

Welcome to the WPNinjaCH Virtual Spring edition 2103

Organized by; Alain Schneiter & Mirko Colemberg



Windows 10 Servicing in the work from anywhere era

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Agenda

- Challenges
- Make your odds better
- Microsoft Intune (WUfB)
- Task Sequence
- Windows Servicing



Windows 10 Servicing in the Work from Home era



... Tony Russell



... Mojoe Roberts



... Danny Dwyer



... Jenn Hays



Challenges with Work from Home

- Network Considerations
 - VPN (Forced/Split Tunneling)
- Content Location
 - On-Prem Servers
 - Azure Shares
 - Cloud Management Gateway (DP)
- End User Support
 - If upgrade fails
 - Recovery/Re-provision/re-deploy?






Network Considerations

- Optimizing Office 365 traffic for remote workers with the native Windows 10 VPN client
 - <https://docs.microsoft.com/en-us/windows/security/identity-protection/vpn/vpn-office-365-optimization>

Optimizing Office 365 traffic for remote workers with the native Windows 10 VPN client

04/07/2020 • 14 minutes to read • 

This article describes how to configure the recommendations in the article [Optimize Office 365 connectivity for remote users using VPN split tunneling](#) for the *native Windows 10 VPN client*. This guidance enables VPN administrators to optimize Office 365 usage while still ensuring that all other traffic goes over the VPN connection and through existing security gateways and tooling.

This can be achieved for the native/built-in Windows 10 VPN client using a *Force Tunneling with Exclusions* approach. This allows you to define IP-based exclusions *even when using force tunneling* in order to "split" certain traffic to use the physical interface while still forcing all other traffic via the VPN interface. Traffic addressed to specifically defined destinations (like those listed in the Office 365 optimize categories) will therefore follow a much more direct and efficient path, without the need to traverse or "hairpin" via the VPN tunnel and back out of the corporate network. For cloud-services like Office 365, this makes a huge difference in performance and usability for remote users.

Note

The term *force tunneling with exclusions* is sometimes confusingly called "split tunnels" by other vendors and in some online documentation. For Windows 10 VPN, the term *split tunneling* is defined differently as described in the article [VPN routing decisions](#).



Content location challenge

How do we do feature updates today?!

- Windows Update for Business (Microsoft Intune)
- SCCM Task Sequence (MEMCM)
- Windows Servicing (MEMCM)
- Any scripted solutions left out there??



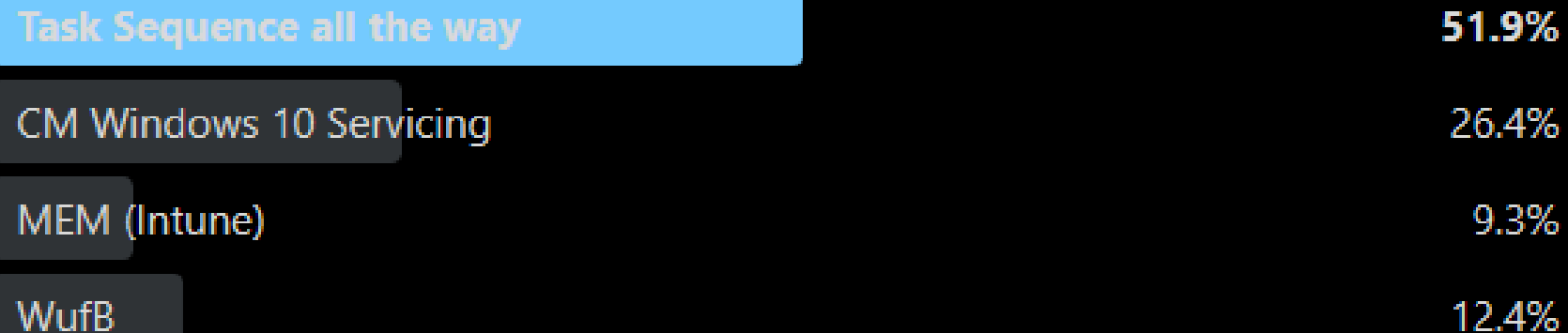


State of servicing in the Community

Windows 10 servicing question, @ronnipedersen and I are looking for community stats for our Nordic Virtual Summit session.

How are you doing Windows 10 Servicing?

nordicvirtualsummit.com #Windows10 #MEMCM



129 votes · Final results

8:14 AM · Feb 1, 2021 · Twitter Web App



Make your odds better

Update Drivers, BIOS and Applications



Challenges with Feature Updates

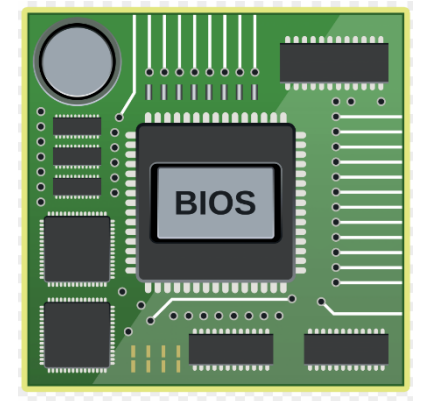
- BIOS and Drivers Updates
- Outdated/unsuported Applications
- Pending Reboots
- Missing updates (CU and Security)
- Language Packs





Driver/BIOS Management

- Community Tool: MSEndpointMgr Modern Driver Management
 - <https://msendpointmgr.com/modern-driver-management/>
- Modern Driver Management will soon support Intune (native)
 - <https://msendpointmgr.com/modern-driver-management/> ???
- HP has started updating BIOS/Firmware using MU:
<http://h10032.www1.hp.com/ctg/Manual/c06696094>
- Updates Drivers from Microsoft Update



