uses it in the analysis.

2. Select an option under **STEP 2 Choose Reference Image.**

   - **Browse**—Select the previously saved XML image configuration file.

   - **<This Computer>**—Selects the computer HPIA is running on to compare the target image to. When the analysis is started, HPIA captures the image configuration information and then uses it in the analysis. This can be useful in scenarios where the current computer is a known, good image.

   - **<From HP.com>**—Automatically selects the latest XML image configuration file provided by HP. The automatic XML selection depends on the system ID, OS version, and architecture of the target image.

   NOTE: To receive recommendations from HPIA, you must select this option.

   To use this option, you must be connected to the Internet.

3. Select **STEP 3 Analyze**.

   NOTE: If the system ID, OS version, and architecture (64-bit or 32-bit) of the reference image and target image do not match, the images cannot be compared and analyzed.

After the image configuration files are analyzed, a summary is displayed.

The **Search** option is available in the **Advisories**, **Device**, **Drivers**, **Installed Software**, **Firmware**, and **BIOS Settings** tabs. Use the option to search for a specific subject within that tab.

Analyzing the summary

After you run HPImageAssistant.exe, a system summary is displayed. Select one of the other tabs to see additional details about device drivers, installed software, security, firmware, and BIOS settings. If you selected the <From HP.com> option, there is a **Recommendations** tab. If you did not select the From <HP.com> option, there is a **QFEs** tab.

The **Summary**, **Recommendations**, **Advisories**, and **Security** tabs contain information about the target image only. The **Device Drivers**, **Installed Software**, **QFEs**, **Firmware** , and **BIOS Settings** tabs contain information about the comparison between the target image and the reference image.

The following table describes the icons used to help you analyze the results and prioritize the recommended changes to the target image.

Icon	Description
●	Identifies components that exist on the target image only. These components often include third-party drivers, user-installed software, and QFEs.

Icon	Description
●	Identifies components that exist on the reference image only.
	If you are using an HP refence image, all available drivers are displayed.
●	Identifies components that are the same on the target image and the reference image.
⊕	Identifies components where the version installed on the target image is earlier than the version on the reference image.
⚠	Identifies components necessary for full system function that do not exist on the target image.
●	Identifies components that exist on both the target image and the reference image, but are different in a manner not described by other filters.
	Difference can include components made by different manufacturers or a newer version installed on the target image.

Summary

The **Summary** tab summarizes the overall health and overall security of the target image. The tab includes details about the platform, BIOS and firmware configuration, missing or out-of-date drivers, HP recommended software, out-of-date software, and security settings.

The **Security Settings** summary includes details on whether antivirus and antispyware protection is enabled and up-to-date, whether the firewall is enabled, and whether a BIOS Setup Password is set. This section also indicates whether the target image contains any root certificates with an embedded private key. For more information, see Security on page 11.

Under **BIOS and Firmware**, the section **Different** identifies the BIOS settings that exist in both the target image and reference image, but have different values. **Added** and **Missing** identify the BIOS settings that were either added or removed between BIOS releases.

The **Firmware** section indicates the number of firmware components which are out of date on the target image.

Recommendations

📝 **NOTE:** The **Recommendations** tab is available only if the <From HP.com> option was selected as the reference image.

The **Recommendations** tab displays the latest versions of the BIOS, drivers, and software installed on the target image and reference image. Based on the comparison, HPIA recommends installing any missing or newer components on the target image.

The **Components** column provides the name of the BIOS, driver, or software available for installation. The **Target Image** and **Reference Image** columns provide version information.

In the **SoftPaq** column, the SoftPaq number links to the SoftPaq executable, the document icon links to the SofPaq release notes, and the CVA icon links to the SoftPaq CVA file. The INF icon indicates whether INF-based installation support is available. The HP System Software Manager (SSM) icon ⬤ indicates that silent installation is available. The **Comments** column provides comments from HP pertaining to the deliverable.

To install or update a component:

1. If additional software needs to be installed before a SoftPaq is installed, it is listed under **Prerequisites**. If there is a green checkmark next to the prerequisite, it is already installed on the system. Download

and install any prerequisites until all of them are marked with a green checkmark. After each prerequisite is installed, analyze the system. Continue this process until all prerequisites are marked with a green checkmark.

2. Advisories pertaining to the SoftPaq and the target image are listed under **Advisories**.

3. By default, **Critical** components will be selected if they are available. Choose the components drop-down menu to view the following options:

   - **All**—Selects all packages.

   - **None**—Selects no packages.

   - **Critical**—Selects all critical packages.

