#NVSummit2021

Windows 10 Servicing in the work from anywhere era

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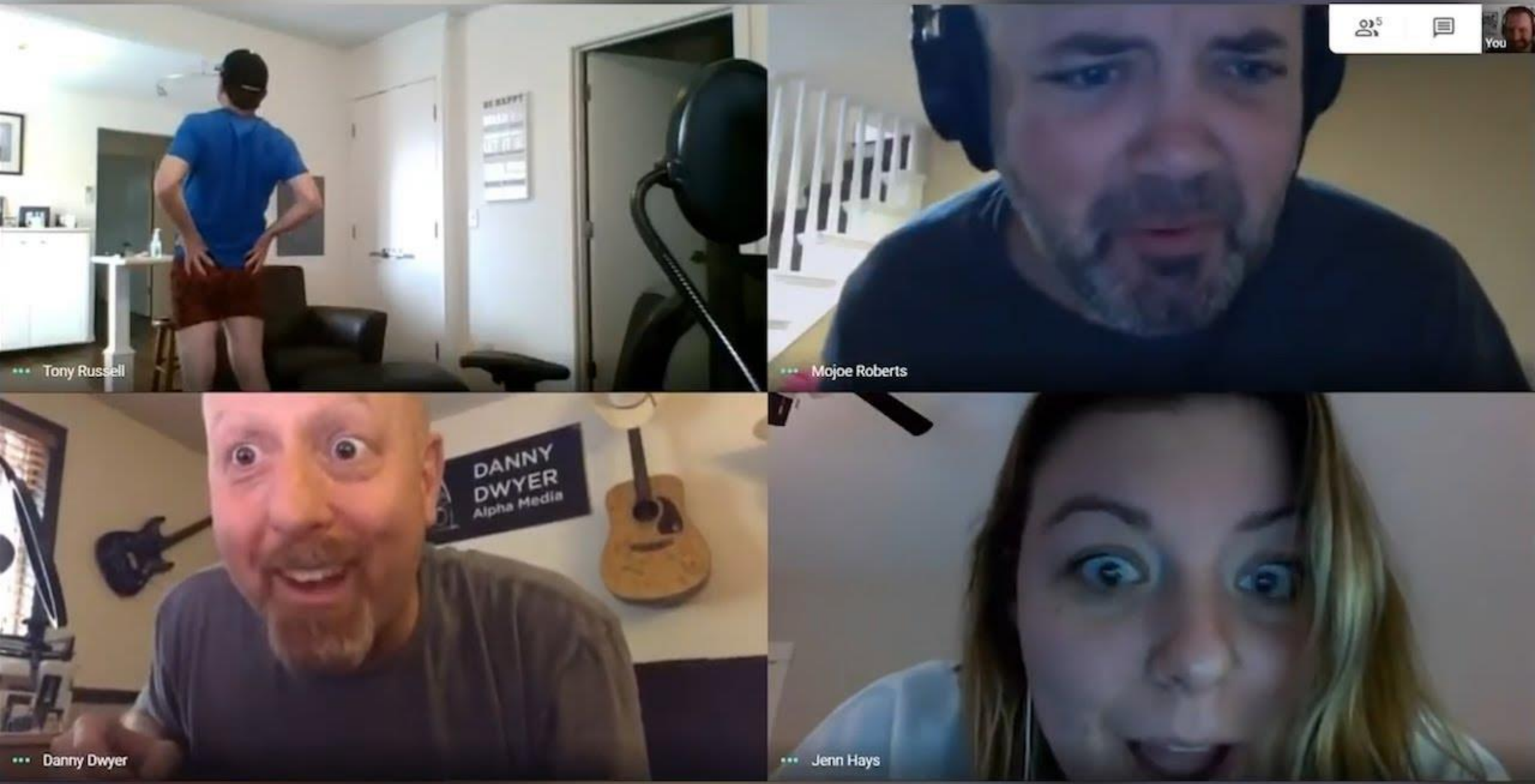
Agenda

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

Windows 10 Servicing
in the Work from Home era


5
You
Tony Russell
Mojoe Roberts
DANNY
DWYER
Alpha Media
Danny Dwyer
Jenn Hays

Challenges with Work from Home

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- 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

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- 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

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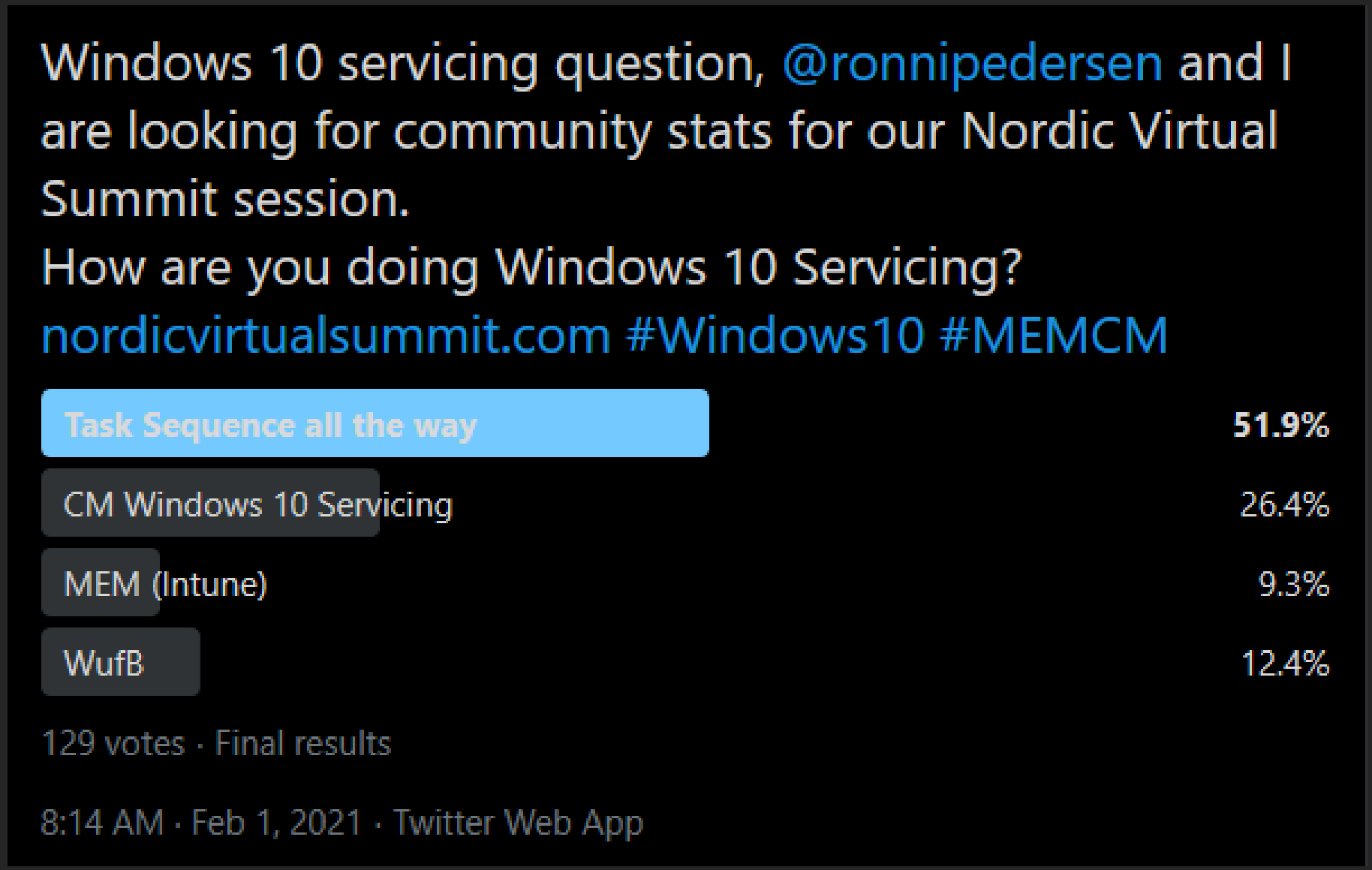
How do we do feature updates today?!