Updates Drivers from Microsoft Update



```
#search and list all missing Drivers
(New-Object -ComObject Microsoft.Update.ServiceManager).Services
$UpdateSvc = New-Object -ComObject Microsoft.Update.ServiceManager
$UpdateSvc.AddService2("7971f918-a847-4430-9279-4a52d1efe18d",7,"")

$Session = New-Object -ComObject Microsoft.Update.Session
$Searcher = $Session.CreateUpdateSearcher()

$Searcher.ServiceID = '7971f918-a847-4430-9279-4a52d1efe18d'
$Searcher.SearchScope = 1 # MachineOnly
$Searcher.ServerSelection = 3 # Third Party

$Criteria = "IsInstalled=0 and Type='Driver' and ISHidden=0"
Write-Host('Searching Driver-Updates...') -Fore Green
$SearchResult = $Searcher.Search($Criteria)
$Updates = $SearchResult.Updates

#Show available Drivers

$Updates | select Title, DriverModel, DriverVerDate, Driverclass, DriverManufacturer | fl

#Download the Drivers from Microsoft

$UpdatesToDownload = New-Object -Com Microsoft.Update.UpdateColl
$Updates | % { $UpdatesToDownload.Add($_) | out-null }
Write-Host('Downloading Drivers...') -Fore Green
$UpdateSession = New-Object -Com Microsoft.Update.Session
$Downloader = $UpdateSession.CreateUpdateDownloader()
$Downloader.Updates = $UpdatesToDownload
$Downloader.Download()

#Check if the Drivers are all downloaded and trigger the Installation

$UpdatesToInstall = New-Object -Com Microsoft.Update.UpdateColl
$Updates | % { if($_.IsDownloaded) { $UpdatesToInstall.Add($_) | out-null } }

Write-Host('Installing Drivers...') -Fore Green
$Installer = $UpdateSession.CreateUpdateInstaller()
$Installer.Updates = $UpdatesToInstall
$InstallationResult = $Installer.Install()
if($InstallationResult.RebootRequired) {
Write-Host('Reboot required! please reboot now..') -Fore Red
} else { Write-Host('Done..') -Fore Green }
```

```
PS C:\WINDOWS\system32> $Updates | select Title, DriverModel, DriverVerDate, Driverclass, DriverManufacturer | fl

Title           : INTEL - System - 7/18/1968 12:00:00 AM - 10.1.14.4
DriverModel      : Intel(R) Host Bridge/DRAM Registers - 3ED0
DriverVerDate    : 18/07/1968 00.00.00
DriverClass      : OtherHardware
DriverManufacturer : INTEL

Title           : Intel - net - 22.20.0.6
DriverModel      : Intel(R) Wireless-AC 9560 160MHz
DriverVerDate    : 30/11/2020 00.00.00
DriverClass      : Networking
DriverManufacturer : Intel Corporation

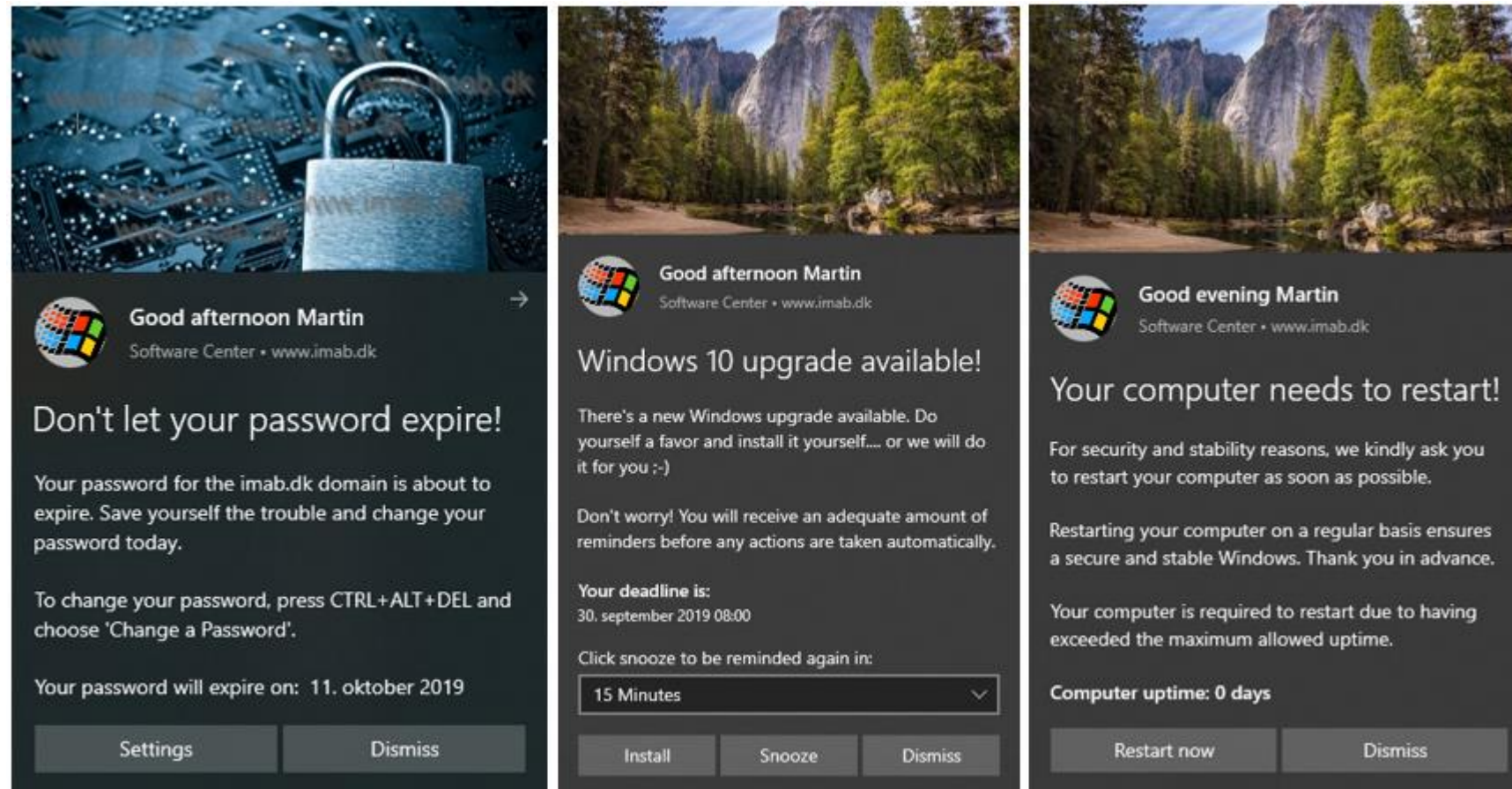
Title           : Intel Corporation - Bluetooth - 22.20.0.3
DriverModel      : Intel(R) Wireless Bluetooth(R)
DriverVerDate    : 27/11/2020 00.00.00
DriverClass      : OtherHardware
DriverManufacturer : Intel Corporation
```

```
$UpdatesToDownload = New-Object -Com Microsoft.Update.UpdateColl
$Updates | % { $UpdatesToDownload.Add($_) | out-null }
Write-Host('Downloading Drivers...') -Fore Green
$UpdateSession = New-Object -Com Microsoft.Update.Session
$Downloader = $UpdateSession.CreateUpdateDownloader()
$Downloader.Updates = $UpdatesToDownload
$Downloader.Download()
Downloading Drivers...
```

```
HResult ResultCode
-----
0 2
```




