



The science behind the report:

Deploy Microsoft Windows 10 to AMD processor-based systems without altering existing processes

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report ["Deploy Microsoft Windows 10 to AMD processor-based systems without altering existing processes"](#).

On April 2, 2018, we finalized the hardware and software configurations we tested. Updates for current and recently released hardware and software appear often, so unavoidably these configurations may not represent the latest versions available when this report appears. For older systems, we chose configurations representative of typical purchases of those systems. We concluded hands-on testing on April 10, 2018.

Our results

The tables below presents our findings in detail.

Time to deploy an image to target system (h:mm:ss)

	AMD: Lenovo™ ThinkPad® A275	AMD: HP EliteDesk 705 G3 MT	Intel: Lenovo ThinkPad X270	Intel: HP ProDesk 600 G3 MT
IT manager time	0:01:55	0:02:22	0:01:53	0:02:00
System time	0:38:49	0:34:44	0:41:41	0:37:22
Total elapsed time	0:40:44	0:37:06	0:43:34	0:39:22

Steps to deploy an image to target system

	AMD: Lenovo ThinkPad A275	AMD: HP EliteDesk 705 G3 MT	Intel: Lenovo ThinkPad X270	Intel: HP ProDesk 600 G3 MT
Steps	35	34	35	34

System configuration information

The tables below present detailed information on the systems we tested and used for testing.

Laptops

System	Lenovo ThinkPad A275	Lenovo ThinkPad X270
Processor		
Vendor	AMD	Intel®
Model number	PRO A12-9800B	Core™ i7-7600U
Core frequency (GHz)	2.70	2.80
Number of cores	4	2
Cache	2x1MB L2	4MB L3
Memory module(s)		
Amount (GB)	8	8
Type	DDR4	DDR4
Speed (MHz)	1,866	2,133
Integrated graphics		
Vendor	AMD	Intel
Model number	Radeon™ R7	HD 620
Storage		
Amount (GB)	256	128
Type	Solid state	Solid state
Connectivity/expansion		
Wired internet	Realtek RTL8111EPV GbE	Intel I219-LM GbE
Wireless internet	802.11ac	802.11ac
Bluetooth	4.1	4.1
Battery		
Type	Lithium-Ion	Lithium-Ion
Size	3 cell	3 cell
Rated capacity (Wh)	23.2	23.2
Display		
Size (inches)	12.5	12.5
Resolution	1920x1080	1366x768
Operating system		
Vendor	Microsoft®	Microsoft
Name	Windows® 10 Pro	Windows 10 Pro
BIOS		
BIOS name and version	Lenovo R0NET30W (1.08)	Lenovo R0IET51W (1.29)

Desktops

System	HP EliteDesk 705 G3 MT	HP ProDesk 600 G3 MT
Processor		
Vendor	AMD	Intel
Model number	Ryzen™ 5 PRO 1500	Core i5-7600
Core frequency (GHz)	3.50	3.50
Number of cores	4	4
Cache	2MB L2 + 16MB L3	1MB L2 + 6MB L3
Memory module(s)		
Amount (GB)	8	8
Type	DDR4	DDR4
Speed (MHz)	2,133	2,400
Integrated graphics		
Vendor	N/A	Intel
Model number	N/A	HD 630
Discrete graphics		
Vendor	AMD	N/A
Model number	Radeon R7 430	N/A
VRAM	2GB DDR4	N/A
Storage		
Amount (GB)	256	256
Type	Solid state	Solid state
Connectivity/expansion		
Wired internet	Broadcom® NetXtreme GbE Plus	Intel I219-LM GbE
Operating system		
Vendor	Microsoft	Microsoft
Name	Windows 10 Pro	Windows 10 Pro
BIOS		
BIOS name and version	HP P09 Ver. 02.08	HP P02 Ver. 02.15

Imaging server

Server configuration information	Dell EMC™ PowerEdge™ R720
BIOS name and version	Dell Inc. 2.5.4
Operating system name and version/build number	Microsoft Windows Server® 2016 Datacenter 10.0.14393 Build 14393
Date of last OS updates/patches applied	4/2/2018
Power management policy	Performance
Processor	
Number of processors	2
Vendor and model	Intel Xeon E5-4650
Core count (per processor)	8
Core frequency (GHz)	2.70
Stepping	7
Memory module(s)	
Total memory in system (GB)	224
Number of memory modules	14
Vendor and model	Hynix HMT42GR7MFR4C-PB
Size (GB)	16
Type	2Rx4
Speed (MHz)	1,600
Speed running in the server (MHz)	1,600
Storage controller	
Vendor and model	Dell PERC H710P mini
Cache size (MB)	1,024
Firmware version	21.3.4-0001
Driver version	6.805.3.0
Local storage	
Number of drives	16
Drive vendor and model	2 x SSDSC2BX400G4R, 14 x ST300MM0006
Drive size (GB)	400, 300
Drive information (speed, interface, type)	6 Gbps SATA SSD, 6 Gbps SAS 10K HDD
Network adapter	
Vendor and model	Intel X540/I350
Number and type of ports	4 x 10GbE
Driver version	17.5.10

Server configuration information		Dell EMC™ PowerEdge™ R720
Cooling fans		
Vendor and model	Sanyo Denki 9GA0612P1K641	
Number of cooling fans	6	
Power supplies		
Vendor and model	Dell L1100E-S0	
Number of power supplies	2	
Wattage of each (W)	1,100	

How we tested

Our testing uses an SCCM environment with typical settings. In our tests, we used an existing task sequence to deploy Windows 10 images with already captured Windows 10 .wim image. Below is what we refer to as the established deployment task sequence.