- 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



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Make your odds better

Update Drivers, BIOS and Applications

Challenges with Feature Updates

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- Outdated/unsuported Applications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

Driver/BIOS Mangement

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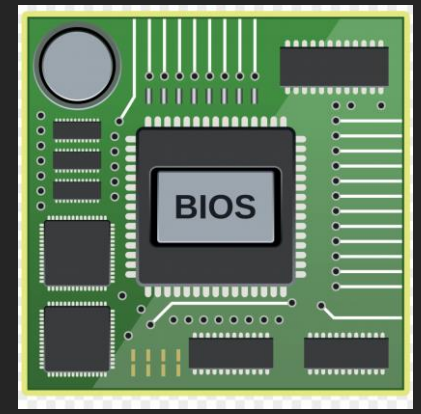
- Community Tool: MSEndpointMgr Modern Driver Management
  - https://msendpointmgr.com/modern-driver-management/
- Modern Driver Management will “soon” support Intune (native)
  - https://msendpointmgr.com/modern-driver-management/ ???
- HP has started updating BIOS/Firmware using MU: http://h10032.www1.hp.com/ctg/Manual/c06696094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



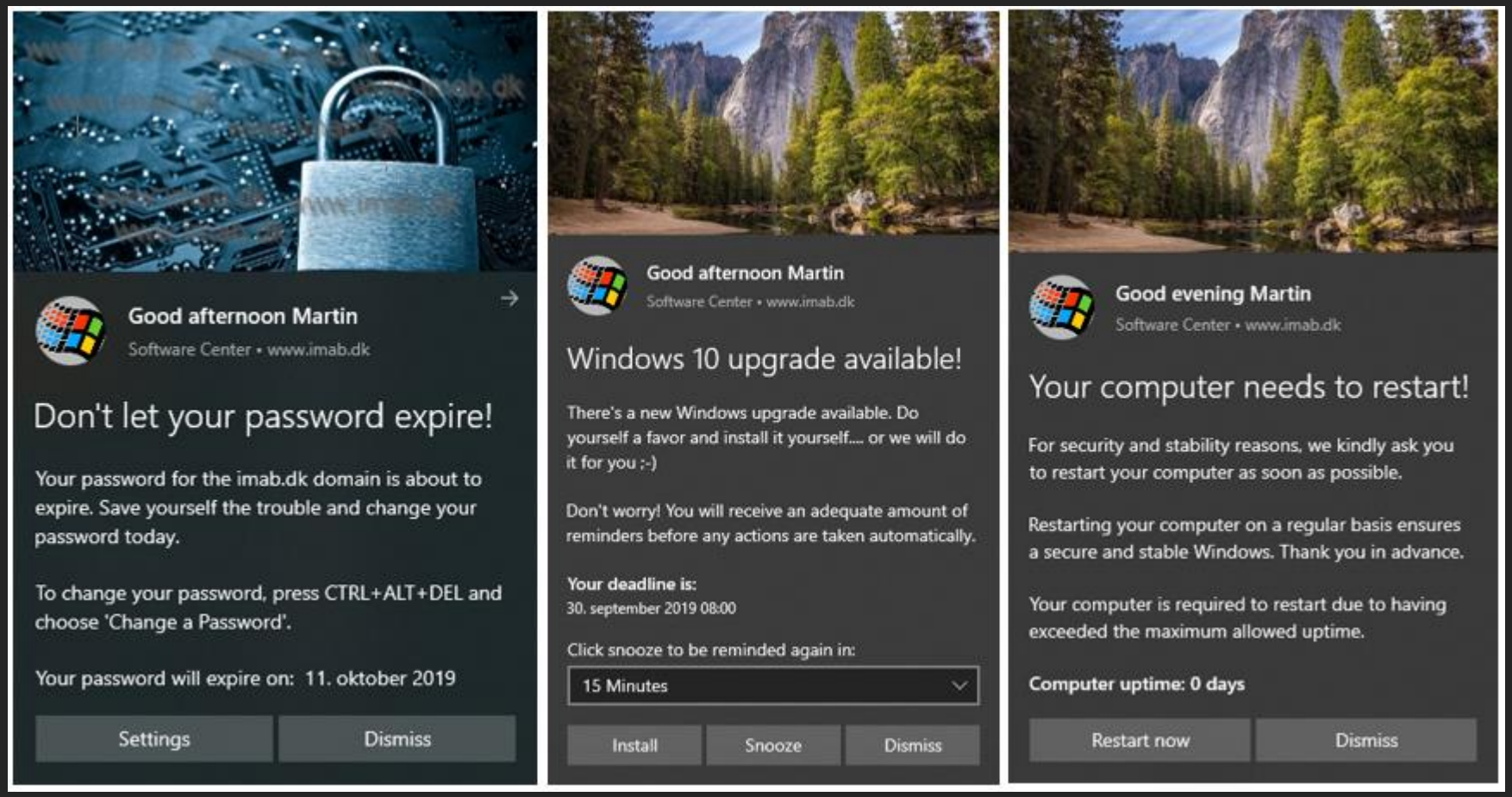
Updates Drivers from Microsoft Update

```powershell