Pending Reboots / Notifications



- <https://www.imab.dk/windows-10-toast-notification-script/>



Method #1: WSUS

Windows Server Update Service (WSUS)





WSUS

- Pros
 - None
- Cons
 - Many 😊





Windows 10 Feature Updates

Windows Update for Business in Microsoft Intune



Windows Update for Business

- Pros

- Devices access Windows Update directly for the updates
 - Simple infrastructure and Less work
- Simple Management
- Microsoft hold back updates for “bad” devices
- Included driver updates

- Cons

- Limited Control
- Maximum 1 year postpone
- Limited Reporting





Windows 10 Feature Updates (Intune)

This feature is still in public preview

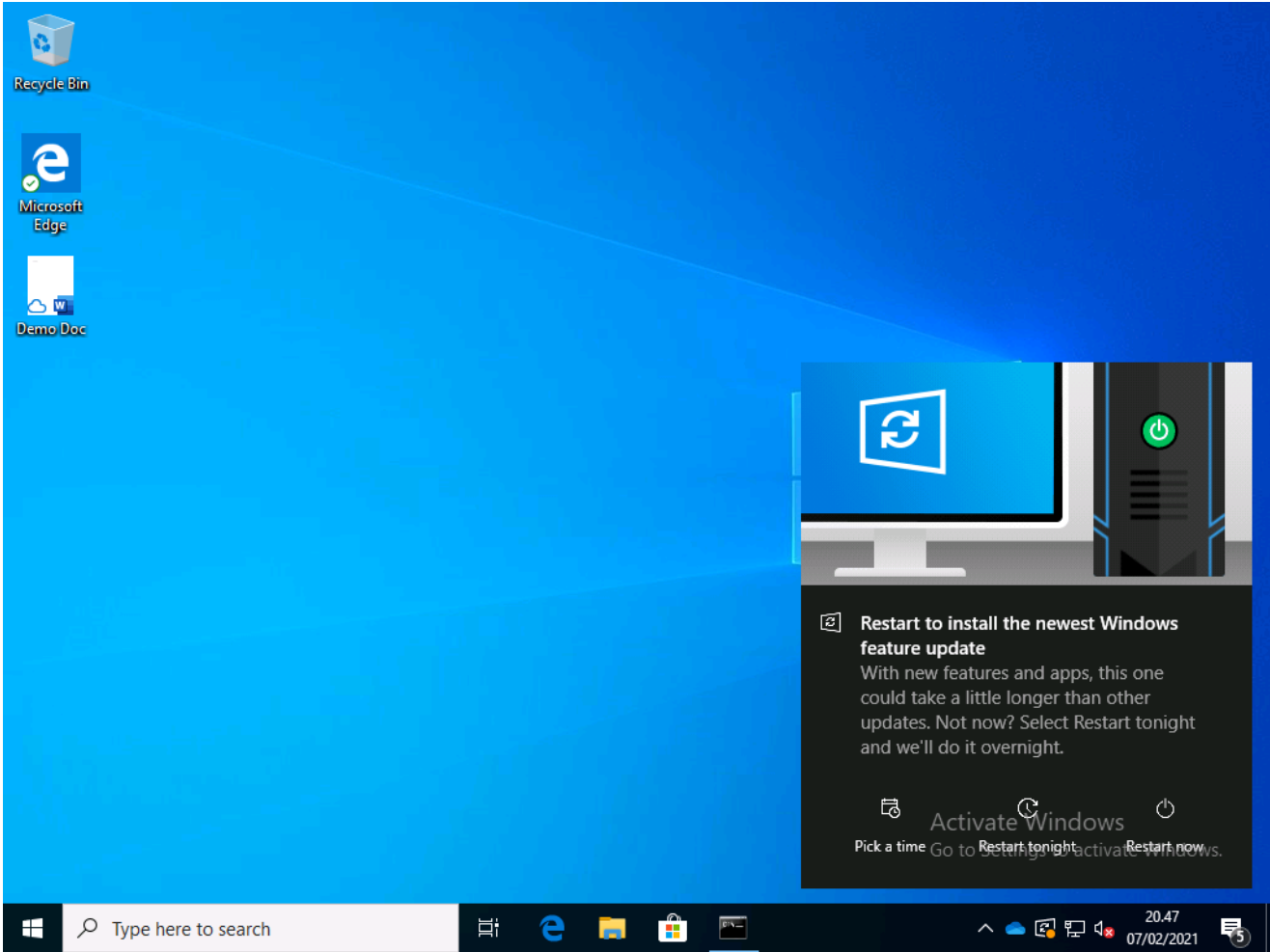
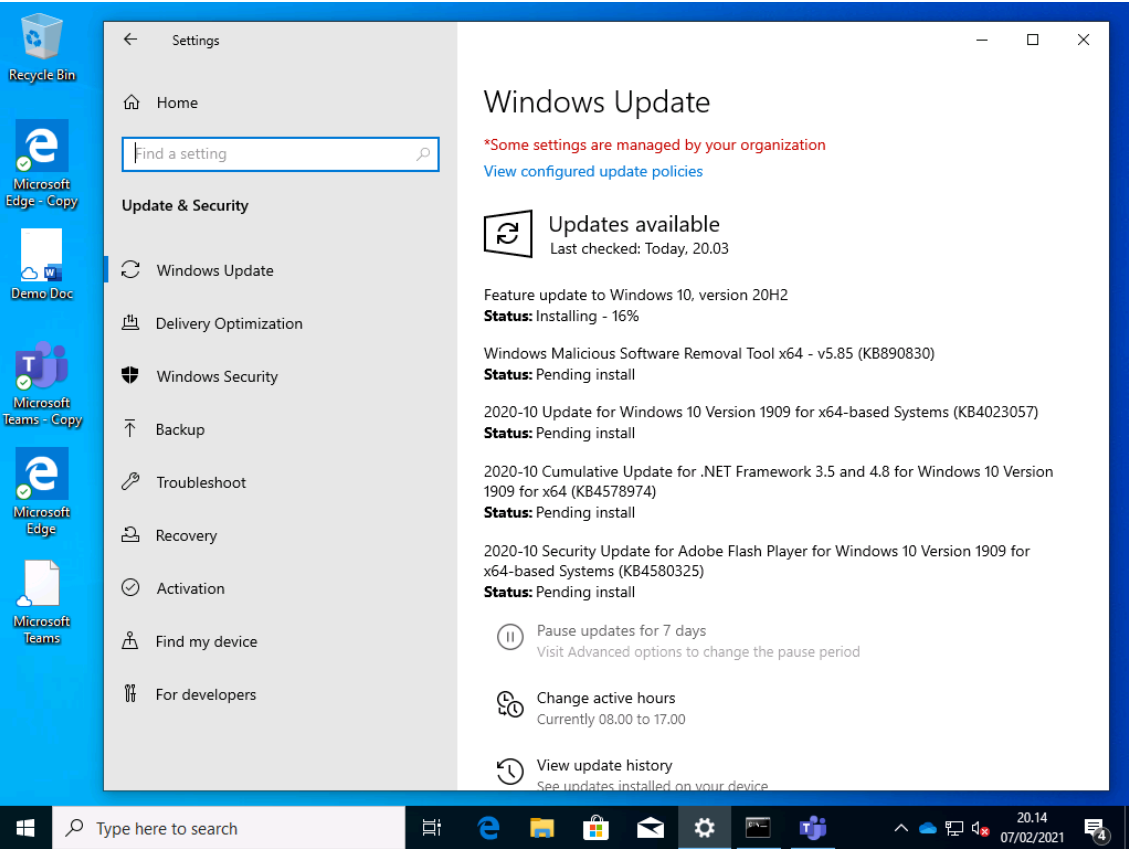
- Telemetry must be turned on
 - Minimum setting of **Basic**.

