HP Digital Signage Player MP4 and MP9 Microsoft® Windows Embedded Standard 7

Quick Reference Guide

About this guide

This document uses the following styles to distinguish elements of command line text:

Style	Definition
`<variable>`	Variables or placeholders are enclosed in angle brackets and italicized. For example, replace `<pathname>` with the appropriate path, such as `C:\Windows\System`. When typing the actual value for the variable, omit the brackets.
`[optional parameters]`	Optional parameters are enclosed in square brackets. When specifying the parameters, omit the brackets.
`"literal value"`	Command line text that appears inside quotation marks should be typed exactly as shown, including the quotation marks.

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1 Introduction

This guide is intended for administrators of For HP MP4, MP9 Digital Signage Player models that are based on the Windows® Embedded Standard (WES) 7E and WES 7P operating systems. It is assumed that you are using the latest WES 7E or WES 7P image provided by HP and that you will be logged on to WES as an administrator when making configurations or accessing administration utilities.

Finding more information

The information in this guide provides a basic overview of features specific to HP Digital Signage Players. See the following table to locate information not covered in this guide.

Resource	Contents
Windows Help and Support On the Windows desktop, click **Start > Help and Support**.	A broad range of how-to information and troubleshooting tips about Windows operating system usage
HP support website http://www.hp.com/support	Documentation for HP software not covered in detail in this guide **TIP:** If your search results cannot locate the software you are looking for, search for your Digital Signage Player model instead and see the Manuals page.
Microsoft support website http://support.microsoft.com	Documentation for Microsoft software not covered in detail in this guide

Finding image updates and add-ons

HP provides periodic updates and add-ons for digital signage player images. Check the HP support site at http://www.hp.com/support for updates and add-ons that apply to your image version. Select the country/region from the map, then select Drivers & Software. Type the digital signage player model in the field and click **Search**.

Finding utilities in the Windows Control Panel

To find many of the utilities listed in this guide, you need to view the Control Panel as large icons or small icons, not as categories. You can also configure the Control Panel item in the Start menu to display as a menu for quick access to all utilities.

2 Getting started

- [Write filters](#)
- [Local drives](#)
- [Configuring logon settings](#)
- [Configuring the system date and time settings](#)

Write filters

Write filters provide a secure environment and can extend the life of your Digital Signage Players by protecting it from unauthorized and excessive writes to the storage device. Write data is intercepted by the write filter and cached in the RAM drive, and as a result, lost after the next reboot. There are two different types of write filters available:

- **Enhanced Write Filter (EWF)**—Protects the entire storage device from writes

- **File-Based Write Filter (FBWF)**—Allows you to specify files or folders to be excluded from interception by the write filter

Only one write filter can be selected and active at one time. To save permanent configurations to the storage device, the write filter must be temporarily disabled.

⚠ **CAUTION:** Ensure that the write filter is enabled after committing necessary configurations to the thin client flash drive. During normal operation of the thin client, the write filter must be enabled. Also ensure that Page File is not enabled on thin clients with flash memory storage. Failure to follow these required actions can void the warranty of the flash storage device. In the event of damage to the flash storage device due to operation with a disabled write filter or enabled Page File, the damage will not be covered by HP warranty.

Enhanced Write Filter

Using the Enhanced Write Filter command line utility

The EWF command line utility enables you to issue a set of commands to the EWF driver, report the status of each protected volume overlay, and report the format of the overall EWF configurations.

To use the EWF command line utility, follow these steps:

1. Select **Start > Run**.

2. Type CMD and click **OK**.

3. Enter ewfmgr c: <commands> at the prompt.

The following table describes the supported commands for the EWF utility.

Command	Description
-all	Displays information about all protected volumes and performs a command, such as disable, enable, and commit, on each volume, if specified.
-commit	Commits all current cached data to the specified volume after the next reboot.

Command	Description
-disable	Disables the write filter on the specified volume after the next reboot.
-enable	Enables the write filter on the specified volume after the next reboot.
-commitanddisable	Commits all current cached data and disables the write filter on the specified volume after the next reboot.

Using the Enhanced Write Filter GUI

To access the EWF GUI, follow these steps:

▲ Click **Start > Control Panel > HP Write Filter Configuration**.

The EWF interface includes the following buttons:

- **Enable/Disable EWF**—Enables or disables the EWF on the specified volume.

- **Overlay Configuration**—Displays the overlay information and is a combination of the information supplied when executing `ewfmgr.exe c: -Description` and `ewfmgr.exe c: -Gauge` from the command line.