   - **Update Recommended**—Selects all packages recommended for update.

   - **Install Recommended**—Selects all recommended packages for installation.

   - **INF Installation Supported**—Selects all packages that support installation via INF.

   - **Auto Installable (SSM-Compliant)**—Selects all packages that support Software Manager installation.

   Select the **SoftPaq** column, then select the link to download the SoftPaq.

   – or –

   To download multiple SoftPaqs simultaneously, select the box next to the name of each update.

4. Select **Download (X)** where x is the number of packages selected.

5. Select a download option.

   - **Download Softpaq(s) only**—Downloads the SoftPaqs.

     – **Extract SoftPaq Files**—If the Download Softpaq(s) only option is selected, you can also select this option to extract the files after they are downloaded.

   - **Download SoftPaq(s), extract files, and install**—Downloads, extracts, and installs the SoftPaqs on the computer running HPIA. The selected SoftPaqs must support silent installation to use this option.

6. Select **Start**.

Advisories

The **Advisories** tab provides a list of customer advisories, product change notification documents, and security bulletins relating to the target image. Click the document icon 📄 to view the details of the document. A keyword search feature is available for searching the customer advisories, product change notifications, and security bulletins list.

To export the list to a CSV file.

▲ Select the Microsoft Excel icon.

To display a specific set of documents:

- **Advisories**— Displays customer advisories.

- **Notices** — Displays product change notification documents.

- **Bulletins** — Displays security bulletins.

Device Drivers

The **Device Drivers** tab provides information about the device drivers installed on the target image and reference image, including the class description, driver name, device ID, device manufacturer, driver provider, date the driver was last updated, and driver version. Use the keyword search feature to search the device drivers list.

To export the device driver details to a CSV file:

▲ Select the Microsoft Excel icon.

To display a specific set of drivers, select one or more of the following filters:

- **Target Image Only**—Displays drivers installed on the target image but not the reference image

- **Reference Image Only**—Displays drivers installed on the reference image but not the target image

- **The Same**—Displays drivers that match on the target image and the reference image

- **Out-of-Date**—Displays drivers that need to be updated on the target image (based on the reference image); might be identified as a critical update

- **Missing**—Displays drivers that need to be installed on the target image for full system function (based on the reference image)

- **Different**—Displays drivers installed on both the target image and reference image, but with a difference not covered by the other filters

Installed Software

The **Installed Software** tab provides information about the software installed on the target image and reference image, including the name, version, manufacturer, and date installed. This software can be found under Programs and Features in Control Panel.

To export the installed software details to a CSV file:

▲ Select the Microsoft Excel icon.

To display a specific set of software, select one or more of the following filters:

- **Target Image Only**—Displays software installed on the target image but not the reference image

- **Reference Image Only**—Displays software installed on the reference image but not the target image

- **The Same**—Displays software that matches on the target image and the reference image

- **Out-of-Date**—Displays software that needs to be updated on the target image (based on the reference image); might be identified as a critical update

- **Missing**—Displays software that needs to be installed on the target image for full system function (based on the reference image)

- **Different**—Displays software installed on both the target image and reference image, but with a difference not covered by the other filters

QFEs

> **NOTE:** The QFEs tab is available only if a custom XML file is selected as the reference image.

The QFEs tab provides information about available Microsoft updates, including the ID, description, comments about the fix, and the date the update was installed.

To export the QFEs details to a CSV file:

▲ Select the Microsoft Excel icon.

To display a specific set of QFEs, select one or more of the following filters:

- **Target Image Only**—Displays QFEs installed on the target image but not the reference image

- **Reference Image Only**—Displays QFEs installed on the reference image but not the target image

- **The Same**—Displays QFEs that matches on the target image and the reference image

- **Different**—Displays QFEs installed on both the target image and reference image, but with a difference not covered by the other filters

Security

📝 **NOTE:** The information in this tab applies to the target image only.

The **Security** tab provides information about security items.

The **Security Settings** section provides information about the firewall, antivirus software, antispyware software, and BIOS setup password. You can see whether the firewall is enabled, whether the antivirus software is enabled and up-to-date, whether the antispyware software is enabled and up-to-date, and whether there is a BIOS Setup Password. HP strongly recommends that you use a BIOS Setup Password.

The **Certificates** section provides a list of root certificates and whether each certificate has an embedded private key. HP does not recommend using root certificates that have an embedded private key.

To export the certificate details to a CSV file:

▲ Select the Microsoft Excel icon.

