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1E

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BIOS,UEFI, Configuration Manager and Windows 10

Windows 10 – Where to Begin?

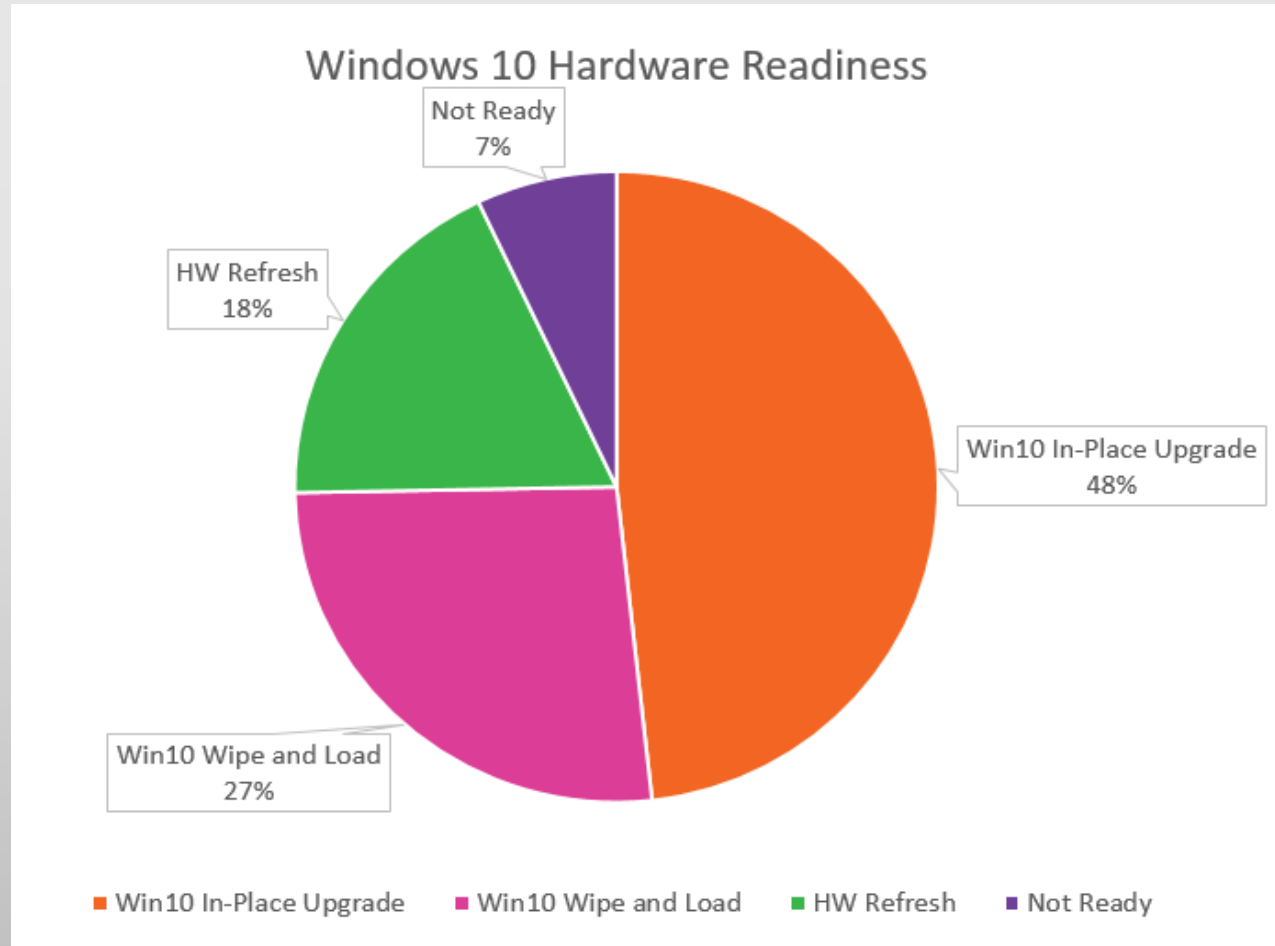What models are in the environment and which ones support Windows 10?

Which models are supported by the vendor to run Windows 10?