- **Clear Boot Command**—Clears any boot commands that were entered via the command line.

- **Commit Data to Volume**—Commits all current cached data to the specified volume after the next reboot.

Using the Enhanced Write Filter status utility

The EWF status utility creates an icon in the notification area of the taskbar that shows the status of the filter. You can right-click the icon to display and execute the available options.

The EWF status icon displays the following states:

- **Red lock**—EWF is disabled.

- **Green lock**—EWF is enabled.

- **Yellow lock**—EWF state will change on next boot.

You can change the status of EWF by right-clicking the icon and selecting the desired EWF state.

If you use the command line to modify the EWF, right-click the icon to refresh the status icon display (click anywhere on the screen to close the context menu). The status icon display is refreshed automatically when you make modifications through the HP Write Filter Configuration utility.

NOTE: Because the ewfmgr.exe utility and the EWF status service execute separate code, status changes by ewfmgr.exe are not automatically reflected by the EWF status icon.

File-Based Write Filter

Using the File-Based Write Filter command line utility

The FBWF command line utility enables you to issue a set of commands to the FBWF driver, report the status of each protected overlay, and report the format of the overall FBWF configurations.

To use the FBWF command line utility, follow these steps:

1. Select **Start > Run**.

2. Type `CMD` and click **OK**.

3. Enter `fbwfmgr c: <commands>` at the prompt.

The following table describes the supported commands for the FBWF utility.

Command	Description
/disable	Disables the write filter on the next restart.
/enable	Enables the write filter on the next restart.
/displayconfig	Displays all current configuration information for the write filter including filter state, protected volumes list, cache compression state, overlay cache threshold, cache pre-allocation status, and write-through paths.
/overlaydetail	Displays detail on the current overlay contents for all protected volumes including file and folder contents and memory used.
/addexclusion	Adds a write through path to the exclusion list.
/removeexclusion	Removes a write through path from the exclusion list.
/setthreshold	Sets the overlay threshold value.

Using the File-Based Write Filter GUI

To access the FBWF GUI, follow these steps:

▲ Click **Start > Control Panel > HP Write Filter Configuration**.

The FBWF interface includes the following buttons:

- **Enable/Disable Write Filter**—Enables/disables the FBWF so that data written to the protected media is cached or not.

- **Enable/Disable Cache Compression**—Enables/disables cache compression.

- **Enable/Disable Cache Pre-allocation**—Enables/disables cache pre-allocation.

- **Set Cache Threshold**—Sets the amount of RAM in MB that the FBWF cache can use.

Using the File-Based Write Filter status utility

The FBWF status utility creates an icon in the notification area of the taskbar that shows the status of the FBWF. You can right-click the icon to display and execute the available options.

The FBWF status icon displays the following states:

- **Red lock**—FBWF is disabled.

- **Green lock**—FBWF is enabled.

- **Yellow lock**—FBWF state will change on next boot.

You can change the status of FBWF by right-clicking the icon and selecting the desired FBWF state.

If you use the command line to modify the FBWF, right-click the icon to refresh the status icon display (click anywhere on the screen to close the context menu). The status icon display is refreshed automatically when you make modifications through the HP Write Filter Configuration utility.

NOTE: Because the fbwfmgr.exe utility and the FBWF status service execute separate code, status changes made by fbwfmgr.exe are not automatically reflected by the FBWF status icon.

Local drives

IMPORTANT: The write filter must be disabled for any configurations to be made permanent. See Write filters on page 2 for more information.

The following local drives are configured on the Digital Signage Player by default:

- **Drive C (storage device)**—This is where the operating system and software are installed. Writes to this drive can be limited or restricted entirely by using a write filter.

  CAUTION: HP recommends that you do not allow the available free space on the storage device to drop below 10% of the flash size. If the available free space on the storage device drops below 15 MB, the Digital Signage Player can become unstable.

- **Drive Z (RAM drive)**—This is a virtual drive that is created from the system's physical RAM. This drive will look and behave like a standard fixed disk drive, but it is created at system startup and destroyed at system shutdown. Therefore, HP recommends that you do not store information or data on this virtual disk drive.

  You can use the HP RAMDisk Manager utility to configure the size of Drive Z. For more information, see HP RAMDisk Manager on page 8.

Configuring logon settings

IMPORTANT: The write filter must be disabled for any configurations to be made permanent. See Write filters on page 2 for more information.

- For a user account, the factory-default user name and password are both `User`.

- For an administrator account, the factory-default user name and password are both `Administrator`.