Firmware

The **Firmware** tab provides information about the firmware on the computer, including the firmware name and version for both the target image and the reference image. If they are the same, the version is listed once. A keyword search feature is available for searching the firmware list.

To export the firmware details to a CSV file:

▲ Select the Microsoft Excel icon.

To display a specific set of firmware, select one or more of the following filters:

- **Target Image Only**—Displays firmware installed on the target image but not the reference image

- **Reference Image Only**—Displays firmware installed on the reference image but not the target image

- **The Same**—Displays firmware that matches on the target image and the reference image

- **Out-of-Date**—Displays firmware that needs to be updated on the target image (based on the reference image); might be identified as a critical update

- **Different**—Displays firmware installed on both the target image and reference image, but with a difference not covered by the other filters

BIOS Settings

The **BIOS Settings** tab provides information about the BIOS settings on the target image and the reference image, including name, F10 Setup path, and the current value. Only BIOS settings that can be configured are displayed. A keyword search feature is available for searching the BIOS settings list.

To export the BIOS settings details to a CSV file:

▲ Select the Microsoft Excel icon.

To display a specific set of BIOS settings, select one or more of the following filters:

- **Target Image Only**—Displays BIOS settings installed on the target image but not the reference image

- **Reference Image Only**—Displays BIOS settings installed on the reference image but not the target image

- **The Same**—Displays BIOS settings that match on the target image and the reference image

- **Different**—Displays BIOS settings installed on both the target image and reference image, but with a difference not covered by the other filters

Saving a results file

▲ After analyzing a system image, select **File**, and then select **Save Recommendations**.

This HTML file can be opened and printed as needed.

4 Migrating an operating system

HPIA supports both in-place upgrade and wipe-and-load migration scenarios. For an in-place upgrade, an IT administrator can perform the OS upgrade on a representative computer and then analyze the image using HPIA after the upgrade to identify, download, and deploy addition updates to similar computers after the migration.

In a wipe-and-load migration, HPIA can help with specific supported options.

Migration considerations

During the migration process, if a TPM firmware upgrade is needed, any encrypted drives associated with the keys stored in the TPM must be decrypted. Then, encryption must be disabled (not suspended).

HP recommends connecting any peripheral devices that only enumerate if attached to the selected system, such as a smart card reader, before capturing or analyzing the image information of a system. This is necessary for HPIA to detect those devices as well as the associated driver and firmware versions and updates.

In-place upgrade

HP recommends using an in-place upgrade to migrate from the Windows 7 OS to either the Windows 8.1 OS or Windows 10 OS.

The following are the advantages of using an in-place upgrade instead of a wipe-and-load migration:

- No user data backup is required. Data, settings, drivers and applications from the existing OS is automatically preserved.

- It is usually faster than a wipe-and-load migration.

- Windows 10 build 1703 and later include a MBR2GPT tool to convert a disk from Master Boot Record (MBR) to GUID Partition Table (GPT). MBR-to-GPT conversion with in-place upgrade scenarios is now possible without the need to modify or delete existing data on a disk. For more details, see the Microsoft documentation at the following URL: https://technet.microsoft.com/en-us/itpro/windows/deploy/mbr-to-gpt.

Migrating from Windows 7 or Windows 8.1 OS to Windows 10 OS

NOTE: You must be connected to the Internet to receive recommendations from HPIA.

1. On the **Migrate OS** tab, select one of the following options under **STEP 1 Choose System**.

- **Browse**—Specifies a saved XML image configuration file.

- **<This Computer>**—Selects the image configuration of the computer running HPIA. HPIA captures and then analyzes the image.

2. Under **STEP 2 Choose OS & Partition**, select the option with the appropriate Windows version, architecture, and disk-partitioning scheme.

> 📝 **NOTE:** HP recommends using the default selection: **Win10 64 GPT**. BIOS-based options are supported if you rely on the legacy boot mode.

3. Under **Step 3 Choose WinPE OS**, verify the selected boot image version. HP recommends using the boot image version that matches the Windows version you are migrating to. **WinPE 10** is the only selection if you are migrating to the Windows 10 operating system.

4. Under **STEP 4 Choose TPM Version**, verify the target TPM firmware specification version. The available options include TPM firmware version 2.0, if the computer supports a TPM firmware upgrade. For more information, see TPM firmware upgrade on page 26.

> 📝 **NOTE:** If a TPM firmware upgrade is available, HP recommends upgrading to TPM 2.0 to improve your security.
>
> If you do not know your TPM specification version, run `TPM.msc` from the command line and locate the **Specification Version**.