Important

- The **Feature update deferral period (days)** must be set to **0**.
- **Windows Autopilot:** The feature updates policy cannot be applied during the out of box experience (OOBE). (Can take up to 1 day).

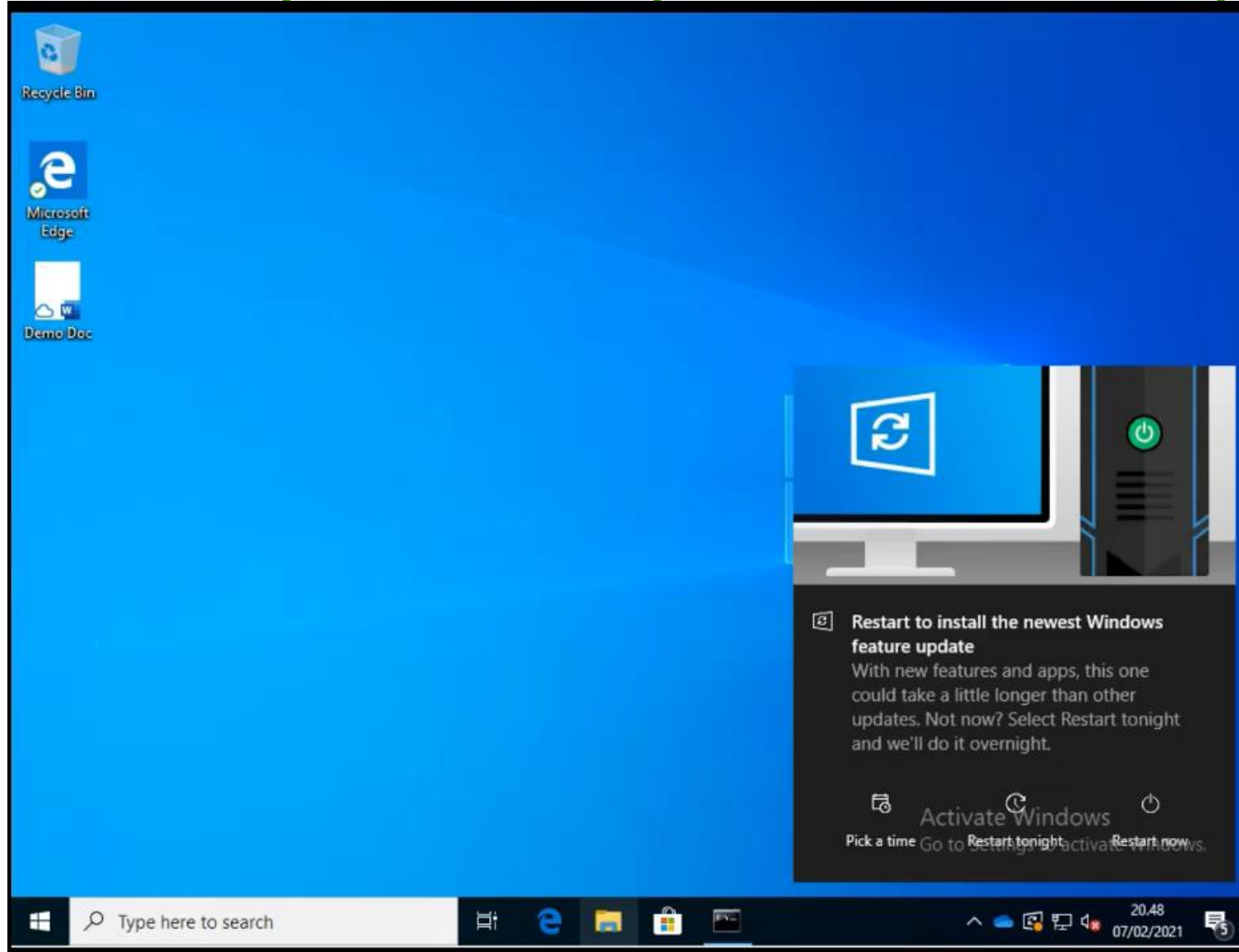


End User Experience (1909 → 20H2)