#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, DriverManufactu


#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/

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Method #1: WSUS

Windows Server Update Service (WSUS)

WSUS

- Pros
  - None

- Cons
  - Many ☺

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Windows 10 Feature Updates

Windows Update for Business in Microsoft Intune

Windows Update for Business

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- 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)

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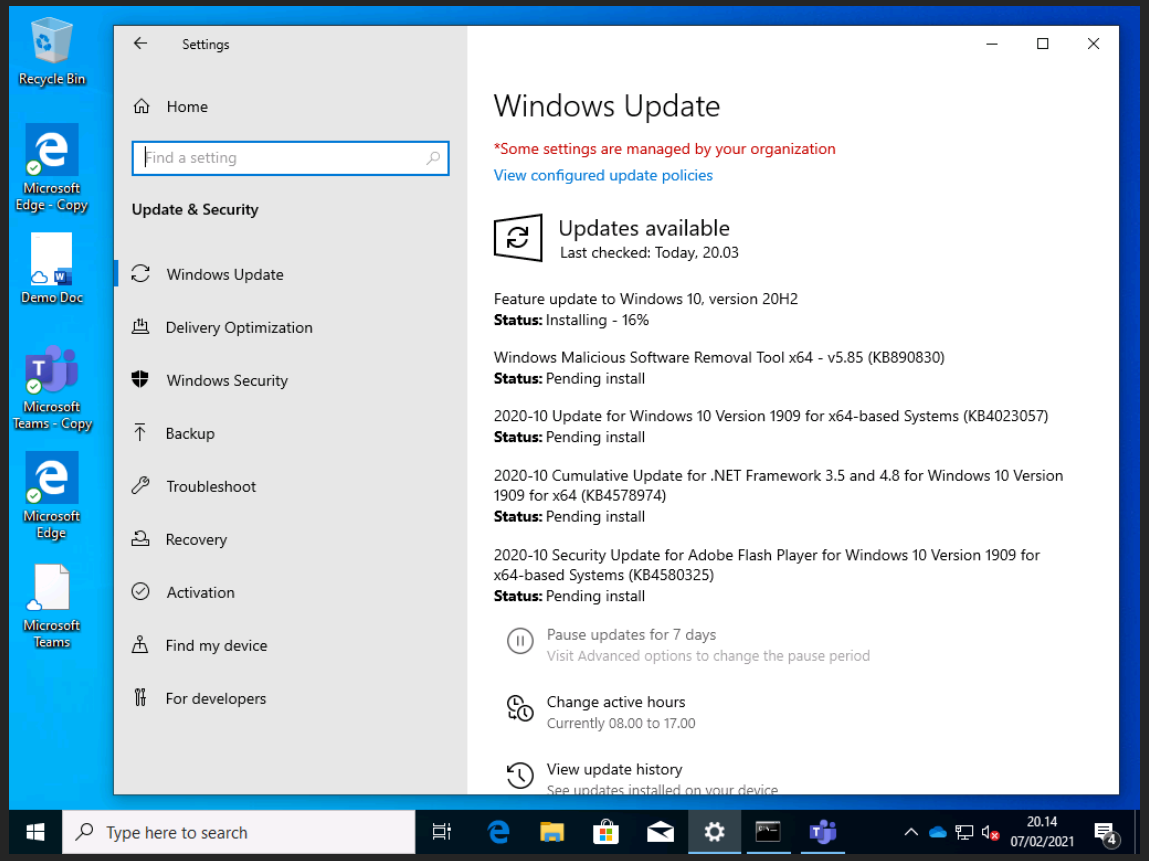
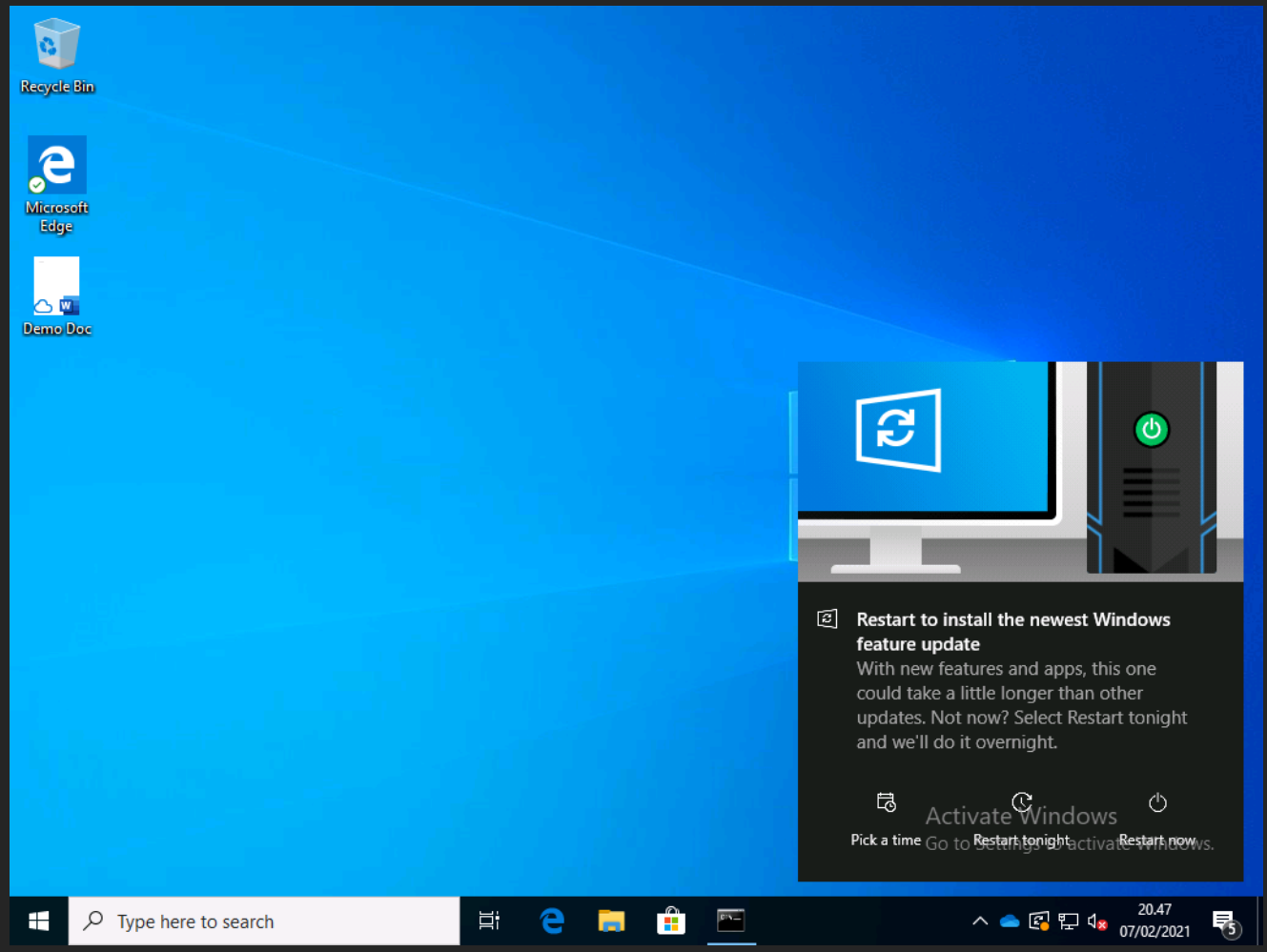
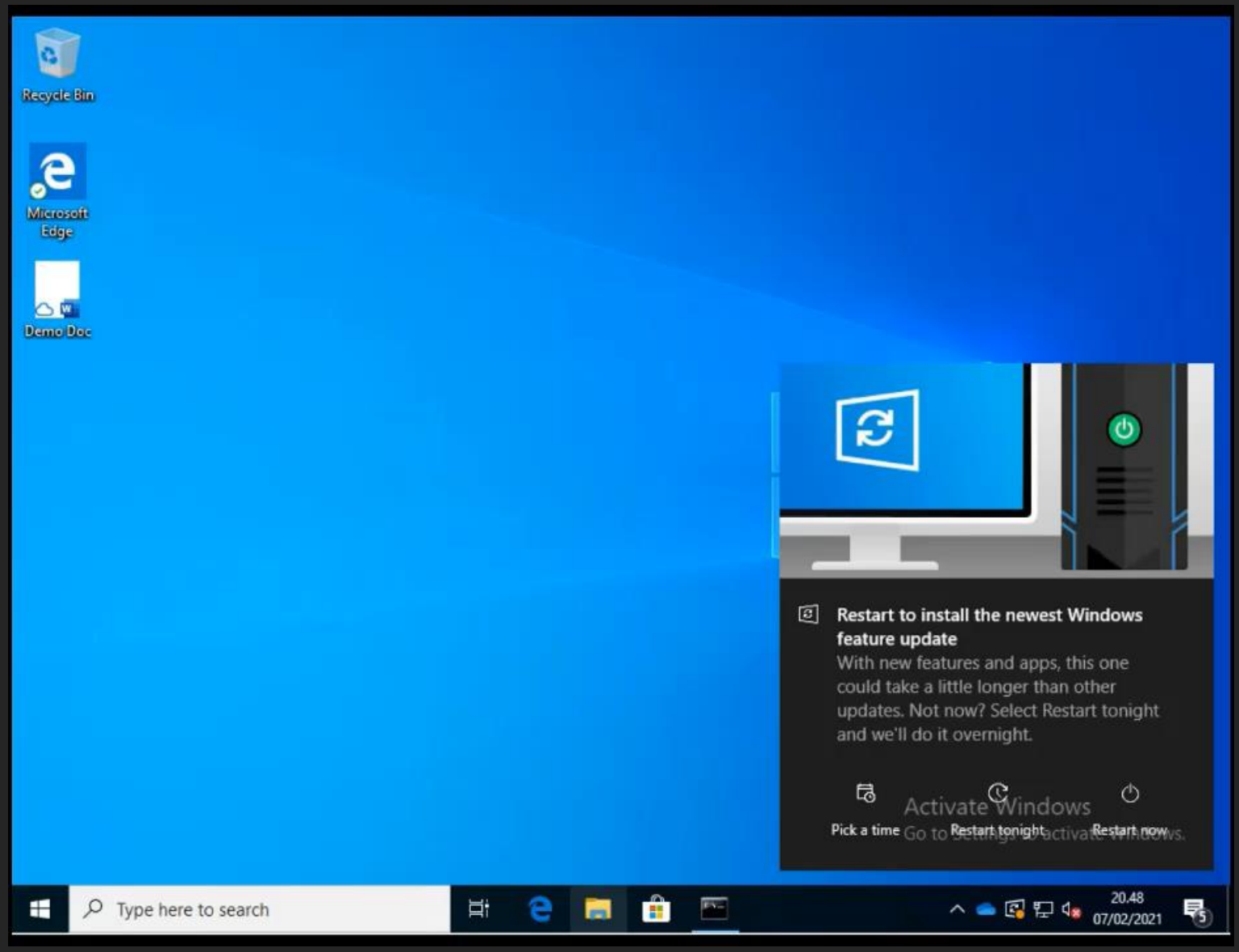


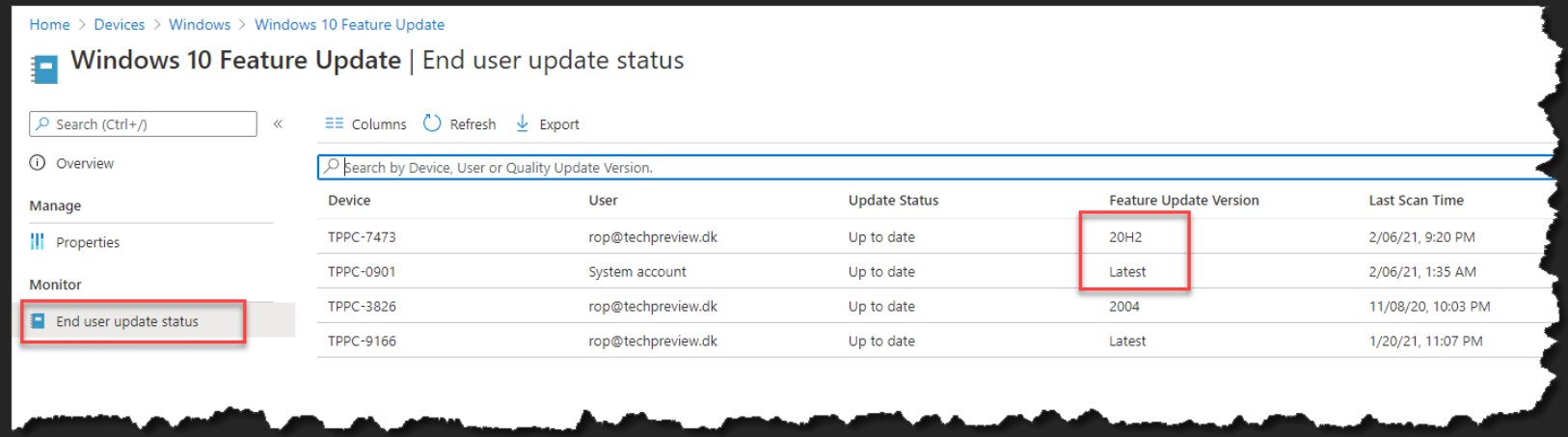


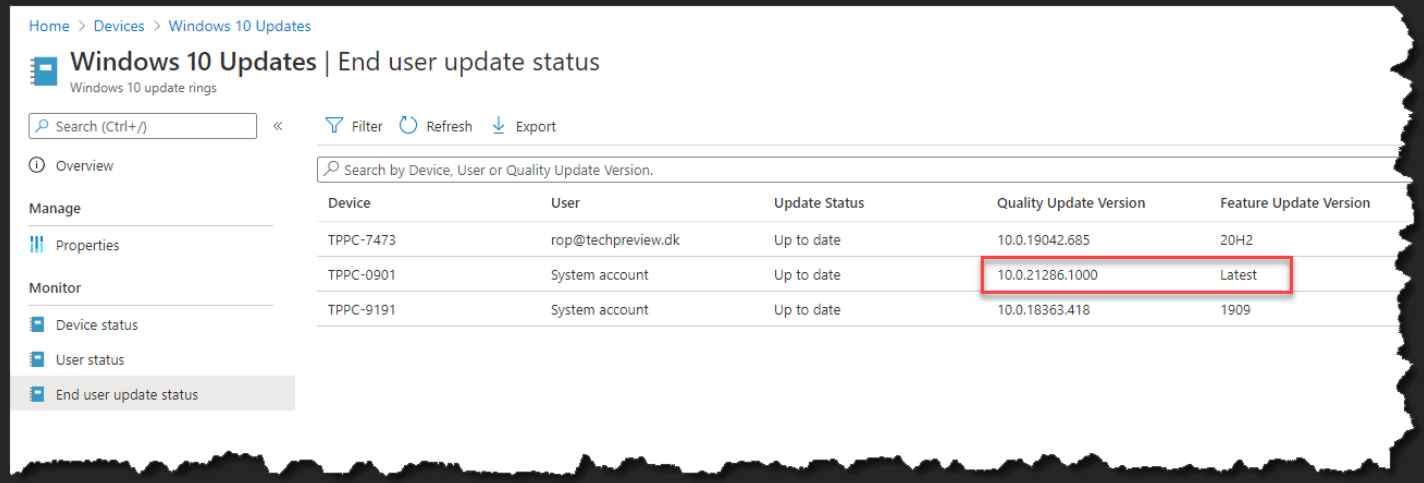
End User Experience (1909 –> 20H2)



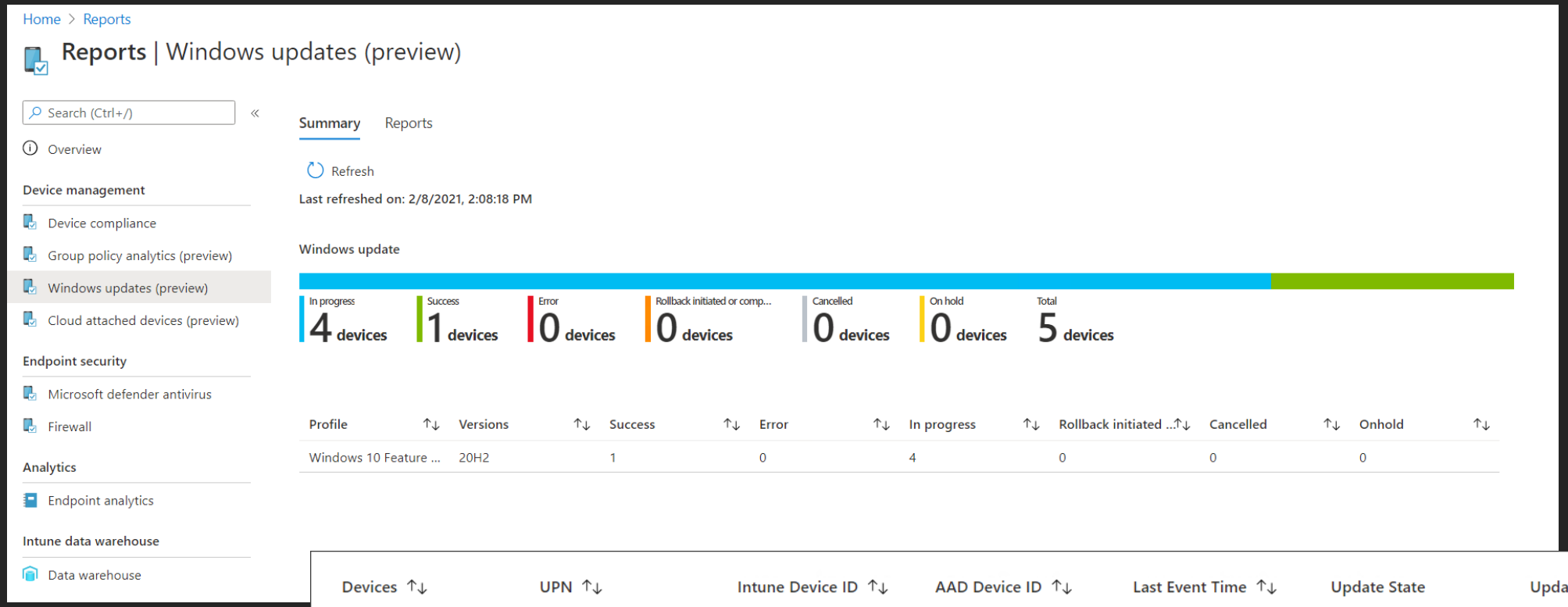
Feature Updates Reporting

- Latest = Insider Preview