5. Under **STEP 5 Start Analysis/Recommend**, select **Analyze**.

HPIA retrieves and displays the recommended migration tasks in the **Summary** tab and detailed components information in the **Recommendations** tab.

Summary

The high-level recommended tasks serve as a guideline and are applicable to most management solutions.

Tasks with links under the **Recommended Packages** column link to the **Recommendations** tab, where HPIA provides binaries and scripts that can be used during the migration process or in a task sequence.

All tasks with **N/A** listed under the **Recommended Packages** column either are common tasks already provided by a task sequence or third-party tools or are not applicable to the selected computer.

For example, the Backup User Data task does not have a recommended package because IT administrators can use either Microsoft User State Migration Tool (USMT) or another third-party tool to back up the user data.

Recommendations

The **Recommendations** tab provides information about available solutions, including the build versions of software, the value of a BIOS setting, or the target TPM version; the downloads associated with the solution; and any comments.

These solutions are divided into types, identified by the icons described in the following table.

Icon	Description
✅	Identifies a recommended solution.
	This package contains all items successful for a necessary migration and HP best practices.
➕	Identifies an optional solution.

Icon	Description
	These packages contain components that add value or drivers that are supported by the product model, but the associated hardware is not detected on the system.
	Identifies solutions that are necessary for the chosen system. For example, if a BIOS Setup Password is set on the current system and the item has been cleared on the target configuration, the Current BIOS Setup Password solution is displayed with the warning icon.

If additional software needs to be installed before a SoftPaq is installed, it is listed under **Preresquisites**. Advisories pertaining to the SoftPaq are listed under **Advisories**.

Downloading packages

1. Select **Select Packages to Download/Apply**.

2. From the drop-down menu, select one of the following options:

   - **All**—Selects all recommended and optional packages.

   - **HP Recommendations with HP-Verified Driver Pack**—Selects all driver packs built and tested by HP in addition to other recommended items, except for all drivers listed under the **Customer Driver Pack** section. This option is available when a system supports driver packs verified by HP, and is the default selection.

     > **NOTE:** Driver packs verified by HP are updated quarterly, or when there is a critical update. Using HP driver packs can help minimize your time spent creating and verifying driver packs.

   - **HP Recommendations with Custom Driver Pack**—Creates a driver pack that includes the latest recommended drivers in addition to other recommended items. This option provides the latest driver files that have been tested individually, but not necessarily in combination with each other. For optimal results, verify the custom driver pack before deployment.

   - **None**—Clears all selected packages.

3. Select **Download (X)**, where X is the number of packages selected.

4. Enter the download folder location. By default, this is the current user download path with a subfolder named the product model.

5. If prompted, enter the new or current BIOS setup password.

6. Select **Start** to download the binaries and scripts for the selected recommendations.

Common solutions

The following are common solutions that might be recommended for your system.

WinPE Driver Pack

This is the HP WinPE driver pack that can be added to a Windows PE 10 image to make sure that the boot image can connect to the network and that USB and storage devices function properly in the Windows PE environment.

BIOS Setup Password

HP recommends setting a BIOS setup password to strengthen the security protecting your BIOS settings.

If **New BIOS Setup Password** is selected, the download dialog requires that you enter a new password.

If **Current BIOS Setup Password** is selected, the download dialog requires that you enter the current password.

Prepare TPM

These recommendations help create a script to be sure that the TPM is available and enabled. The script makes sure that the TPM activation policy requires no prompt. When HPIA detects that the selected system has TPM properly enabled already, the script is still provided in the recommendation list because other systems in the target collection might have their TPM disabled or hidden.

BIOS

A BIOS update is recommended if the system BIOS version of the selected system is out of date. Be sure to review the release notes for fixes and feature and device support updates.

📝 **NOTE:** BIOS updates require that a system is connected to AC power to ensure the completion of an update. For best practices, always connect a system to AC power before an imaging process.

BIOS Settings

Any BIOS settings that your system needs are listed in this section.

TPM

TPM firmware updates are supported for systems from 2015 or later. For more information, see TPM firmware upgrade on page 26.

⚠ **WARNING!** To avoid a complete loss of data, before you updated the TPM firmware, encrypted drives must be decrypted and the encryption is disabled. The TPM firmware utility included in the download has a built-in verification for BitLocker and HP Drive Encryption software solutions only. If BitLocker or HP Drive Encryption is used and the primary drive is not decrypted, the utility exits with an appropriate error code. The utility does not detect other disk encryption solutions.

📝 **NOTE:** The TPM firmware update also requires physical presence. A manual action is required to complete the reboot after the firmware upgrade utility is run.

