Building a Common HP Desktop Software Image Using Microsoft® Deployment Toolkit (MDT)

Introduction

The goal of this document is to guide the IT professional through the process of creating and deploying a common HP Desktop software image utilizing Microsoft® Deployment Toolkit (MDT) and LiteTouch Installation (LTI).The advantages of using MDT to deploy operating systems over creating a common image on a single system for multiple system families is the ability to use specific drivers or applications which were tested for each individual target system. Deploying a driver which was not tested on a target system introduces unnecessary increased risk. MDT allows the user to ensure the correct, proven, and tested drivers are installed on each appropriate destination system.

HP recommends Windows® 7.

Contents

While this document specifically mentions building a Microsoft® Windows® 7 Professional 64-bit common image for the HP Compaq 8200 Elite PC and HP Z210 Workstation families, this same document can be utilized for different operating systems and HP target systems. If used for different HP target systems, it is critical to ensure the corresponding supported drivers for those specific systems have been downloaded.

Before you begin

Before starting this process, note the following:

- While deploying a common image can be extremely advantageous, it causes a shift in the support liability from HP back to the organization deploying/creating the common image. It is the responsibility of the organization to qualify the image before deployment.

- It is very important to be aware of the Microsoft Windows operating system licensing requirements. Contact your Microsoft licensing representative for the proper licensing requirements.

- It is assumed that your IT organization has done the necessary research and planning for the creation and deployment of a common image. This document serves as a guideline to facilitate the deployment of a common image.

- This document provides a proven step-by-step process for deploying a common image, but other approaches exist.

- This document does not include comprehensive instructions for image capture, deployment, or management. Due to the number and complexity of infrastructures available, it is the customer's responsibility to decide, research, and implement these steps in the imaging process.

- The Web URLs listed in this document are for additional reference. URLs are subject to change or termination.

- By providing this document, HP is not liable to provide any additional consulting services. Contact your HP Sales Representative or Channel Partner to arrange for additional HP Consulting Services.

- This document is not meant to be comprehensive in supporting all the possible configurations of the HP Compaq 8200 Elite Desktop PC, or the HP Z210 Workstation Families, but provides sufficient information to enable key hardware devices.

Definition of terms

This document uses the following terms.

Product family: Defined as a set of form-factor types within a numerically-defined series. For example, the HP Z210 product family consists of the HP Z210 CMT Workstation and the HP Z210 SFF Workstation.

Common image: For the purposes of this paper, a "Microsoft Windows 7 Professional 64-bit Common Image" is defined as an operating system, applications, and drivers to be deployed across multiple hardware platforms.

Target system: The target system is the product to which the common image will be deployed.

For this document, the example target system refers to an HP Z210 SFF Workstation. The common image, however, can also be deployed to an HP Compaq 8200 Elite CMT PC or HP Compaq 8200 Elite SFF PC, and an HP Z210 CMT Workstation.

Things you need before you begin

Make sure you have the following items before you begin:

- A system with MDT installed and connected to the network either by a workgroup or domain. For more information on installing MDT please visit Microsoft's website for downloading and installing MDT at: http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=25175

NOTE: This paper was created based on MDT being installed on a HP Z200 SFF Workstation running Microsoft® Windows 7 64-bit Professional Operating System.

- An OS image either provided by Microsoft, or a custom image already created by your company.

- External media (CD/DVD or Plug-n-Play USB external drive recommended) to store the WinPE Boot Image created by MDT to install the operating system.

Common image creation process

This section will detail the steps to create the common image.

Step 1: Choose and Import a base OS image

Use one of the following approaches to establish the base image:

- The original OS installation CD. This is particularly useful when building an image from the Microsoft Volume License media if your company is licensed for that product. The Windows base image should only be applied to systems with a valid Microsoft OS license. Please consult your Microsoft Licensing Representative to assure that the common image deployment meets the Microsoft licensing requirements.

- Use an existing custom image (.wim file) that your organization has already developed.

- Use a Windows Deployment Services image.

While any of the choices above are acceptable, this white paper utilizes the original OS installation CD.

Once the base image has been chosen, import this OS file into the MDT Deployment Share.

Step 2: Collect the required drivers for the HP target systems

Go to the HP support website, http://www8.hp.com/us/en/support-drivers.html, and type the product name for which you want to download drivers. Select the specific operating system to obtain the appropriate drivers. Drivers are contained in self-extracting packages that HP calls SoftPaqs. Choose to "Save" the appropriate SoftPaqs from the matrix (see the Driver SoftPaq Matrix in Appendix A). Please note that the online SoftPaqs are updated periodically, so the drivers listed in the matrix may not be the most current driver version.

Extract the driver packages to expand their file structures. This allows MDT to import the necessary files needed for OS deployment.

It is best to keep the extracted SoftPaqs for each system family in separate folder structures per system family for easier import into MDT. For example, extract all HP Z210 Workstation SoftPaqs into a folder named "HP_Z210_Drivers".

Step 3: Import the drivers into MDT

Create two folders in MDT under the "Out-of-Box Drivers" category to import the drivers for the two different system families.

- For example: Name the folders "HP Z210 Win 7 64-bit Drivers" and "HP 8200 Win 7 64-bit Drivers". It is better to import specific system family drivers into separate folder structures instead of a flat import. While all systems may have similar drivers, different versions may have been tested and released on different system families. For the optimal experience, it is best to ensure the target system receive the appropriate tested driver versions.

Right-click on each respective system family driver folder in MDT and import each set of drivers.

Step 4: Create selection profiles for product families in MDT

Create two new selection profiles in MDT under "Advanced Configuration" to deploy the appropriate drivers to the specific system families.