End User Experience (1909 → 20H2)





Feature Updates Reporting

- Latest = Insider Preview

Home > Devices > Windows > Windows 10 Feature Update

Windows 10 Feature Update | End user update status

Search (Ctrl+ /) Columns Refresh Export

Overview

Search by Device, User or Quality Update Version.

Device	User	Update Status	Feature Update Version	Last Scan Time
TPPC-7473	rop@techpreview.dk	Up to date	20H2	2/06/21, 9:20 PM
TPPC-0901	System account	Up to date	Latest	2/06/21, 1:35 AM
TPPC-3826	rop@techpreview.dk	Up to date	2004	11/08/20, 10:03 PM
TPPC-9166	rop@techpreview.dk	Up to date	Latest	1/20/21, 11:07 PM

Home > Devices > Windows 10 Updates

Windows 10 Updates | End user update status

Windows 10 update rings

Search (Ctrl+ /) Filter Refresh Export

Overview

Search by Device, User or Quality Update Version.

Device	User	Update Status	Quality Update Version	Feature Update Version
TPPC-7473	rop@techpreview.dk	Up to date	10.0.19042.685	20H2
TPPC-0901	System account	Up to date	10.0.21286.1000	Latest
TPPC-9191	System account	Up to date	10.0.18363.418	1909



Reports: Windows updates (preview)

Home > Reports

Reports | Windows updates (preview)

Search (Ctrl+ /) <<

Overview

Device management

- Device compliance
- Group policy analytics (preview)
- Windows updates (preview)
- Cloud attached devices (preview)

Endpoint security

- Microsoft defender antivirus
- Firewall

Analytics

- Endpoint analytics

Intune data warehouse

- Data warehouse

Summary Reports



Last refreshed on: 2/8/2021, 2:08:18 PM

Windows update



Profile	↑↓	Versions	↑↓	Success	↑↓	Error	↑↓	In progress	↑↓	Rollback initiated ...↑↓	Cancelled	↑↓	Onhold	↑↓
Windows 10 Feature ...		20H2		1		0		4		0	0		0	

Devices ↑↓	UPN ↑↓	Intune Device ID ↑↓	AAD Device ID ↑↓	Last Event Time ↑↓	Update State	Update Substate	Update Aggregated S...
MININT-RLCM8T8	rop@techpreview.dk	4e1d242a-de6a-4f95-b9...	233486f3-1ceb-4b5a-a2...	2/9/2021, 10:00:00 AM	Installed	Update installed	Success
TPPC-0901	rop@techpreview.dk	b80efc22-e7d9-420b-9f...	03fb09da-8960-4e24-90...	2/7/2021, 2:45:06 PM	Pending	Scheduled	In progress
TPPC-2315	rop@techpreview.dk	c3c91379-f4d0-4d44-89...	b668834e-3a0f-49a7-90...	2/9/2021, 4:00:00 AM	Installed	Update installed	Success
TPPC-3826	rop@techpreview.dk	a8f7da64-241c-4948-92...	7cc7944c-88b6-49d9-94...	2/7/2021, 2:45:06 PM	Pending	Scheduled	In progress
TPPC-4085	rop@techpreview.dk	bda1191d-2388-47cd-a...	692baff1-f6fb-4ff9-af5d-...	2/8/2021, 10:45:21 PM	Offering	Offer ready	In progress
TPPC-7412	rop@techpreview.dk	ffab687d-1795-4565-ac8...	68d0fa2b-39ef-44c3-9b...	2/7/2021, 2:45:06 PM	Pending	Scheduled	In progress