HP-Verified Driver Pack

This driver pack has been tested by HP with different deployment scenarios: manual injection via DISM.exe to an offline image, deployment via MDT, and deployment via Configuration Manager task sequences. The drivers and versions included in the driver pack are listed in the collapsible **Contents** section.

Custom Driver Pack

This section lists all drivers that can be injected into an OS with DISM.exe. If a driver is associated with a device that exists on the selected system, it is marked recommended. A driver is marked optional if it is supported by the selected product model, but the associated hardware has not been detected on the selected system. It is listed because other target systems might include the hardware option. All selected driversare built into a driver pack for the target OS during the download process. The individual SoftPaqs are also downloaded.

Drivers not included in Driver Pack

The section list drivers that are not included in the driver pack verified by HP and that cannot be built into a custom driver pack because they do not support an INF install. These drivers need additional configuration to

work properly, such as Bluetooth and wireless network drivers. These drivers need to be installed by running the silent install command of their installers.

Software

Recommended hardware-enabling and optional value-added software are both listed in this section. Hardware-enabling software is marked recommended.

HTML Migration Report

After the selected packages are downloaded, the HTML Migration Report is displayed in your default browser. The report lists both the current configuration and the target configuration of the selected system for the migration. The following sections correspond to the high-level tasks from the **Summary** tab. If a section contains binaries and/or scripts, there is a link to the subfolder containing those binaries or scripts.

▲ To open the download folder, select **Download Folder**.

Download information

In the download folder, binaries and scripts are organized into subfolders based on the high-level task order and task description. These folders can be used for the migration process, or as packages referenced by a task sequence in MDT or Configuration Manager.

In folders containing BIOS operations or software applications, HPIA automatically generates command-line scripts.

Downgrading from Windows 10 to Windows 7

The process is similar to migrating from Windows 7 to Windows 10. HPIA makes both recommended and optional suggestions for a selected system. The recommended Windows PE boot image recommended is Windows 7 based; that is, Windows PE 3. Because Windows 7 does not support native UEFI boot, UEFI hybrid with Compatibility Support Module (CSM) boot mode is recommended.

If a system does not support Windows 7, HPIA displays a message that the configuration is not supported by the platform.

5 Downloading SoftPaqs

HPIA incorporates some of the features of HP SoftPaq Download Manager. IT administrators can use HPIA to search for and download the SoftPaqs appropriate for supported HP computers.

To simplify managing SoftPaqs for a set of HP computers, the HPIA Download SoftPaq feature allows you to create a custom list, a configurable **My Products List**, of multiple HP computer models. HPIA saves **My Products List** as part of the configuration settings file. The IT administrator can create and use more than one configuration settings file by saving and loading each configuration in its own uniquely named file using the **File** menu commands.

HPIA will query for available SoftPaqs based on the contents of the **My Products List**.

Creating My Products List

1. In the **Download SoftPaqs** tab, select the **Create** or **Edit** button located to the right of **Step 1 Create My Products**. The button will be labeled as one of the following:

   - **Create:** If your current configuration option does not yet have products listed in My Products List, the button will be labeled **Create**.

   - **Edit:** If your current configuration option does have products listed in **My Products List**, the button will be labeled **Edit**.

   Once selected the **Edit My Products List** dialog box will open.

2. Select your version of Windows from the drop-down menu. Once selected, the **HP Product Catalog** search results will display all available products for the specified OS. You can use the **Search** box, to search for products. For example, you can search by product names (complete or partial) such as "EliteBook" or product numbers such as "800." Select the check box next to the products you want to add to the list.

   📝 **NOTE:** You must be connected to the Internet to view or search the list of supported platforms.

3. Items can be removed from the list via the following options:

   - To remove a specific product, select the trash can icon to the left of the product name.

   - In cases where multiple OSes are listed under a single product, a specific OS can be removed by selecting the trash can icon to the left of the name of the OS.

   - To remove all products, select the check box option **Clear all selected products**.

4. Select **Apply** to save changes. This will close the **Edit My Products List** dialog box.

Creating and using multiple My Product Lists

HPIA will remember your My Products List selections from session to session as part of the default configuration file. This default file is saved in the same folder as HPImageAssitant.exe.

To maintain more than one My Products List, create a My Products List and then save the current configuration using the **File** and **Save Configuration File** menu items. This will let you specify the name and location of the file. You can replace the current configuration with the contents of a previously saved

configuration file using the File and the Open Configuration File menu items. This will relaunch HPIA using the specified configuration file, which will become the current default configuration.