Reports: Windows updates (preview)



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

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MEMCM

Boundaries WFH!

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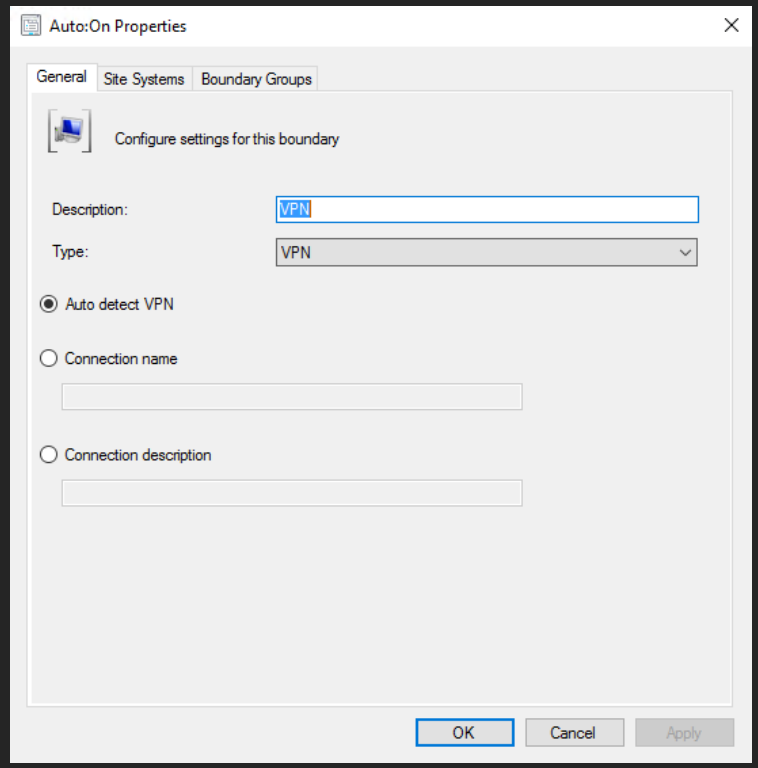
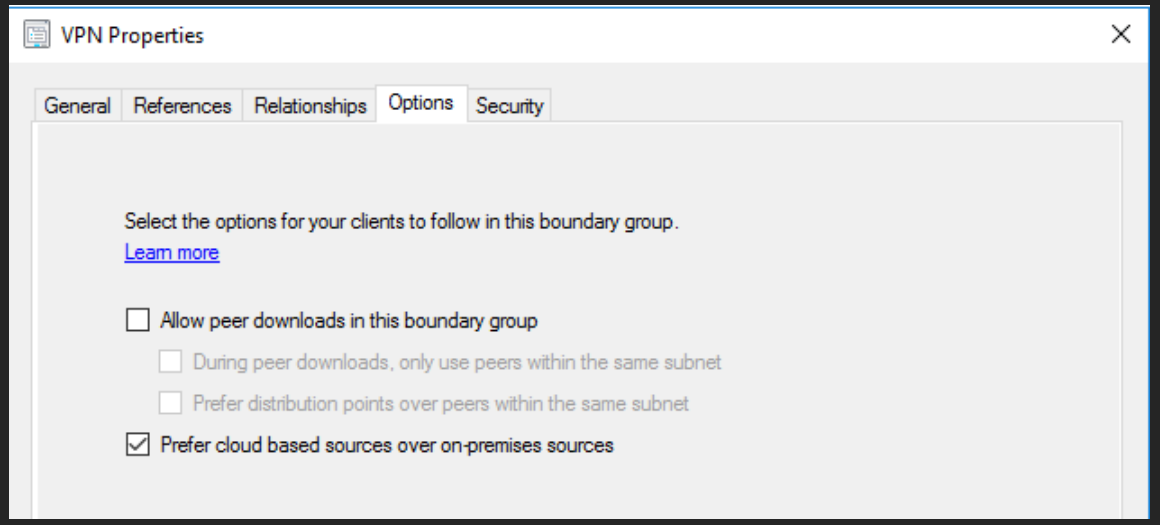
- Boundaries in MEMCM
  - VPN Boundary
  - Turn off peering
  - User cloud as preferred source (CMG & Windows Update)





Cloud Management Gateway

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- 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

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- 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

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Windows Servicing (MEMCM)

Windows Servicing (MEMCM)

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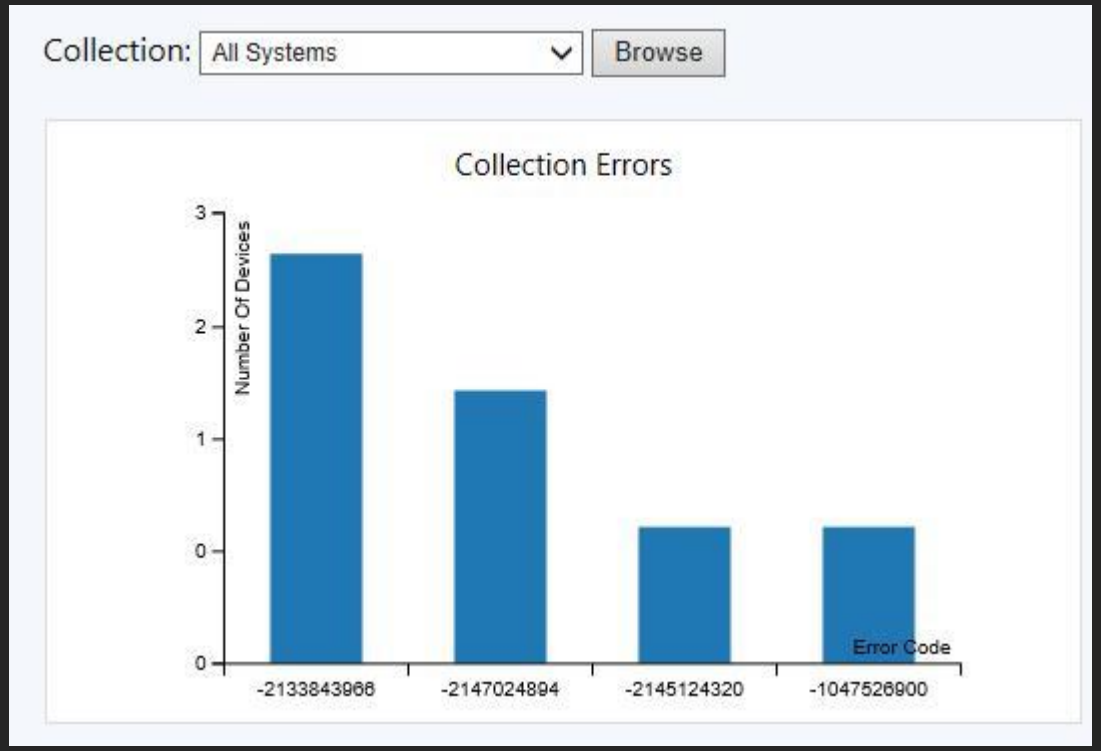
Improved in MEMCM 2010.

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



MEMCM Windows 10 servicing