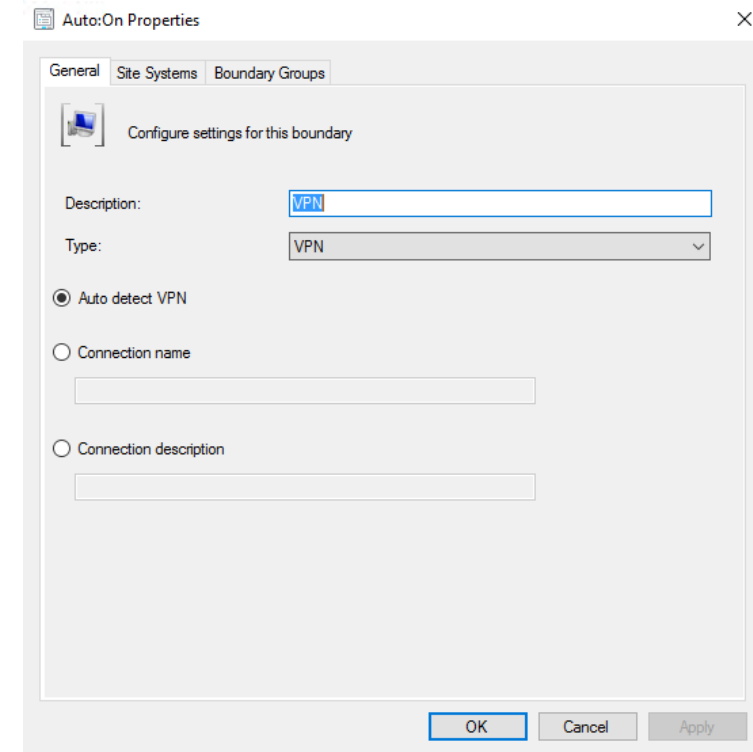
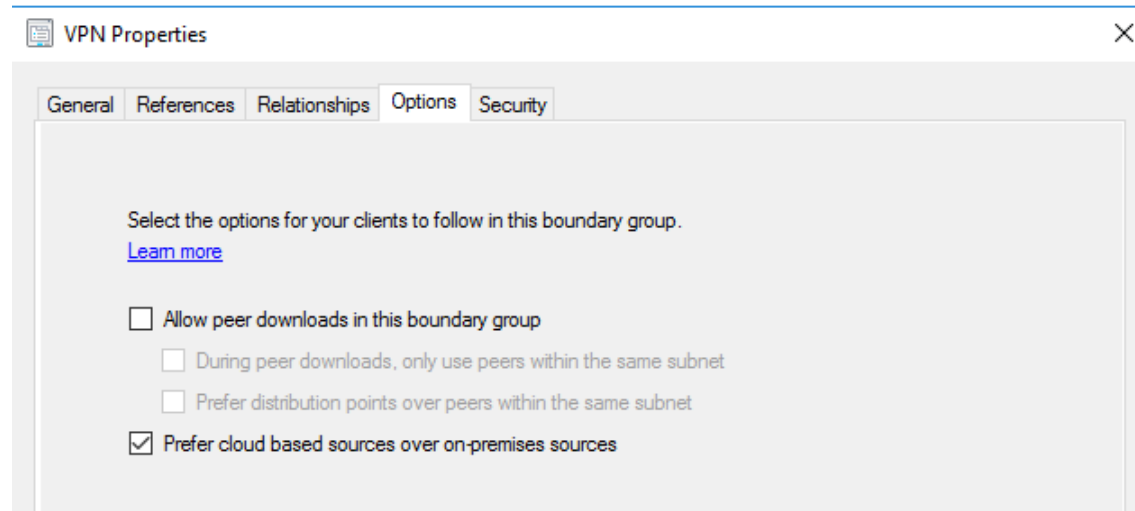


MEMCM



Boundaries WFH!

- Boundaries in MEMCM
 - VPN Boundary
 - Turn off peering
 - User cloud as preferred source (CMG & Windows Update)





Cloud Management Gateway

- The number 1 Covid-19 tool for MEMCM Admins!
- Even if VPN/AlwaysOn is used a CMG is a must have!
- If not used for anything else, it can be used to fix VPN ;-)





Task Sequence

- Prestage/deploy Task Sequences
 - Update Drivers and BIOS as part of the process
 - MultiLanguage support
 - Uninstall/install apps
 - Reporting
-
- Ultimate WaaS example by Gary Blok / Mike Terrill
[WaaS – GARYTOWN ConfigMgr Blog](#)



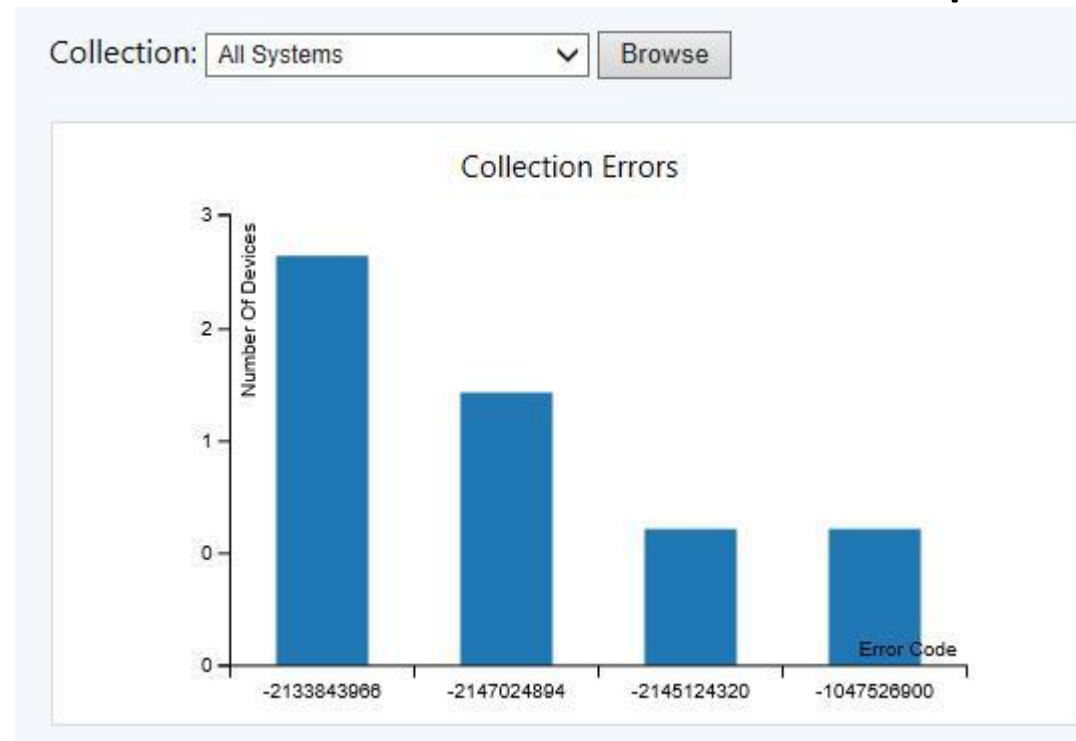
Windows Servicing (MEMCM)



Windows Servicing (MEMCM)

Improved in MEMCM 2010.