Finding available SoftPaqs for a specific product

▲ To find SoftPaqs for products listed in **STEP 2 Select from My Products List**, select **Analyze** located to the right of **STEP 3 Get SoftPaqs**. By default, all products listed in **STEP 2 Select from My Products List** will be checked. To limit the SoftPaqs search, uncheck the products in **My Products List** prior to selecting **Analyze** and the products will not be included. After selecting **Analyze**, the **Available SoftPaqs** and **Advisories** tabs open.

Available SoftPaqs

1. After you run **Analyze**, the **Available SoftPaqs** tab lists the SoftPaqs or updates available for the selected platforms and operating system. You can filter, sort, or display a specific set of drivers via the following options:

   - **Latest**—Displays only the latest version of drivers, software, and/or firmware.

   - **All**—Displays all available versions of drivers, software, and/or firmware.

   - **Search**—Searches for a specific driver, software, or firmware.

   - **Pencil icon**—Selects which columns to show in this tab and in the report.

   To export the list to a CSV file, select the Microsoft Excel icon.

2. Choose **Select Components to Download/Apply** to display a drop-down menu. Choose from the following options:

   - **All**—Selects all packages.

   - **None**—Selects no packages.

   - **Supersede**—Selects all superseded packages.

   - **Critical**—Selects all critical packages.

   - **Recommended**—Selects all recommended packages.

   - **Routine**—Selects all packages classified as routine.

   - **INF Installation Supported**—Selects all packages that support installation via INF.

   - **Auto Installable (SSM-Compliant)**—Selects all packages that support Software Manager (SSM) installation.

   If additional software needs to be installed before a SoftPaq is installed, it is listed under **Prerequisites**. Advisories pertaining to the SoftPaq are listed under **Advisories**.

▲ To update CSV files for downloaded SoftPaqs, select **Update CSV**. Downloaded SoftPaqs will be indicated by the check mark icon located to the right of the name of the product. If there are no SoftPaqs downloaded, this option will be unavailable.

Advisories

The **Advisories** tab provides a list of customer advisories, product change notification documents, and security bulletins relating to the target image. For more information on advisories, go to .

6 Get Drivers

HPIA allows you to find and download available driver SoftPaqs by OS and product name. The **Get Drivers** tab allows you to download or create a driver pack for a specific product and OS combination. HPIA does not save the selected product and OS. Each unique time that you run HPIA and use the **Get Drivers** feature you must select an OS version and product.

NOTE: You must be connected to the Internet to view the list of Supported Platforms or use the HP Product Catalog. This feature allows you to select only a single platform and a single OS version for the purpose of either downloading files into the download folder or creating a driver pack (ZIP, CAB, ISO or WIM).

Finding Driver SoftPaqs

1. **STEP 1 Choose OS**—From the drop-down menu, select the specific OS version.

2. **STEP 2 Choose Product**—Specify a product in either of the two following ways:

   Select a specific product.

   - or -

   Search for a specific product by using a partial model name such as "EliteBook" or "Elite" or product number such as "800." Select the desired product.

3. **Step 3 Get driver SoftPaqs**—Select **Analyze**.

Available SoftPaqs

1. After you run **Analyze**, the **Available SoftPaqs** tab lists the SoftPaqs or updates available for the selected platforms and operating system. You can filter, sort, or display a specific set of drivers via the following options:

   - **Latest**—Displays only the latest version of drivers, software, and/or firmware.

   - **All**—Displays all available versions of drivers, software, and/or firmware.

   - **Search**—Searches for a specific driver, software, or firmware.

   - **Pencil icon**—Selects which columns to show in this tab and in the report.

   To export the list to a CSV file, select the Microsoft Excel icon.

2. Choose **Select Components to Download/Apply** to display a drop-down menu. Choose from the following options:

   - **All**—Selects all packages.

   - **None**—Selects no packages.

   - **Critical**—Selects all critical packages.

   - **Recommended**—Selects all recommended packages.

   - **Routine**—Selects all packages classified as routine.

- **INF Installation Supported**—Selects all packages that support installation via INF.

- **Auto Installable (SSM-Compliant)**—Selects all packages that support Software Manager (SSM) installation.

  If additional software needs to be installed before a SoftPaq is installed, it is listed under **Prerequisites**. Advisories pertaining to the SoftPaq are listed under **Advisories**.

3. Select **Download (X)** where X is the number of packages selected.

   Operation—The options are as follows:

   - **Create driver pack and download driver installation executables**—Select the driver file pack create type (ZIP, CAB, ISO, or WIM) from the **File type** drop-down menu.