- For security purposes, HP recommends that you change the passwords from their default values. An administrator can change passwords by pressing Ctrl+Alt+Del and then clicking **Change a password**.

  NOTE: You cannot change the password while logged on as a user.

- Passwords are case sensitive.

Alternatively, the Digital Signage Player can be configured to log on to a specific user account automatically. To configure automatic logon:

1. Click **Start > Control Panel > HP Logon Manager**.

2. In the Windows Logon Configuration dialog box, check the **Enable Autologon** box, type the account credentials and domain name, and then click **OK**.

The configured account will be logged on to automatically during system startup.

TIP: To log on as a different user or as an administrator when automatic logon is enabled, simply log off the current account to return to the Windows logon screen.

Configuring the system date and time settings

IMPORTANT: The write filter must be disabled for any configurations to be made permanent. See Write filters on page 2 for more information.

You can use the **Date and Time** utility in the Control Panel to set the system date and time manually or to configure the system to synchronize the date and time with an Internet server periodically.

TIP: You can also access this utility by clicking the clock in the Windows notification area and then clicking **Change time and date settings** or by right-clicking the clock and selecting **Adjust date/time** from the menu.

If you want to configure the system to synchronize the date and time with an Internet server, you will also need to enable the **Windows Time** service, which is disabled by default. To do this, follow these steps:

1. Click **Start > Control Panel > Administrative Tools**.

2. Double-click **Services**.

3. Double-click the **Windows Time** service to access its settings. You can start the service manually and configure it start up automatically in the future.

3 Software

Microsoft Remote Desktop Protocol

Make Microsoft Remote Desktop Protocol (RDP) available on the network using Microsoft Terminal Services on a Windows server. Use the Remote Desktop Connection (RDC) utility to establish a connection to a Windows terminal server or to access remote applications using Microsoft RDP.

To open the RDC utility:

▲ Click **Start > All Programs > Accessories > Remote Desktop Connection**.

NOTE: If a Windows server is used, a Terminal Services Client Access Licenses (TSCAL) server must also reside somewhere on the network. A Client Access License (CAL) permits a client to use the services provided by the Windows server. The server grants temporary licenses (on an individual device basis) that are good for 90 days. Beyond that, TSCALs must be purchased and installed on the TSCAL server. A client cannot make a connection without a temporary or permanent license.

4 Administration tools

- [HP Digital Signage Player Imaging Utility](#)
- [HP RAMDisk Manager](#)
- [HP ThinState](#)
- [HP Velocity](#)
- [Microsoft System Center Configuration Manager](#)

HP Digital Signage Player Imaging Utility

The HP Digital Signage Player includes a utility in each SoftPaq that contains an original factory image for an HP Digital Signage Player. Use this utility to restore the original factory image to the Digital Signage Player.

This utility allows you to choose one of the following options:

- Create a bootable flash image on a storage device
- Unbundle the image to a directory for use in a custom deployment scenario or PXE image

See the release notes included in the SoftPaq for instructions.

HP RAMDisk Manager

HP RAMDisk Manager allows you to configure the size of the RAM drive (Drive Z).

To open HP RAMDisk Manager:

▲ Click **Start > Control Panel > HP RAMDisk Manager**.

By default, the size of the RAM drive is set to the optimal setting of 128 MB. The maximum size that can be set is 768 MB. The minimum is 16 MB. Temporarily increase the size to install software that requires more than 128 MB.

HP ThinState

HP ThinState can be used to capture an HP Digital Signage Player image that can then be deployed to another HP Digital Signage Player of identical model and hardware.

> **NOTE:** HP ThinState now uses `ibrpe.exe` for imaging. Any storage devices previously created containing `ibr.exe` can no longer be used.

To perform an HP ThinState capture:

1. On the Digital Signage Player you are capturing the image from, make sure the first boot device in the BIOS is set to USB.

2. Disable the write filter.

3. Insert a storage device that is greater in size than the onboard storage device.

4. Click **Start > Control Panel > HP ThinState Capture**.

5. Follow the on-screen instructions.

6. The HP ThinState Capture tool opens a blue screen. Follow the on-screen instructions.

Use the storage device to deploy the captured image to another HP Digital Signage Player of the exact same model and hardware.

> **NOTE:** With HP ThinState Capture, you might be able to capture the image from a larger flash and deploy it to a smaller flash, depending on the size of the captured image.

To perform an HP ThinState deployment:

1. On the Digital Signage Player you are deploying the image to, make sure the first boot device in the BIOS is set to USB.