Only works with Windows 10 2004 as it runs setupdiag on failure





MEMCM Windows 10 servicing

- Windowsupdatebox.exe + .esd file
- Content can come from Microsoft Update
- Can be run from an application instead
 - WindowsUpdateBox /Update /PreDownload /quiet
 - WindowsUpdateBox /Update /Install /quiet
 - WindowsUpdateBox /Update /Finalize /quiet

Name	Date modified	Type	Size
 19042.631.201119-0144.20h2_release_svc_refresh_CLIENTBUSINESS_VOL_x64FRE_en-us.esd	2021-02-01 16:37	ESD File	3 950 615 KB
 WindowsUpdateBox.exe	2021-01-31 20:28	Application	22 370 KB

[SCCM/MEMCM: Windows 10 Feature Update Rollouts via Application Deployment - TechNet Articles - United States \(English\) - TechNet Wiki \(microsoft.com\)](#)



Dynamic Updates

- Servicing will always trigger Dynamic Updates

- **Setup DU:** Fixes to Setup binaries or any files that Setup uses for feature updates.
- **SafeOS DU:** Fixes for the 'safe OS' that we use to update Windows recovery environment (WinRE).
- **Servicing Stack Update (SSU)/Critical DU:** Fixes that are necessary to address the Windows 10 servicing stack issue and thus required to complete the feature update.
- **Latest Cumulative Update (LCU)/General Distribution Release (GDR) DU:** Installs the latest cumulative quality update.
- **Language Pack (LP) and Feature On Demand (FOD) DU:** Preserves users' installed language packs and optional features by reinstalling them.
- **Driver DU:** Latest version of applicable drivers that have been already published by manufacturers (OEMs and/or IHVs) into Windows Update and specifically targeted for Dynamic Update.

Name	Date modified	Type	Size
boot	11/20/2020 1:30 AM	File folder	
Drivers	2/5/2021 9:40 AM	File folder	
DUImageSandbox	2/5/2021 9:40 AM	File folder	
DUSetupSandbox	2/5/2021 9:25 AM	File folder	
	11/20/2020 1:30 AM	File folder	
	11/19/2020 12:54 AM	File folder	
	2/5/2021 9:45 AM	File folder	
	2/5/2021 9:45 AM	File folder	
	11/20/2020 1:30 AM	File folder	
	2/5/2021 9:47 AM	File folder	
	11/20/2020 1:26 AM	Setup Information	1

DUSetupSandbox, ... Properties

General Customize

1,369 Files, 7 Folders

Type: All of type File folder

Location: All in C:\\$WINDOWS.~BT

Size: 530 MB (556,340,509 bytes)

Size on disk: 535 MB (560,988,160 bytes)

Attributes ☐ Read-only

Installation Progress

CCMEXECP

Running: Windows 10 20H2 IPU

Running action: Upgrade Operating System



How can we run commands pre/post Feature Update?

Option 1: Setupconfig.ini

Option 2:

- %windir%\System32\update\run\{GUID}\preinstall.cmd
- %windir%\System32\update\run\{GUID}\precommit.cmd
- %windir%\System32\update\run\{GUID}\failure.cmd
- %windir%\System32\update\run\{GUID}\success.cmd (2004)
- %windir%\System32\update\run\{GUID}\postuninstall.cmd (2004)

Use Runonce instead of Run for = runonce ;-)

<https://docs.microsoft.com/en-us/windows-hardware/manufacture/desktop/windows-setup-enable-custom-actions>



Setupconfig.ini = your new best friend

- Drivers, commands and more = total control!

<< Local Disk (C:) > Users > Default > AppData > Local > Microsoft > Windows > WSUS				
Name	Date modified	Type	Size	
Setupconfig.ini	2020-11-11 17:23	Configuration sett...	1 KB	

```
[Setupconfig]
BitLocker=AlwaysSuspend
Compat=IgnoreWarning
Priority=Normal
DynamicUpdate=Enable
ShowOOBE=None
Telemetry=Enable
PostOOBE=C:\Windows\AdvancedIPU\SetupComplete.cmd
PostRollBack=C:\Windows\AdvancedIPU\ErrorHandler.cmd
PostRollBackContext=System
```

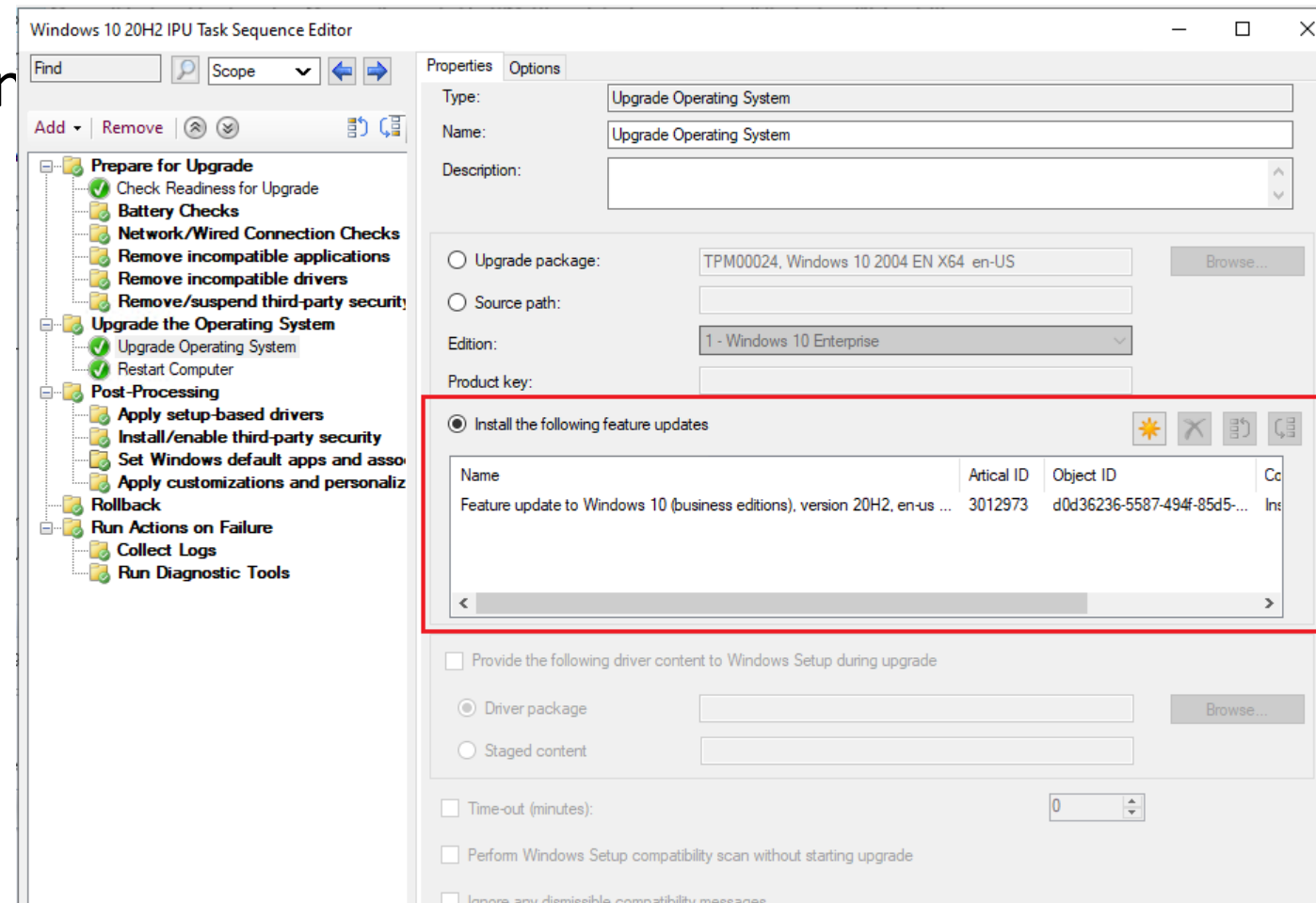
Name	Date modified	Type	Size
Branding	2021-02-09 11:26	File folder	
RemoveApps	2021-02-08 15:09	File folder	
Brand_Win10.cmd	2020-02-10 23:29	Windows Comma...	4 KB
RemoveApps.ps1	2020-02-10 23:29	Windows PowerS...	13 KB
RunSilent.exe	2020-10-06 14:18	Application	14 KB
RunSilent.ini	2021-02-09 00:15	Configuration sett...	1 KB