   - **Download drivers**—Downloads only the drivers to the download folder.

4. Select **Start** to begin download.

5. The **Get drivers** summary page opens in a browser window that provides information about the downloaded driver SoftPaqs and, if selected, the custom driver packs.

7 Running from a command-line

HPIA supports running analysis from a command-line. An IT administrator can automate the analysis and downloading of recommendations.

The following table describes the valid command line options.

Option	Description
`/UseFTP/FTPURL:<URL>/` `FTPUSER:<username>/` `FTPPassword:<password>`	`/UseFTP` Use FTP when connecting to HP.com (Default is HTTPS). `/FTPURL:<URL>` Specifies the FTP URL. `/FTPUSER:<username>` Specifies the FTP username. `/FTPPassword:<password>` Specifies the FTP password.
`/Debug`	Enables logging (%TEMP%\HP Image Assistant.log).
`/VerifySoftPaq:<SoftPaqpath>`	Verifies the specified Softpaq EXE integrity/signature.
`/ProxyURL:<URL>/` `ProxyPort:<portnumber>/` `ProxyUser:<username>/` `ProxyPassword:<password>/` `ProxyDomain:<domain>`	`/ProxyURL:<URL>` Specifies the proxy URL. If not specified, Internet Explorer proxy settings are used. `/ProxyPort:<portnumber>` Specifies the proxy port number. `/ProxyUser:<username>` Specifies the proxy username. `/ProxyPassword:<password>` Specifies the proxy password. `/ProxyDomain:<domain>` Specifies the proxy domain name.
`/Silent`	Runs the application in silent (no UI, non-interactive) mode.
`/Operation:[Analyze|DownloadSoftPaqs]`	`[Analyze]` Performs the analyze operation. `[DownloadSoftPaqs]` Downloads and/or extracts the relevant SoftPaqs based on the default configuration, or the configuration specified in the `/file` option, or overridden by other command-line options.
`/TargetFile:targetImagePath`	A saved XML image configuration file to be analyzed.
`/Selection:[All|Critical|` `AutoInstallable]`	• `[All]` Selects all recommendations available. This is the default operation if no option is specified. • `[Critical]` Selects critical recommendations only. • `[AutoInstallable]` Selects Auto-installable or SSM-compliant recommendations only.
`/SelectLatest`	Selects all latest Softpaqs (Default). Applicable only in `/Operation:DownloadSoftpaqs`.
`/SelectUpdate`	Selects all Softpaqs newer than downloaded SoftPaqs. Applicable only in `/Operation:DownloadSoftpaqs`.
`/InstallType:[All|INFInstallable|` `AutoInstallable]`	Specifies the installation type: `[All]` Selects all SoftPaqs. Tthis is the default selection if omitted.

Option	Description
	`[INFInstallation]` Selects Softpaqs which are DPB-compliant.
	`[AutoInstallable]` Selects SoftPaqs which are SSM-compliant.
`/Action:[List|Download|Extract|Install]`	Specifies the action to perform. • `[List]` Retrieves a list of recommendations. This is the default action if omitted. • `[Download]` Downloads recommendations. • `[Extract]` Downloads and extracts recommendations. • `[Install]` Downloads, extracts, and installs recommendations. This is only applicable if `/TargetFile` is not specified. Only Auto-installable (SSM-compliant) Softpaqs will be installed.
`/AutoReport`	Creates Softpaq installed status SoftpaqReport.csv file in %ProgramData%\HP\HP Image Assistant\. Use `/TargetFile` to specify the Target. Otherwise, the Target is "This Computer."
`/Category:[All,BIOS,Drivers,Software,Firmware]`	Specifies the recommendation category . `[All]` is default if omitted.
`/ReportFolder:<folderPath>`	Specifies the output folder path.
`/ReportFilePath:<folderPath\filename>`	Specifies both output folder and filename of the recommendations output files (.HTML and .XML). This overrides `/ReportFolder`.
`/ResultFilePath:<folderPath\filename>`	Specifies the complete path of the results output file. Default is "Readme xxxx" in the download folder (/SoftpaqDownloadFolder) where xxxx is the current date and time. If `/ReportFolder` is specified, the default is "Readme" (without the date/time stamp) in the report folder.
`/SoftpaqDownloadFolder:<folderPath>`	Specifies the SoftPaq download folder. If omitted, defaults to the current user's download folder.
`/SPList:<filename>`	Downloads the Softpaqs listed in the provided text file. If the path/filename contains spaces, enclose the entire value in quotes. For example, `/SPLIST:"C:\My Path\My SP List.txt"` The file contents are simply a list of raw Softpaq numbers, without the "SP" prefix and without ".exe" extension, one number per line. The Softpaqs are downloaded into the %ProgramData%\HP\HP Image Assistant\SWDownload folder. The corresponding .CVA and release notes (.HTML) are also downloaded for each Softpaq. When combined with the `/Action:Extract` or `/DownUnpack` option, each Softpaq is expanded into its own "spXXXXX" subfolder. The process will run silently (no UI). It is recommended that you use `START/WAIT` when scripting so execution of the following step in the script does not begin until SPLIST processing completes. For example: `START /WAIT HPImageAssistant.exe /SPList:mySoftpaqs.txt.`
`/RunHidden`	Inherited from Softpaq Download Manager (SDM). Equivalent to `/Silent`.
`/Auto` or `/AutoMyPC`	Inherited from SDM. Equivalent to `/Operation:Analyze /Action:Install`.
`/DownOnly`	Inherited from SDM. Equivalent to `/Action:Download`.
`/DownUnpack`	Inherited from SDM. Equivalent to `/Action:Extract`.