2. Insert the storage device that contains the captured image, and then restart the computer.

3. Follow the on-screen instructions.

After you remove the storage device and cycle power to the system, the image will unbundle. Do not interrupt or cycle power to the unit during this process.

HP Velocity

HP Velocity is a quality of service (QoS) system that dramatically improves the user experience for real-time, networked applications by reducing packet loss on IP-based networks used to carry the application traffic. The HP Velocity client-side component is preinstalled on HP Digital Signage Players running WES 7 and works in conjunction with a server-side component.

> **TIP:** For more information, go to http://www.hp.com/go/velocity and see the HP Velocity documentation.

Microsoft System Center Configuration Manager

Microsoft System Center Configuration Manager (SCCM) helps maintain corporate compliance and control while enabling users to use the devices and applications they need. It provides key management capabilities for application delivery, desktop virtualization, device management, and security, which makes it possible to enable productivity amidst device proliferation.

> **TIP:** For more information, see the white paper *Managing HP Thin Clients with SCCM 2012 SP1*.

5 Operating System Technical Information

This section describes the components and settings included in the Windows® Embedded Standard 7 on the HP MP9 and MP4 Digital Signage Players.

- Windows Embedded 7 P SKU components
- Codecs
- Write Filters
- Application Versions Included
- Windows Embedded Device Manager 2011 Client Service Pack, v 1.0.600.0
- Drivers

Windows Embedded 7 P SKU components

- Anti-Malware \ Defender
- Tablet / Touch
- Photo Viewer
- DirectAccess
- Branchcache
- Enterprise Search Scopes
- Applocker
- Remote Media Streaming
- Additional accessories such as Snipping Tool, Sticky Notes, etc

Codecs

- Microsoft AC3 Encoder
- Microsoft DTV-DVD Video Decoder (MPEG-2, H.264)
- Microsoft DTV-DVD Audio Decoder (MPEG-2, AAC)
- MPEG Layer-3 Audio Codecs (MP3)
- MPEG-4 Decoders
- Windows Media Video Codecs (VC-1)

Write Filters

Both the Enhanced Write Filter and File Based Filter are available, but disabled by default.

QFE's Installed				
KB2425227	KB2511250	KB2563894	KB2621440	KB2660465
KB2446710	KB2511455	KB2564958	KB2631813	KB2660649
KB2475792	KB2515325	KB2567053	KB2632503	KB2665364
KB2476490	KB2518869	KB2567680	KB2633171	KB2667402
KB2478662	KB2526967	KB2570791	KB2633873	KB2675157
KB2479628	KB2530548	KB2570814	KB2633952	KB2676562
KB2479943	KB2533623	KB2570947	KB2637530	KB2677070
KB2482017	KB2534366	KB2572077	KB2639417	KB2679255
KB2485376	KB2536275	KB2573437	KB2640148	KB2685939
KB2492386	KB2536276	KB2573449	KB2641653	KB2686831
KB2496898	KB2539566	KB2584146	KB2644615	KB2688338
KB2497640	KB2539635	KB2585542	KB2645895	KB2690533
KB2502285	KB2541014	KB2585853	KB2647516	KB2695962
KB2502664	KB2544521	KB2586448	KB2647518	KB2699988
KB2503658	KB2544893	KB2588516	KB2649672	KB2703157
KB2503665	KB2545698	KB2598845	KB2653956	KB2709162
KB2506212	KB2547666	KB2604115	KB2654269	KB2709630
KB2506223	KB2552343	KB2607576	KB2654428	KB2709981
KB2507618	KB2555917	KB2612905	KB2656356	KB2718704
KB2507938	KB2556532	KB2617657	KB2656373	KB947821
KB2508272	KB2559049	KB2618444	KB2656411	KB976902
KB2508429	KB2560656	KB2618451	KB2658846	KB976932
KB2509553	KB2562937	KB2620704	KB2659262	KB982861
KB2510531	KB2563227	KB2620712	KB2660075	

Application Versions Included

- PDF Complete, version 4.1.10
- Windows Embedded Device Manager 2011 Client Service Pack, ver 1.0.600.0

Windows Embedded Device Manager 2011 Client Service Pack, v 1.0.600.0

- Anti-Malware \ Defender

- Tablet / Touch

- Photo Viewer

- DirectAccess

- Branchcache

- Enterprise Search Scopes

- Applocker

- Remote Media Streaming

- Additional accessories such as Snipping Tool, Sticky Notes, etc

Drivers

To ensure you have the most up-to-date drivers, you can search for your product and download drivers for your digital signage player model.

To find the latest drivers go to http://www8.hp.com/us/en/drivers.html and enter your product name.

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