Are the models I have that are supported in a ready state?

Are they configured correctly?

# Where to Begin – Hardware Readiness

Determine Your HW Models

```sql
Select Manufacturer0 As 'Manufacturer', Model0 As 'Model',
Count(Model0) As 'Count'

FROM v_GS_COMPUTER_SYSTEM

Where Model0 is not null and Manufacturer0 not like '%Lenovo%'

Group by Manufacturer0, Model0

UNION

Select Vendor0 As 'Manufacturer', Version0 As 'Model', Count(Version0)
As 'Count'

From dbo.v_GS_COMPUTER_SYSTEM_PRODUCT

Where Version0 is not null and Vendor0 like '%Lenovo%'

Group by Vendor0, Version0

Order by 1, 2 ASC
```

Manufacturer	Model	Count
Dell Inc.	Latitude E6430	1
Hewlett-Packard	HP EliteBook Folio 9470m	1
LENOVO	ThinkPad T450	1
Microsoft Corporation	Surface Pro 2	1
Microsoft Corporation	Virtual Machine	8

Inventory Secure Boot State


```
1   // ================================================================
2   // START SECTION
3   // Custom UEFI Secure Boot Settings
4   // ================================================================
5
6   #pragma namespace ("\\\\.\\root\\cimv2")
7   #pragma deleteclass("SecureBootState", NOFAIL)
8   [DYNPROPS]
9   Class SecureBootState
10  {
11      [key] string KeyName;
12      Uint32 UEFISecureBootEnabled;
13  };
14
15  [DYNPROPS]
16  Instance of SecureBootState
17  {
18      KeyName="Secure Boot Settings";
19      [PropertyContext("Local|HKEY_LOCAL_MACHINE\\SYSTEM\\CurrentControlSet\\Control\\Secu
20  };
21
22  // ================================================================
23  // Custom UEFI Secure Boot Settings
24  // END SECTION
25  // ================================================================
```
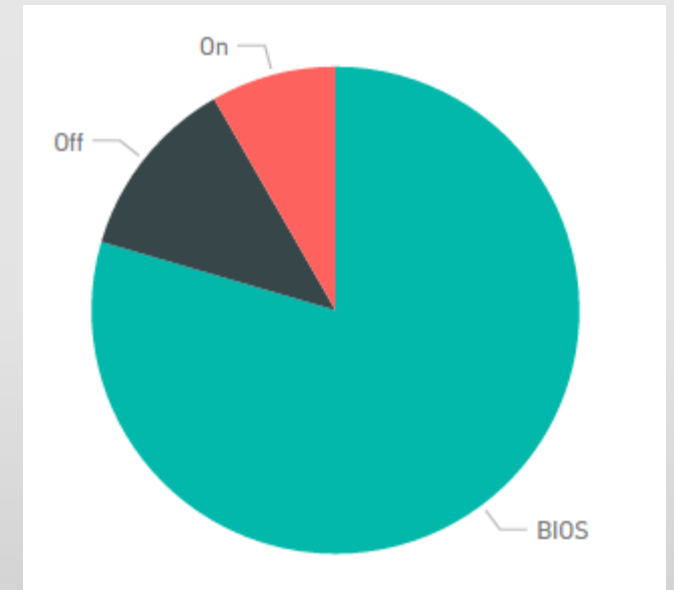
For more info see: Inventory Secure Boot State and UEFI with ConfigMgr

Inventory Vendor Specific Info
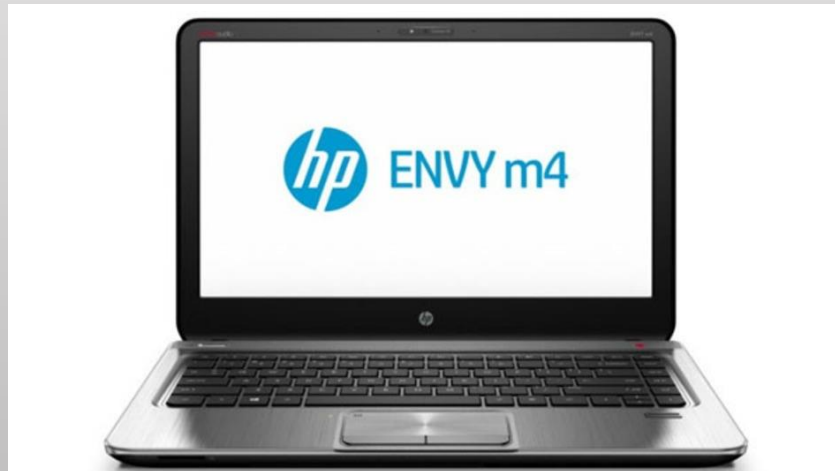
Settings of interest