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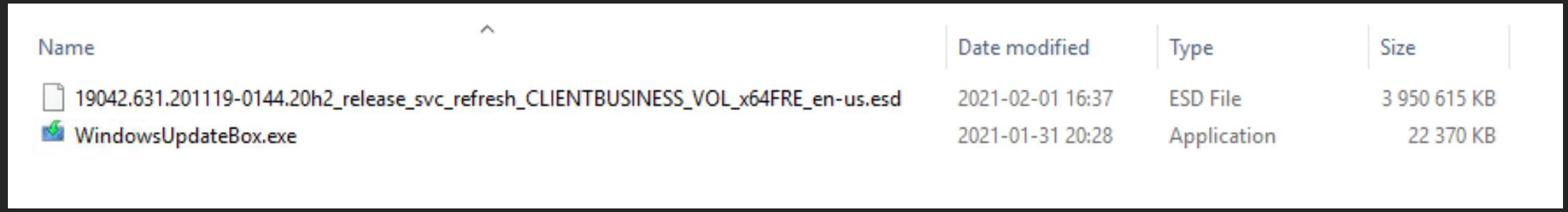
- Windowsupdatebox.exe + .esd file
- Content can come from Microsoft Update
- Can be run from an application instead
  - WindowsUpdateBox /Update /PreDownload /quiet
  - WindowsUpdateBox /Update /Install /quiet
  - WindowsUpdateBox /Update /Finalize /quiet



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

Dynamic Updates

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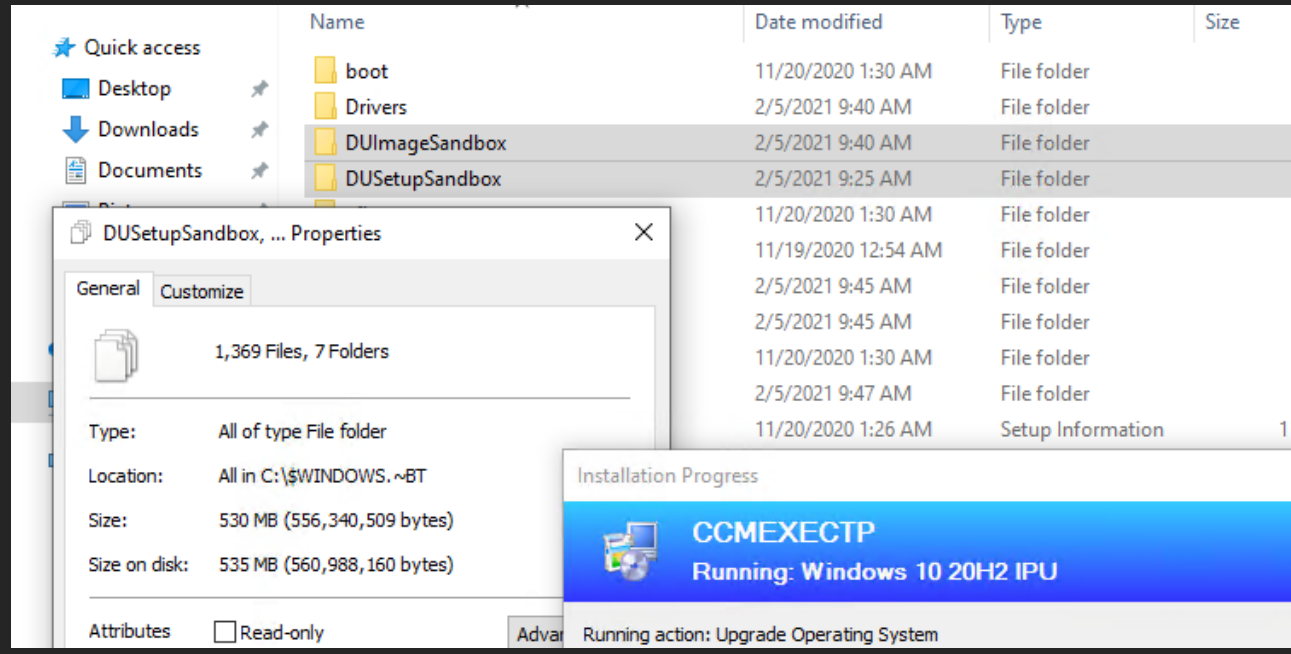
- Servicing will always trigger Dynamic Updates

- **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.



https://techcommunity.microsoft.com/t5/windows-it-pro-blog/the-benefits-of-windows-10-dynamic-update/ba-p/467847

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

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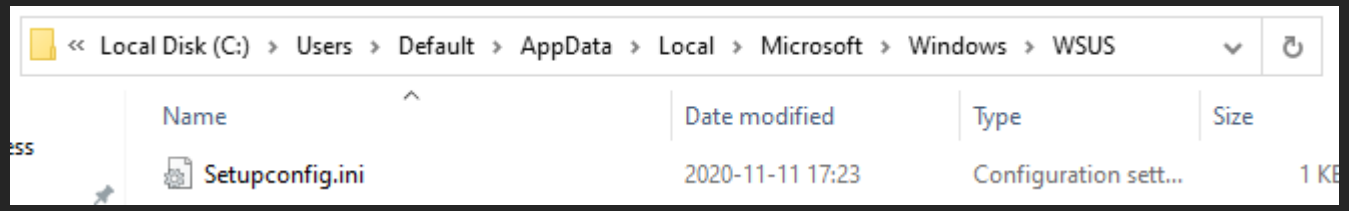
- Drivers, commands and more = total control!