<https://www.asquaredozen.com/2019/08/25/windows-10-feature-updates-using-setupconfig-ini-to-manage-feature-updates-in-the-enterprise/>



Changes coming in MEMCM (TP2101)

- Feature update in Task Sequencer
- Why you ask?
 - IPU Source = 5,1 GB
 - *.ESD = 3.8 GB
- Will always run Dynamic Updates
- Need to use setupconfig.ini





Advanced Windows Servicing (MEMCM)

- New community tool!
- DeploymentScheduler + IPUInstaller – by Johan Schrewelius
- Either patched Media or .Esd
- Post commands
- Driver updates
- Errorhandling

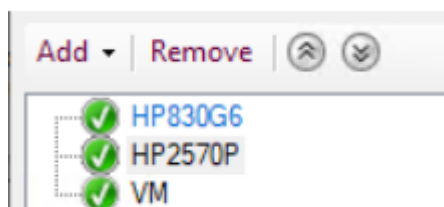
Name	Date modified	Type
ErrorHandler	2021-02-07 13:43	File folder
Media	2021-02-07 21:29	File folder
SetupComplete	2021-02-07 14:56	File folder
IpuInstaller.exe	2021-02-09 11:46	Application

<https://onevin.schrewelius.it/>

his PC > New Volume (E:) > Sources > OS Upgrades > IPU-JN > IPUApplication > SetupComplete >				
Name	Date modified	Type	Size	
Branding	2021-02-07 13:43	File folder		
DefaultApps	2021-02-07 13:43	File folder		
Edge	2021-02-07 13:43	File folder		
RemoveApps	2021-02-07 13:44	File folder		
RemoveEdgeWelcome	2021-02-07 13:44	File folder		
StartMenu	2021-02-07 13:44	File folder		
StartMenuFiles	2021-02-07 13:44	File folder		
Brand_Win10.cmd	2020-02-10 23:29	Windows Comma...	4 KB	
ChangeSearchbarFor1903AndLater.ps1	2020-11-19 10:27	Windows PowerS...	2 KB	
CleanUp.ps1	2021-02-02 17:01	Windows PowerS...	1 KB	
DefaultApps.ps1	2020-02-10 23:29	Windows PowerS...	11 KB	
Importlayout.ps1	2020-02-10 23:29	Windows PowerS...	10 KB	
RemoveApps.ps1	2020-02-10 23:29	Windows PowerS...	13 KB	
RunSilent.exe	2020-10-06 14:18	Application	14 KB	
RunSilent.ini	2021-02-07 14:57	Configuration sett...	1 KB	

IPUInstaller - drivers

- Driver Package
- IPUDrivers.WIM anywhere in CCMCache



Properties Options

Type: Download Package Content

Name: HP2570P

Description:

	Name	Type	Size (MB)	Package ID
1	HP2570P	Package	443	EKX00518

Place into the following location:

☐ Task sequence working directory

☐ Configuration Manager client cache

☒ Custom path: %ProgramData%\~IPUDrivers

☐ Save path as a variable:

Refer to the variable in subsequent steps, using %mycontent02% or %mycontent03%, where the number corresponds to the order this Download Package Content step lists the packages.

☒ If a package download fails, continue downloading other packages in the list

? Add Condition Remove Remove All Cut Copy Paste

This group/step will run if the following conditions are met:

If All the conditions are true:

WMI Query SELECT * FROM Win32 ComputerSystem WHERE Manufacturer='Hewlett-Packard' AND Model='HP EliteBook 2570p'



Recycle Bin



Google Chrome



Microsoft Edge



A Windows upgrade is available.

Please, schedule the upgrade.

Schedule

Postpone



Type here to search





Why move to Servicing/WufB?

- User experience / productivity
- Content from Microsoft Update
- Better WFH experience

Technology	Total time	Reboot Time	Downtime	Dynamic Updates
Task Sequence	26 min	6 min	26 (!?!)	
Feature Update	46 min	4 min	4 min	X
IPIInstaller	24 min	5 min	5 min	



Summary

- Update drivers/BIOS BEFORE servicing, makes it easier to troubleshoot and increase success rate + more stable computer
- Keep it simple use Microsoft Security features (BitLocker & AV...)
- If you are using MEMCM you need a CMG
- Split-tunneling is an enabler
- Look at transitioning to WufB / Windows Servicing



Thank You





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