BIOS Settings:

- Boot Mode (i.e. Legacy, UEFI Hybrid, UEFI Native)
- Secure Boot (not just enabled or disabled, but capable)
- UEFI PXE
- Virtualization Settings (DEP, VTd, VTx)
- TPM (OS mgmt, Activation Policy, Device)
- WOL

Device Boot Order:

- Legacy, UEFI, Network

Dell

Deploy Dell Command | Monitor

Extend ConfigMgr Hardware Inventory

Namespace: root\dcim\sysman

Class: DCIM_BIOSEnumeration

Properties: AttributeName, CurrentValue, IsReadOnly, PossibleValues, PossibleValuesDescription

Class: DCIM_BootSourceSetting

Properties: BIOSBootString, ElementName, StructuredBootString

For more info see:
[How to Inventory Dell BIOS and UEFI Settings with ConfigMgr Part 1](#)
[How to Inventory Dell BIOS and UEFI Settings with ConfigMgr Part 2](#)

HP

Extend ConfigMgr Hardware Inventory:

Namespace: root\HP\InstrumentedBIOS

Class: HPBIOS_BIOSEnumeration

Properties: Current Value, Display in UI, Is Read Only, Name, Possible Values, Value

Class: HPBIOS_BIOSOrderedList

Properties: Name, Value

For more info see: How to Inventory HP BIOS and UEFI Settings with ConfigMgr

Lenovo

Extend ConfigMgr Hardware Inventory

Namespace: root\wmi

Class: Lenovo_BiosSetting

Properties: InstanceName, Active, CurrentSetting

For more info see: How to Inventory Lenovo BIOS and UEFI Settings with ConfigMgr

Demo

Other Useful Inventory Items

Win32_OperatingSystem

- DataExecutionPrevention_Available

- OSArchitecture

SMS_LogicalDisk

- FreeSpace

Root\CIMV2\Security\MicrosoftTpm\Win32_Tpm

- IsActivated_InitialValue

- IsEnabled_InitialValue

- IsOwned_InitialValue

- SpecVersion

For more info see: Getting Ready For Windows 10 Using ConfigMgr Inv

Upgrading the BIOS/UEFI

Why do it?

Upgrading the BIOS/UEFI

Example – Lenovo ThinkPad T450:

<1.17> 2015/09/07
- (New) Added win10 support.
- (New) Enabled N25Q128 SPI ROM support.
- (New) Added security fix addresses LEN-2015-002 SMM "Incursion" Attack.
- (New) Included security fixies.
- (New) Added new incompatibility bit for Back Flash Prevention.

Upgrading the BIOS/UEFI

Tips and tricks:

Use a task sequence.

Suspend BitLocker!!!

Dell is currently only x86 – means no WinPE x64 but they are working on it.

HPQ Flash works on WinPE x64, but requires WinPE-HTA to work.

Test, test, test!

Baseline and document supported configurations.

Demo – Upgrading the BIOS like a Boss

Enabling UEFI

Demo

Vendor Tools - Dell

Dell Command | Configure (aka CCTK)

Get BIOS mode:

Cctk bootorder --activebootlist

Enable UEFI:

Cctk bootorder --activebootlist=uefi

Get Legacy ROM setting (aka CSM):

Cctk --legacyorom

Disable Legacy ROMs:

Cctk --legacyorom=disable

Enable Secure Boot:

Cctk --secureboot=enable

Vendor Tools - HP

HP BIOS Configuration Utility

Get BIOS mode:

BiosConfigUtility(64).exe

Enable UEFI:

 BiosConfigUtility(64).exe /setvalue:"Boot Mode","UEFI Native (Without CSM)"

Enable Secure Boot:

BiosConfigUtility(64).exe /setvalue:"SecureBoot","Enable"

Vendor Tools - Lenovo

One way – VBScript

<u>Get current settings</u>:

Cscript ListAll.vbs

<u>Enable UEFI & Secure Boot</u>:

Cscript SetConfig.vbs SecureBoot Enable

Creating Vendor Tools Package in Configuration Manager

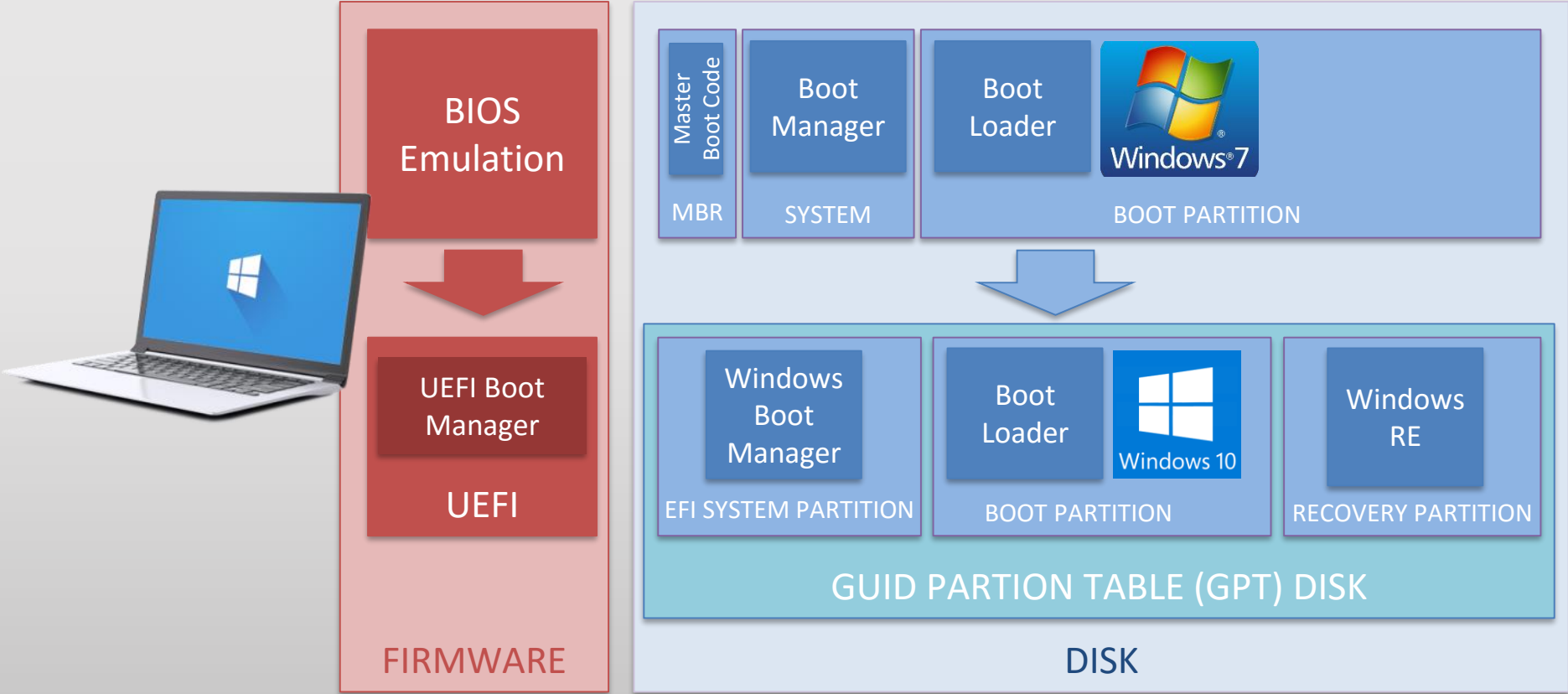How to create a Dell Command-Configure Package in ConfigMgr