Option	Description
/DownInstall	Inherited from SDM Equivalent to /Action:Install.
/SelectCritical	Inherited from SDM. Equivalent to /Selection:Critical.
/SelectSSMComp	Inherited from SDM. Equivalent to /Selection:AutoInstallable.

For example, to Get/Save a list of recommendations to C:\HPIAOut\Recommendations folder:
`HPImageAssistant.exe /Operation:Analyze /Action:List /Silent / ReportFolder:C:\HPIAOut\Recommendations.`

To download recommended critical driver Softpaqs: `HPImageAssistant.exe / Operation:Analyze /Category:Drivers /Selection:Critical /Action:Download / Silent`

8 Capturing an image

If you run HPIA on an HP computer, by default, HPIA selects the reference image provided by HP. HPIA also supports capturing a reference image from a known, good computer.

ImageCapture.exe is a lightweight command-line executable that can be run on a machine to capture the image configuration in an XML file for future analysis against target images. IT administrators using MDT or Configuration Manager can create a software package or task sequence to run this tool on a client and save the XML file to a designated location to be used with other HPIA features.

The HPIA Image Capture tool generates the configuration XML file in the same directory as the executable, using the naming convention of `SYSID_BIT_OSVERSION.xml`, as follows:

- `SYSID`—HP platform system ID (for example, 2253)

- `BIT`—Operating system architecture (64 for 64-bit, 32 for 32-bit)

- `OSVER`—Operating system major and minor versions (for example, 6.3 for Windows 8.1)

To capture an image:

1. Run **ImageCapture.exe** as an administrator from a USB flash drive.

    – or –

    Run `ImageCapture.exe` as an administrator from the command line.

    – or –

    Open the directory where you extracted the HPIA files to a computer, right-click **HPImageAssistant.exe**, and then select **Run as administrator**. Select **Tools**, and then select **Capture Target Image Configuration**.

2. Save the configuration files to a USB flash drive.

☼ **TIP:**   This ensures that you do not modify the image of the computer you are working on.

A TPM firmware upgrade

The TPM firmware update utility 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 the latest TPM 2.0 firmware
- Converting from TPM 2.0 to the latest TPM 1.2 firmware

NOTE: 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.

Supported platforms

TPM firmware updates are supported for systems from 2015 or later. To confirm whether your platform supports a TPM firmware upgrade, see the *Maintenance and Service Guide* for your platform. Go to http://www.hp.com/support and follow the on-screen instructions to locate this manual.

Supported operating systems

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

Other system prerequisites

- Infineon SLB9670 TPM chip
- Latest commercial BIOS

B Connection or proxy issues

Reference image configurations provided by HP require a connection to the Internet. Verify that your computer is connected to the Internet and then try to use the reference image from HP.com again.

Verify that network connection icon in the notification area shows that you are connected and there are no issues.

Verify that the primary HP reference file location can be accessed by your default browser: https://hpia.hpcloud.hp.com/. If this URL cannot be accessed, be sure that your IT department allows the connection.

Verify that the secondary HP reference file location can be accessed by your default browser: https://ftp.hp.com/pub/caps-softpaq/cmit/imagepal/ref/platformList.html. If this URL cannot be accessed, be sure that your IT department allows the connection.

NOTE: If HPIA cannot access the primary location, it automatically attempts to access the secondary location.

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