- For example, name the selection profiles "HP Z210 Win 7 64-bit Drivers" and "HP 8200 Win 7 64-bit Drivers", and then select the appropriate driver folder from "Out-of-Box Drivers" to apply to the new profile.

Step 5: Add additional applications in MDT

If desired, add applications to MDT which are desired to be installed on target systems.

Please note that some driver applications do no install during the driver injection process of OS deployment (also known as Plug and Play [PnP]). This is based on how the driver package is created by each vendor. If desired, some driver applications will need to be installed by running the setup file provided by the vendor and are denoted in the matrix in Appendix B, along with the appropriate silent install commands.

It is very important to be aware of the licensed applications that are part of the common image. Royalty-based applications typically have strict guidelines surrounding deployment and usage. Some examples of royalty-based applications are: Microsoft Office, HP ProtectTools, Roxio Easy Media Creator, Correl WinDVD, and antivirus software. Contact your applications providers for the proper application royalties and licensing requirements and restrictions.

Step 6: Create an OS deployment task sequence in MDT

Create a new task sequence for each system family in MDT.

- For example: "Deploy Windows 7 64-bit Professional to HP Z210 Workstations". The reason separate task sequences are needed is to ensure that the appropriate system drivers are installed on the target systems.

Once the task sequences are created, edit the "Inject Drivers" task from the Preinstall task to use the correct selection profile that was created in Step 4. This process ensures only the correct drivers will be deployed to each system.

Step 7: Deploy the OS image to target systems

Update the deployment share to create the WinPE images needed to deploy the image. Copy the WinPE image to the external bootable media (i.e. CD, DVD, USB drive).

Boot the target systems using the WinPE image.

NOTE: This white paper is based on a "Standard Deployment".

Select the appropriate task sequence created in Step 6 that matches the target system.

- For example, if the target system is an HP Z210 CMT workstation, select the task sequence that was created for the HP Z210 workstations.

NOTE: If applications were added, select those during OS deployment as well.

Once complete, a message box will appear stating the deployment was successful.

After the initial MDT setup, the ability to update target systems in minutes with a new OS image, applications, and drivers are now located on one networked system, making IT management of OS deployment easier and less complicated than previous common image methods. This ensures that newer systems being deployed throughout your organization (including different HP system families) will be up-to-date, and also contain known and tested drivers.

Driver SoftPaq Matrix for Microsoft Windows 7 and the HP Z210 Workstation and HP Compaq Elite 8200 families

APPENDIX A

Integrated	Add-On Options	HP Z210 CMT	HP Z210 SFF	HP Compaq Elite 8200 CMT PC	HP Compaq Elite 8200 SFF PC
Chipset, Storage and Controllers					
Intel Chipset Software Installation Utility		9.2.0.1021	9.2.0.1021	9.2.0.1015	9.2.0.1015
Intel Rapid Storage Technology Utility and Driver		10.5.0.1027	10.5.0.1027	10.1.0.1008	10.1.0.1008
	NEC USB 3.0 Drivers	1.0.19	1.0.19	N/A	N/A
Audio					
Realtek High-Definition Audio Driver		6.0.1.6080	6.0.1.6080	6.0.1.6080	6.0.1.6080
	Creative SoundBlaster X-Fi Titanium Audio Driver	6.0.01.1323	N/A	N/A	N/A
Network					
Intel LOM Driver		11.8.84.0	11.8.84.0	15.6_239133	15.6_239133
	Intel PRO/1000 Gigabit (CT) Driver	11.7.32.0	11.7.32.0	15.6_239133	15.6_239133
	Ralink 802.11n Wireless LAN	N/A	N/A	3.1.16.0	3.1.16.0
Graphics					
Intel High-Definition (HD) Graphics Driver		8.15.10.2455	8.15.10.2455	8.15.10.2279	8.15.10.2279
	ATI FireGL Unified Graphics Driver	8.83.5.6	8.83.5.6	8.840.0.0000	8.840.0.0000
	NVIDIA Quadro Professional Driver	271.05	271.05	8.17.12.6153	8.17.12.6153
	NVIDIA Graphics Driver for the NVIDIA GT405 Graphics Card	N/A	N/A	8.17.12.5965	8.17.12.5965
Security / Manageability					
Intel AMT LMS_SOL for AMT 7.xx		7.1.10.1053	7.1.10.1053	7.1.2.1041	7.1.2.1041

Silent Install Commands for Driver Applications

The following executables need to be run during OS deployment if the user would like them installed. These applications are not installed during PnP.

APPENDIX B

Application	Setup File	Silent Install Command
AMD Catalyst Control Center (32-bit) - Workstations	Bin\ATISetup.exe	-NoUI -Install -Use DRIVERS\ Wista32_8.83.5.6\Packages
AMD Catalyst Control Center (64-bit) - Workstations	Bin64\ATISetup.exe	-NoUI -Install -Use DRIVERS\ Wista64_8.83.5.6\Packages
AMD Catalyst Control Center (32-bit) - PCs	Bin\ATISetup.exe	-NoUI -Install -Use Packages
AMD Catalyst Control Center (64-bit) - PCs	Bin64\ATISetup.exe	-NoUI -Install -Use Packages
Intel Management Engine (ME)	Setup.exe	Setup.exe -s
Intel Rapid Storage Technology (RST)	iata_enu.exe	iata_enu.exe -s
NVIDIA NView	NView\nviewsetup.exe	nviewsetup.exe -s

Additional HP Support URLs

APPENDIX C

• HP Workstations—http://www.hp.com/large/products/workstations.html

• HP support and drivers—http://welcome.hp.com/country/us/eng/support.html

• HP driver subscriptions, alerts and notifications—http://www.hp.com/united-states/subscribe/gateway