```
[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)

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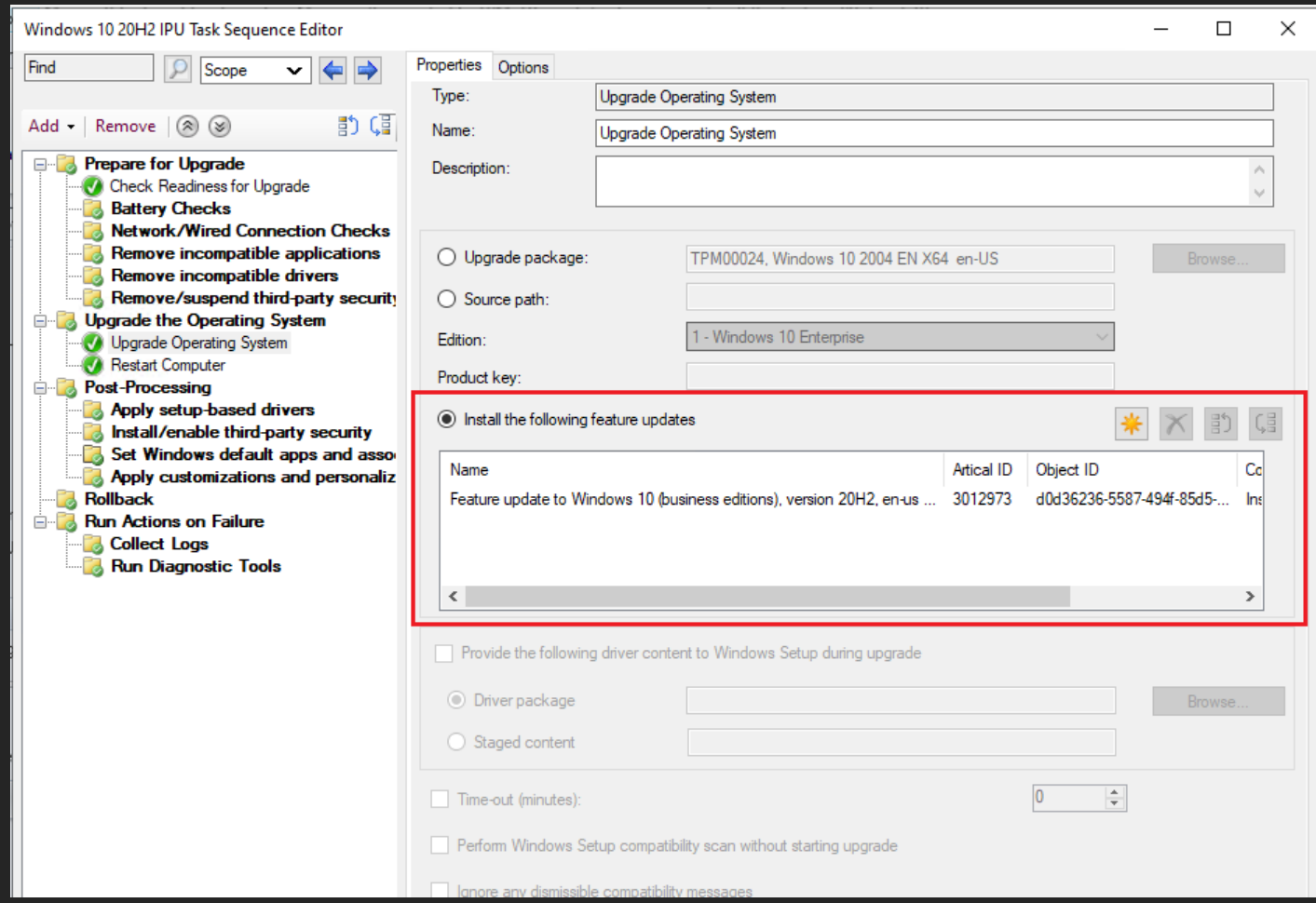
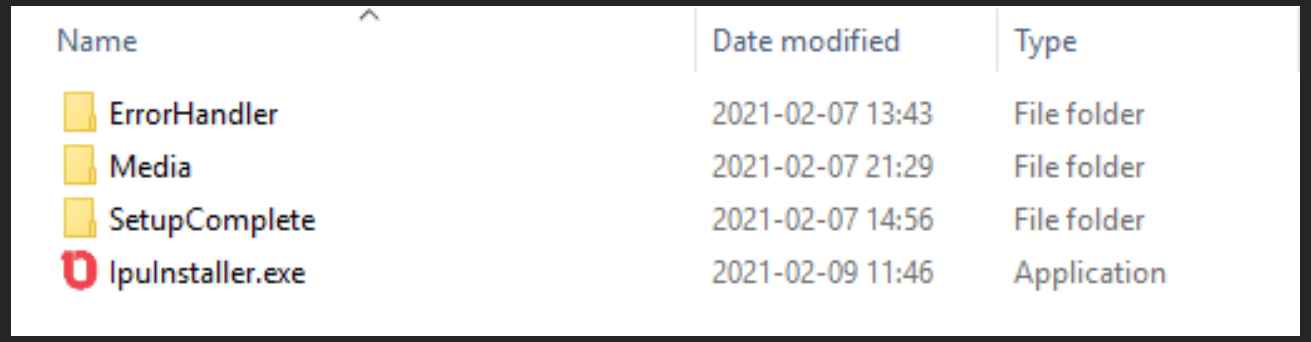
- Feature update in Task Sequence
- Why you ask?
  - IPU Source = 5,1 GB
  - *.ESD = 3.8 GB
- Will always run Dynamic Updates
- Need to use setupconfig.ini