How to create a HP BiosConfiguration Utility Package in ConfigMgr

Automating Dell BIOS-UEFI Standards for Windows 10

Booting UEFI

Hard drive partitioning

USB Flash Drives (UFDs)

Format Fat32

Fat32 challenges – 4 GB file limit

Removable drives vs. fixed

Sandisk example

UEFI Booting

Only boot platform architecture

Task Sequences and Boot Images – 1:1

X64 and TS Environment Limitation

- Microsoft.SMS.TSEnvironment is not available between Pre-start & Running Task Sequence
- Normally this is not a problem – but for testing Prestart development it can be
- Solution – launch a cmd /k from Prestart and the TSEnvironment will be available
- See DeploymentRamblings blog for more information

UEFI PXE Booting

Client Architecture Types (Option 93)

Type	Architecture Name	Boot Image	
		x86	x64
0	Intel x86PC	●	○
1	NEC/PC98		
2	EFI Itanium		
3	DEC Alpha		
4	Arc x86		
5	Intel Lean Client		
6	EFI IA32	●	
7	EFI BC		●
8	EFI Xscale		
9	EFI x86-64	●	●

BOOTING WITH CONFIGMGR

BIOS Configuration	Boot List Option	Legacy Option ROMs (CSM)	_SMSTSBootUEFI	Client Architecture
PC BIOS	Legacy	Enabled	FALSE	Intel x86PC
UEFI Hybrid (with Legacy ROMs)	UEFI	Enabled	FALSE* TRUE*	Intel x86PC* EFI BC*
UEFI	UEFI	Disabled	TRUE	EFI BC

Hidden Gem – Dynamic Variables

ConfigMgr 2012 R2 & Newer

- _SMSTSMake
- _SMSTSModel
- _SMSTSMacAdresses (not Addresses)
- _SMSTSIPAddresses
- _SMSTSDefaultGateWays
- _SMSTSSerialNumber
- _SMSTSAssetTag
- _SMSTSUUID

While we are talking about OSD TS Variables

List and Set Task Sequence Variables using TSEnv2

TSEnv2.exe list

TSEnv2.exe list > osdvars.txt

TSEnv2.exe get _SMSTSMDataPath

For more info see: www.1e.com/free-tools

Demo

Installing Win7 x64 in UEFI Mode

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(**@miketerrill**)

3/8/16, 6:17 PM
If you still deploy Win7x64, do yourself a favor & deploy it in #UEFI mode. That way you can upgrade securely to #Windows10 & thank me later.

"If the goal is to ever move to Windows 10 and enable Secure Boot, then you should definitely deploy Windows 7 x64 using UEFI, with all modern hardware (Windows 8 logo certified or later) that support UEFI 2.3.1 or higher.

The "don't bother" approach is what's causing lots of customers pain these days as part of their Windows 10 deployments where they want to enable this security feature but can't easily do it (without reconfiguring the firmware, moving the data off the box, repartitioning the disk, installing a new OS, and bringing all the data back down – compared to just doing an in-place upgrade)."

-Michael Niehaus 4/5/2016

Benefits

100% Supported by Microsoft

Start your conversion to UEFI now

Take advantage of the Windows 10 Upgrade option later when ready and just enable Secure Boot after the upgrade

Demo

That's all Folks!
Thanks!

Share your ideas

- Share your voice / ideas!
  - http://microsoftintune.uservoice.com/
  - http://configurationmanager.uservoice.com/

Weitere Infos

Digicomp Kurse

https://www.microsoft.com/learning/en-us/course.aspx?ID=20695A&Locale=en-us

https://www.microsoft.com/learning/en-us/course.aspx?ID=20696c&Locale=en-us

https://www.microsoft.com/en-us/learning/course.aspx?cid=20398a&loc=en-us

https://www.microsoft.com/en-us/learning/course.aspx?cid=20697-2&loc=en-us

Danke

Herzlichen Dank

Bewertung der Session: Configmgr.ch / azureems.ch

- Xing: https://www.xing.com/net/cmce

- Facebook: https://www.facebook.com/groups/411231535670608/

- Linkedin: http://www.linkedin.com

- Twitter: https://twitter.com/configmgr_ch

Nächster Event: Freitag 7. Oktober Digicomp Zürich