Creating and deploying a new task sequence

1. In the SCCM console, navigate to Software Library → Operating Systems → Task Sequences.
2. Click Create → Create Task Sequence.
3. In the Create Task Sequence Wizard, select Install an existing image package, and click Next.
4. On the Task Sequence Information section, create a task sequence name, and select Boot image (x64) as the boot image.
5. Click Next.
6. On the Install Windows section, browse for the image package created from the captured image, and select it.
7. Under the Image drop-down menu, select the correct listing (should be 1-1).
8. Deselect Configure task sequence for use with BitLocker.
9. Select Enable the local admin account and specify the local administrator password, and choose a password.
10. Click Next.
11. On the Configure Network section, select Join a domain, and add the local domain.
12. Next to Account, click Set, and select the domain administrator account.
13. Click Next two times.
14. On the State Migration section, deselect all boxes.
15. Click Next four times.

Testing overview

To deploy the image to our target systems, we downloaded the required drivers for the target system and integrated those drivers into our boot image. We then deployed our task sequence to the Unknown systems collection. We started the target laptop and selected the boot option to boot to LAN. We then allowed the Deploy Windows 10 task sequence to complete. No two systems were running at the same time.

We captured time where the administrator actively completes the following steps and called that administrator time. The time after the administrator finishes issuing commands, but the system is still completing those commands, is called system time.

Downloading the drivers

All drivers were available in .cab files from their vendor's sites.

1. On the System Center server, open a browser, and navigate to the respective site for each system as shown in the chart below.
2. In the Save As window, click Save As.
3. Start the system time timer, and stop it when the download completes.

Here are the names and sizes for each file according to their system.

System name	File name	File size	Download
ThinkPad A275	tp_a475_w1064_201801.exe	540 MB	https://download.lenovo.com/pccbbs/mobiles/tp_a475_w1064_201801.exe
HP EliteDesk 705 G3	sp84747.exe	595 MB	https://ftp.hp.com/pub/softpaq/sp84501-85000/sp84747.exe
ThinkPad X270	tp_x270_w1064_201712.exe	705 MB	https://download.lenovo.com/pccbbs/mobiles/tp_x270_w1064_201712.exe
HP ProDesk 600 G3	sp85276.exe	967 MB	https://ftp.hp.com/pub/softpaq/sp85001-85500/sp85276.exe

Extracting the drivers

Extract the drivers from the appropriate file.

For Lenovo laptops

1. Run the executable file.
2. In the setup wizard, click Next.
3. Accept the license and agreement, and click Next.
4. Select a shared folder to extract the drivers to, and click Next.
5. Click Install.

For HP desktops

1. Run the executable file.
2. In the installation wizard, click Next.
3. Accept the license and agreement, and click Next.
4. Select a shared folder to extract the drivers to, and click Next.

Validating the drivers

We completed the following task for each machine. The same steps are required for all machines.

1. In the SCCM console, navigate to Software Library → Operating Systems → Drivers.
2. Click Import Drivers.
3. In the Import New Driver Wizard, select the network path to the folder with the target drivers, and click Next.

Start the timer for system time while SCCM imports the driver's information. Stop the timer when the task is complete. The time for this task varies based on the combined size of all driver files.

Importing the drivers

We completed the following tasks for each machine. The same steps are required for all machines.

1. In the Import New Driver Wizard, click Next.
2. Click Next.
3. Click Next.
4. Click Next.

Start the timer for system time while SCCM adds the drivers to SCCM. Stop the timer when the task is complete. The time for this task varies based on the combined size of all driver files.

Updating the boot image

1. In the SCCM console, under Operating systems, select Boot Images.
2. Right-click the Boot image (x64), and select Update Distribution Points.
3. In the Update Distribution Points Wizard, click Next.
4. Click Next.

Start the timer for system time while SCCM adds the drivers to the boot image. Stop the timer when the task is complete. The time for this task varies based on the combined size of all driver files.

Deploying the task sequence

1. In the SCCM console, under Operating systems, select Task Sequences.
2. Right-click the Deploy Windows 10 task sequence and select Deploy.
3. For collection in the Deploy Software Wizard, click Browse....
4. In the Select Collection window, select All Unknown Computers. Click OK.
5. Click Next.
6. For Purpose, select Required. For Make available to the following, select Only Configuration Manager clients, media and PXE. Click Next.
7. For Assignment schedule, click New.
8. In the Assignment schedule window, select Assign immediately after this event, and click OK.
9. Click Next.
10. Click Next.
11. Click Next.
12. Check the boxes for Allow clients to use distribution points from the default site boundary group and for Allow clients to share content with other clients on the same subnet. Click Next.
13. Click Next.

Starting the task sequence on the target system

We completed the following steps on each of the systems to start the task sequence.

For Lenovo laptops

1. On the target system, press the power button.
2. To enter the boot manager during boot, press F12.
3. On the Boot Menu tab, select PCI LAN.
4. Press Enter.

For HP desktops

1. On the target system, press the power button.
2. To enter the Network (PXE) Boot Menu during boot, press F12.
3. Select UEFI N/W – IPV4 Network.
4. Press Enter.

For all systems, start the timer for system time while the image is deployed and configured. When the system reaches the login screen for Windows, stop the timer.

Read the report at <http://facts.pt/rxwzop> ►



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