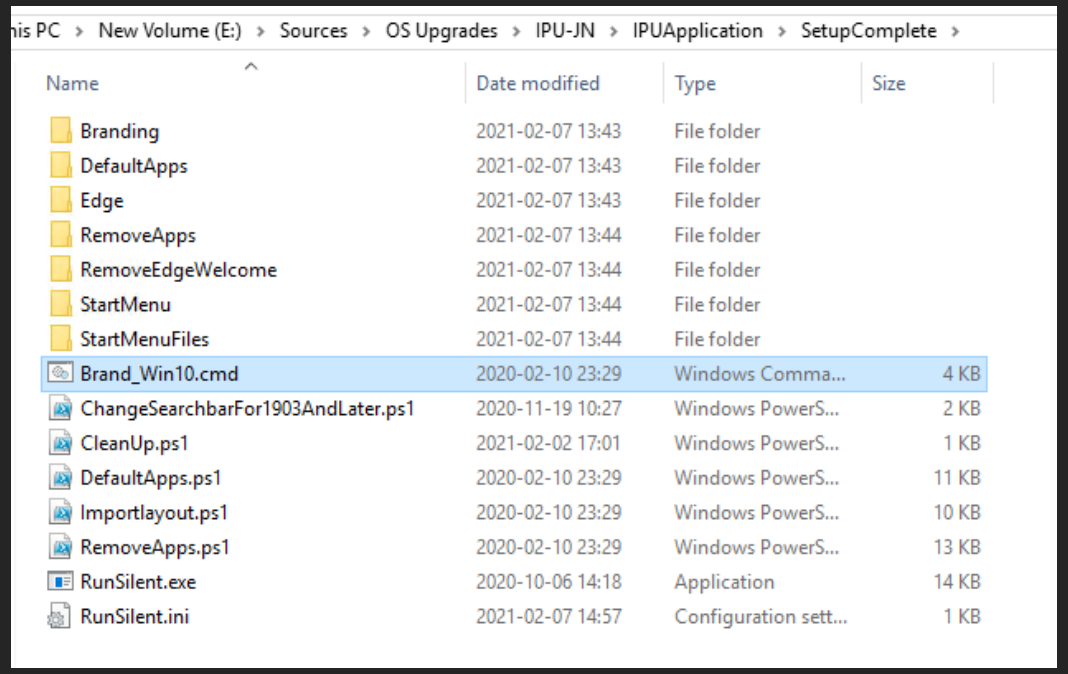
Advanced Windows Servicing (MEMCM)

New community tool!

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



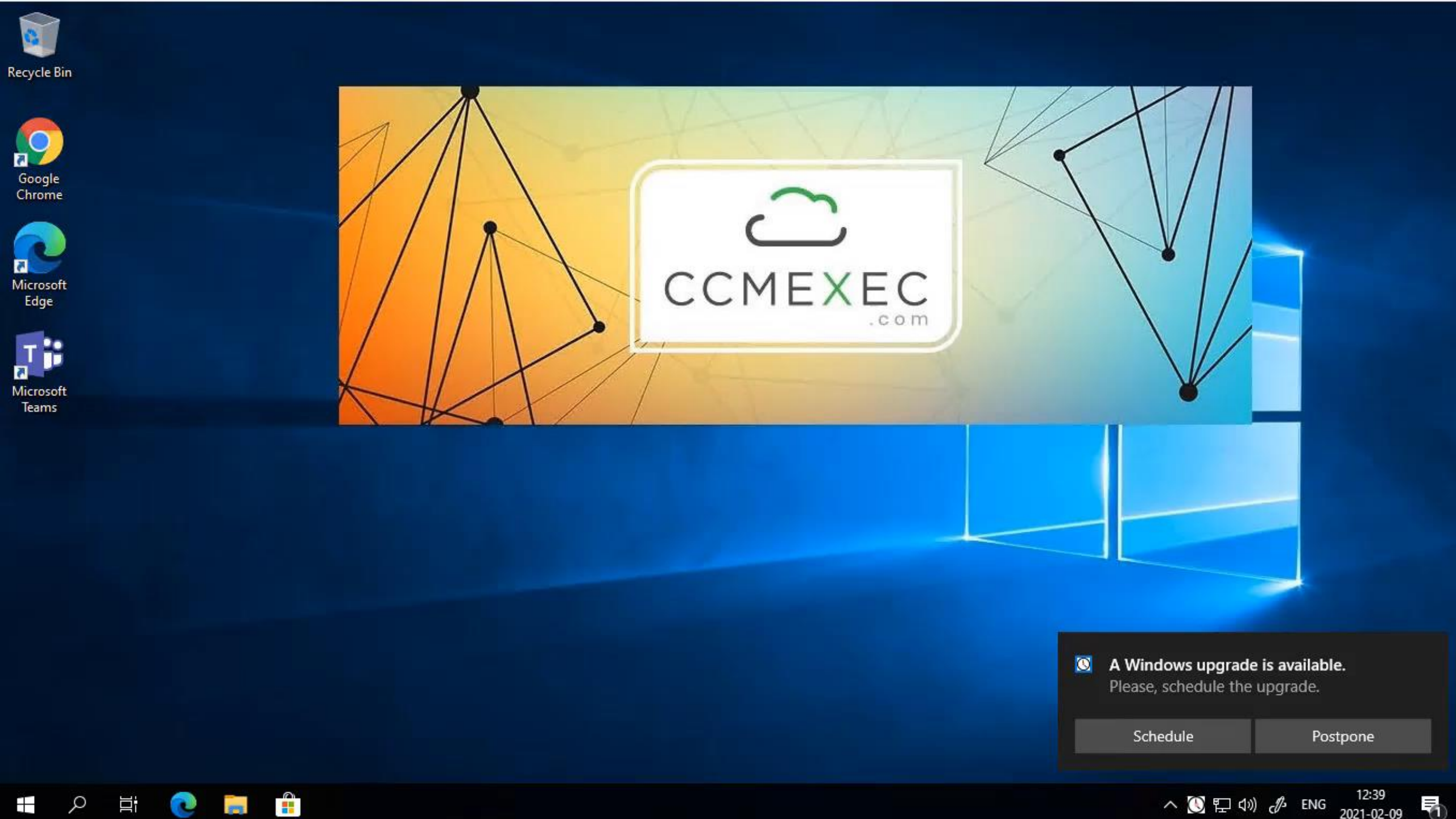
Name	Date modified	Type
ErrorHandler	2021-02-07 13:43	File folder
Media	2021-02-07 21:29	File folder
SetupComplete	2021-02-07 14:56	File folder
IpuInstaller.exe	2021-02-09 11:46	Application



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

https://onevinn.schrewelius.it/


Recycle Bin
Google Chrome
Microsoft Edge
Microsoft Teams
CCMEXEC
.com
A Windows upgrade is available.
Please, schedule the upgrade.
Schedule
Postpone
ENG
12:39
2021-02-09

Why move to Servicing/WufB?

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- 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
IPUInstaller	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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System Center User Group Finland
#SCUGFI

System Center User Group Denmark

#SCUGDK

System Center User Group Sweden
#SCUGSE

Modern Management User Group Norway
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